# RATE OF RETURN ON INVESTMENT IN UNIVERSITY 

 EDUCATION: A CASE STUDY OF IRAQ
## Thesis Submitted for the Degree of

 Doctor of Plilosophy at the University of Leicesterby

Hamid Sultan Jawad
B.A., Diploma (Baghdad)

Department of Economics
University of Leicester

All rights reserved

## INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.
In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.


UMI U072095
Published by ProQuest LLC 2015. Copyright in the Dissertation held by the Author.
Microform Edition © ProQuest LLC.
All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code.


ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346

Ann Arbor, MI 48106-1346
©

TO MY PARENTS
AND

TO MY WIIFE SURAB
WITH LOVE
AND APPRECIATION FOR HER PATIENCE, ENCOURAGEMENT, AND SACRIIICES

## $A \mathbb{C} \mathbb{N} O \mathbb{O} \mathbb{E} \mathbb{D} \mathbb{M} \mathbb{N} \mathbb{N}$

I am deeply indebted to my supervisor Dr. David J. Pyle for his academic guidance, encouragement, and support throughout the development of this thesis, and also to Professor Peter J. Jackson who gave me some advice specially in the early stage.

I would also like to express my appreciation to all staff of University of Baghdad, Faculties, Ministry of Higher Education and Scientific Research, Ministry of Planning, who gave me assistance to collected the data of this thesis.

Thanks are extended to all staff of Economics Departments, Computer Center especially to Dr. Richard J. Mobbs and Miss Pan Gibson, Library, Higher Degree and Accommodation Office in Leicester University, who presented their assistance throughout my period of study.

Last, but not mean least, I must express the debt I owe to my wife Surab. Without her support, patience, and understanding this work would have not been possible. I would also like to express my appreciation to my family who encouraged and supported me throughout my study.

## ABSTRACT

RATE OF RETURN ON INVESTMENT IN UNIVERSITY EDUCATION
A CASE STUDY OF IRAQ
by
Hamid Sultan JAWAD

This study is concerned with a cost-benefit analysis of university education in Iraq. The major purpose is the calculation of the monetary private and social rate of return to investment in particular forms of university education in Iraq, represented by University of Baghdad. The subjects chosen for calculating were fifteen different programs.

The present study evaluated the decision to invest in various university subject groups at age eighteen (i.e. immediately after secondary school graduation) and at later age.

Costs and benefits are calculated from point of view of three entities: Private; the institution; and society as a whole. Costs and benefits per student year and per graduate are also calculated.

The results indicate that private rates of return are higher than social rates of return in all subject groups; that the social and private rates of return on investment in Engineering are the highest; that the private and social rates of return for Medicine program higher than other programs (four-year and five-year program) except for engineering; that the private rates of return to investment in five programs (Engineering, Medicine, Pharmacy, Dentistry, and Veterinary Medicine) are found to be greater than returns associated with other kind of investment i.e. to exceed $12 \%$ ); that the social rate of return on investment in all four-year subject groups, except Engineering are found lower than $7 \%$; that the social rate of return, while the social rate of return in Engineering is greater than $12 \%$; that there is a negative relationship between the commencement age and private rate of return; that there is a positive relationship between commencement age and foregone earnings (private cost).

The implications of these results for allocation of government spending on university education in Iraq are discussed.

## CONTENTS

Page
Dedication ..... ii
Acknowledgements ..... iji
Abstract ..... iv
Contents ..... v
Abbreviations ..... ix
List of Tables and rigures ..... X
Chapter
1 INTRODUCTION
1.1 Introduction ..... 1
1.2 The Purpose of This Study ..... 3
1.3 Methodology ..... 8
1.3.1 The Net Present Value ..... 9
1.3.2 The Internal Rate of Return ..... 9
1.3.2.1 An Alternative Aproach To Rates-Of-Return ..... 10
1.3.2.2 Private Versus Social Rate of Return ..... 10
1.4 The Assumptions of This Study ..... 12
1.5 The Scope and Limitations of This Study ..... 14
1.6 Structure of This Study ..... 15
2 AN OVERVIEW OF TRAQ'S HIGHER EDUCATION SYSTEM2.1 Establishment and Development of UniversityEducation in Iraq17
2.2 System of Administration of Education ..... 19
2.3 Structure and Organization of the system ..... 19
2.4 Financing of Education ..... 20
2.5 Baghdad University ..... 21
2.5.1 Introduction ..... 21
2.5.2 The Administratjon ..... 21.
2.5.3 Academic Programs ..... 22
2.5.4 The Students ..... 22
2.5.5 The Academic Teachers ..... 22
2.6 Post-graduates Courses ..... 23
2.6.1 Post-graduates from Inside Iraq ..... 23
2.6.2 Post-graduates from Abroad ..... 23
3 REVIEW OF THE LITERATURE ON COSTS, BENEFITS, AND RATES OF RETURN OF EDUCATION.
3.1 Costs and Benefits of Education ..... 32
3.1.1 Cost of Education ..... 32
3.1.1.1 Private Costs of Education ..... 33
3.1.1.2 Opportunity Costs (Foregone Earnings) ..... 35
3.1.1.3 Depreciation, Obsolescence, and Maintenance Costs ..... 40
3.1.1.4 Social Costs of Education ..... 42
3.1.2 The Benefits from Education ..... 43
3.1.2.1 Age-earnings Streams and Educational Levels ..... 51
3.2 Rate of Return to Investment in Education ..... 63
3.2.1 Men Versus Women Rates of Return ..... 64
3.2.2 A Selective Review of Studies ..... 66
4 THE APPLICATION OF COST BENEFIT ANALYSIS IN HIGHER EDUCATION
4.1 Introduction ..... 110
4.2 Correlation Between 'Ability' and Education ..... 114
4.3 The Correlation Between Earnings and Productivity ..... 118
4.4 Identification and Valuation of Externalities ..... 122
4.5 Effect of Unemployment on Rates of Return ..... 124
4.6 Relation Between the Past, Present And Future ..... 126
4.7 Consumption Benefits of Education ..... 128
5 ANALYSIS OF THE COSTS OF UNIVERSITY EDUCATION IN TRAO
5.1 The Institutional Costs ..... 131
5.2 Operating Expenditures ..... 132
5.3 Capital Expenditure ..... 133
5.4 Cost per Student ..... 135
5.5 Cost per Graduate ..... 136
5.5.1 The Net-Value-Added Method ..... 138
5.5.2 The Cost-per-Student-Year Method ..... 142
5.6 Cost Per Graduate in Iraq (The Actual Calculus) ..... 145
5.7 The Private Cost ..... 146
5.8 The Data ..... 147
5.9 The Earnings Profiles ..... 149
5.10 The Social Cost ..... 151
5.10.1 Customs Duty on Equipment ..... 153
5.10.2 Custom Duty on Vehicles ..... 153
5.10.3 The Tax Component of the Capital Cost of Building ..... 153
5.10.4 The "Pure" Subsidy component of The Students' Boarding and Living Allowance ..... 154
5.11 Summary ..... 155
6 ANALYSIS OF 'THE BENEFITS OF UNIVERSITY EDUCATION IN TRAQ
6.1 The Private Benefits ..... 169
6.2 The Earnings Profiles ..... 169
6.3 The Social Benefits ..... 172
6.4 The Institutional Benefits ..... 175
7 PRIVATE AND SOCTAL RATE OF RETURN TO UNIVERSITY EDUCATION IN IRAQ
7.1 The Private Internal Rate of Return ..... 179
7.2 The Social Internal Rate of Return ..... 184
7.3 Estimates of the Private Internal Rate of Return According to Commencement Age ..... 188
7.3.1 Private Cost ..... 188
7.3.2 Earnings Differential ..... 188
7.3.3 Internal Rate of Return ..... 189
8 SUMMARY, CONCLUSIONS AND RECOMNENDATION 8.1 Summary of This Study ..... 206
8.2 Findings of This Study ..... 208
8.3 Implication for Further Research ..... 210
8.4 Problems of Data Available ..... 211
8.5 Recommendations ..... 212

## APPENDTCES

| A | Supplement to Chapter 5 | A. 1 - A. 87 |
| :---: | :---: | :---: |
| B | Supplement to Chapter 6 | B. 1 - B. 35 |
| C | Supplement to Chapter 7 | C. 1 - C. 31 |
| D | Some Spillover Benefits of University Education System in Iraq: A Case Study of the Medicine College at the |  |
|  | University of Baghdad | D. $1-\mathrm{D} .9$ |REFERENCESR. 1 - R. 16

## ABBREVIATIONS

| Number |  |
| :---: | :---: |
| 1. | Science |
| 2. | Engineering |
| 3. | Medicine |
| 4. | Pharmacy |
| 5... | Dentistry |
| 6. | Nursing |
|  | . Veterinary Medicine |
| 8.. | . Agriculture |
|  | . Administration and Economics |
| 10.. | Law and Politics |
|  | Arts |
|  | . Education |
|  | . Physical Education |
|  | . Fine Arts |
| 15. | Alsharia |
|  | . Administration Office |
| 17. | . Registration Office |
| 18. | Dormitory Office |
| 19.. | Library Central |
|  | Salaries and Wages |
|  | . Goods and Commodities |
| 33. | Services |
|  | Depreciation |
| 38.. | Transferable Expenses |

## LIST OF TABLES

Table Page
2.1 Number of Colleges at Iraqi Universities, 1987/1988 ..... 28
2.2 Number of Students Enrolled and Graduates, University of Baghdad, for Years 1959/60-1988/89 ..... 28
2.3 Number of Students Enrolled in Iraqi Universities for Years 1981/82-1988/1989 ..... 29
2.4 Number of Graduates in Iraqi Universities and Technical Institute for years 1981/82-1986/87 ..... 29
2.5 Number of the Teachers in Baghdad University for Years 1964/65 to 1988/89 ..... 30
2.6 Number of Teachers and Student/Teacher Ratio in the Iraqi Universities, ..... 30
2.7 The Recurrent and Capital Expenditures for the Universities in Iraq for Years 1980-1987 ..... 31
3.1 Elements of Social and Private Costs of  ..... 44
3.2 Elements of Social and Private Benefits of Education ..... 52
5.1 Schedule of Expenditures of Iraqi Universities, 1986/87, (In thousands ID) ..... 158
5.2 Schedule of Number of Colleges at Iraqi Universities, 1986/87 ..... 158
5.3 Schedule of number of Students Enrolled in Iraqi Universities, $1986 / 87$ ..... 159
5.4 Schedule of Number of Graduates from Iraqi Universities, 1986/87 ..... 159
5.5 Average Institutional Cost per Student by College and Year, University of Baghdad, 1981/82-1986/87, (In 1987 prices) ..... 160
5.6 Total cost of hypothetical college model of Figure 5.2 ..... 161
5.7 Inventory of Completed Levels in the
Hypothetical College Model of Figure 5-2 ..... 162
5.8 Average Cost per Completed Level in Hypothetical College Model of Fig 5.2 ..... 163
5.9 Average Cost per Graduate in the Hypothetical College Model of Fig. 5.2 ............................. ..... 164
5.10 Number of Student - Years Consumed by Various Outputs in the Hypothetical College ............. ..... 165
5.11 Allocation of the Cost of Repeater to the Real Outputs in the Hypothetical College of Fig. 5.2. ..... 166
5.12 Allocation of the Cost of Dropouts to Graduates and Current Students in the Hypothetical College Model of Figure 5.2 ..... 166
5.13 Comparison Between the Institutional Cost per Graduate and Social Institutional Cost per Graduate, by College, University of Baghdad, (ID in 1987 Price) ..... 167
5.14 Total Social Costs per Graduate by Subject, University of Baghdad, 1986/87 (In ID) .......... ..... 168
6.1 Institutional Revenue and Cost, by College, University of Baghdad, 1986/87 ..... 177
6.2 Institutional Cost and Revenue, University of Baghdad, 1981/82-1986/87 ..... 178
7.1 Private Rates of Return by subject group, in Iraq, 1986/87, (Assuming no ability adjustment). ..... 191
7.2 Comparative Private Internal Rates of Return to University Education in Iraq, 1986/87, Under Subjective Estimates of the Alpha Coefficient .. ..... 192
7.3 Comparative Private Internal Rates of Return to University Education in Iraq, 1986/87, Under Subjective Estimates of the Alpha Coefficient .. ..... 193
7.4 Social Rates of Return to University Education in Iraq, 1986/87, (Assuming no ability adjustment) .................................................... ..... 194
7.5 Comparative Social Internal Rates of Return to University Education in Iraq, 1986/87, Under Various Estimates of the Alpha Coefficient ..... ..... 195
7.6 Comparative Social Internal Rate of Return of College Graduates (Relative to Secondary School Graduates) in Iraq, 1986/87, Under Subjective Estimates of the Alpha Coefficient ................ ..... 196
Comparative Private and Social Internal Rates of
Investment in Higher Education in Iraq, $1986 / 87$,
Using Subjective Estimates of the Alpha Coefficient ..... 197
7.8 Comparative Private and Social Internal Rates of Investment In Higher Education in Iraq, 1986/87, Using Subjective Estimates of the Alpha Coefficient ..... 198
7.9 Private Cost of University Education per Student by Program and Commencement Age, Baghdad  ..... 199
7.10 Lifetime Earnings Differentials Attributed to Various Programs, and Various Ages, Baghdad University, 1987 ..... 200
7.11 A Comparison of Private Internal Rate of Return to Investment in Various Programs of University Education at Various Ages, Baghdad University, 1987 ..... 201
8.1 The Percentage of Foregone Earnings to Total
8.2 Average Period Required to Graduate from Various ..... 209
University Education programs in Iraq ..... 210
APPENDIX-A
A-1 Operating Expenditure, University Of Baghdad, 1981/82, (In ID) ..... A. 2
A-2 Operating Expenditure, University Of Baghdad, 1982/83. (In ID) ..... A. 2
A-3 Operating Expenditure, University of Baghdad, 1983/84, (In ID) ..... A. 3
A-4 Operating Expenditure, University of Baghdad, 1984/85, (In ID) ..... A. 3
A-5 Operating Expenditure, University of Baghdad, 1985/86, (In ID) ..... A. 4
A-6 Operating Expenditure, University of Baghdad, 1986/87, (In ID). ..... A. 4
A-7 Number and Percentage of students According to College, University of Baghdad, 1981/82-1986/87. ..... A. 5
A-8 Number and Percentage of Dormitory students
A-8 Number and Percentage of Dormitory students
According to College, University of Baghdad, 1981/82-1986/87. ..... A. 5
A-9 Opportunity and Capital cost of Science College, University Of Baghdad, 1981/82-1986/87, (In ID). ..... A. 6
A-10 Opportunity and Capital cost of Engineering College, University Of Baghdad 1981/82-1986/87, (In ID) ..... A. 6
A-11 Opportunity and Capital cost of MedicineCollege, University of Baghdad, 1981/82-1986/87,(In ID)A. 7
A-12 Opportunity and Capital cost of PharmacyCollege, University Of Baghdad, 1981/82-1986/87,(In ID)A. 7
A-13 Opportunity and Capital cost of Dentistry College, University Of Baghdad, 1981/82-1986/87, (In ID) ..... A. 8
A-14 Opportunity and Capital cost of Medicine College, University of Baghdad, 1981/82-1986/87, (In ID) ..... A. 8
A-15 Opportunity and Capital cost of AgricultureCollege, University Of Baghdad, 1981/82-1986/87,(In ID)........................................................A. 9
A-16 Opportunity and Capital cost of Law And PoliticsCollege, University Of Baghdad 1981/82-1986/87A-17 Opportunity and Capital cost of AdministrationAnd Economic College, University Of Baghdad1981/82-1986/87, (In ID)..............................A-18 Opportunity and Capital cost of Arts College,University Of Baghdad, 1981/82-1986/87 (In ID)..A. 10
A-19 Opportunity and Capital Cost of EducationCollege, University Of Baghdad, 1981/82-1986/87(Tn TD) ...................................(In ID)
A. 11
A-20 Opportunity and Capital Cost of PhysicalEducation College, University Of Baghdad, (InID)
A. 11
A-21 Opportunity and Capital Cost of Academy Of FineArts College, University Of Baghdad,1981/82-1986/87, (In ID).................................Office, University Of Baghdad, 1981/82-1986/87,(In ID)........................................................A. 12
A-22 Opportunity and Capital Cost of AdministrationA. 12
Office, University 0f Baghdad, 1981/82-1986/87, (In ID) ..... A. 13
A-24 Opportunity and Capital Cost of Land, According to College, University of Baghdad, 1981/82-1986/87, (In ID).............................. ..... A. 13
A-25 Allocation of Indirect Cost (costs of $\begin{aligned} & \text { Administration Office, Registration Office, }\end{aligned}$Administration Office, Registration Office,Dormitory ofice and Library central) to variousColleges, University of Baghdad, 1981/82, (InID)A. 14
A-26 Allocation of Indirect Cost (costs ofAdministration Office, Registration Office,Dormitory Office and Library Central) to Variouscolleges, University of Baghdad, 1983/84, (InID)A. 15
A-27 Allocation of Indirect Cost (Costs ofAdministration Office, Registration Office,Dormitory Office and Library Central) to VariousColleges, University of Baghdad,1983/84, (In ID)A. 16A-28 Allocation of Indirect Cost (costs ofAdministration Office, Registration Office,Dormitory Office and Library Central) to Variouscolleges, University of Baghdad, 1984/85 , (InID)A. 17
A-29 Allocation of Indirect Cost (costs ofAdministration Office, Registration Office,Dormitory Office and Library Central) to Variouscolleges, University of Baghdad, 1985/86, (InID)A. 18
A-30 Allocation of Indirect Cost (costs ofAdministration Office, Registration Office,Dormitory Office and Library Central) to Variouscolleges, University of Baghdad, 1986/87, (InID)A. 19
A-31 Total Institutional Costs and Institutional Cost per Student, University of Baghdad, 1981/82, (In ID) ..... A. 20
A-32 Total Institutional Costs and Institutional Cost per Student, University of Baghdad, 1982/83, (In ID) ..... A. 21
A-33 Total Institutional Costs and Institutional Cost per Student, University of Baghdad, 1983/84, (In ID) ..... A. 22
A-34 Total Institutional Costs and Institutional Cost per Student, University of Baghdad 1984/85, (In ID) ..... A. 23
A-35 Total Institutional Cost and Institutional Cost per Student, University of Baghdad, 1985/86, (In ID) ..... A. 24
A-36 Total Institutional Cost and Institutional Cost per Student, University of Baghdad, 1986/87, (In ID) ..... A. 25
A-37 Weighted Average of Composite Price Index Number in the City of Baghdad, 1973-1987 ..... A. 26
A-38 Institutional Cost per Student According to College, University of Baghdad, 1974/75-1986/87, (In ID) ..... A. 27
A-39 Number of Graduates According to Graduation andAdmission Years, College of Science, Universityof Baghdad, 1981/82-1986/87.........................
A-40 Number of Graduates According to Graduation andAdmission Years, College of Engineering,University of Baghdad, 1981/82-1986/87..........
A-41 Number of Graduates According to Graduation and Admission Years, College of Medicine, University of Baghdad, 1981/82-1986/87
-42 Number of Graduates According to Graduation and Admission Years, College of Pharmacy, University of Baghdad, 1981/82-1986/87
A. 29
A-43 Number of Graduates According to Graduation and Admission Years, College of Dentistry, University of Bagh'dad, 1981/82-1986/87.......... A. 30
A-44 Number of Graduates According to Graduation and Admission Years, College of Nursing, University of Baghdad, 1981/82-1986/87 ..... A. 30
A-45 Number of Graduates According to Graduation and Admission Years, College of Veterinary Medicine University of Baghdad, 1981/82-1986/87. ..... A. 31
A-46 Number of Graduates According to Graduation and Admission Years, College of Agriculture, University of Baghdad, 1982-1986/87 ..... A. 31
A-47 Number of Graduates According to Graduation andAdmission Years, College of Administration andEconomics, University of Baghdad,1981/82-1986/87...................................A. 32
A-48 Number of Graduates According to Graduation and Admission Years, College of Law and Politics, University of Baghdad, 1981/82-1986/87 ..... A. 32
Baghdad, 1981/82-1986/87 ..... A. 33
A-50 Number of Graduates According to Graduation and Admission Years, College of Education, University of Baghdad, 1981/82-1986/87.......... ..... A. 33
A-51 Number of Graduates According to Graduation and Admission years, College of Physical Education, University of Baghdad, 1981/82-1986/87........... ..... A. 34
A-52 Number of Graduates According to Graduation and Admission Years, College of Academy of Fine Arts, University of Baghdad, 1981/2-1986/87.....A-53 Number of Graduates According to Graduation andAdmission Years, College of Alsharia, Universityof Baghdad, 1981/82-1986/87A. 35
A-54 Institutional cost per Graduate, College of Science, University of Baghdad, 1981/82-1986/87, (In ID) ..... A. 36
A-55 Institutional Cost per Graduate, College of Engineering, University of Baghdad, 1981/82-1986/87, (In ID) ..... A. 37
A-56 Institutional Cost per Graduate, College of Medicine, University of Baghdad, 1981/82-1986/87, (In ID) ..... A. 38
A-57 Institution Cost per Graduate, College of Pharmacy, University of Baghdad, 1981/82-1986/87, (In ID) ..... A. 39
A-58 Institutional Cost per Graduate, College of Dentistry, University of Baghdad, 1981/82-1986/87, (In ID) ..... A. 40
A-59 Institutional Cost per Graduate, College of Nursing, University of Baghdad, 1981/82-1986/87, (In ID) ...................................................... ..... A. 41
A-60 Institution Cost per Graduate, College ofVeterinary Medicine, University of Baghdad,1981/82-1986/87, (In ID).
A-61 Institutional Cost per Graduate, College of Agriculture, University of Baghdad, 1981/82-1986/87, (In ID)............................... ..... A. 43
A-62 Institutional Cost per Graduate, College of Administration and Economics, University of Baghdad, 1981/82-1986/87, (In ID) ..... A. 44
A-63 Institutional Cost per Graduate, College of Law and Politics, University of Baghdad, 1981/82-1986/87, (In ID). ..... A. 45
A-64 Institutional cost per Graduate, College of Arts University of Baghdad, 1981/82-1986/87, (In ID). ..... A. 46
A-65 Institutional Cost per Graduate, College of Education, University of Baghdad, 1981/82-1986/87, (In ID).. ..... A. 47
A-66 Institutional Cost per Graduate, College ofPhysical Education, University of Baghdad,A-67 Institutional Cost per Graduate, College ofAcademy of fine Arts, University of Baghdad,1981/82-1986/87, (In ID)..........................A. 49
A-68 Institutional Cost per Graduate, College of Alsharia, University of Baghdad, 1981/82-1986/87, (In ID) ........................................... 50
A-69 Summary of Institutional Cost per Graduate by College and Year of Graduation, University of Baghdad, 1981/82-1986/87, (In ID) .................. ..... A. 51
A-70 Estimated Customs Paid by University of Baghdad on Equipment (Prorated Cost), by College,  ..... A. 52
A-71 Estimated Customs Paid by University of Baghdad on Equipment (Prorated Cost), by College,  ..... A. 52
A-72 Estimated Customs Paid by University of Baghdad on Equipment (Prorated Cost) by College, 1986/1987 (In ID) ..... A. 53
A-73 Estimated Customs Paid by University of Baghdad on Equipment (prorated Cost), by College, 1985/1986, (In ID) ..... A. 53
A-74 Estimated Customs Paid by University of Baghdad on Equipment (Prorated Cost), by College, 1984/1985 (In ID) ..... A. 54
A-75 Estimated Customs Paid by University of Baghdad on Equipment and Laboratory (Prorated Cost), by College, 1983/1984, (In ID). ..... A. 54
A-76 Estimated "Tax Component" on Capital Cost of Building according to College and Year, University of Baghdad, 1981/82-1986/87, (In ID). ..... A. 55
A-77 Estimated Customs Duty Paid by University of Baghdad on Vehicle According to College and Year, 1981/82-1986/87, (In ID) ..... A. 56
A-78 Estimated "Pure Subsidy" of students' Boardingand Living Expenses According to College and
year, University of Baghdad, 1981/1982-1986/87,
(In ID)................................................................. 57
A-79 Allocation of Customs Duty on Equipment of
Administration office and Library Central,
According to College, University of Baghdad,
1981/82-1986/87, (In ID)
A. 58
A-80 Allocation of Customs Duty on Equipment of
Dormitory Office According to College and Year,
University of Baghdad, 1981/82-1986/87, (In ID).A. 58
A-81 Allocation of "Tax Component" of Capital cost of
Building of Administration Office and Library
Central, According to College, University of
Baghdad, 1981/82-19886/87, (In ID)..................... A. 59
A-82 Allocation of Customs Duty on Vehicles of
Administration Office and Library Central,
According to college, University of Baghdad,1981/82-1986/8, (In ID)...............................A. 59
A-83 Total Customs Duty on Equipment by College, University of Baghdad 1981/82-1986/87, (In ID).. A. 60
A-84 Total Custom Duty on Vehicle According toCollege and Year, University of Baghdad,1981/82-1986/87, (In ID).............................A. 62
A-85 Total "Tax Component" on Building, According of College and Year, University of Baghdad, 1981/82-1986/87, (In ID)............................ ..... A. 63
A-86 Social institutional cost and Social Institutional Cost per Student, University of  ..... A. 65
A-87 Social Institutional Cost and Social Institutional Cost per Student, University of Baghdad, 1982/83, (In ID)............................ ..... A. 66
A-88 Social Institutional Cost and Social Institutional Cost per Student, University ofBaghdad, 1983/84, (In ID)............................
A. 67Institutional Cost per Student, University ofBaghdad, 1984/85, (In ID) .............................A-90 Social Institutional Cost and SocialInstitutional cost per student, University ofA. 69A-91 Social Institutional Cost and SocialInstitutional cost per student, University ofBaghdad, $1986 / 87$, (In ID)....................................A. 70
A-92 Social Institutional Cost per Student According


```
A-93 Social Institutional Cost per Graduate, College
        of Science, University of Baghdad,
        1981/82-1986/8'7, (In ID)...........................
    A.72
A-94 Social Institutional Cost per Graduate, College
        of Engineering, University of Baghdad,
        1981/82-1986/87, (In ID).........................
    A.73
A-95 Social Institutional Cost per Graduate, College
        of Medicine, University of Baghdad,
        1981/82-1986/87, (In ID)........................
                        A.74
A-96 Social Institutional Cost per Graduate, College
        of Pharmacy, University of Baghdad,
        1981/82-1986/87, (In ID)........................
A-97 Social Institutional Cost per Graduate, Collegeof Dentistry University of Baghdad1981/82-1986/87, (In ID).............................
A-98 Social Institutional Cost per Graduate, Collegeof Nursing, University of Baghdad,1981/82-1986/87, (In ID) ..............................A. 77
A-99 Social Institutional Cost per Graduate, College of Veterinary Medicine, University of Baghdad, 1981/82-1986/87, (In 1987 Iraqi dinars).........
```

A-101 Social Institutional Cost per Graduate, College of Administration and Economics, University of Baghdad, 1981/82-1986/87, (In ID)
A. 80
A-102 Social Institutional Cost per Graduate, College
of Law and Politics, University of Baghdad,
$1981 / 82-1986 / 87$, (In ID)............................................
A-103 Social Institutional Cost per Graduate, College of Arts, University of Baghdad, 1981/82-1986/87, (In ID)
A. 82
A-104 Social Institutional Cost per Graduate, College of Education, University of Baghdad, 1981/82-1986/87, (In ID)
A. 83
A-105 Social Institutional Cost per Graduate, College of Physical Education, University of Baghdad, 1981/82-1986/87, (In ID)
A. 84
A-106 Social Institutional Cost per Graduate, College of Academy of Fine Arts, University of Baghdad,

```
1981/82-1986/87, (In ID) ..... A. 85
A-107 Social Institutional Cost per Graduate, College of Alsharia, University of Baghdad, 1981/82-1986/87, (In ID).................................. A. 86
A-108 Summary of Social Institutional cost per Graduate by College and Year of Graduation, University of Baghdad 1981/82-1986/87, (In ID).. ..... A. 87
APPENDTX-B
B-1 Annual Gross Salaries of Secondary SchoolGraduates Employed in Public Sector, in Iraq, byNumber of Years Since High School Graduation,1986/1987.B. 2
B-2 Annual Gross Salaries of Arts Graduates Employedin Public Sector in Iraq, by Number of YearsSince High School Graduation, 1986/1987, (In ID)B-3 Annual Gross Salaries of Science GraduatesEmployed in Public Sector in Iraq, by Number ofYears Since High School Graduation, 1986/1987...
B-4 Annual Gross Salaries of Medicine GraduatesEmployed in Public Sector in Iraq, by Number ofYears Since High School Graduation, 1986/1987.B. 5
B-5 Annual Gross Salaries of Engineering Graduates Employed in Public Sector in Iraq, by Number of Years Since High School Graduation, 1986/1987. ..... \(\mathbb{B}_{.6} 6\)B-6 Annual Gross Salaries of College of AgricultureGraduates Employed in Public Sector in Iraq, byNumber of Year Since High School Graduation,B. 7
B-7 Annual Gross Salaries of Dentistry GraduatesEmployed in Public Sector in Iraq, by Number ofYears since High School Graduation, 1986/1987...B. 8
B-8 Schedule of Cost of Living Allowances Corresponding to Annual Nominal Salary Scales in the public Sector in Iraq............................... ..... B. 9
B-9 Allocation Indirect Revenue of Administration Office to various Colleges, University of Baghdad, 1981/82-1986/87, (In ID)............... ..... B. 10
B-10 Allocation Indirect Revenue of Dormitory Office to Various Colleges, University of Baghdad, 1981/82-1986/87, (In ID). ..... B. 10
B-11 Allocation Indirect Revenue of Central Library
```

        to Various Colleges, University of Baghdad,
        1981/82-1986/87, (In ID).........................
            B. }1
    B-12 Total Revenue and Institutional Revenue per
Student, College of Science, University of
Baghdad, 1981/82-1986/87, (In ID) ............... B.11
B-13 Total Revenue and Institutional Revenue per
Student, College Engineering, University of
Baghdad, 1981/82-1986/87, (In ID)................
B. }1
B-14 Total Revenue and Institutional Revenue per
Student, College Medicine, University of
Baghdad, 1981/82-1986/87 (In ID)................
B. 12
B-15 Total Revenue and Institutional Revenue per
Student, College of Pharmacy, University of
Baghdad, 1981/82-1986/87 (In ID).................
B.13
B-16 Total Revenue and Institutional Revenue per
Student, College of Dentistry, University of
Baghdad, 1981/82-1986/87 (In ID)................
B.13
B-17 Total Revenue and Institutional Revenue perStudent, College of Nursing, University ofBaghdad, 1981/8-1986/87, (In ID).................
B-18 Total Revenue and Institutional Revenue perStudent, College of Veterinary MedicineUniversity of Baghdad, 1981/8-1986/87, (In ID).B. 14B-19 Total Revenue and Institutional Revenue perStudent, College of Agriculture, University ofBaghdad, 1981/82-1986/87 (In ID).................B. 15

```
B-20 Total Revenue and Institutional Revenue per Student, College of Administration and Economics, University of Baghdad,  ..... B. 15
B-21 Total Revenue and Institutional Revenue per
```Student, College of Law and Politics, Universityof Baghdad, 1981/82-1986/87 (In ID)...............B. 16
```

```B-22 Total Revenue and Institutional Revenue perStudent, College of Arts University of Baghdad,1981/82-1986/87 (In ID)B. 16
```

B-23 Total Revenue and Institutional Revenue per

```Student, College of Education, University ofBaghdad, 1981/82-1986/87 (In ID).................B. 17
B-24 Total Revenue and Institutional Revenue per Student, College of Physical Education, University of Baghdad, 1981/82-1986/87 (In ID).. B. 17

University of Baghdad, 1981/82-1986/87 (In ID).. B. 18
B-26 Total Revenue and Institutional Revenue per Student, College of Alsharia, University of Baghdad, 1981/82-1986/87, (In ID)................
B-27 Institutional Revenue per Student According to College, University of Baghdad, 1974/75-1.986/87,
 B. 19

B-28 Institutional Revenue per Graduation, College of Science, University of Baghdad, 1981/82-1986/87,

B. 20

B-29 Institutional Revenue per Graduation, College of Engineering, University of Baghdad,
 B. 21

B-30 Institutional Revenue per Graduation, College of Medicine, University of Baghdad, 1981/82-1986/87, (In ID).
B. 22

B-31 Institutional Revenue per Graduation, College of Pharmacy, University of Baghdad,
 B. 23

B-32 Institutional Revenue per Graduation, College of Dentistry, University of Baghdad, 1981/82-1986/87, (In ID) .............................. B. 24

B-33 Institutional Revenue per Graduation, College of Nursing, University of Baghdad, 1981/82-1986/87, (In ID).
B. 25
\(\begin{array}{llll}\text { B-34 Institutional Revenue per Graduation, College of } & \\ & \text { Veterinary Medicine, University of Baghdad, } & \\ & 1981 / 82-1986 / 87 \text {, (In ID)........................................ } 26\end{array}\)
B-35 Institutional Revenue per Graduation, College of Agriculture, University of Baghdad, 1981/82-1986/87, (In ID)
B. 27

B-36 Institutional Revenue per Graduation, College of Administration and Economics, University of Baghdad, 1981/82-1986/87, (In ID).................
B-37 Institutional Revenue per Graduation, College of Law and Politics, University of Baghdad,
 B. 29

\(\begin{array}{ll}\text { B-39 Institutional Revenue per Graduation, College of } \\ & \text { Education, University of Baghdad, } \\ & 1.981 / 82-1986 / 87 \text {, (In ID)....................................... } 31\end{array}\)
\begin{tabular}{|c|c|}
\hline B-40 & Institutional Revenue per Graduation, College of Physical Education, University of Baghdad, 1981/82-1986/87, (In ID).............................. \\
\hline B-41 & Institutional Revenue per Graduation, College of Academy of Fine Arts, University of Baghdad, 1981/82-1986/87, (In ID). \\
\hline B-42 & \begin{tabular}{l}
Institutional Revenue per Graduation, College of Alsharia, University of Baghdad, \\

\end{tabular} \\
\hline B-43 & Summary of Institutional Revenue Per Graduate by College and Year of Graduation, University of Baghdad, 1981/82-1986/87, (In ID)................. \\
\hline \multicolumn{2}{|l|}{APPENDIX - C} \\
\hline C-1 & \begin{tabular}{l}
Private Cost-Earning profiles and Private Internal Rate of Return of College of Science Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha \\

\end{tabular} \\
\hline C-2 & Private Cost-Earning profiles and Private Internal Rate of Return of College of Engineering Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID).......... \\
\hline C-3 & Private Cost-Earning profiles and Private Internal Rate of Return of College of Medicine Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient 1986/87, (In ID)........................... \\
\hline C-4 & Private Cost-Earning profiles and Private Internal Rate of Return of College of Pharmacy Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)......................... \\
\hline C-5 & Private Cost-Earning profiles and Private Internal Rate of Return of College of Dentistry Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID).......................... \\
\hline C-6 & Private Cost-Earning profiles and Private Internal Rate of Return of College of Nursing Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)........................ \\
\hline C-7 & Private Cost-Earning profiles and Private \\
\hline
\end{tabular}
Internal Rate of Return of College of Veterinary Medicine Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)..........
C-8 Private Cost-Earning profiles and Private Internal Rate of Return of College of Agriculture Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)..........
Internal Rate of Return of College of
Agriculture Graduates (Relative to High school
Graduates) in Iraq, under Various Assumption for
C-9 Private Cost-Earning profiles and Private Internal Rate of Return of College of Administration and Economics Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)........................................................
C-10 Private Cost-Earning profiles and Private Internal Rate of Return of College of Law and Politics Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)..........
C-11 Private Cost-Earning profiles and Private Internal Rate of Return of College of Arts Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)........................
C-12 Private Cost-Earning profiles and private Internal Rate of Return of College of Education Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)
C-13 Private Cost-Earning profiles and Private Internal Rate of Return of College of Physical Education Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)..........
C-14 Private Cost-Earning profiles and Private Internal Rate of Return of College of Academy of Fine Arts Graduates (Relative to High school
 the Alpha Coefficient, 1986/87, (In ID)..........
C-15 Private Cost-Earning profiles and Private Internal Rate of Return of College of Alsharia Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)
C-16 Social Cost-benefit profiles and Social Internal Rate of Return of Investment in College of Science Graduates in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87,
(In ID)........................................................
C-17 Social Cost-benefit profiles and Social Internal Rate of Return of Investment in College of Engineering Graduates in Iraq, under Various Assumption for the Alpha Coefficient 1986/87, (In ID).......................................................

C-18 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Medicine Graduates in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)..........
C-19 Social Cost-benefit profiles and Social Internal
Rate of Return of Investment College of Pharmacy
Graduates in Iraq, under Various Assumption for
Rate of Return of Investment College of Pharmacy
Graduates in Iraq, under Various Assumption for the Alpha Coefficient 1986/87, (In ID)

C-20 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Dentistry Graduates in Iraq, under various Assumption for the Alpha Coefficient, 1986/87,

C-21 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Nursing Graduates in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)
c-22 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Veterinary Medicine Graduates in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID
C-23 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Agriculture Graduate in Iraq, under Various Assumption for the Alpha Coefficient 1986/87, (In ID)....................................................

C-24 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Administration and Economics Graduates in Iraq, under Various Assumption for the Alpha Coefficient, \(1986 / 87\), (In ID).........................

C-25 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Law and Politics Graduate in Iraq, under Various Assumption for the Alpha Coefficient 1986/87, (In ID)

C-26 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Arts Graduates in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)
C-27 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Education Graduates in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID). ..... C. 28
C-28 Social Cost-benefit profiles and Social InternalRate of Return of Investment College of PhysicalEducation Graduates in Iraq, under VariousAssumption for the Alpha Coefficient, 1986/87,(In ID)C. 29
C-29 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Academy of Fine Arts Graduates in Iraq, under Various Assumption for the Alpha Coefficient 1986/87, (In ID)C. 30
C-30 Social Cost-benefit profiles and Social Internal Rate of Return of Investment College of Alsharia Graduates in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (In ID)

\section*{APPENDISK-D}
D-1 Spillover Medical services provided by the Surgery Section, College of Medicine, University of Baghdad, 1986/87......................................
D. 2 Spillover Medical services provided by the Medicine, University of Baghdad, 1986/87........
D.3 Spillover Medical services provided by the Pathology Section, College of Medicine, University of Baghdad, 1986/87.......................

D. 4 Spillover Medical services provided by the Microbiology Section, College of Medicine, University of Baghdad, 1986/87....................... ..... D. 8
D. 5 Spillover Medical services provided by the Radiology Section, College of Medicine, University of Baghdad, 1986/87....................... ..... D. 8
D-6 Spillover Medical services provided by the Medical Section, College of Medicine, University of Baghdad, 1986/87........................................ ..... D. 9
D-7 Summary of Spillover Medical Services provided by the College of Medicine, University of Baghdad, 1986/87........................................... ..... D. 9

\section*{LIST OF FIGURES}

\section*{rigure}
2.1 Organization Of Ministry of Education in Iraq.. 25
2.2 Organisation Of The Ministry Of Higher Education And Scientific Research. ..... 26
2.3 Structure of the Iraqi Education System. ..... 27
5.1 The General Production System. ..... 136
5.2 Flow OF Students in a Hypothetical College Model.. ..... 157
7.1 Age-Education-Earning Profiles ..... 202
7.2 The Comparison Between PIRR and SIRR When Alpha \(=1\). ..... 203
7.3 The Comparison Between PIRR and SIRR When Alpha \(=2 / 3\) ..... 204
7.4 The Comparison Between PIRR and SIRR When Alpha \(=1 / 2\) ..... 205

\section*{\(\mathbb{C} \mathbb{H} \mathbb{P} \mathbb{E} \mathbb{R} \mathbb{N} \mathbb{E}\)}

\section*{\(\mathbb{I} \mathbb{N} \mathbb{R} O \mathbb{D} \mathbb{C} \mathbb{T} \mathbb{O} \mathbb{N}\)}

\subsection*{1.1 Introduction}

Education is highly important not only for economic reasons but also for the social and political development of a country. From a purely economic point of view, education is an investment in human resources and may bring about technological improvement and an increase in productivity. Education provides the labour force with skills and other knowledge which are required for the productive activities in an economy. For this reason, investment in education is as important to economic development as investment in physical capital. Economists writing in the eighteenth and nineteenth century, including Adam Smith, Alfred Marshall, and others, drew attention to the importance of education as a form of national investment and considered the question of how education should be financed. Adam Smith \({ }^{1}\) in 'The Wealth of Nations', drew the analogy between expenditure on education and investment in physical capital, and compared the difference between the wages of skilled and unskilled labour with the returns or profit derived from an expensive machines.
"When any expensive machine is erected, the extraordinary work to be performed by it before it is worn out, it must be expected, will replace the capital laid out upon it, with at least the ordinary profits. A man educated at the expense of much labour and time to any of those employments which require extraordinary dexterity and skill, of those employments which require extraordinary de
may be compared to one of those expensive machines."
More than a century later, Alfred Marshall \({ }^{2}\) also drew attention to the correspondence between human and physical capital from the point of view both of the nation and of educated individuals. He also stated that "The wisdom of expending public and private funds on education is not to be measured by its direct fruits alone. It will be profitable as a mere investment, to give the masses of the people much greater opportunities than they can generally avail themselves of." \({ }^{3}\)

\footnotetext{
1 Smith, A. The Wealth of Nations. Bk. 1, Chp. 10, pt. 1, no. 6, 2nd Edition edited by James E. Thorold Rogers, (Clarendon press, 0xford), 1880, p. 106 .
\({ }^{2}\) Marshall, A., Principles of Economics, Bk. 4, chp. 6, no. 7, Third Edition, (Macmillan and Co. Ltd., London, 1895).
}

However the implications for economic behaviour were not really recognized until the early \(1960^{\prime} s^{4}\) perhaps because social values and cultural traditions had discouraged us from treating human beings as capital goods; for even today the mere thought of treating education as investing in human beings may annoy many people.

Today it is generally accepted that education is an investment process because of the benefits which it is expected yield in the future. \({ }^{5}\) Many economists and those who are interested in economic development and the economics of education accept this as a fact. \({ }^{6}\) They also accept the importance of education for development, by helping increase the national income, and raising manpower productivity. Most studies and researches into education in its developmental role emphasize the importance of the "Residual Factor", which is attributed to education and scientific research, in influencing growth rates obtained in many countries. \({ }^{7}\)

One of the studies of the residual factor is that by Schultz which showed that 83 per cent of the increase in agricultural production realized in the U.S.A. between the two periods (1910-1914), and (1945-1949) might be due to this residual factor whilst the other production factors had not contributed more than 17 per cent. \({ }^{8}\)

Education, in most countries, takes a substantial share of society's scarce resources. Taxpayers question the qualitative and quantitative aspects of educational activities in view of the resource inputs to education vis-a-vis other investment opportunities. The question is particularly important in less developed countries. Consequently, these countries are searching for new and better ways of using their resources to speed up their economic and social development. The questioning of resource allocation is not limited to the "social" policy. Individuals ask

3 Marshall, A., Principles of Economics, Bk. 4, chp. 6, no. 7, Third Edition, (Macmillan and Co. Ltd., London, I895), p. 299.

4 Blaug, Mo An Introduction to the Economics of Education, (The Penguin press, London, 1972), p. 3 .

5 Sheehan, J. The Economics of Education. (George Allen and Unvin Ltd., 0xford, 1973), p. 31 .

6 Such as Denison, Edding, Sheehan, Schultz, and others.
7 Abdul-Salam, M. Studies in the Economics of Education. (Dar Al-Talea Press, Beirut, \(1974, \frac{\mathrm{p}}{\mathrm{p}} 14\) ( \(\operatorname{In}\) Arabic).

8 Schultz, T. W., "Economic Prospects of Primary Products." In Ellis, H. S. (ed) Economic Development for Latin America (Proceeding of a conference held by the International Economic Association), Ch. 11, pp. 308-331, London, Macmillan, 1961.
themselves: "should I invest my time and limited resources to furthering my education, or should I do something else instead?"

If properly developed, human resources will be a great asset to a nation; if not, they will inhibit its development For example, the unemployment of educated people in developing countries represents an unfortunate waste.

Investment in education uses scarce resources which can be used for an alternative purpose e.g. investment in physical capital. In other words, investment in education competes with investment in physical capital in the allocation of available scarce resources for the purpose of increasing economic productivity. It is important to see which type of investment is more productive in the economy.

The economics of education, particularly the study of rates-of-return on education, is intended to provide economic information to help societies and individuals to make investment decisions among competing alternatives. While resource allocation among alternatives is important both in developed and developing countries, the issue becomes even more important in developing countries.

Formal education is becoming the subject of increased conscious planning throughout the world. Such planning must include more or less explicit decisions concerning several types of resource allocation. One involves the portion of national product that is to be devoted to education in general. A second concerns allocation between various levels of schooling such as primary, secondary, and higher education. A third deals with allocation between various programs within universities such as law, medicine, agriculture, engineering, Science etc., and at secondary level a choice between academic and vocational training (commercial, agriculture, and industrial). This thesis is deals with the various programs of university education in Iraq.

\subsection*{1.2 The \(\mathbb{P}\) urposeof This Study}

The major purpose of this study is to undertake a systematic economic evaluation of the private and social returns to investment in particular forms of university education in Iraq, represented by the University of Baghdad. The programs chosen for analysis were four-year degree courses in Engineering, Science, Nursing, Agriculture, Economics and Administration, Law and Politics, Education, Physical Education, Arts, Fine Arts, Alsharia \({ }^{9}\); five-year degree courses in Pharmacy, Dentistry, and Veterinary Medicine; and a six-year degree course in Medicine. An additional purpose

9 Alsharia is the college which teaches Islamic Law, Arabic, and Islamic Religion.
of this study is to increase information about the application of the rate-of-return method to investment in education in Iraq. Such techniques have not been previously applied in Iraq to estimate public sector investments.

The present study evaluated the decision to invest in university education at age eighteen, but furthermore, an economic evaluation of similar investment decisions at later ages was included. Therefore, the later cases deal with the situation of individuals who choose to commence a program of formal education after spending one or more years in the labour market.

To achieve the purpose of this study, the benefits and costs of university education in Iraq needed to be determined, defined, and evaluated. The economic benefits to investment in higher education will be divided into three categories: (1) private benefits; (2) social benefits; and (3) institutional benefits. The private and social benefits will be sub-divided into two categories: (i) measurable and (ii) non-measurable. The measurable private benefits are those increases in lifetime earnings attributable to the investment in higher education. These are also called direct benefits, and are measured by calculating the difference in lifetime earnings between university graduates and secondary school graduates respectively. The non-measurable private benefits of education are the private "consumption" benefits of education. It is well recognized that education expenditures are not only investment in human capital, but also represent at the same time a "consumption" benefit. \({ }^{10 \text { A troublesome }}\) problem in the cost- benefit analysis of education is knowing how much of the cost is an expenditure which is expected to yield benefits only in the future and how much is expenditure for immediate satisfaction. Should all costs of education be regarded as investment and none as expenditure for immediate consumption? Note that we are concerned here only with immediate consumption. If we were interested also in the future non-monetary benefits of further education, then the monetary benefits are a complete measure of the returns on educational investment (at least in the private

\footnotetext{
10 See the following:
Becker, Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education, (New York: National Bureau of Economic Research, 1964), chp. 1.

Blaug, M. An Introduction .... op. cit., pp. 16-22.
Angus, Maddison, "What is Education for?", Lloyds Bank Review, no. 112, (April 1974), pp. 19-21.

Schultz, To W, The Economic Value of education. (N. Y.: Columbia University press, 1963), pp. 54-63.

Vaizey, J. The Political Economy of Education, (London: Gerald Daukworth \& Co., 1972), p. 66.

Woodhall, Mog Cost Benefit Analysis In Educational Planning, UNESC0,
Internal Institute Ior Education Planning, 1970, pp 25-34.
Carr-Hill R. and Magnussen, Indicators of Performance of Educational Systems, (Paris: OECD, 1973), chp. VI.
}
case), that costs include investment, expenditures for immediate consumption, and expenditures for a consumer durable item. But if we argue that monetary returns understate the total benefits of investment in education, then we cannot also argue that some costs of education should be viewed as expenditures for consumer durables.

Bowen (1964) suggested that the rational way to proceed is to make an explicit monetary evaluation of the consumption contributions of education, add this sum to the monetary returns from education, and then compare the total returns with the total costs. However, because of difficulties in estimating the consumption benefits, most studies of the rate-of-return to education have proceeded by ignoring the consumption component entirely and have treated education as a pure investment in human capital. This study therefore includes only the direct, monetary return to individuals resul.ting from further education.

Direct measurable benefits to society as a whole are worker productivity gains which are reflected in increased personal income. Therefore, differential lifetime incomes between groups of individuals completing different educational levels can be taken as a partial measure of both private and social benefits. The increased income is the direct, individual private benefit, and reflects the direct social benefits of increased worker productivity. obviously, there could be gains in worker productivity which were the result of extended education, but which did not result in increased earnings. This would be the case in any but a perfectly competitive world where the marginal product of labour must be equal to its wage. Finally, differences in lifetime income across individuals who have completed different levels of schooling, can be only partially explained by these differences in extent of education. 11

Some private and social benefits involve explicit financial payment; other do not. Some benefits are internal to a particular decision maker; others are external to a particular decision maker or group decision makers. 12 In other words, externalities refer to those educational benefits that are external to the person who receives the schooling. They represent an important concept in rate-of-return analysis. A list of those indirect benefits of education that have been cited in the literature is provided by Blaug. \({ }^{13}\) Most private and social benefits which are external to any particular decision maker are virtually non-measurable. For example, external benefits of education such as better management employee

\footnotetext{
11 See Weisbrod, B. A., "Preventing High School Dropouts", In R. Dorfman (ed.), Measuring Benefits of Government Investments, (Vashington, D. C.: The Brooleings Institution, 1965), p. 117.
}

\footnotetext{
12 Weisbrod B. A., External Benefits of Public Education: An Economic Analysis, (Princeton, New Jersey: Industrial Relation Section, Princetion Analysis,
}
relationships or increased political awareness are not easily measurable. Whether or not the external benefit is measurable, its essential feature is that it cannot be quantitatively apportioned to an individual or to any sub-group of individuals within the society.

There are certain external benefits which can be estimated, as, for instance, the possible effect of added years of education on the unemployment rate. If an extra year of education reduces unemployment and generates increased income, it would reduce the costs of total welfare and unemployment compensation and, on the income side, increase the total tax take. Further, reductions in the cost of crime prevention might be counted as an external social benefit of the extra education, assuming that direct welfare benefits reduce if unemployment is decreased and that people are more law-abiding when they are employed. To be sure, the savings in actual monies spent on social services are but a small measure of economic benefits accruing to the society at large; there is no implication that total increment in social welfare can be measured by these cost savings or increases in tax take. It was claimed that some external benefits are, for all practical purposes, unmeasurable, while others are measurable. Though it is not always easy to identify and evaluate all of these external benefits, there is no doubt that some of these benefits are quite significant and cannot be ignored if the evaluation of investment in higher education is to be meaningful. Vaizey argues that ignoring externalities can be seriously misleading because they are so great that in many circumstances they may outweigh the direct benefits. \({ }^{14}\) His view is undoubtedly valid and is shared by Weisbrod. \({ }^{15}\) However, external benefits for different university education programs may be the same, so that their

\footnotetext{
13 According to Blaug's listing, the externalities include:
1. The current spillover income gains to other persons.
2. The spillover income gains to subsequent generations.
3. The supply of convenient mechanisms for discovery and cultivation of potential talent.
4. The means of assuring occupational flexibility of the labour force.
5. The provision of an environment that stimulates research.
6. The tendency to encourage lawful behaviour.
7. The tendency to foster political stability.
8. The supply of social control, transmission of common culture and heritage.
9. The enhancement of enjoyment of leisure.

See Mark Blaug, "The Rate of Return on investment in Education", In Economics of Education, Vol. 1, Mark Blaug (ed.) (Baltimore: Penguin Books, 1968, p. 243.

14
Vaizey, J. The Role of Education in Economic Development, in Planning Education for Social and Economic Development, Herbert S. Parnes, ed. (paris, OECD, 1963), pp. 40, 50-52.

15 Weisbrod, B. A. "Education and Investment in Human Capital, Journal of Political Economy, LXX, no. 5, part 2, Supplement 1962, pp. 106-123.
}
effect in calculating rates of return in this study is not significant. To illustrate some of these secondary benefits, let us consider briefly the case of the Medical College in Iraq (see Appendix D). In the course of instructing medical students, the college staff (doctors, Surgeons, technicians, etc.) perform operations, administer treatment and provide various other services, free of charge, for patients at the various teaching hospitals. Although such medical services are a necessary and integral part of medical education, they nevertheless provide simultaneously tangible economic benefits to society as a whole, over and above their primary educational objectives. In the present study some of these spillover benefits will be identified and, whenever possible, they Will be quantified in monetary terms (see Appendix D). These estimates, however, will not be taken into account in the rate of return calculus.

Finally, the institutional benefits in general derive from tuition paid by the students or their families, and from miscellaneous sources such as consulting services to industry, agriculture etc., rent of equipment and facilities, sale of goods produced in laboratories and experimental farms, and receipts from various activities such as museum fees. The revenue of most universities today (specially state universities) is derived almost entirely from governmental grants and subsidies. However, grants and subsidies are essentially transfer payments and must not therefore be viewed as income in cost-benefit analysis.

In the University of Baghdad (as in all universities in Iraq) since tuition is entirely free, the sources of revenue are the government grants and institutional revenue. But the latter is very limited and the magnitude of such revenue is small when compared to the magnitude of the government grants or the costs.

For the purpose of this evaluation, costs like benefits, will be divided into three main categories: (1) institutional costs, (2) private costs, and (3) social costs. The private and social costs will be divided into measurable and non-measurable costs. Institutional costs include the direct expenditures for salaries (for teachers and other staff), books, supplies and equipment, maintenance of buildings and other fixed assets to operate an educational institution, the indirect cost of depreciation on buildings and equipment and machines which are used by the institution. The institutional expenditure data were obtained from the annual financial statements of each college of the University of Baghdad for the years 1981/82-1986/87. The average institutional cost per student in a particular year is calculated. Also, the cost per graduate is estimated by using the cost-per-student year method (see chapter 5) for the same period under consideration.

The measurable private costs are those current expenditures which are incurred by the individual student or his family. These include tuition fees, expenditure for academic supplies, books, transportation to and from
the educational institution. In addition there are measurable opportunity costs, which are the forgone earnings of students who choose to continue education rather than enter the labour market. They are estimated by calculating what such students would have earned during the relevant time period had they chosen to seek employment. In the present study, the direct private costs are assumed to be zero, because there are no tuition fees, and most of books and related educational materials are supplied (or loaned) by the university to students free of charge. In other words, the private costs of university education in Iraq are equal to forgone earnings by the student which he could have earned as a secondary school graduate had he not chosen to pursue a university education.

Social costs of higher education in Iraq consist of (i) educational costs incurred by the society (institutional costs), and (ii) the opportunity cost or forgone income incurred by individuals during the period when further education is acquired.

In summary, this study examines the private and social monetary returns to university graduates who have undertaken one of several forms of programs. The study provides an assessment of the relationship between private and social monetary returns and the following variables: (i) type of program; (ii) the length of program; and (iii) the age at which the individual chooses to commence such a program.

\subsection*{1.3 Methodology}

The approach used to appraise the economic contribution of education is known as rate-of-return analysis. Cost-benefit analysis is a technique for the assessment of investment projects in the public sector. It considers all benefits and all costs (sacrifices) regardless of to whom they accrue. In the cost-benefit analysis, the concern is the economy as a whole and the welfare of the society at large.

Cost-benefit analysis is an accepted planning tool used to evaluate an investment project by comparing expected total costs with expected total benefits. However some writers do not seem to agree whether or not to define it strictly as a separate planning tool or as a one of several approaches to educational planning namely, social demand and manpower requirements approaches.

Cost-benefit analysis is essentially an investment assessment technique which attempts to do explicitly what the market price system does implicitly. \({ }^{16}\) It does this by estimating the expected total benefits and comparing them with the expected total costs. Since the cost and benefits

16 Blaug, M. An Introduction .... op. cit., p. 120.
of all investment projects flow nonuniformly over the life of the project, it is necessary to reduce these costs and benefits to a common denominator if the comparisons are to be meaningful, i.e. all future streams of benefits and costs are discounted to the present.

\subsection*{1.3.1 The \(\mathbb{N}\) et PresentValue \(\operatorname{Mi}\) ethod}

The net present value method of the investment is the difference between the present value of the benefits stream and the present value of the cost stream.

Several investment criteria are given by Turvey and Prest (1965) \({ }^{17}\) for a case in which no projects are interdependent or mutually exclusive, and where starting dates are giver and no constraints are operative. The choice of projects which maximize the present value of the total benefits less total costs can be expressed in any of following four equivalent ways:
1. Select all of the projects where the present value of the benefits exceed the present value of the costs.
2. Select all of the projects where the ratio of the present value of benefits to the present value of costs exceeds unity.
3. Select all of the projects where the constant annuity with the same present value as benefits exceeds the constant annuity (of the same duration) with the same present value as costs.
4. Select all the projects in which the internal rate of return exceeds the chosen rate of discount.

If the values of benefits, costs, and the discount rate are determined, the net present value of the investment is easily calculated. However, often the discount rate is either not known or cannot be agreed upon. In such circumstances, the net present value may be calculated for a range of discount rates thereby providing the decision makers with a form of sensitivity analysis.

\subsection*{1.3.2 The Internal \(\mathbb{R}\) ateof \(\mathbb{R}\) eturn}

More commonly in education projects, however, the internal rate of return of the investment is calculated. The internal rate of return is defined as that discount rate which would equate the present value of total benefits with the present value of total costs. In other words, it is that

17 Turvey, R and Prest A. R., "Cost-Benefit analysis: A Survey". The Economic Journal, Vol. 75, 1965, pp. (683-735).
discount rate which would cause the net present value of an investment to become zero.

\subsection*{1.3.2.1 An AlternativeApproach To \(\operatorname{Rates-Of-Return}\)}

There are three main methods for calculating the rate of return to investment in education. The method adopted by various writers often depends upon the availability of data or the degree of desired accuracy. These methods are: (1) the elaborate method; (2) the earnings function method; and (3) the short-cut method. 18

\section*{1. The Elaborateor \(\mathbb{D}\) iscounting Method}

This method of estimating the profitability of investment in education requires detailed data on age-earnings profiles by educational level and unit costs of each level of education. The rate of return ( \(r\) ) could be found by solving the following formula:
\[
\begin{equation*}
\sum_{t=m+1}^{n}\left(E_{h}-E_{h-1}\right)_{t}(1+r)^{-t}=\sum_{t=1}^{m}\left(C_{h}+E_{h-1}\right)_{t}(1+r)^{-t} \tag{1}
\end{equation*}
\]

Where \(\mathbf{E}\) is worker earnings; \(\mathbf{E}_{\mathbf{h}}-\mathbf{E}_{\mathbf{h}-\mathbf{1}}\) represents the earnings differential between a more educated worker and less educated worker; \(\mathbf{E}_{\mathbf{h}-1}\) represents the student's foregone earnings or indirect costs; \(C_{h}\) represents the direct costs of schooling consisting of tuition, books, transportation, etc.; \(\mathbf{n}\) represents the expected working life of the higher educated worker; and \(m\) represents the length in years of schooling cycle.

\section*{2. The Earnings \(\mathbb{F}\) unctionor \(\mathbb{R}\) egression \(\mathbb{M} \operatorname{cthod}\)}

This amounts to fitting a Mincerian earnings function expressed as:

\footnotetext{
18 For more details see Psacharopoulos, G. and R。 Layard "Human Capital and Earnings: British Evidence and a Critique", Review of Economic Studies, Vol. 46, no. 3, 1979, pp. 485-503; Psacharopoulos, Go "Returns to Education: an Updated International Comparison", Comparative Education, Vol. 17, no. 3, 1981, pp. 321-341; Psacharopoulos Go The Cost-Benefit Model, in Psacharopoulos, G. The Economics of Education, 1987, pp. 342-347; Psacharopoulos, Go and Alam, A.g Earnings and Education in Venezuela: An Updated from 1987 Household Survey, Economics of Education Review, Vol. 10, No. 1, 1991, pp. 29-36; and Psacharopoulos, Go, and Yo NG: "Earnings and Education in Latin American", The World Bank, 1992, VPS 1056.
}
\(\underset{\text { Where }}{\operatorname{Ln} Y_{i}}=a+b_{\cdot} S_{i}+C_{\cdot} E X_{i}+\) d.EX \(_{i}{ }^{2}\)
\(Y_{i}=\) human capital earnings to the individual (i);
\(\mathrm{S}_{\mathbf{i}_{2}}=\) the number years of schooling of the individual (i);
\(\mathrm{EX}_{\mathrm{i}}\) and \(\mathrm{EX}_{\mathbf{i}} \mathbf{i}_{2}=\) his years of labour market experience and \(i t s\) square, respectively
b = coefficient of "S", which can be interpreted as the average private rate of return to one extra year of schooling

This method does not include any specific reference to direct educational costs, although it does incorporate earnings forgone which are a high proportion of total costs. Depending on data availability, the Mincer method may be relatively quick and easy to compute using a standard regression package. The major disadvantage of this method is that it is applied to data for broad aggregates (often for the whole of education) and thus does not provide results that are readily implementable at the micro level. \({ }^{19}\)

\section*{3. The Short-CutMethod}

Age-earnings profiles by educational level are not always available. In some cases, however, average (over all ages) wages by schooling level are available and have been used to estimate the rate of return. The rate of return could be estimated by solving the following formula:
\[
\begin{equation*}
r_{h}=\frac{W_{h}-W_{h-1}}{s\left(C_{h}+W_{h-1}\right)} \tag{3}
\end{equation*}
\]

Where \(W_{h}\) is the average wage for a higher educated person; \(W_{h-1}\) is the average wage for a less educated person; \(S\) is the length of the school cycle in years; \(C_{h}\) is the direct annual cost of schooling; and \(r_{h}\) is the rate of return to higher education.

In this method, the rates of return are estimated on the basis of the following three assumptions: (1) the earnings differential is fixed throughout the worker's lifetime; (2) the earnings last forever (to infinity) ; and (3) the cost of schooling occurs at one point in time.

19 Tan, J-P, and Paqueo, V. B., The Economic Returns to Education In the Philippines, International Journal of Educational Development, Vol. 9, No. 3, 1989, pp. 243-250.

The major advantage of this method is that one can use ready available information on the earnings of workers by educational level in order to estimate the private rate of return. Moreover, it is easy to add the resource cost of schooling in the denominator in order to calculate the social rate of return.

However, this method is inferior to any of the other methods reported above. The main problem with this method lies in the abstraction from the fact that age-earnings profiles are concave, and that the discounting process (including the true rate of return) is very sensitive to the early values entering the computation. However, Psacharopoulos \({ }^{20}\) (1981) suggested that "this can be rectified in case the mean earnings by educational level are available for large age groups. Then, choice of, say, the 35-45 age group for computation of the rate of return somehow prevents biases associated with the early experience profiles. 21 (1981) suggested that "this can be rectified in case the mean earnings by educational level are available for large age groups. Then, choice of, say, the 35-45 age group for computation of the rate of return somehow prevents biases associated with the early experience profiles." However, the elaborate or discounting method is applied in this study.

\subsection*{1.3.2.2 \(\mathbb{P r i v a t e V e r s u s ~ S o c i a l ~} \mathbb{R}\) ates Of \(\mathbb{R} \operatorname{turn}\)}

There are two aspects of education as an investment i.e. the private and the social. The private return aspect looks at education from the individual's point of view. It considers the relationship between the costs incurred by the individual his/herself or by his/her family in obtaining education and his/her life-time earnings (where these can be attributed to education). The benefits (earnings) must be taken on an after taxes. The social aspect looks at education from the point of view of the society (national economy) at large. This aspect considers the relationship between the total costs (cost to the individuals and society) and benefits accruing to society as a whole. The benefits must be taken on a before tax basis. Private returns and social returns are discussed in more detail in chapter 6 .

\footnotetext{
20 Psacharopoulos, G. "Returns to Education: an Updated International Comparison", Comparative Education, Vol. 17, no. 3, 1981, pp. 326.

21 Psacharopoulos, G. "Returns to Education: an Updated International Comparison", Comparative Education, Vol. 17, no. 3, 1981, pp. 326.
}

\subsection*{1.4 The Assumptions of this study}

The following assumptions are made in this study of rates-of-return to university education in Iraq:
1. Individuals have decided to invest in the university education rather than in some form of physical capital. This assumption obviates the necessity of considering the many alternatives that could be followed.
2. Because of estimation difficulties, consumption benefits ignored.
3. It is assumed that all university education costs are assumed to be investment.
4. The period of working life is as follows:

Secondary school graduates enter the labour market at age 18, and retire at age 60; while university graduates enter the labour market at ages 22, 23, and 24 depending upon whether they study for a four-year program, five-year program or six-year program respectively. All retire at age 60 .
5. It is assumed that all graduate students continue their programs directly after secondary school graduation and complete their work for an under-graduate degree without interruption (except see chapter 7 section 3 where we consider late entrants).
6. For university graduates, there is guaranteed employment in the public sector.
7. There is no salary differences between males and females since the majority of university graduates work in the public sector. in other words, both are equal in the promotion and salary pattern. It also assumed that all graduates enter the labour force immediately after graduation and complete their lifetime working without interruption except married women who take a maternity leave. However, women employed in public sector in Iraq are paid full salaries for this period (one year). According this assumption the private rate of return may be the same for both men and women. But the social rate of return for women are most likely less than for men, because the former is less productivity than the latter. Also may effect the private rate of return when the women are not paid for the maternity leave period, i.e. Private rate of return for women less than for men.
8. Monetary benefits and costs only are taken into account. that is, the external or spillover benefits and costs of education are ignored because of estimation difficulties.
9. It is assumed that no students work part-time while attending university.
10. Because all university schooling is free in Iraqi, the direct costs are assumed to be zero.
11. Most research is carried out by the council of studies and scientific
research which was founded in 1969 or by research centres which have a separate budget. in the universities, therefore, it seems reasonable to assume that academic salaries are teaching function.

\section*{\(1.5 \mathbb{T}\) he Scopeand Limitations of This Study}
1. The author faced considerable difficulties in obtaining directly relevant data. It is hoped that the study will stimulate and encourage the government authorities to survey and research this area thoroughly. The study utilizes the 1972 national survey of government and public sector employees in Iraq in order to provide the salary and wage data. However, these data were adjusted for increases in salaries and wages for the period between 1972 and 1987. Data upon the costs of university education, the number of students enrolled, the number of graduates etc. were obtained from the financial statements of faculties and service offices in the University of Baghdad, financial records, official documents, national or regional surveys, and other sources of statistics. This data would have to be obtained from various sources, examined, and reclassified systematically. Unfortunately such an undertaking is often not possible due to time and resource constraints. Because of such difficulties, the data on the institutional costs of university education in the present study were based not on the total Iraqi system of university education, but rather on the basis one representative university. It was decided to focus upon the University of Baghdad (see ch. 5)
2. The study was restricted to the evaluation of private and social returns on investment in fifteen different programs of the University of Baghdad in Iraq.
3. The types of university education chosen for investigation were eleven four-year programs, three five-year programs, and one six-year program, namely Science, Engineering, Nursing, Agriculture, Economics and Administration, Law and Politics, Arts, Fine Arts, Education, Physical Education, and Alsharia; Pharmacy, Dentistry, and Veterinary Medicine; and Medicine respectively.
4. The internal rate of return is used to evaluate the private and social returns to investment in different programs of university education in Iraq. The internal rate of return is calculated by using The "Elaborate or Discounting Method". This method is refined by using different values of alpha coefficient, and different ages of commencement.
5. No attempt was made to investigate the economic contributions of other alternatives such as investment in 'on-the-job industrial training', or indeed investment in physical capital rather than human capital.
6. The study was restricted to students (without any distinction between males and females) who have graduated from the University of Baghdad.
7. The indirect benefits (external economic benefits and social benefits) were omitted from this thesis because of quantification difficulties. In this thesis only the monetary benefits are used to evaluate the returns on investment in university education. Therefore, the private and social returns to investment in university education were understated.
8. Earnings differentials are due not only to extra education received but also to other factors such as family income, social background, occupation, natural ability, age, region of work, and so on. Ideally to arrive at the economic benefits of education, all of these factors should be taken into consideration. To do so, however, would require data about all of the above factors. Instead cost-benefit analysts adjust the observed earnings differentials of educated workers by an arbitrary coefficient to allow for these non-educational factors. In this thesis, three values of the so-called alpha coefficient were applied (1, 2/3 and 1/2).

\subsection*{1.6 Structureof \(\mathbb{T}\) hisstudy}

In Chapter two we present an overview of the establishment and development of university education in Iraq as well as some information about the organization of the Ministry of Education and the Ministry of Higher Education and Scientific Research, and the financing of the educational system. We also present some background information about Baghdad University, such as the number of students enrolled, graduates, the number of teaching staff compared with other universities in Iraq, and the postgraduate programs.

In Chapter three, previous studies of the costs, benefits, and rate of return to education are reviewed. This chapter concentrates on the rate of return studies and covers the social and private rates of return for males and females, white and non-whites, urban and rural dwellers, as well as rates of return for different levels of education and for various subjects in different countries.

Chapter four considers the specific issues encountered in the application of cost-benefit analysis in the field of higher education, particularly in Iraq.

Chapter five is concerned with the estimation of the costs of university education in Iraq from the point of view of the individual, the educational institutional and society at large. In this Chapter the institutional costs per student and per graduate are calculated; the social
institutional cost per student and graduate are also estimated. All costs are adjusted for 1987 prices.

Chaptex six analyses the benefits of higher education from the private, institutional, and social points of view. In this Chapter, the private and social benefits are calculated using the salaries and wages of government and public sector employees. Different values of the alpha coefficient are used to adjust the earnings for factors other than education.

The private and social rates of return on university education in Iraq are discussed in Chapter seven. The private rates of return are also estimated for people who commenced their studies at different ages.

A Summary of the main findings and recommendations is presented in Chapter eight. In this Chapter some conclusions about costs, benefits, and private and social rates of return to university education in Iraq are drawn. The implications of the results for the allocation of government expenditure on university education are discussed. The problems of data availability are discussed as well.

\section*{\(\mathbb{C} \mathbb{H} \mathbb{P} \mathbb{T} \mathbb{E} \mathbb{R} \mathbb{W} \mathbb{O}\)}

\section*{\(\mathbb{A} \mathbb{N} \mathbb{V} \mathbb{R} \mathbb{V} \mathbb{E} \mathbb{W}\) OFIRAQ'S HIGHER \(\mathbb{E D U C A T I O N S Y S T E M}\)}

\subsection*{2.1 Establishmentand \(\mathbb{D}\) avelopmentof University \(\mathbb{E d u c a t i o n}\) in \(\mathbb{I r a q}\)}

Higher education in Iraq started slowly with a limited range of higher studies. The "School of Law" was established in 1908 and later developed into the College of Law and Politics. The Higher Teacher Institute was established in 1927 (later renamed as the College of Education), the College of Medicine also opened in 1927, the College of Pharmacy in 1936, Engineering in 1942, the College of "Al-Sharia" (which teaches religion and Arabic) in 1946, the Alia Queen for Ladies in 1947 (later renamed as the Ladies College, and closed in 1969), the College of Commerce in 1947 (renamed as the Administration and Economics College), the College of Arts in 1949, the College of Science in 1949, and the Higher Agricultural Institute in 1950 (in 1952 it was renamed the College of Agriculture). \({ }^{1}\)

Therefore, by 1952 there were 11 Colleges offering first degree courses. Few other Colleges vere set up in the 1950's until the year 1957 when the need for a university became apparent following the rise in the number of colleges. Therefore, the constitution of the University of Baghdad was designed in 1956 and this was the cornerstone of the foundation of the University which took place in the end of 1957. The first meeting of the University Council was held in 1958 during which the colleges which were to be part of the University were defined. \({ }^{2}\) According to the law No. 28 in 1958, \({ }^{3}\) Baghdad University consisted of the following colleges:

\footnotetext{
1 AL-Zauba'e, A. and Al-Ghannam M。Higher Education in Iraq, Its Trends and Problems, University of Baghdad, Government Press, 1968, P.1. (In Arabic Version)

2 University of Baghdad, Leaflet of University of Baghdad, for the Year 1962/63, Al-Ianai Press, Baghdad, 1963, pp. 5-8.

3 Mathews and Akrawi said that "At least two attempts were made in 1943, 1945 to incorporate the existing colleges, but neither attempt went beyond producing a draft charter and a draft law for the proposed university". See Mathews E. D. and Akrawi M. Education in Arab Countries of Near East. (Footnote continued)
}
1. College of Science.
2. College of Engineering.
3. College of Medicine.
4. College of Pharmacy.
5. College of Dentistry.
6. College of Agriculture.
7. College of Veterinary Medicine.
8. College of Commerce.
9. College of Education.
10. College of Arts.
11. College of Ladies.
12. College of Law and Politics

The 1960's witnessed a rapid increase in the number of colleges associated with Baghdad University in addition to the establishment of several other universities. These universities are (i) Al-Mustansyrai, founded in 1963 as a private university and later (1974) converted to an official public university, (ii) Al-Basrah opened in 1964, (iii) Al-Mosul (1967), (iv) Salah Al-Dean (1968), (vi) and the Technology University (1975). Each of these offered courses in almost all of the major specialisms, such as medicine, engineering, pure science, law, and economics. In 1987, four new universities were established. These are the Universities of Al-Anbar, Al-Qadissiya, Tikreet, and Cuoffa. Therefore, the total number of universities in Traq has become 10, excluding the Technical Institutes.

During the year of the revolution (1968/69), the Revolutionary Council adopted a policy for the re-organization of the higher education system. A number of colleges and institutes were abolished and at the same time several similar faculties in different colleges were merged. \({ }^{4}\) In September 1969 the "Council" for higher studies and scientific research was formed, which again initiated some re-organization in the higher education system.

The Ministry of Higher Education and Scientific Research was established in 1970, which incorporated the Directorate of Higher Education Council which was the body in charge of the education, cultural, scientific and technological policies.

\footnotetext{
3 (continued)
America Council on Education, Washington, 1949, p. 199.
}

4 Ministry of Planning, Educational and Social office, Deparṭment of Educational Planning, report No. 3, 1971, Higher Education in Iraq for the period 1960/61-1969/70.

\subsection*{2.2 Systemof Administration of Education ind lraq}

Higher education is administered by the Ministry of Higher Education and Scientific Research. However, The Universities are independent in most technical professional matters. \({ }^{5}\) Various technical Ministries such as Agriculture and Agrarian Reform, Communications, Health, Industry, and Labour and Social affairs also organize training programs which are mainly at the skilled worker's level.

The organization of the Ministries of Education and Higher Education and Scientific Research are shown in Figures 2.1 (p. 25) and 2.2 (p. 26).

Education Law No. 124 of 1971 re-defined overall functions and duties of these Ministries in the light of the objectives of the government policy. In this, the first duty of the Ministry of Education is to plan for education and follow up the approved planning.

As a consequence of this Law ordinance No. 13 of 1972 was issued, involving a major reorganization of the administrative machinery of the Ministry and the development of new functions. \({ }^{6}\)

According to Law No. 132 of 1970 , the Ministry of HESR is responsible for the execution of the technical, scientific, cultural and educational policy of the state in the sphere of public institutes at the post-secondary level. The Ministry also prepares the financial estimates for Higher education and Scientific Research. It is also responsible for negotiating external cultural delegations and scientific missions. The Law also provides for a Board of Higher Education which is the highest authority in dealing with all policy matters in high education in Iraq.

\subsection*{2.3 Structure and Organizationofthe Systenm}

The structure of the education system in Iraq is shown in the Fig. 2.3 (p. 27) It can be seen that pre-school education based on a two-year Kindergarten program, forms the lowest rung of the education ladder. This is followed by six-years of primary school (grades 1-6). Secondary education is also of six-years' duration, but is divided into two sub-levels: an intermediate program of three years, followed by a

\footnotetext{
5 Ministry of Education, Development of Education in Iraq, during 1974/75-1975/76: Directorate General of Education Planning, Baghdad, 19/8, p. 14, (in English version).

6 Ministry of Education, A Report on Educational Development in Iraq. Baghdad, 1977, p. 2, (in English version)

7 Ibid.
}
preparatory levels of the same duration. While the intermediate program provides common and general education courses for all, the preparatory schools are diversified to cater for individual interests on the one hand and to the needs of economy on the other. Scondarty school is divided into two main sections: Academic and Vocational. The Academic section provides one year of general education at the end of which students may specialize either in literary or scientific subjects for a period of two years in grades 11 and 12. The vocational section comprises of three streams namely: Agricultural, Industrial and Commercial.
There are three main types of teacher training institutions, namely:
(i) Teacher Training Schools (TTS) which offer a 3 year course after the intermediate school leaving certificate.
(ii) Teacher Training Institutes (TTI) which offer a 2 year course after the preparatory school leaver certificate.
(iii) College of Education (CE) which offers a 4 year course after the preparatory school leaver certificate.

Higher education is provided either in Higher Technical Institutes, normally having a two or three year cycle, or in universities and colleges which offer courses extending over four to six years, depending on the field of specialization.

\subsection*{2.4 Financing of 配ducation}

In Iraq, education is considered as one of the main public services, alongside Health, Housing and Communication, that government has to provide for the people. It is free at all levels from kindergarten, through to postgraduate studies. The Ministry of Education budget provides for kindergarten, primary, secondary (both general and vocational) education, and teacher training. The Ministry of Higher Education and Scientific Research finances all university, institute, and postgraduate technical education.

Expenditure on public education in Iraq is provided in two ways: \({ }^{8}\)
1. The Government Annual Budget, which provides such recurrent funds as salaries and wages, maintenance, administration, general expenditure for improving and developing the curricula, textbooks, technical committees and the like.
2. Capital expenditure, which is provided from the Economic Development Plan Budget. This includes provision for the construction of new school buildings, new classrooms, and land purchases. 0ther capital

\footnotetext{
8 Ministry of Education, Official Report (1969-77) Directorate General of Educational Planning, Baghdad, 19/8, PY. 52-54, (in Arabic version).
}
expenditures include tools and laboratories, school furniture, and audio-visual aids. The capital expenditures and recurrent expenditure of Iraqi Universities for years \(1981 / 82\) to \(1986 / 87\) are shown in Table 2.7 (p. 31)

\subsection*{2.5 Baghadad University}

\subsection*{2.5.1 Intioduction}

The University of Baghdad, is the oldest and the largest university in modern Iraq. The University comprises of fifteen colleges and nine research centres, with about 55,000 students. It provides instruction in humanities, sciences and other spheres of learning.

The University offers bachelor degrees, high diploma \({ }^{9}\), masters' degrees, and doctorates in various fields of sciences and arts, and carries out applied and pure scientific research and gives technical consultations to various state establishments.

This section focuses on four aspects; the Administration, the Academic program, the students (enrolled and graduate), and the Academic teachers.

\subsection*{2.5.2 TheAdministration}

As stated in section 2.1 above, The University of Baghdad is composed of the fifteen colleges. It has also nine Research Centres which have their own administrative systems. However these Centres are financed by a separate budget. These are as follows:

\section*{University Research Centres}
1. Natural History Research Centre
2. Education and Psychological Research Centre
3. Economics and Administrative Research Centre
4. Medical Research Centre
5. Palestinian Studies Centre
6. Centre of Psychiatry
7. Urban and Regional planning Centre
8. Dental Research Centre
9. Arab Scientific Research Centre

The University of Baghdad is the largest university in Iraq, in terms of

\footnotetext{
9 High diploma is higher than a BA/BSc degree.
}
the number of colleges, except for the Technical Institute. See Table 2.1 (p. 28).

\subsection*{2.5.3. Academic Program}

The required period of attendance for undergraduate program is four years with the exception of five years at the Colleges of Pharmacy, Dentistry, and Veterinary Medicine, and six years at the College of Medicine. The required period of study for the masters' program it is 3-6 semesters and for the doctors' program it is \(4-8\) semesters.

\subsection*{2.5.4 Thestudents}

The number of students enrolled in the University increased from 3,244 in 1959/60 to 6,730 in 1964/65 and reached 10,018 in 1979/80. However by 1988/89 the number of students had reached 55,351. Table 2.2 (p. 28) shows the development in terms of the number of students enrolled and graduates for the years 1959/60-1988/89.

The reasons for the sharp increase in the student numbers were the exclusive availability of some studies or programmes in Baghdad University, the internal migration of students to Baghdad, who prefer to be in the capital because the facilities and services are better than in other cities.

The number of Baghdad University graduates increased from 1196 in 1959/60 to 7141 in 1984/85 and 5904 in 1986/87.
Also, the number of students enrolled and graduating are higher than in any other university in Iraq (see Tables 2.3 and 2.4, p. 29).

\subsection*{2.5.5 TheAcademicteachers}

Provision of an academic staff is one of the basic requirements for education and it plays a major role in the success of the education process. The University of Baghdad faced since its establishment the problem of a shortage of qualified persons and this led to efforts to close the gap. The shortage was overcome by:
a. employment of foreign teachers;
b. using mutual agreements between Iraq and other countries in the provision of some academic staff;
c. securing qualified staff by assigning scholarships for students and training programmes.

Table 2.5 (p. 30) shows the academic staff of Baghdad University from year \(1964 / 65\) to \(1988 / 89\). It shows that the number of academic staff increased from 566 in 1964/65 to 2641 in 1988/89.

The student/teacher ratio has declined from 38 in 1964/65 to 21 during the year 1988/89.

The Student/ teacher ratio in Baghdad University is higher than in other Iraqi Universities, except for Al-Mustanssirya University. Numbers of teachers and Student/teacher ratio are shown in Table 2.6 (p. 30)

\subsection*{2.6 Post-graduate Courses}

Postgraduate students could be divided into graduates from inside Iraq and graduates from abroad.

\subsection*{2.6.1 PostgraduateStudentsfrom Inside Iraq}

Post-graduate courses started early in the 1960's at the University of Baghdad. The number of students registered for MSc. degrees increased from 14 in 1961 to 125 in 1967, for the year 1972 the figure totalled 705 students. In 1988/89 the number of Postgraduate students reached 2099.

\subsection*{2.6.2 Postgraduatestudents \(\mathbb{F r o m a b r o a d}\)}

The second source of supply of individuals is Traqi graduates from foreign universities and institutions. Since the Second Var the number of Iraqi students who received educational training abroad has increased rapidly. The increase accelerated after 1958 as the government offered a larger number of scholarships for students to pursue higher education courses abroad. During the years \(1960 / 69\) successive governments financed the studies of approximately 2,000 students in foreign countries. among these 223 students were pursuing their education in Arab countries, such as Egypt, Syria and Lebanon, while 861 students were receiving education in European countries such as Germany, The U.K. and France. Of the remainder, 383 were in America and 412 in socialist countries. The courses for which they were sent abroad included engineering, physics, chemistry, economics, law and anthropology . Out of the 2,000 sponsored students, 1113 have completed the courses successfully, while a large proportion of the remainder were still pursuing their educational training.

In additional to the 2,000 government sponsored students there were 17,000 private students studying abroad. A sample of 250 of these students was analysed by the Educational Section of the Ministry of

Planning. \({ }^{10}\) Their results showed that of the sample 65 were studying in Arab countries, 51 in European countries, 76 in Socialist countries, 20 in America and 38 in Turkey and other Eastern countries. Approximately one-third of the 250 students had successfully completed their courses, while a significant proportion of the remainder were still following the educational training courses. However, more meaningful results could have been obtained with a larger sample size. That is to say the sample considered was very small, constituting \(1 / 68\) of the total private student population during the years 1960-69. The results would have been more useful if the period considered was longer than nine years, since it would require a minimum of ten years to proceed from a pre-first degree course to the \(\mathrm{Ph} . \mathrm{D}\) degree. The implication is that there was a higher proportion of private students who obtained educational qualifications than the results of the sample survey had shown. In 1985, The Iraqi government offered about 2000 scholarships to students to continue their higher education abroad.

To conclude, it is clear that the educational system was already well established in the early 1950's and that the output of this system, that is, graduates with first degrees and postgraduate degrees, increased substantially over the years. Ultimately these joined the labour force and by so doing they imported quality improvements to the labour force which in turn constituted an important element in the production process.

\footnotetext{
10 An Evaluation of the Studies of Iraqi Students Abroad for years 1960-1969, The Educational Planning Section, Ministry of Planning, Baghdad, No. 1977.
}

FIG 2.1 ORGANTZATION OF MINISTRY OF EDUCATION IN IRAQ。


Source: Ministry of Education, Development of Education in Iraq During 1974/75-1975/76, Baghdad, 1977, p.49.

\section*{Directorates under their respective Directors-General}
1.1 Head quarters; 1.2 personnel; 1.3 Local Affairs; 1.4 Accountant; 1.5 Supplies; 1.6 Production works; 1.7 Printing press. 2.1 Physical Education (boys); 2.2 Physical Education (girls); 2.3 Youth training in School 2.4 Boy Scouts \& Girl Guide. 3.1 Primary Education; 3.2 Kindergartens; 3.3 Special Education; 3.4 Pilot project (Education and rural Development). 4.1 Secondary Education; 4.2 School Activities.5.1 Educational Planning; 5.2 Follow-up \& Evaluation; 5.3 Statistics; 5.4 School Buildings; 5.5 Studies and Documentation. 6.1 Curriculum \& Textbooks; 6.2 Teaching Aids; 6.3 Educational Television; 6.4 Laboratories; 6.5 Libraries. 7.1 Cultural Exchanges; 7.2 Information; 7.3 UNESCO Affairs \& other International Organizations; 7.4 Cultural Counsellors Abroad. 8.1 Evaluation \& Educational Guidance; 8.2 Examinations; 8.3 Certification; 8.4 High Control for Public Examinations.9.1 Supervision (Secondary Education); 9.2 Supervision (Primary Education); 9.3 In-service Training (Secondary Education); 9.4 In-service Training (primary Teachers); 9.5 Central Institute for in-service Training of Educational Workers 10.1 Statistics \& Follow-up; 10.2 Curriculum \& Textbooks; 10.3 Audio-visual Aids; 10.4 Supplies.
Abbreviations Used:
IFA: Institute Fine of Arts; IDELTI: Institute for the Development of English Language Teaching In Iraq; HC/CETA: High Committee for the Development of Curriculum, Examination and Teaching Aids.

FIG. 2.2 ORGANISATION OF THE MINISTRY OF HIGHER EDUCATION AND SCIENTITIC RESEARCH


Source:
Minisiry of Education, Development of Education in Iraq During 75-/76, Baghdad, 1977, p. 50.
Note: The author has added the new universities which were established in 1987.
Directorate under the respective Department
8.1 Central Registration; 8.2 Admissions \& Transfers; 8.3 Guidance and Follow-up; 8.4 Administrative Aflairs. 9.1 Accounts; 9.2 Administrative services and Follow-up; 9.3 Personnel; 9.4 Legal Affairs; 9.5 Mail \& Filing; 9.6 Library \& Documentation; 10.1 Finance \& Investment; 10.2 Co-ordination \& Follow-up; 10.3 Appraisal of Layouts; 11.1 Plan Aggregation \& Co-ordination; 11.2 Statistics; 11.3 Electronic Computer; 12.1 Agreements; 12.2 Arab or Foreign Students; 12.3 Exclaange of Professors; 12.4 Information; 12.5 International Organization 3 Scholarslips (America); 13.4 Equating of Degree; 13.5 Administration.
Fig. 2.3 Structure of the Iragi Education System

Source:
Sur-Habeeb, M. J., Education and Economic Development, Al-Rasheed Distribution Co., Baghdad-Iraq 1981, p. 231.


Table 2.1
Number of Colleges at Iraqi Universities, 1987/1988.
\begin{tabular}{|lc|}
\hline Number of Colleges at Iraqi Universities, & 1987/1988. \\
\hline University & Number of \\
\hline Baghdad & 15 \\
Basra & 9 \\
Mosul & 11 \\
Salah Al-Dean & 7 \\
AL-Mustanssirya & 6 \\
Technology & 10 \\
Al-Anbar & 4 \\
Al-Qadissiya & 3 \\
Tikreet & 3 \\
Al-Couffa & 7 \\
Technical Institutes & 22 \\
\hline
\end{tabular}

\section*{Source:}

Republic of Iraq, Ministry of Planning, Central Statistical Organization, Annual Abstracts of Statistics, 1988/89.

Table 2.2
Number of students enrolled and graduates, University of Baghdad,
\begin{tabular}{|l|c|c|c|c|}
\hline 1959/60-1988/89. & \begin{tabular}{c} 
Number \\
of \\
Year
\end{tabular} & \begin{tabular}{c} 
Index \\
\(1959 / 60\) \\
Students
\end{tabular} & \begin{tabular}{c} 
Number \\
of \\
Graduates
\end{tabular} & \begin{tabular}{c} 
Index \\
\(1959 / 60\) \\
\(=100\)
\end{tabular} \\
\hline \(1959 / 60\) & 10,591 & 100 & 1,196 & 100 \\
\(1964 / 65\) & 21,249 & 201 & 2,775 & 232 \\
\(1969 / 70\) & 19,582 & 185 & 4,791 & 401 \\
\(1974 / 75\) & 26,181 & 247 & 3,567 & 298 \\
\(1979 / 80\) & 32,318 & 305 & 6,844 & 572 \\
\(1984 / 85\) & 32,938 & 311 & 7,141 & 597 \\
\(1986 / 87\) & 42,784 & 404 & 5,904 & 494 \\
\(1988 / 89\) & 55,351 & 523 & n.a. & n.a. \\
\hline
\end{tabular}

\section*{Source:}

Baghdad University , Registration Office, Annual Abstracts of statistic, Al-Zaman Press, 1965, For the year 1959/60 and 1964/65; Baghdad University, Planning Office, Annual Abstracts of year 1969/70, 1974/75, and 1979/80; and year 1986/87 and 1988/89 Compiled from the "student's records", Statistical Department, University of Baghdad.

Table 2.3
Number of Students Enrolled in Iraqi Universities for years 1981/82-1988/1989.
\begin{tabular}{|l|r|r|r|r|r|r|r|}
\hline & \multicolumn{7}{|c|}{ Year } \\
\cline { 2 - 8 } University & \(81 / 82\) & \(82 / 83\) & \(83 / 84\) & \(84 / 85\) & \(85 / 86\) & \(86 / 87\) & \(88 / 89\) \\
\hline Baghdad & 34408 & 36063 & 34555 & 35030 & 44307 & 46382 & 55351 \\
Basra & 10205 & 9611 & 9702 & 10020 & 11646 & 20033 & 14803 \\
Mosul & 14721 & 14759 & 15558 & 16733 & 21053 & 11746 & 21565 \\
Salah Al-Dean & 6367 & 6119 & 5866 & 5821 & 7634 & 7490 & 8091 \\
Al-Mustanssirya & 10814 & 11162 & 11686 & 11241 & 14886 & 16879 & 17587 \\
Technology & 8137 & 7859 & 7384 & 7824 & 7378 & 7692 & 8990 \\
Technical Inst. & 27808 & 30687 & 34277 & 35572 & 34858 & 32322 & n.a \\
\hline
\end{tabular}

\section*{Source:}

Republic of Iraq, Central Statistical Organization, Annual Abstracts of Statistics, 1981/82 Table 2, P. 4; 1082/83 Table 2, p. 4; 1983/84 Table 2, p. 4; 1984/85 Table 2, p. 4; 1985/86 Table 2, p.30; 1986/87 Table 2, p. 25; and 1988/89, Table 2, p. 26.

Table 2.4
Number of Graduates from Iraqi Universities and Technical Institute for years
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline 1981/82-1986/87 & \multicolumn{6}{|c|}{ Year } \\
\cline { 2 - 7 } & \multicolumn{6}{|c|}{} \\
\cline { 2 - 7 } & \(81 / 82\) & \(82 / 83\) & \(83 / 84\) & \(84 / 85\) & \(85 / 86\) & \(86 / 87\) \\
\hline Baghdad & 5644 & 6400 & 6588 & 7106 & 6661 & 6085 \\
Basra & 1756 & 1829 & 1529 & 1667 & 2867 & 3159 \\
Mosul & 2359 & 2567 & 2413 & 2542 & 1680 & 1826 \\
Salah Al-Dean & 1148 & 1321 & 855 & 825 & 1226 & 984 \\
Al-Mustanssirya & 1721 & 1648 & 1590 & 1826 & 2314 & 1975 \\
Technology & 1443 & 1514 & 1442 & 1431 & 1403 & 1359 \\
Technical Institutes & 8253 & 8786 & 7954 & 10410 & 11951 & 11669 \\
\hline
\end{tabular}

\section*{Source:}

Republic of Iraq, Central Statistical Organization, Annual Abstracts of Statistics, 1981/82 Table 1, P. 4; 82/83 Table 1, p. 4; 1983/84 Table 1, p. 3; 1984/85 Table 1, p. 9; 1985/86 Table 1, p.9; and 1986/87 Table 1, p. 9 。

Table 2.5
Number of the Teachers in Baghdad university for years 1964/65 to 1988/89.
\begin{tabular}{|c|c|c|c|}
\hline Year & \begin{tabular}{c} 
Number \\
of \\
Teachers
\end{tabular} & \begin{tabular}{c} 
Index \\
\(1964 / 65\) \\
\(=100\)
\end{tabular} & \begin{tabular}{c} 
Student/Teacher \\
Ratio
\end{tabular} \\
\hline \(1964 / 65\) & 556 & 100 & 38 \\
\(1969 / 70\) & 761 & 137 & 26 \\
\(1976 / 77\) & 1152 & 207 & n.a. \\
\(1979 / 80\) & 1504 & 271 & 21 \\
\(1988 / 89\) & 2641 & 475 & 21 \\
\hline
\end{tabular}

\section*{Source:}

For year 1964/65 see General Registration Office, Baghdad University, Abstract of Statistic for year 1964/65, Al-Zaman Press, 1965; for years 1969/70, 1976/77, and 1979/80 see Baghdad University, Planning Office, Annual Abstracts of year 1969/70, 1976/77, 1979/80; and 1988/89 Compiled from the "student's records", Statistical Department, University of Baghdad.

Table 2.6
Number of Teachers and Student/Teacher Ratio in Iraqi Universities, 1988/1989.
\begin{tabular}{|l|r|c|c|}
\hline University & \begin{tabular}{c} 
Number \\
Teachers
\end{tabular} & \begin{tabular}{c} 
Student \\
Enrolled
\end{tabular} & \begin{tabular}{c} 
Student/Teacher \\
ratio
\end{tabular} \\
\hline Baghdad & 2641 & 55351 & 21 \\
Basra & 726 & 14803 & 20 \\
Mosul & 1515 & 21565 & 14 \\
Al-Mustanssiriya & 667 & 17587 & 26 \\
Salah Al-Dean & 559 & 8091 & 14 \\
Technology & 419 & 8990 & 21 \\
Al-Anbar & 31 & 355 & 11 \\
AL-Qadissiaya & 46 & 539 & 12 \\
Tikreet & 38 & 160 & 4 \\
Al-Cuoffa & 147 & 2596 & 18 \\
\hline
\end{tabular}

Source: Column (1) from Republic of Iraq, Ministry of Planning, Central Statistical Organization, Annual Abstracts of Statistic 1989, p. 32; column (2) from Table 2.2; and Column (3) Column 2/column 1.
Table 2.7 The Recurrent and Capital Expenditures for The Universities in Iraq for Years 1980-1987
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Year & \multicolumn{3}{|l|}{Oniversity of Baghicad} & \multicolumn{3}{|l|}{University of Mosul} & \multicolumn{3}{|l|}{University of Basra} & \multicolumn{3}{|l|}{Oniversity of Salah Al-Dean} & \multicolumn{3}{|l|}{\begin{tabular}{l}
Oniversity of \\
AL-Mustansira
\end{tabular}} & \multicolumn{3}{|l|}{University of Technology} & \multicolumn{3}{|l|}{Founclation of Techaical Institute} \\
\hline & CAP & CUR & Total & CAP & CUR & Total & cap & CUR & Total & CAP & cur & Total & cap & cur & Total & CAP & CUR & Total & CAP & cor & Total \\
\hline 1980 & 2.0 & 9.5 & 11.5 & 1.3 & 9.0 & 10.3 & 1.0 & 8.0 & 9.0 & 0.9 & 5.3 & 6.2 & 1.2 & 4.3 & 5.5 & 3.4 & 4.5 & 7.9 & 3.0 & 11.6 & 14.6 \\
\hline 1981 & 3.8 & 18.7 & 22.5 & 1.2 & 12.2 & 13.4 & 1.3 & 10.7 & 12.0 & 0.5 & 5.3 & 5.8 & 0.7 & 6.3 & 7.0 & 1.4 & 5.1 & 6.5 & 5.1 & 16.4 & 21.5 \\
\hline 1982 & 2.5 & 13.1 & 15.6 & 2.7 & 12.5 & 15.2 & 0.6 & 9.3 & 9.9 & 1.1 & 6.5 & 7.6 & 0.6 & 6.2 & 6.8 & 0.8 & 5.1 & 5.9 & 1.3 & 20.8 & 22.1 \\
\hline 1983 & 1.9 & 18.7 & 20.6 & 1.1 & 12.6 & 13.7 & 0.5 & 8.8 & 9.3 & 0.4 & 7.4 & 7.8 & 0.1 & 6.2 & 6.3 & 0.1 & 4.9 & 5.0 & 0.4 & 16.4 & 16.8 \\
\hline 1984 & 1.6 & 19.7 & 21.3 & 0.5 & 12.1 & 12.6 & 0.14 & 7.8 & 8.2 & 0.3 & 6.8 & 7.1 & 0.2 & 5.9 & 6.1 & 0.2 & 5.3 & 5.5 & 0.9 & 14.6 & 15.5 \\
\hline 1985 & 3.5 & 21.8 & 25.3 & 0.9 & 12.8 & 13.7 & 0.6 & 9.9 & 10.5 & 1.3 & 7.8 & 9.1 & 0.8 & 6.7 & 7.5 & 1.0 & 5.2 & 6.2 & 2.5 & 19.6 & 22.1 \\
\hline 1986 & 8.2 & 22.9 & 31.1 & 0.9 & 15.4 & 16.3 & 0.6 & 10.5 & 11.1 & 0.9 & 7.5 & 8.4 & 1.6 & 8.2 & 9.8 & 0.5 & 5.6 & 6.1 & 4.1 & 19.8 & 23.9 \\
\hline 1987 & 0.6 & 27.3 & 27.9 & 0.5 & 15.7 & 16.2 & 0.7 & 9.8 & 10.5 & 0.7 & 5.3 & 6.0 & 0.4 & 8.1 & 8.5 & 0.2 & 4.8 & 5.0 & 1.8 & 18.2 & 20.0 \\
\hline
\end{tabular}
Source:
Note : CAP is Capital Expenditures; CUR is Recurrent Expenditures.

\section*{\(\mathbb{C H} \mathbb{A} \mathbb{P} \mathbb{E} \mathbb{R} \mathbb{H} \mathbb{E} \mathbb{E}\)}

\section*{ \(A N \mathbb{R} \mathbb{A} \mathbb{A} \mathbb{S} O \mathbb{R} \mathbb{E} \mathbb{T} \mathbb{R} O \mathbb{F} \mathbb{D} U C A T I O N\)}

\subsection*{3.1 Costsand Benefitsof \(\mathbb{E} d\) ucation}

The costs and benefits of education need to be quantified if researchers are to evaluate the "profitability" of education. Psacharopoulos (1973) wrote, " The cornerstone of practically any analysis in the economics of education is the relationship between benefits and costs associated with different levels of schooling". \({ }^{1}\)

The contribution of education to the economic welfare of an individual and society can be measured in two ways, according to Schultz (1960) and Becker (1964). The two measures are (i) direct benefits, that is the pecuniary value, and (ii) indirect benefits. \({ }^{2}\) Vaizey (1968) stated that the indirect benefits are analogous to 'external economies', which from the standpoint of society "provides its chief justification as a free or unsubsidized public service". \({ }^{3}\) The benefits, both direct and indirect, have two components, that is, private and social benefits. Similarly, there are both private and social costs in education. The identification and evaluation of private and social costs and benefits provide the basic data used to compute the returns to education.

\subsection*{3.1.1 Cost of \(\mathbb{E} d u c a t i o n\)}

Seneca and Taussig (1974) defined costs as "essentially foregone benefits and, therefore, are most fundamentally regarded as opportunity costs. The cost of any economic good or service consists of the foregone

\footnotetext{
1 Psacharopoulos, G., Returns to Education: An International Comparison San Francisco: Jossey-'BaSs, 1973, P. IX.

2
2 See Schultz, To W. "Capital Formation by Education". Journal of Political Economy, 1960, Vol. 68, pp. 571-583; Also see Becker, G. S. Human Capital : A Theoretical and Empirical Analysis with Special Reference to Education. New York: National Bureau of Economic Research, 1964.

3 Vaizey, J. "The return to education". in Bowman, M. J., et al. (eds). Readings in the Economics of Education. Paris: UNESCO, 1968, P. 593.
}
benefit from the consumption of some other good or service". \({ }^{4}\) In other words, the cost of an investment is the benefit that otherwise would be gained from the alternative. It is the opportunity that one loses by selecting one investment option over anther. Colberg, Forbush, and Whitaker (1970) distinguish between "Implicit and explicit cost: the alternative earnings of inhered factors are often called 'Implicit cost'. Hence, deduction of implicit as well as explicit costs from gross income gives 'economic profit'. Deduction of explicit costs alone gives accounting profit". 5

Hansen (1963) stated that the cost of education consists of two variables: (1) total resource costs, and (2) private resource costs. \({ }^{6}\) The concept of total resource costs is similar to the concept of social costs of education. The social costs of education imply total educational costs as incurred by the society as a whole. Private resource costs are incurred mainly by individuals or/and their families who receive the education. Furthermore, there are two other elements - direct and indirect costs.

Therefore, the costs of education include both direct costs (to the school, to the student, to his family) and indirect costs (foregone earnings). To calculate the rate of return, one must have estimates not only of the earnings from education but also of its cost.

\subsection*{3.1.1.1 Private Costsof Education}

The private costs of education consist of direct costs and indirect costs (foregone earnings or opportunity costs of students while attending school). The direct costs of education are defined as the costs that are incurred for purpose of receiving that education. These costs are incurred by individual students and/or their parents, and include items such as tuition fees, books and school supplies, accommodation, and transportation. Weisbrod (1960), Schultz (1960), Woodhall (1987) and others, stress that not all monetary outlays represent real opportunity costs, therefore it is incorrect to include costs which they have been incurred anyway as costs of education. For example, university students will spend considerable amounts on clothes, food, and accommodation during their courses, but such

4 Seneca, J. J. and Taussig, M. K. Environmental Economics. Englewood cliffs, N. J.: Prestic- Hall Inco., 1974, p. /.

5
Colberg, M. R., Forbush, D. R., and Whitaker, G. R. Business economics: Principles and cases. Homewood, Ill: Ricard D. Irwin, 1970, p. 4.

6 Hansen, W. Lee. "Total and Private Rate of Return to Investment in Schooling". Journal of Political Economy, Vol. 71, 1963, P. 139.
maintenance expenditures would have been \(\frac{r}{7}\) quired even if these individuals had not chosen to pursue their education. In the same way Woodhall (1987) pointed out that not all public expenditures on education are social costs. For example, maintenance grants to students are transfers rather than opportunity costs, that is, they are income transfers from one group in society, i.e. tax payers, to another, i.e. students. She also pointed out that such payments do not correspond to alternative opportunities which must be forgone as a result of educational provision. This does not mean that the government can ignore such transfer payments when the level and allocation of public expenditure are discussed. However they do not represent opportunity costs of education. Also they do not represent \(\frac{a}{8}\) diversion of resources from the production of other goods and services. \({ }^{8}\) While foregone earnings are classified as indirect costs, the rest of the costs met from out-of-pocket are referred to as direct costs.

Rogers and Ruchlin (1971) said that most people think of the price of education as being the tuition cost, and possibly, the cost of school supplies and transportation. However, these are just part of one component referred to as the direct cost of education. \({ }^{9}\) The disagreement come when one considers the opportunity cost. For example Vaizey (1968) doubted the usefulness of including the opportunity costs as part of either the private or social costs. \({ }^{10}\) On other hand, Schultz (1971), Blaug (1965, 1970) and others argued for the inclusion of opportunity costs in calculating the rates of return. \({ }^{11}\) Blaug argues that earnings forgone should be included in any estimate of the true economic cost of education, particularly if the purpose is to analyse education as an investment. His grounds for

\footnotetext{
7 Weisbrod, B. A. "Education and Investment in Human capital". The Journal of Political Economy, 1962, Vol. 70, no. 5, p. 123; Schultz (1960) stated that "The cost of living of students and none - students may be put aside because they go on whether young people go to school or enter the labor market and are about the same except for minor items, such as books, extra clothes, and some travel in getting to and from school". p. 573 and see Woodhall 1987, p. 401.

\section*{8 Woodhall 1987, p. 401.}

9
Rogers, D. C., and Ruchline, H. S. Economics and Education: Principles and Application. New York: The Free Press, 1971, p. 40.
}

10 Vaizey Thought that "the inclusion of income foregone opens the gate to a flood of approximation which would take the concept of national income a way from its origin as an estimation of the measurable flows of the economy; if income forgone is added to education costs it must also be added to other sectors of the economy (notably housewives, mothers, unpaid sitters-in, voluntary work of all sorts); and doubtful whether any more useful purpose is served by a statistical exercise of this kind, than could be achieved merely by observing the number of people engaged in education". See Vaizey, J. "The Return to Education". In Bownan Mo Jo, et al. (eds). Readings in the Economics of Education. Pairs: UNESCO, 1968, p. 594.
including earnings forgone are threefold: (1) it helps to explain why the dropout rate after the minimum school leaving age is everyvhere inversely related to income of household; \({ }^{12}\) (2) if forgone earnings are ignored there is a tendency to treat education after the age of 15 or 16 as 'free' which is a 'potent source of irrational planing' and leads to a gross misuse of student time within educational systems; and (3) perhaps the most important point is that it contributions to a massive underestimation of investment in education in national income accounts. \({ }^{13}\) He argues that earnings forgone, are no less 'real' than direct financial outlays, since they represent the value of real resources which do have alternative uses. Although the time of teachers and the use of buildings and equipment are measured directly by "what is put in", the time of the students is measured indirectly by "what is done without", the distinction is one of statistical expediency, not of theoretical principle. \({ }^{14}\) Coombs and Hallak (1987) point out that the opportunity cost concept is also fundamental to any cost-benefit exercise designed to compare the rate of return on investments at different education levels and on investment in alternative fields, such as industry. \({ }^{15}\)

Opportunity cost is not the only area of contention. There are also other cost, areas, such as human capital depreciation, obsolescence, and maintenance, which are not usually included in costs of education. These two areas of contention are further explored below.

\subsection*{3.1.1.2 Opportunity Costs... \(\mathbb{F}\) oregone \(\mathbb{C}\) arnings}

Coombs and Hallak (1987) point out that "since any nation (community or individual) has only a limited supply of economic resources to use in any given period, a decision to use some of them for a specific purpose, such

\footnotetext{
11 Blaug Mo, "The Rate of return on Investment in Education in Great Britain"; The Manchester School of Economics and Social Studies, Vol. 33, 1965. Also see the same author, An Introduction to Economics Education, 1970, p. 49; and see Schultz T. W. "Investment in Human Capital: The KoIe of Education and of Research. (New Yorle: The Free Press, 1971).

12 That is families with low incomes cannot easily afford to forgone the earnings of their children.

13 Blaug M. 1970 Pp. 49-50
14 Blaug M. An Introduction .. 1970, p. 50.
15 Coombs, P. H. and J. Hallak, Cost Analysis in Education: A Tool for Policy and Planning. Published for the World Bank, the Johns Hopkins, University Press, London, 1987, p.1.
}
as education, means sacrificing the opportunity to spend these same resources on something else." 16 For example, the resources devoted to education might be have been used to provide health care or agricultural development, or industrial development. The opportunity costs of education include all the real resources which are devoted to the educational system, and when these cannot be measured directly in money terms, an estimate of their value in alternative uses must be made. Earnings forgone by students when they choose to continue their education rather than seek paid employment is the most obvious example. The real economic cost of education is the real resources of time, books, equipment and buildings which are used in the education process, rather than money which buys them. However, the main difference between the opportunity cost of education and money expenditures is the value of students' time. The foregone earnings are that part of earnings which an individual has to be forego in order to receive certain education, adjusted for unemployment and taxes that would have been levied. Schultz (1963) stated that: \({ }^{17}\)
"Students in secondary schools and beyond, and many of them before they
have completed their elementary school, would be earning their keep and more at jobs suitable to their age and experience. Thus there is here an opportunity in attending school that is equal to the earnings that students forego."

When students are deciding to pursue full-time higher education instead of participating in the labour market, it means that there some is lost income for the individuals who are studying, and also lost production for the economy as a whole.

This assumes that the alternative to education is paid employment. Of course in some cases, students would be unemployed if they were not enrolled in higher education. Also, for younger pupils employment may not be a realistic alternative, either because compulsory schooling makes it impossible, or because there are few jobs open to children. Even in these cases, hovever, the concept of earnings foregone has some relevance.

When measuring the opportunity cost of students' time, the observed earnings of young workers should be adjusted to allow for the probability of unemployment. However, the opportunity cost is not zero even if unemployment rate is high. Some reporters have argued that the existence of unemployment means that the earnings foregone of students' is zero, since a marginal additional worker in the labour market would automatically be unemployed. Ultimately, the same argument is used on the benefit side of the calculation also, since any marginal worker in the labour market

\footnotetext{
16 Coombs and Hallak, 1987, p. 13.
17 Schultz, T. W. The Economic Value of Education. (New York: Columbia University Press, 1963), p. 2/.
}
will be unemployed, the returns to education are zero. Blaug et al. \({ }^{18}\) (1969) argued that this is mistaken. The existence of unemployment will mean that an increased supply of one graduate will marginally lower his/her salary and wage, and increase employment, but that any measurement of the costs and benefits of education should take into account average levels of unemployment when estimating both earnings differentials and earnings foregone. So, in order to give a measure of the true opportunity cost of students' time, earnings foregone are multiplied by the age-specific graduate employment rates.

The forgone earnings of primary-school children in advanced countries are insignificant because of minimum working - age laws. However, in a poor developing country the opportunity cost of attending primary school is substantial, because of the lost agricultural help (and thus, lost agricultural output) provided by children of young ages.

Furthermore, during an economic recession in any country the opportunity cost of schooling declines since employment possibilities are reduced and salaries and wages are depressed. Therefore, investing in education during this period is financially more attractive than investing during a period of "normal" economic activity.

In this thesis the earnings forgone are not adjusted for unemployment probability because the rates of unemployment among secondary school leavers and university graduates are very close (in the 1987 Census of Population in Iraq, the unemployment among secondary school graduates were 3.5 and \(3.3 \%\) among university graduates), i. e. the effect of unemployment rates on calculated rates of return is insignificant. \({ }^{19}\)

Cohn (1972) stated that " Time spent by students in school or in preparation for school is not costless. So long as jobs are available for individuals with no or relatively little education, some income could have been earned had the student chosen to work rather than go to school". 20 Opportunity costs of education for individuals are measured by the income that they would be received had they been employed, and for society as a whole, the student's foregone earnings represent the production foregone by society. Foregone earnings are a large element in the total costs of university education. Schultz (1963), Maglen and Layard (1970), and the Robbins Committee (1972) estimated foregone earnings as 59 per cent, 60 per cent and 42 percent of total costs of education respectively. \({ }^{21}\) Foregone earnings may represent about 100 per cent of private costs, because most students receive grants to cover their fees and expenditures on books and

\footnotetext{
Blaug Mos. Layard P. R. Go and Woodhall, M. The cases of Graduate Unemployment in India, London, Allen Lane, The Penguin press, 1969.

19 Republic of Traq, Ministry of Planning, Central statistical Organization, The 1987 Census of Population in Iraq, 1988, Table 32, pp. (125-129).
}
transportation.
Foregone earnings occur only in the secondary, college, and higher education age groups, with the amount of foregone earnings generated by the college age group being higher than those at the secondary level. Also Vaizey (1969), Cohn 1972, Sheehan (1973), and others state that for compulsory education there are no foregone earnings as long as the laws forbidding the employment of children cover all children of less than school leaving age: In developed countries this is normally the case (except for part-time employment). 22 In Iraq all individuals under the age of eighteen are prohibited by the law from obtaining jobs.

Schultz (1971) observed that the following information is required to calculate foregone earnings:
(1) the full earnings opportunity of students. That is, the amount the "student" would earn if he were participating in the labour force instead of attending school during the year;
(2) the earnings the students realize while attending school; and
(3) the actual foregone earnings are then found by subtracting (2) from (1). \({ }^{23}\)

In calculating foregone earnings, the incidence of unemployment is based on the assumption that the rate is extremely high among young workers. \({ }^{24}\) In addition, the fact that students usually attend school for only 40 weeks of the year must be considered. Another factor which economists agree must be considered is that many students may work part-time during school; however, whether such part-time earnings should be deducted from estimated foregone earnings is questionable. Cohn (1979) maintains "this phenomenon is probably most serious in the estimation of foregone earnings for students in THEs. \({ }^{25}\)

20 Cohm, R. The Economics of Education. Toronto: D C Heath, 1972, p. 94.
21 See Schultz, T. W. The Economic Value of Education. New York: Columbia University press, \(1963, \mathrm{p} .29\). Also see Maglen Lo and Layard R. How profitable is engineering education? Higher Education Review, 1970, Vol.2, no. 2, p. 59.

22 Vaizey, J. The Economics of Educational Costing, 1969, p. 75. Also see Cohn E. The Economics of Education. Toronto: D. C. Heath, 1972, p. 94. Sheehan Jo The Economics of Education. (London: George Allen and Unwin, 1973), P. 36.

23 Schultz, To Wo Investment in Human Capital: The Role of Education and of Research. (New York: The Free Press, 1971), ए. 108.

24 Rudolph C. Blitz, The Nation's Educational Outlay in Economics of High Education, (ed.) by S. Mushkin (Washington, D. C.: U. S. Department of Health, Education and Welfare, 1963), p. 155.

Foregone earnings have been found to be different for different levels of education，region of employment，and social classes in many countries． Jallade 1977 and Psacharopoulos 1973 findings bear this out．\({ }^{2} 6\) Furthermore，minimum wage laws and the level of employment affect the level of foregone earnings．Consideration of the unemployment rate，particularly in less developed countries can be even more important．Okigbo（1966） writing about the experience of Nigeria，stated that in a region of extreme underemployment it would be incorrect to add the earnings foregone by students to the cost of education．He added that for most pupils the alternative to remaining in school is idleness． 27 Schultz（1971）thought differently．He said that the value of children in production and household activities is high even at a tender age in poor countries． 28

Barsby（1972），on the other hand，argued that in calculating opportunity costs，the＂vacuum＂effect，that is the number of jobs vacated by students，is not usually taken into account．He added，＂To the extent that the vacuum effect operates，opportunity costs for society are reduced＂．However，the opportunity costs for the individual is not reduced because the individual does not receive any of the benefit accruing to the previously unemployed workers．Barsby 1972 stated that＂The vacuum effect generally is assumed to be zero，at least partly because of the difficulties encountered in trying to measure it＂。 29

The other unresolved problem is，the reverse vacuum effect．That is what happens if all the students decide to seek employment instead of attending school？Unless the proportion of students is small compared to the labour force，the effect could be very significant and may result in reduced wages and thus reduced the opportunity costs．However，one could argue that the situation in which all student seek employment at the same time is unrealistic，and should not be a factor in considering foregone earnings．

25 Cohn，E．The Economics of Education．Cambridge：Ballinger Publishing Co．1979，p． 72.

26 Jallade Jean－pierre，Basic Education and Income Inequality in Brazil： The Long Term View．World Bank Staff Working Paper No．268，Washington，D． C．：The World Bank，1977．AIso see Psacharopoulos，G．1973．pp．125－128．

27 Okigbo，P。N．C．＂Criteria for Public Expenditure on Education＂．In Robinson，E．A．Go and Vaizey J。E．（eds．）．The Economics of Education． New York：St．Martin＇s press，1969，pp．479－494．

28 Schultz，T．H．Investment in Human Capital：The Role of Education and of Research．New York：The Free Press，1971，P．103．

29 Barsby，S．L．Cost－Benefit Analysis and Manpower．Toronto：D．C． Heath， 1972 ，p． 15.

Bowman (1969) disagreed with the concept of the vacuum effect or its reverse. She observed that those who consider the question of throwing all the students on to the labour market at once fail to point out the effect of throwing all teachers on the labour market at once. Also she stated the concept of the vacuum effect has two methodological - conceptual fallacies: (1) it overlooks the fact that foregone earnings are like all prices in measuring the value of a good or service, and (2) it confuses which measures are proxies for which underlying variable or concept in a particular problem. She went on to say, "In investigating resource allocation, which requires comparison of one alternative with another, 'foregone earnings of students' measures the alternative properly". \({ }^{30}\)

In this study, the vacuum effect or its reverse is not considered and the suggestion given by Schultz (1971) is, however, applied. \({ }^{31}\) Also the foregone earnings are adjusted by ability.

\subsection*{3.1.1.3 Depreciationg. Obsolescence, and Maintenance Costs}

Human capital has characteristics similar to physical capital in that it is subject to depreciation, obsolescence and maintenance costs. The depreciation of human capital is real. Klevmarken and Quigley (1976) argue that the existence of retirement alone points to this conclusion, but the precise level of age-related depreciation probably varies with an individual's occupation. \({ }^{32}\) Klevmarken and Quigley (1976) and Stoikov (1975), and others thought that the depreciation of human capital may also be affected by obsolescence of skills and knowledge and/or deterioration of mental and physical capacities. \({ }^{33}\) Schultz (1971) had previously argued that advances in knowledge, which become a source of new skills tend to make the skill of older workers obsolete. \({ }^{34}\)

The other source of deterioration of human capital is non-use. Long periods of unemployment could be one cause of the deterioration of skills. Stoikov (1975) reported, "the non-use of human capital for a lengthy period of time may lead to a serious deterioration of skills, knowledge, good working habits, etc." \({ }^{35}\) Schultz (1971) expressed a similar view when he

\footnotetext{
30 Bowman, M. J. "Economics of Education". Review of Educational Research
} 1969, vol.39, no. 5, p. 645.

31 Schultz, T. Wo, 1971, P. 108.
32 Klevmarken A. and Quigley J. M. "Age, Experience Earnings and Investment in Human Capital". The Journal of Political Economy, 1976, Vol. 84, no. 1, p. 49.
said, "Educational capital deteriorates when it is kept idle. Thus unemployment impairs the skills and associated knowledge that a worker has acquired". \({ }^{36}\) But what about the cost of maintenance of human capital?

It is a common practice for people to invest in themselves at work places or through informal programs to maintain their skill and knowledge to be able to adopt to new demands. Klevmarken and Quigley (1976) observed that individuals invest first in length and type of schooling and, after entering the labour market, they make additional investments in training. \({ }^{37}\) Similarly, Shaffer (1968) argued that the maintenance cost of education needs to be considered in human capital investment analysis because knowledge and training become obsolete overtime if not maintained. \({ }^{38}\)

Conceptually, all the above categories of private costs need to be taken into account in order to evaluate the rate of return to education. However in practice, the values of certain costs are difficult to determine. Therefore, in this study, the directly measurable costs which can be identified in one field survey and those obtainable from relevant documents are included. Unemployment data were needed to adjust forgone earning. Intangible costs, such as depreciation, obsolescence, and maintenance costs of human capital, which are expected to occur during the working lifetime of individuals, are not included. The advice given by Klevmarken and Quigley was taken for this study especially in as far as depreciation of human capital is concerned. They suggest that if one assumes that the depreciation rate is constant, knowledge of the retirement age and the rate of return is sufficient to estimate a gross investment profile constant with any depreciation rate. \({ }^{39}\)

\footnotetext{
33 Klevmarken A. and Quigley J. M. 1976, p. 56. Also see Stoikov, Vo The Economics of Recurrent Education and Training. Geneva: Internatioñal Labour Office, 19/5, P. 38.

Schultz, T. W. 1971, p. 108.
35 Stoikov, V., 1975, p. 43.
Schultz, T. W., 1971, p. 36.
Klevmarken A. and Quigley J. M. 1976, pp. 48-49
Shaffer, H. G. "A Critique of the Concept of Human Capital". In Blaug M. (ed.). The Economics of Education 1, London: Penguin Borks 1968, pp. 45-57.
}

39 Klevmarken, A. and Quigley J. M. 1976, p. 49.

\subsection*{3.1.1.4 Social Costsof \(\mathbb{C}\) ducation}

The social costs of education are the total costs of education. They refer to all costs incurred by students and/or their families and society at large, except tuition and other fees which are considered as transfers to society instead of expenditures from the standpoint of society. Norris (1969) stated, "To private outlays is added expenditure by the state on education: Thus in calculations that have been made the social costs consist of educational cost incurred by individuals plus educational cost incurred by the state plus the opportunity costs incurred by individuals". 40 Thus the private costs become part of the social costs, but foregone earnings are taken before tax. The proportion of the costs borne by the public alone compared to that part borne by the individual varies from one nation to another. In a country where public supported mass secondary education is practiced, the proportion that is borne by the public alone will be relatively large. The costs of education in Iraq that are borne exclusively by society include salaries for the educational personnel, rental values of the school land and buildings, the rental value of the capital outlays and depreciation.

Social costs (total resource costs) include: "(1) school costs incurred by society, that is, teachers' salaries, supplies, interest and depreciation on capital; (2) opportunity costs incurred by individuals, namely income foregone during school attendance; and (3) incidental school-related costs incurred by individuals for example, books and travel". 41 Therefore, in addition to the private costs which are incurred, the social costs include the following direct costs: \({ }^{42}\)
(1) the direct salary and the allowances paid to teachers and non-teachers;
(2) provident funds and pension fund contributions;
(3) organizational and administrative costs of the educational system, both salary and non-salary;
(4) teacher-education-costs, both salary and non-salary;
(5) facilities, services, and maintenance costs of the school system;and
(6) pupil welfare costs, including expenditure on school meals, resident

\footnotetext{
40 Leite, M. et al., The Economics of Educational Costing, Vol IIIA: Capital and Returns in Education. Lisbon: lstito Gulbenkian Deciencia. 1969, Chapter VI, pp. 89-90.

41 Hansen, \(W_{0}\) Lee "Total and private Rate of Return to Investment in Schooling". Journal of Political Economy, 1963, Vol. 71, no. 2, p. 130.

42
Hallak, J. Some Methodological comments on compiling unit costs and their utilization in educational planing paris, unESCO: IIEP, 1966 (limited circulation)
}
hostel services and bursaries to pupils.
Also, the opportunity cost of students' time must be added as an indirect cost. Cost of depreciation and/or implicit interest on school buildings must be added. In this study, the interest implicit on the cost of school buildings which are construction by the five years planning, is employed, whereas the depreciation for the buildings purchase is used.

As indicated earlier, the intangible costs are not included in this study. According to the previous discussion, the private and social costs of education are summarized in Table 3.1 (p. 40).

As pointed out in chapter one, ascribing all of the total social costs of education to investment may not seem logical. Social benefits from secondary school are expected to be a great deal more than the direct monetary return. Schultz (1968) argued that only half of the total cost of secondary schooling should be considered as investment. He said that from the social point of view, the other half should be considered as expenditure to meet other political, social and cultural goals. Schultz did not regard this same argument as applicable to private costs, because individuals are assumed to incur the costs of education mostly to maximize their income. \({ }^{43}\) However most studies assume that total private and social costs of education are investment. Similarly, this study assumed the total private and social costs to be investment in evaluating the "profitability" of various subjects of university education in Iraq.

\subsection*{3.1.2 The \(\mathbb{B}\) enefits \(\mathbb{F r o m} \mathbb{E} d u c a t i o n\)}

Seneca and Taussig (1974) define the benefits of any good or service as the "market prices at which consumers show themselves willing to buy them". 44 Herfindahl and Kneese (1974) mention two methods for estimating benefits. "The first one is to make actual estimates of willingness to pay for the output in the sense of estimating an actual demand function; the second one is to calculate the alternative cost of achieving some projected output". 45

Analysis of any investment always consists of estimating the benefits

\footnotetext{
43 Schultz T. Wo "Investment in Human Capital". In Blaug, Mo (ed.). Economics of Education 1. London: penguin Books, 1968, p. 299.
}

44 Seneca, Jo Jo and Taussing M. Ko Environmental Economics. Engelwood Cliffs, N. J.: Prentice-Hall, Inc., 1974, p. 6.

45 Herfindahl, 0. C. and Kneese, A. U. Economic Theory of Natural Resources. Columbus: Charies E. Merrill Publishing Co., 1974, p. 246 .
Table 3.1 Element̀s of Social and Private Costs of Education

to be derived from it and the cost of attaining those benefits. Cohn (1972) stated that although it is quite difficult to measure the costs of education, it appears that the benefits - while significant - are entirely unmeasurable. \({ }^{46}\) Turvey and Prest (1965) concluded from their study "Cost-benefit analysis: A Survey" that in cost-benefit study, the benefit side poses more problems than the costs side. They made the distinction between the enumeration and the evaluation of the benefits. As far as enumeration goes, when there are many diverse types of benefits from a project and/or many different beneficiaries, it is difficult to list them all and to avoid double counting. On the evaluation of benefits, they listed several difficulties. First, is measurement of surpluses which immediately leads into the measurability of utility of money to the individual; second, it is necessary to go beyond the measurement of benefits on the basis of market prices and make allowances for imperfections, externalities and so on; third, the problem of evaluation is to choose an appropriate discount rate; and fourth, how should one allow in any systematic fashion for uncertainty. \({ }^{47}\)

Most of the writers on education have limited their analysis to the direct returns to the individual. They consider the after-tax lifetime earnings differentials of people who received different amounts of education as the private gains from schooling. Analysis is usually limited to formal education and disregards training on the job and vocational education. \({ }^{48}\) In calculating social returns to education most of the authors consider, "as a first approximation" the before-tax lifetime earnings differentials of individuals with varying levels of schooling.

Education not only benefits the student through consumption and investment opportunities, in addition, a large number of external effects expand the range of educational benefits. Weisbrod (1966) determined three types of effects: those that increase production possibilities (such as increased labour skills); those that help to reduce costs (such as reductions in crime and law enforcement needs); and those that enhance

\footnotetext{
46 Cohn, E. The Economics of Education. Lexington: D. C. Heath and Co. 1972 , p. 125 Also, many authors believe that no reasonable measure of educational benefits is possible. See, for example H. G. Shaffer, "Investment in Human Capital: Comment". American Economic Review, 1962, pp. 1026-1035; J. Vaizey, The Economics of Education. (London: Faberand Faber, 1962, Ch. 3 ; and \(P\). \(P_{0}\) Streeten, The Coefticient of Ignorance", Bulletin of Oxford University Institute of Economics and Statistics, 1963, p. 120.

47 Turvey, R. and Prest, A. R. Cost-Benefit Analysis: A Survey. The Economic Journal, 1965, vol. 75, p. 729.

48 However see, Mincer, J. "On-The-Job Training: Costs, Return, and Some Implication". The Journal of Political Economy, Supplement, 0ct. 1962, pp. 50-79.
}
earnings and welfare. Therefore, education can be divided mainly into private benefits from education and social benefits from education. Private benefits from education are derived from the greater income and reduced prospect of unemployment. Social benefits from education are derived from the fact that education provides both external and intergenerational benefits. One group of beneficiaries from education is employers. Education affects tax-payers in general. Lack of education leads to employment difficulties, and possibly to crime, and so raises the cost of crime prevention, law enforcement and social unrest. The nation as a whole gains from education through the process of economic growth. Further, education itself brings about a stronger democracy. \({ }^{49}\)

Weisbrod (1964) \({ }^{50}\) classified the benefits of public education under two categories: (1) extra benefits to educated persons (or benefits internal to the student) and (2) benefits of education external to the student. He divided the former into four categories, which are as follows: 51
(1) the financial option return, which is the value of the opportunity to obtain extra education and the reward accompanying it. For example, the decision to obtain secondary education includes not only additional earnings but also the value of the option to follow university education. Weisbrod (1964) said that the value of the option to pursue additional education depends upon (a) the probability of its being exercised and (b) the expected value, if exercised. 52 According to this concept, Veisbrod

49 Weisbrod, B. A. "Present Values of Lifetime Earnings for Deferent Occupation". The Journal of Political Economy, Dece. 1966, vol. 74, no. 6, pp. 556-573.

50
Weisbrod, B. A., External Benefits of Public Education: An Economic Analysis. Princeton, \(N\). J.: Industrial Relations Section, Princetion University, 1964, p. 21.

51 Hirsch et al (1964) classified the benefits in a different way. These authors divide the benefits of public education into the following categories.
(1) direct long-run benefits (e.g. increased earnings, increased satisfaction).
(2) direct shot-run benefits (e.g. increased income of the mother for whom school provides a "baby sitting" service, satisfaction gained by parents on account of the education of their children).
(3) indirect long-run benefits (tax reduction for non-student families because educated people have higher income and pay more tax, increased earnings of co-workers, informal education in the students future homes, reduced expenditure on maintenance of law and order, improved conditions of living of neighbours, improved supply of skilled personnel, creation of an informed electorate).
(4) indirect short-run benefits (tax reductions for non-student families resulting from the incomes of students' working mothers).

See Hirsch, W. Zo, Segelhorst, E. Wo, and Marcus, Mo Jo Spillover of Education Cost and Benefit. Los Angeles: Institute of Government and Public Affairs. University of California, Los Angeles, 1964, p. 263.
(1964) found that the option value of secondary schooling in The United States in 1939 increased the rate of return on investment in secondary school from 14 to 17 per cent. \({ }^{53}\) Moreover, education provides other financial options to individuals e.g. the widened variety of job opportunities. That is, education may provide opportunities for the recipient to choose among jobs that provide higher pay and/or qualify the individual for advanced on-the-job training that may provide higher pay. It was assumed that the more education a person has, the more on-the-job training he is likely to obtain and more likely he is to get more monetary returns. If this assumption holds, the value of this option is captured in the direct earnings stream.
(2) the non-monetary "opportunity option" involving the broadened individual employment choices which education permits. To some extent educated people may prefer a job which carries relatively less salary but has more non-monetary benefits like enhanced leisure, greater security, etc.
(3) the hedging option. Weisbrod (1964), Cohn (1972), Bowman (1970) and others argue that the hedging option consists of the "increased ability to adjust to changing job opportunities" due, for example, to technological changes. 54 That is, education provides opportunities for "hedging" against the vicissitudes of technological change and the obsolescence of skills. Weisbrod (1964) argues that "education may be viewed as a type of private (and social) hedge against technological displacement of skills". 55 Those who have more education are likely to adjust to new technology, and are likely to reap the higher pay which new technology has made possible.

The benefit from the 'hedging' option is likely to be reflected in the earnings of the individuals. In other words, part of the direct monetary return of the education is due to the hedging option.
(4) the non - market return. Cohn (1972) stated that the non-market option arises from "the fact that with education an individual can perform a

\footnotetext{
52 Weisbrod, B. A., 1964, pp. 15-39. Also see Weisbrod, B. A. "Education and Investment in Human Capital, The Journal of Political Economy, Oct. 1962, pp. 102-123. Mincer, J. "On-The-Job Training: Cost, Return, and Some Implication". The Journal of Political Economy, 0ct. 1962, pp. 50-79 Show (table 1, 2) that the extra education increases the opportunities for additional training on the job.

53 Weisbrod, b. a., 1964; pp. 140-141.
54 Weisbrod, B. A., 1964, pp. 23-24; see also Cohn E. 1972, p. 130; Bowman, Mo J. "Education and Economic Growth". in Johns R. Loo et al (eds.). Economic Factors Affecting of Edu

55 Weisbrod, B. A., 1964, p. 23.
}
variety of activities that he could not have done without it". 56 For example, Weisbrod (1964) estimated that the market value of the personally filed income-tax return in the United States in (1965) was \(\$ 250\) million. This is an example of a saving which is attributed to education. Weisbrod said that if this service were provided through the market, it would be priced and included in national income. \({ }^{57}\) This particular return to society is not included in this study because of difficulties of getting data.

While the above benefits of education directly affect individuals, they are also social benefits. Education has other benefits external to the person receiving education. Some of these external benefits are briefly mentioned below.

Weisbrod (1964), Bowman (1964), Thias and Carnoy (1972), Davis (1970), and others argue that not all education generated benefits accrue to the student; there are other people who profit from his education. 58 These benefits can be separated according to the categories of persons who receive these external benefits. 59
(1) residence-related beneficiaries, include the current and future family of the person receiving education, his/her neighbours, and the local tax-payers. The current family benefits accrue when the children go to school and their mothers can then go to work. The future family benefits accrue when the students become adults and their children receive informal education at home. Benefits from one's education also accrue to one's neighbours if educated people have better social value and behavior-norms. Local tax-payers may benefit if law enforcement costs are reduced.
(2) employment-related beneficiaries include those who have an employment relationship with the person receiving education. These beneficiaries
\(\overline{56 \text { Cohn, E., 1972, p. } 130 .}\)
57 Weisbrod, B. A., 1964, pp. 24-25.
58 Weisbrod, B. A., 1964, pp. 28-34; Bowman W. G. Economic Aspects of Education: Three Essays. Princeton, N. J.: Industrial Relations Section, Princeton University, 1964, p. 22; Thias H. H. and Carnoy M. Cost-Benefit Analysis in Education: A Case Study of Kenya. Baltimore, Marryland: the Johns Hopkins Press, 19/2, p. 6; Davis, Jo Konnie, "The Social and Economic Externalities of Education". in Johns R. L. et al (eds.) Economic Factor Affecting the Financing of Education. Education Finance Project, 1910, p. 65.

59 Weisbrod, B. A., 1964, pp. 28-35. The indirect benefits of education are also discussed extensively by Blaug Mo, "The Rate of Return on Investment in Education in Great Britain". The Manchester School of Economics and Social Studies, vol. 33, 1965, pp. 234-241.
include employers, and his fellow workers. The education of one worker may have favourable external effects on the productivity of others because of the people working with him/her are likely to get some kind of informal education from him. Furthermore, employers are likely to capture extra benefits, because market imperfections may result in a failure of the employer to pay the educated worker for his full productivity (marginal revenue product).
(3) society in general.

This category includes all residual benefits which are not included in the previous two categories. The benefits included in this category are the inter-generational effects of public education and many other advantages which make possible diffusion of innovation, a network of widespread communications, a banking system, etc. For example, the contribution of education to the improvement of income distribution is an external benefit.

Weisbrod (1964) suggested that society in general stands to gain from more education. For example, the more people who are literate and educated, the greater the demand for books, checking accounts, newspapers, etc. As products and services of these types are typically subject to significant economies of scale, increased demand will lead to mass production and distribution of these products and services at lower prices. Also, the more people are engaged in research, the greater the benefits to society in the form of inventions and innovations for which the inventor cannot generally collect all the fruits of his labour. \({ }^{60}\) The direct and external benefits of education identified above are summarized in Table 3.2 (p. 46).

The list of extra private and social benefits of education above is not in any way complete, but it shows that educational benefits go far beyond the direct monetary returns on educational investment. As a rule, all of the benefits must be included in order to evaluate the educational investment, but as Bowen (1964) and Thias and Carnoy (1972) have pointed out, by their nature the indirect benefits are extremely difficult to measure. 61 Therefore, this study was limited to the direct lifetime earnings of workers who have had university education.
\(\overline{60 \text { Heisbord B. A., 1964, pp. 33-24 }}\)
Bowen, W. Go Economic Aspects of Education: Three Essays. Princeton, N. J.: Industrial Relations Section, Princeton University, 1964, pp. 22-23. also see Thias H. H. and Carnoy, M. Cost-Benefit Analysis in Education: A Case Study in Kenya. Baltimore, Maryland: the Jhons Hopkins Press, 1972, p. 6 .
Table 3.2 glements of Social and Private Benefits of Education


To the extent that the non-monetary benefits classified above are not give any value, the rate of return is underestimated. On the other hand, many authors believe that earnings are influenced by factors other than education. Koulourianos (1967) and others have pointed out that the estimates of educational returns on the basis of ceteris paribus will overestimate the returns.

A category of external economy not easily estimated is the contribution of education to the general advance of human knowledge. It is very difficult to calculate even the pure economic contribution of this factor to our welfare, because it is widely spread and affects in many ways all sectors of the economic system. As one author puts it "nor is it just research in natural science that has important economic consequences.. it would be interesting to know the magnitude of the increase in real income that has stemmed from our improved understanding of how to prevent large scale unemployment". 62 Moreover, education increases rationality which is a basic condition for an efficient allocation of resources.

All who work on this subject acknowledge the importance of education-generated external benefits and admit that, to the extent that these benefits are not taken into account, social returns to education are undervalued. This underestimation is implicit in any study that relies, of necessity, upon the before-tax earnings differentials as a "first approximation" to social return on education. 63

\subsection*{3.1.2.1 Age-Earnings Streamsand Educationallevels}

In order to calculate a rate of return to education, age - earnings profiles must be established. This is the relationship between education and earnings for various age groups. Woodhall (1987), Taubman (1976), Psacharopoulos \((1973,1975)\), Blaug (1972), and others \({ }^{64}\) state that it is a

Bowen William Go "Assessing the Economic Contribution of Education: An Appraisal of Alternative Approach". In OECD, 82, p. 190.

63 Becker G. S. Human Capital: A Theoretical and Empirical Analysis With p. II8.

64 Woodhall, M. "Earnings and Education". In Psacharopoulos, G. (ed.) Economics of Education. 1987, p. 209; Taubman, \(\mathbf{P}_{\text {。 "Earnings, Education }}\) Peretics, and Environment". Journal of Human Resources, Vol. XI, No. 4 , 1976a, p. 447; Blaug, M. The Correlation Between Education and Earning: Psacharopoulos, Return to Education: An International Comparison. (San Francisco: Jossey-Bass, 1973), p.2; Psacharopoulos, Go Earning and (Footnote continued)
statistical fact that workers with more education earn higher wages or salaries than those who have completed less education, or have lower educational qualifications. In order to throw light on the relationship between education and economic growth, to evaluate education as an investment in human capital, to examine the relationship between education and the distribution of income, and to measure the private and social rates of return to education, the relationship between education and earnings and age has been widely applied.

However, earnings differentials are not due to education alone but to factors such as innate ability, background of parents, student motivation, and the like. Also there are other factors such as historical and institutional factors and trade union bargaining pare all of which help to determine the pattern of earning differentials. Psacharopoulos (1973) argued that: 65
"It would be naive to believe that earning differentials are totally
dependent on the level of education received. At least part of the earnings differential must be attributed to factors like ability, social class, sex, motivation, origin and the like."

Woodhall M. (1987) \({ }^{66}\) stated that there is considerable disagreement between economists who argue that education is a form of investment in human capital, and that techniques such as cost-benefit analysis should be used as a guide to resource allocation, and those who argue that education merely identifies the most productive workers.

Generally, education and earnings are closely related. Blaug summaries the evidence as follows: 67
"we begin by noting a remarkable fact of life: between any two groups of individuals of the same age and sex, the one with more education will have higher average earnings than the one with less, even if the two groups are employed in the same occupation category in the same industry. The universality of this positive association between industryo and earnings is one of the most striking findings of modern social science. It is indeed one of the few safe generalization, that one can make about labour markets in all countries, whether capitalist or communist."

\footnotetext{
64 (continued)
Education in OECD Countries, Organisation for Economic Co-operation and Development, 1975, p. 10.

65 Psacharopoulos, Ge Return to Education: An International Comparison (San Francisco, Jossey - Bass, 1973), P. 28.

66 Woodhall, M. 1987, p. 209.
67 Blaug, M. The Correlation between education and earnings: What dos it signify? Higher Education, 1972, Vol. 1, no. 1, p. 54.
}

Data on earnings can be collected on a time-series basis, which shows the pattern of earnings over time, or on a cross-section basis, which shows how earnings vary with the age, educational level, and other personal characteristics of workers, at a single point in time.

Woodhall (1987) \({ }^{68}\) observed that there are three types of analysis of the relationship between earnings and education:
(1) Cost-benefit analysis which is used to measure the relationship between the cost of acquiring education and extra lifetime earnings that can be expected as a result of investing in education. This type of analysis relies on cross-section data on earnings.
(2) Type of analysis to measure the contribution of education to economic growth through improvement in the quality of the labour force. This type of analysis requires time-series data.
(3) Study of the earnings function. This attempts to explain what determines earnings and variations in earning power, and compares the relative importance of education and other factors, such as sex, race, ability, family background, and occupation in determining wages or salaries.

Data on average annual earnings of workers with different levels of education to construct age-earnings profiles which show the expected lifetime earnings associated with different amount or types of education, are used in all three types of analysis.

Therefore, an estimate of the additional lifetime earnings of educated workers are needed. These data should be collected by comparing the earnings of educated and less educated workers throughout their working lives. The total lifetime earnings differential would then provide an estimate of the higher productivity of educated. These age-earning profiles show that the average earnings of samples of workers are closely correlated with both the age and educational attainment of the workers, even though for any individual person the relationship may be less close. Cross-section data are usually utilized by estimating average age-earning stream for workers of different level of education. Such use is valuable because "the cross-section data show the current earnings of worker of successive ages, and thus an average lifetime age-earning profile". 69

The age earnings profiles of workers with different levels of education or lengths of 70 schooling or types of education share four general characteristics: 70

\footnotetext{
68 Woodhall, M., 1987, p. 209
}

69 Woodhall, Mo Cost-Benefit Analysis in Educational Planning. Paris: UNESCO, 1970, p. 19.
(1) earnings are highly correlated with education, at every age the highly educated earn more than workers with less education;
(2) earnings increase with education up to a peak at middle age and then flatten or even decline, up to the age of retirement;
(3) the earnings profiles of highly educated workers are steeper than those of the less educated; the peak earnings of an educated worker are higher, in relation to initial earnings, than the peak earnings of the less educated; and
(4) the age at which earnings reach their peak is later for highly-educated workers than for the less educated; in a few cases the earnings of highly qualified workers continue to rise until retirement.

These four characteristics mean that over a lifetime the total earnings of educated workers are considerably higher than the lifetime earnings of these with very little or no education, but they also mean that it is important to look at total life earnings of workers, rather than earnings differentials at one point in time, since these may seriously underestimate the total financial benefits of education. The age-earnings profiles of two groups of workers with different levels of education, for example university graduates and secondary school leavers, show the earnings differential of the graduates throughout their working lifetime, and this provides a measure of extra lifetime income associated with higher education.

As mentioned above in order to measure the benefits of education, time-series statistical data should be used. This would involve collecting data over the whole of the working life, a period of forty years or more. However, this kind of data are not available in most countries, so that it is necessary instead to rely on cross-section data, i.e. snapshot evidence of cross-sections of the society at one point in time. Such cross-section data may be unduly affected by short-term cyclical changes in the economy, ignore future changes in the demand and supply of educated manpower and fail to capture the effects of trends over time, the major one of which in most countries is the incidence of economic growth. In other words cross-section data do not reflect the fact that future earnings are likely to rise as a result of economic growth, so that life-time earnings will be higher than those calculated from cross-section data. Economists (Morris \({ }^{71}\) 1973, Ziderman \({ }^{72}\) 1973, Psacharopoulos \({ }^{73}\) 1973, Freeman \({ }^{74}\) 1977, Blaug \({ }^{75}\) 1965)

\footnotetext{
70 Woodhall, M., 1987, p. 210. Also see the same author, 1970, p. 19.

71
72 Ziderman, A., "Rate of Return on Investment in Education: Recent (Footnote continued)
}
have also discussed this problem and suggested that real earnings may be expected to rise over time and therefore it is necessary to adjust the cross-section educational earnings profiles to approximate to the lifetime earnings patterns of individuals aging over time.

It might be thought that since earnings may be expected to grow in real terms for both qualified and unqualified workers that this will not affect the rate of return calculation. However, each cohort will experience a rise in real income year by year which will not be offset by rising forgone income. The expected rate of return will therefore be higher.

There are two ways of rectifying this. First, future increases in productivity can be compensated for by multiplying the earnings of an individual at a given age by a factor reflecting the productivity change. For example, if the productivity of university graduates is expected to rise at a rate equal to (y) per year, then the earnings at age ( \(t\) ) a sampled by the cross-sectional profile should be multiplied by a factor equal to \((1+y)^{t-\alpha}\) where \(\alpha\) is the age of at which the university graduate enters the labour force. The second way, suggested by Psacharopoulos \({ }^{76}\) (1973), to adjust for productivity change is simply to add the expected rate of productivity growth to the estimated rate of return. That is if the estimated rate of return on the basis of the unadjusted age-earnings profile is ( \(\mathbf{r}\) ), then the expected rate of return adjusted for productivity change is equal to \(r+y\).

Becker \({ }^{77}\) (1974) for the U.S.A., suggested adding the annual expected increase in real income per capita and Ziderman (1973) for the U.K., "conservatively" added \(2 \%\) per annum to all incomes, as did Blaug, Layard and Woodhall (1969) for India, Freeman (1977) \({ }^{78}\) for U.S.A., added \(1.5 \%\) to

\footnotetext{
72 (continued)
Results for Britain", The Journal of Human Resources, Vol. 8, no. 1, 1973, pp. 85-97.

73 Psacharopoulos, Go, Rates of Return: An International Comparison. (Elestvier Scientific Pubulishing Company, London, 19/3).

74
Preeman, R. B. . "The Decline in the Economic Rewards to College Education", Review of Economics and Statistica, Vol. LIX, No. 1, 1977, pp.18-29.

75 Blaug Mo, "The Rate of Return on Investment in Education in Great Britain". Manchester School of Economic and Social Studies, Manchester, (September, 1965) pp. 205-251.

76
Psacharopoulos, Gos Rates of Return ...... 1973.
77 Becker, G. Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education. (princeton Universty press), 1974.
}
adjust the cross-section estimated for potential increase in real income in future by a growth factor \(1.5 \%\) per annum, Wilson \({ }^{79}\) (1980), for Britain, added \(2 \%\) per year, to the earnings differentials as a growth factor. The effect of such an adjustment on the final computation is considerable; further, to add a fixed percentage adjustment in this way assumes that income differentials will remain constant over a period of some forty years, which seems very unlikely. 80 on the other hand, an advantage with using cross-section data is that it is not necessary to correct for the changing effects of inflation over time. Some time-series data has recently become available and Psacharopoulos \({ }^{81}\) (1985) found evidence that over time the rate of return to education declined slightly in developing countries but remained relatively stable in developed countries.

Most countries, including Iraq, do not have time-series (at least forty years) data on the earnings of samples of educated and less educated employees. Moreover, estimated average age-education-earnings profiles for different levels of education (on the basis of cross-section data) is not available either. In Iraq, the government employs the majority of the labour force. It was hoped therefore that a government salary scales would provide a fair estimate of age-earning profiles. Woodhall \({ }^{82}\) (1970) stated that "it is much less satisfactory than cost-benefit analysis based on actual earnings data, but it can be useful in providing preliminary estimates of relative profitability of different levels of education.

Where different university programs are concerned, real earnings may increase at different rates, but it can be assumed for simplicity that all earnings rise by the same annual rate though this happens only if supply and demand for graduates from every program of university education move generally in line. However, in our calculations the age-earnings profiles are not adjusted for economic growth because the latter has not been available since 1960s. Therefore, the private and social rates of return to university education in Iraq are probably underestimates. However, even if we use an arbitrary rate of \(2 \%\) to adjust the age-earnings profiles, the

\footnotetext{
78 Preeman, . Bo, 1977, pp.28-29.
}

79 Wilson R. A., "The Rate of Return to Becoming a Qualified Scientist or Engineer in Great Britain, 1966 - 1976", Scottish Journal of Political Economy, Feb 1980, Vol. 27, no. 1, pp. 41-62.

80 Hough, J. R., Education and the National Economy, (Croom Helm, 1987).
81 Psacharopoulos, G., Return to Education: A Further International Update and Implications, The Journal of Human Resources, Vol. 20, No. 4, PP.

82 Woodhall, Mo, Cost Benefit Analysis In Educational Planning, UNESCO, Internal Institute For Education Planning, 1970, p. 35.
ranking of rates of return for different university programs will not change.

It is necessary to mention some views of public sector employment and education in developing countries, including Iraq, and some fators effect on age earnings differentials, will be discussed.

As mentioned in chapter three, to calculate the rate of return to education, the age-earnings stream must be established. This is the relationship between education and earnings by age group. In most developed countries, the basic source of such data is the national "Census of Population" reports which often provides income distributions by age and level of schooling. In Iraq census have ever published data on age-earnings profiles by type or level of education. So that the salaries and wages of secondary school leavers and university graduates employed in the public sector are used in this study in order to calculate the rate of return on investment in university education.

In most developing countries, much of the qualified manpower is employed in the public sector at administered salaries. Even so, economists such as Blaug, (1970), Hinchliffe (1987), and others have argued that the public sector simply responds to earnings structures in the private sector. 83 Dore (1976) stated this results in the public service significantly influencing earning structures for the educated work force and, through the emphasis on qualifications in hiring practices and the response of raising qualification requirements in the face of a surplus of school leavers, having undesirable effects on the ways in which schools operate. 84

Salaries and wages in the public sector are set according to administratively determined pay scales which related directly to educational certificates. This pattern of salary scales still reflects the salaries that were paid to colonial administrators before the country achieved independence.

In Iraq, the government estimates an auxiliary income as a basis for calculating the supplementary professional allowances which are consequently incorporated into the salary structure of all public sector employees who choose no to pursue private practice or part-time employment in private sector. The purpose of this process is to update the salary structure in the public sector and to equalize the earnings of comparable employees in public and private sectors in Iraq.

However, these pay scales not only fail to reflect existing labour
83 See Blaug, Mo, An Introduction ... 1970, p. 205; and Hinchliffe K. Public Sector Employment and Education. In Economics of Education: Research and Studies. (Pergamon Book Ltd. Oxford, 198/), p. 226.

84 Droe R. P., The Diploma Disease: Education, Qualification and Development. Allen and Unwin, London, \(19 / 6\).
conditions and changes in them but also dominate pay arrangements in the private sector. Moreover, earnings structures appear to reward general education leading to clerk jobs more than technical education which, it is argued, is more relevant to the needs of the developing countries, despite the substantial growth of high-school-leaver unemployment. \({ }^{85}\) It has been on the basis of observations such as these that critics of the rate-of-return method to educational planning for developing countries have partly based their case. According to Balogh and Streeten \({ }^{86}\) (1963), a high observed rate of return would show "that pay scales in the civil service, universities and professions are still governed by the traditional standards of a feudal or colonial aristocracy and by natural or artificial restriction" since earning differentials in no way reflect competitive labour market conditions.

Squire (1981) argued that the public sector dominates the labour market and determines the levels wages, and these levels remain impervious to changing conditions in the labour market such that, for example, excess supply or unemployment does not lead to a fall in wages, the blame for the continuation or growth of school-leaver unemployment is often directly laid at the feet of the public sector where, it is argued, the solution can be found. He gives the following example: \({ }^{87}\)

The rapid expansion in educational output has not elicited the appropriate response in public pay scales and, given the slow rate of adjustment in job expectations, the result has been unemployment. Given the public sector both determines the supply of educated workers (through its educational policy) and the demand for such (through its role as employer) the solution to the problem of educated unemployment is within the immediate sphere of policy influence.

Dore \({ }^{88}\) (1976) and Foster \({ }^{89}\) (1977) pointed out that as a result of the public sector's relatively large size in developing countries, the effect

\footnotetext{
International Labour Organization (ILO), Matching Employment Opportunities and Expectations: A Programme of Action for Ceylon. ILO, Geneva, 1971.
\({ }^{86}\) Balogh, T. and Streeten, P. The Coefficient of Ignorance. Bulletin of the Oxford University Institute of statistics, Vol. 25, No. 2, p. 102.

Squire, L. Employment Policy in Developing Countries: A Survey and Evidence. 0xford University Press, New York, 1981 p. 121 .
\({ }^{88}\) Dore R. P. 1976.
89 Foster, P. J., Education and Social Differentiation in Less Developed Countries. Comparative Education Review, Vol. 21, 1977, pp. 211-229.
}
that this has both throughout the labour market and on the degree of social mobility for those few who are able to obtain higher educational levels is far greater than is the case the more industrialized market economies. Another important aspect of public sector employment practices concerns promotion. Blaug (1973) pointed out that the majority of university graduates in Sri Lanka preferred to work in the public sector because of greater personal freedom and job security. He argued that this was a result of performance rarely being assessed and internal promotion being virtually automatic \({ }^{90}\)

While there is a general agreement that education has a positive effect on income, the magnitude of the relationships between education and income have been found to be difficult to isolate because of other factors. Bowen \({ }^{91}\) (1964), Prest and Turvey \({ }^{92}\) (1965), Thias and Carnoy \({ }^{93}\) (1972), Koulourianos \({ }^{94}\) (1967), and others said that groups with differing amounts of education tend to differ in attributes such as natural ability, ambition, social class, family connections, inherited wealth, race, education of parents, on-the-job training, and hours of work, and all of these are likely to increase earnings. Generally two methods are employed to take out the influences of these other factors.

The first was suggested by Denison \({ }^{95}(1962,1967)\) and was later termed the alpha coefficient by Blaug \({ }^{96}\) (1965). Denison assumed that only \(60 \%\) to

90 Blaug, M., Education and the Employment Problem in Developing Countries. International Labour Organization, Geneva, 1973.

91 Boven, W. Go, Economic Aspect of Education: Three Essays. Princeton, N J.: Industrial Relations Section Princeton University, 1964. p. 16.

92 Prest, A. R., and Turvey, R., "Cost-Benefit Analysis: A Survey". The Economic Journal, Vol. LXXV, No. 300, 1965, p. 726.

93 Thias, H. H. and Carnoy, M., Cost-Benefit Analysis in Education: A case study of Kenya. Baltimore, Maryland: The Johns Hopkins press, 1972, pp 2-6.

94 Koulourianos, D. Th., Educational Planning for Economic Growth Berkeely, Cal.: Center for Research in Management Science, University of Californía, p. 38.

95 See Denison, E. F., The Sources of Economic Growth in the United States and the Alternatives Betore U.S. New York: Committee for Economic Development. Also the same author, Why Growth Rates Differ: Post war Development. Aiso the same author, Why Growth Rates Differ: Post war
Experience of Nine Western Countries. Washington, D. C.: The Brookings Institute.

96 Blaug, Mo, "The Rate of Return on Investment in Education in Great Britain". The Manchester School of Economics and Social Studies, Vol. 33, PP. 205-262.
(Footnote continued)
\(65 \%\) of the earnings differentials reflected secondary and higher education, the remainder, about \(40 \%\), was due to ability, family background and so on. On the other hand, Psacharopoulos \({ }^{97}\) (1975), after reviewing the studies undertaken in OECD countries, found the average value of alpha to be \(77 \%\). In this study, because of the lack of data, and in order to test the sensitivity of the results to a variety of essumptions about the interaction between "ability" and education, three different values of the alpha coefficient ( \(1,2 / 3\), and \(1 / 2\) ) are used.

The second method, which Psacharopoulos \((1973,29)\) claims is the better method, involves regression analysis to standardize earnings for factors other than education.

Assuming that the factors other than education influence earnings, the differences in earnings among individual cannot be entirely attributable to the differences in education acquired. In other words, failure to exclude those factors other than education is bound to lead to an overestimate of the rate-of-return on education.

There are other factors that are expected to distort the rate-of-return on education unless they are taken into account. These factors include: (1) conspicuous consumption and wages policies; (2) collective power; (3) unemployment; and (4) the non-marginality of cross-sectional data.
(1) conspicuous consumption and wages policies. These are the forces that act against the normal market system in which workers are paid the value of their marginal product. Bowen \({ }^{98}\) (1964) stated:

The phrase "conspicuous consumption" refers to the possibility that some employers may choose to hire college graduates (and pay them "college graduate" salaries) for jobs which do not really require college training.

Bowen (1964), and Thias and Carnoy (1972) maintained that conspicuous consumption does not seem to be widespread in the world. On the other hand, they indicated that national policies may lead to wage structures and hiring policies that may not have any relation to productivity. To this effect, Bowen \({ }^{99}\) (1964) advised "in countries where the salary structure is rigid because of status overtones calculation of monetary returns to education can be misleading as a guide to educational policy." On the

\footnotetext{
\({ }^{96}\) (continued)
\({ }^{97}\) Psacharopoulos, G. Earnings and Education in OECD Countries. Paris: OECD, 1975; p. 54.
98 Bowen W. G., 1964, P. 18.
99 Boven 甘. Gos 1964, P. 18.
}
other hand, Rodriguez and Davis \({ }^{100}\) (1974) suggested, "Normally it is impossible for employers to pay workers a wage over a long period of time that exceeds the workers' productivity." In contrast if employers are hiring highly-paid graduates for jobs which do not need their skill, then the returns to education would be overestimated from the society viewpoint, since graduates would be receiving earnings in excess of their product. Blaug, like Bowen, suggests that since this latter questions are unlikely to be so frequent as is sometimes thought, the amounts involved are not likely to be such as would invalidate any rates of return calculations.
(2) Collective power. Collective power by labour unions and other associations may influence the relative earnings. Bowen \({ }^{101}\) (1964) said that this market imperfection may have to be eliminated to arrive at a competitive condition. Blaug suggests that if trade unions, for example, are able by their bargaining power to raise wage rates for their members above those of non-unionised groups that this would probably not affect calculations of educational return, because they would not be among the more highly-educated groups.
(3) The effect of unemployment on earnings. Perlman \({ }^{102}\) (1973, 30), Thias and Carnoy \({ }^{103}\) (1972) and others said that significant unemployment may make wages or salaries invalid as a measure of benefits. They suggested that the rate-of-return on education should be adjusted by employment probabilities. In the present study, because the data of unemployment for both high school leavers and university graduates are very close ( \(3.5 \%\) for former and \(3.3 \%\) for the latter) and there has not been available precise data of unemployment people classified according to the level, kind of education, and occupation, the forgone earnings and flow of lifetime earnings are not adjusted by unemployment rates.
(4) The non-marginality of cross-sectional data. Prest and Turvey (1965), Thias and Carnoy (1972), Hansen \({ }^{104}\) (1968), and others stated that

100 Rodriguez, Lo Jo, and Davis D. Do The Economics of Education. Lincoin, Nebraska: Professional Educators Publícations, 19/4, p. 28.

101 Boven W. Go, 1964, p. 24.
102 Perlman, R. The Economics of Education: Conceptual Problems and Policy Issues. Toronto: McGraw-Hill, 1973, p. 30 .

103 Thias, H. H. and Carnoy, M., 1972, p. 4.
104 Hansen, W. Lee, "Rates of Return to Investment in Schooling in the (Footnote continued)
cost-benefit analysis reflects the situation that exists at the time the data are collected. They said that these cross-sectional data do not accurately reflect both wages and costs in that some are likely to change over time. They suggested that the cross-sectional data have to be extrapolated into the future by using supply and demand as a function of earnings and Gross Domestic Product to overcome the shortcoming of a single time data.

Correspondingly, Jallade \({ }^{105}\) (1977), and Hollister \({ }^{106}\) (1970) argued that the adjustments by adding the economic growth rate to cross-sectional data on earnings is important to reflect the future income. In a growing economy many of these are likely to rise and actual lifetime incomes will be higher than those calculated from cross-section data.

Thus, differential earnings to university education in this study should multiplied by factor reflecting the rate of economic growth of Iraq. But because the latter has not been available since 1960s, so that the earnings differentials have not adjusted for economics growth. However

Factors that are assumed to be responsible for inaccuracies in the returns to education have been identified. While some factors are likely to increase the rate of return, others tend to decrease the rate of return. The effects of these positive and negative factors on earnings may possibly compensate for each other, so that the rate of return based on the measurable monetary returns and other relevant data may reflect the real return on education investment. Psacharopoulos \({ }^{107}\) (1973) reviewing the study made by Hines et al. (1970) observed:
".... one of the things this study demonstrates is that, after ali adjustments are made, it is possible that the final rate of return figure will be very similar to the unadjusted one, since many of the adjustments act in opposite directions and therefore cancel out."

According to the details above, in less developed countries, wages and salaries do not reflect marginal productivity because of imperfections in

\footnotetext{
104 (continued)
United States". In Blaug, Mo (ed.). Economics of Education 1. London: Penguin Books, 1968, pp. 137-155.

105 Jallade, Jean-Pierre, Basic Education and Income Inequality in Brazil: The Long Term View. World Bank Statf Working Paper No. 268, Washington, D. C.: The World Bank, 1977, pp. 25-26.

106 Hollister, \(\mathbf{R}_{8}\) "Education and Income-A Study of Cross- Section and Cohorts". In Education and Distribution of Income: Some Exploratory Forays. Paris: OECD, pp. 64-65.

107 Psacharopoulos, Go Returns to Education: An International Comparison. San Francisco: Jossey-Bass, 1973, p. 39.
}
the labour market, other income policies.
The bias in data due to significant market imperfections may be corrected in two ways (1) a correction to actual benefits or costs, and (2) calculation of shadow rates of return by estimating shadow wages and salaries which more closely reflect the real productivity of workers. However, if the government in Iraq pays its employees in the public sector wages and salaries higher than their productivity, 108 the social rates of return will be overestimated, but this will not change the ranking of returns for different subjects of university education (assuming that the government pays all university graduates higher salaries); whereas the social returns will be underestimated when wages and salaries are less than the productivity. \({ }^{109}\) Also, in this case, the ranking of rate of return will not change.

\section*{}

In order to take into account time preference in evaluating an investment, it is necessary to discount the costs and benefits at a certain discount rate. This is because costs and benefits are incurred and recouped over a period of time rather than at the moment of decision. Woodhall (1970) stated that: 110
"There are three basic ways of presenting this information in a convenient form, first by means of a benefit-cost ratio, secondly by a calculation of the present net value of project, and thirdly by calculating the internal rate of return of the investment. A benefit-cost ratio, as the name implies, simply measures the ratio of discounted future benefits to discounted costs at a particular rate of interest, and the present net value of project is the value of interest, and the present net value of project is the value of discounted benefits minus discounted costs. Both these measures of education, but they are less frequently used to evaluate education than third technique, rate of return analysis. The rate of return of any investment project is simply the rate of interest that equates the discounted present value of expected benefits and the present value of the costs of the project".

Income is discounted according to their remoteness from the present and

\footnotetext{
108 The government in Iraq pays high wages and salaries in order to attract the people to employ in public sector.

109 If the salaries and wages were less than the marginal productivity, the employees will shift toward the private sector or migrate to other countries. So that salaries and wages should be adjusted to update the salary structure in the public sector and equalize the salaries and wages of corresponding workers in the public and private sectors.

110 Woodhal1, Mo Cost-Benefit Analysis in Educational Planning. Paris: UNESCO, 1970, p. 23 .
}
the estimated internal rate of return is compared to a chosen time preference rate. If the former is greater than the latter, investment in education is considered profitable. Under the present value rule, the sum of discounted future earnings differentials is computed using a discount rate chosen to approximate the time preference of the individual or of society as the case may be. The present vale of the earning differential stream is computed, then compared to the educational cost. If the present value is greater than the educational cost, the expenditure is economically justified. Also the cost of education, like the earning differentials, must be discounted in order to be comparable. This is important in the case of education where the investment period is relatively long. In principle, the two methods are the same but they give the same results only under certain conditions. These are that (a) the projects are divisible and independent from each other, (b) the capital markets are competitive and net receipts can be reinvested at their internal rates of return up to end of the period. The present value criterion is more popular among economists, although the internal rate of return is also used often.
Men Versus Women Rates of Return

\subsection*{3.2.1. Men Versus Women \(\mathbb{R}\) atesof \(\mathbb{R}\) eturn}

The rate of return for males has usually been higher than that for females, since the male graduate-nongraduate earnings differential appears to have been higher than the female one. Presumably with the increase in legislation in most countries against sex-discrimination this difference ought to decline in the future. However, while women retain the role of staying at home to look after the family and hence miss out part of their career, this difference in earnings will not disappear entirely. Mincer (1976) concluded his analysis of women's work experience and its effect on earnings as follow: \({ }^{111}\)
(1) The smaller the expected lifetime participation in the labour market, the less are the investment aspects of women's formal education, and the less is the acquisition of job training at work compared to men with comparable education.
(2) During the period of child bearing and child care, long nonparticipation may cause the skills acquired at school and work to depreciate.
(3) Women who return to work after their children reach school age have

\footnotetext{
111 Mincer, J. "Progress in Human Capital Analyses of the distribution of earnings": In: Atkinson A. Bo (ed.) The Personal Distribution of Incomes. Allen and Unwin, London, pp. 162-163.
}
a strong incentive to resume investment in job-related skills.
(4) This suggests that the investment profile of married women is likely to show negative values (net depreciation) during the child-bearing age, whereas the investment profile of unmarried women, with greater continuity of work experience, is closer to that of men.
(5) The implication for earnings profiles are clear. Earnings profiles of men are the steepest and concave; those of childless women are less so; and those of mothers are double peaked with least overall growth.

However, one of the effects of education on women's earnings is that higher levels of education enable a woman to recover her former level of earnings after a number of years and again to enjoy the benefits of rising income associated with increased work experience. Women with less education may never overcome the loss of earnings capacity due to interruptions in their working life and loss of work experience.

However, in a few cases it was found that the female rate of return was actually above the rate observed for men \({ }^{112}\). This is because educated women are far more likely to remain in the labour force than women with less education. Therefore, although the female graduate's average earnings are still below the male average earnings because of the extent of part time work, since the rate of return depends upon differentials rather than absolute earnings, in some cases the rate of return for women may actually be higher than for men. Furthermore, because of differences in occupational distribution and because of the acceptance of part-time work and interrupted careers, the absolute level of earnings for women will always be below that of men, but in relative terms the educated women may enjoy a greater advantage over the less educated ones than educated men have over other men, and because of their education they are likely to face less market discrimination than women with less education. Finally, if some allowance is made for the indirect benefits of education (non-market work or psychic income), it is likely to raise the rate of return to women's education.

However in this study the private and social rates of return for women have not been calculated because there are no separate data on age-earning profiles available for women.

As we mentioned in Chapter one the majority of university graduates,

\footnotetext{
112 For example, Birch and Calvert (1973), Wilson (1983), found that the rate of return to women in teaching was higher than men. See Birch D. T., and J. R. Calvert, How Profitable is Teaching? Higher Education Review, Vol.6, No. 1, pp. 35-45, and Wilson R. A. The Declining Return to Professional States in British Economy (with Special Reference to Scientists and Engineers). Thesis Submitted for Ph.D., Department of Economics, University of Warwick, 1983, pp. 6.58-6.70.
}
both males and females, work in the public sector and the promotion and salary pattern in Iraq does not distinguish between males and females. Moreover, discrimination against women is low in Iraq and women and men are equal under the law. Also, it was assumed that all graduates males and females enter the labour force immediately after graduation, and continue their lifetime working without interruption, except married women who take one year of maternity leave. \({ }^{113}\) However, women employed in the public sector are paid full salaries for this period by the law. It was assumed that people who are employed in the public sector most likely work full-time and that part-time jobs in the public sector are very rare especially among university graduates. Accordingly the private rate of return may be the same (or very close) for men and women. But if it is assumed that the employers do not pay (or pay fractionally salaries) for the maternity leave, the private rate of return for women will be less than for men. The Social rate of return for women may be less than for men because the productivity of women to society is lower than men.

\subsection*{3.2.2. ASelectiveReviewof Studies}

The profitability of investment in education depends on the earnings differentials attributed to education, the cost of education, and the time preference discount rate. Subjective definitions, questionable estimates and even entirely arbitrary values for these variables are in most cases responsible for quite divergent results obtained by different authors.

The first attempt to calculate social and private returns to education was done by the Russian economist S. G. Strumilin early 1920's. He used two samples, one of 2,602 lathe operators (from the year 1919) and another of 2,307 white-collar employees. He tried to establish the functional relationship between wages and education. The relationship between skill on one hand, and age, job experience, years of formal education on other hand. He found that the increment of skill is positive with years of schooling. Moreover, Strumilin found for his sample of physical workers that " the increments of wages related to education" \({ }^{114}\) Also he found that a year of formal education contributed more to manual wages than a year of job experience.

\footnotetext{
113 It should mentioned here that maternity leave may happen many times throughout working lifetime.

114 This part on early Soviet economists on education is based entirely on Kahan Arcadius, Russian Scholars and Statement on Education As Investment. In Anderson C. A. and Mary Jean Bowman (eds), Education and Economic Development, Frank Cass \& Co. Ltd., 1966, pp.3-10.
}

In 1930, the Russian economist E. Liustikh, presented in mathematical form the relationship between wages and education, experience, and age. Liustikh used data from a sample of 72,596 workers in the metal and machine-building industries from the 1929 factory Census. He found that the main factor determining wages differentials was education. 115

The first statistical analysis estimating the relationship between earnings and education in the west was by J. R. Walsh 1935. 116 He attempted to determine whether education expenditure ".. is, strict sense, a capital investment made in profit-seeking, equalizing market, in response to the same motives which lead to the of factories, machinery and the like." 117 His main attempt was to estimate the returns and costs of individuals with various degrees in education beyond the high school level, such as B.S., LLB., M.A, Ph.D and M.D. He used American data of the late 1920 's. Walsh computed means and medians from 16 samples whose size range from 42 to 11,760 observations, and he adjusted for mortality and unemployment rate. In this study, the present value of private earnings differentials always exceeded private costs for college education (using a \(4 \%\) discount rate). He concluded that investment in college education has a rate of return higher than \(4 \%\). In the three cases out of six of education beyond the baccalaureate level, the present value fall behind the corresponding costs, which means that the rate of return to higher education less than \(4 \%\). He found that the LL.B degree produced the highest expected return, followed by B.A, Ph.D (Engineers), M.D. and finally M.A. degrees. In this study, the social returns and costs were not estimated.

Glick and Miller (1956), used 1949 U.S. Census data to estimate the private rate of return. 118 They showed that individual incomes rose with more education, by computing average income for man 45-54 years of age by their amount of education based on data from 1949. They stated that: 119
" a majority of youths in this country who are willing and able to continue their schooling can justifiably expect to receive considerably higher incomes in the long run by completing their education through college instead of entering the labour market after finishing high school".

115 Ibid p. 10.
116 Walsh J. R., "Capital Concept Applied to Man, Quarterly Journal of Economics, Feb. 1935, pp.225-285.

117 Ibid. p. 256.
118 Glick P。C. and H. P. Miller, "Educational Level and Potential Income", American Socological Review, Vol. 21, 1956, pp.207-312.

Glick and Miller concluded that a college education was worth approximately \(\$ 100,000\) in terms of monetary return. But this apparent gain was not discounted to its present value at the time of the educational investment decision was made and no adjustment was made to account for unemployment, mortality and income tax.

Houthakker (1959), published the result of a study which attempted to show the relation between income and education, using U.S. data for the year 1949. \({ }^{120}\) He introduced adjustments for income tax and discounting. His findings clearly indicated the sensitivity of marginal earnings to discounting at various rates. For example, the differences in the before-tax life earnings of college and high school graduates at zero discount rate is \(\$ 105,829\), but with an \(8 \%\) discount rate, he found that the difference dropped to \(\$ 5,095\).

In 1960's, many economists analysed the rates of return to education. They believed that investment in human capital was one of most important factors in achieving this desired high economic growth.

Among these economists was G. Becker (1960) \({ }^{121}\), who introduced a novel way of assessing the return to investment in education. Instead of applying several discount rates to marginal earnings streams, which was the practice in previous studies, he calculated the actual rate of return made from an investment in college education. This rate is now referred to as the 'internal rate of return'. He found, using 1949 data, that the private (after tax) and social rate of return for college graduates were \(11.7 \%\) and \(11.5 \%\) respectively. Also, Becker estimated the rate of return to urban whites college graduates at \(9 \%\) and the rate of return to non-whites about \(2 \%\) lower than of whites. The average return to rural graduates is probably also less that of urban graduates. Therefore, the average return to all graduates, according to Becker would be lower than the \(9 \%\) return to urban white males.

In 1965, Harberger, attempted to estimate the social rate of return for secondary and college education in India. \({ }^{122 \text { His figures range from } 10 \%}\) for four-year secondary schooling to \(16.9 \%\) for six-year university

\footnotetext{
120 H. S. Houthakker, "Education and Income, The Review of Economics and Statistics, Feb. 1959, pp.24-28.
}

121 Becker \(G_{\circ} S_{\circ}\). "Underinvestment in College Education? American Economic Review, Feb. 1960, Vol. 50, pp.346-353.

122 Harberger, A. C, "Investment in men versus investment in Machines: the case of India. In Anderson C. A. and Mary Jean Bowman (eds), Education and Economic Development, Aldine Publishing Co., Chicago, 1965, pp.11-50.
education. These estimate are compared with adjusted social rates of marginal productivity of India's physical capital which varies from \(17.2 \%\) to \(26.1 \%\). Therefore according to author "the estimates for physical capital were 'designed' to be underestimates, whereas those for investment in education were "designed" to be overestimates". 123

Lee \(W\). Hansen (1963), calculated the male private and social rates of return to years of education, \({ }^{124}\) using \(1949 \mathrm{U} . \mathrm{S}\) Census data. These rates of return make the present value of the cost and return streams equal. They were calculated for private and for social money cost and benefits. Hansen's total resource costs or social costs included: (1) School costs incurred by society, that is, teachers' salaries, supplies, interest and depreciation on capital, opportunity costs incurred by individuals, namely foregone earning during school attendance, and incidental school-related cost incurred by individuals, such as books and travel expenses. Private resource costs include the same three components except that in (1) above, tuition and fees paid individuals are substituted for society's costs which are namely defrayed through taxation." 125

He took care to point out some of possible flaws in the data. For example, that the income profiles were based on all income accruing to an individual, not just earning from salaries and wages; that there is some doubt about the validity of attributing financial benefits to educational increments alone; that all cost elements were considered as investment even though some portion thereof should be counted as consumption; that the basing of all estimates of costs and benefits on cross-section data assumed on possible future shifts in relationship of the cost-earning streams; and other functions such as on-the-job training and work experience which may affect on observed earning differential were ignored. \({ }^{126}\) In this study, it was found that the marginal private rates of return before taxes to elementary, high school, and college education were infinite, \({ }^{127} 15.3 \%\), and \(11.6 \%\), respectively. The average private rate of return before tax for the same educational levels were also infinite, \(25.6 \%\), and \(18.2 \%\) respectively.

\footnotetext{
123 Ibid. p. 29.
124 Hansen, Lee V., "Total and Private Rates of return to Investment in Schooling," Journal of Political Economy, 1963, Vol. 71, pp. 128-141.

125 Ibid p. 130.
126 Ibid p. 134-135
127 The reason that the rates of return to elementary education were considered infinite was because the cost of elementary education was free.
}

While the marginal private returns after tax were infinite, \(14.5 \%\), and \(10.1 \%\), respectively. The average returns after tax were for the educational levels were infinj.te, \(27.9 \%\), \(27.2 \%\), respectively. Hansen calculated social returns and he found that the results were the same either for the average or for marginal, \(15 \%\) for elementary, \(11.4 \%\) for high school, and \(10.2 \%\) for college. Finally, he found that an individual who complete only two years of college could expect about one-third the return of one who completed a four-year college (private rate of return for two year college was \(6.2 \%\) whereas for four-year college \(18.7 \%\) ).

Blaug was a leader in the analysis of economic return to education. Blaug (1965) published one of the pioneering articles in the field entitled "The Rate of Return on Investment in Education in Great Britain". \({ }^{128} \mathrm{He}\) emphasized the importance of these calculations for educational planning and provided the techniques on how best to derive them. In this study, many objections that had been raised against rate of return calculations were met. The first study of calculating the rate of return to education in Europe was done by Blaug in his Appendix of 1965. According to Henderson/Stewart's estimates, an estimate of the private rates of return to secondary ('A' level and college education) were \(13 \%\) and \(14 \%\) respectively. Furthermore, the social returns to these two levels of schooling were lower than the private rate of return. Therefore, the average and marginal social rates of return to first degree education were estimated to be \(8 . \%\) and \(6.5 \%\). The marginal social rate of return to 3 extra years of schooling beyond the school leaving age (i.e. 'A' level course for most students) was \(12.5 \%\). In this study assumed that an adjustment for ability which attributes only two-thirds of the earnings differential to education for first degree and 0.60 for secondary schooling. Henderson/Stewart estimated that the private rate of return actually received by graduates is well above \(20 \%\) also adjusting for tax which reduce the earnings differential by \(20-25 \%\).

All British studies, like the early estimates of Henderson/Stewart are based upon earnings data collected in sample survey. This raises the problem that the sample may be too small (Henderson/Stewart used survey of 6500 workers in 1963) to be representative, particularly of those with the highest educational qualifications. Moreover, classification of educational levels was very crude, and workers were distinguished only by their terminal education age, and then grouped into three categories.

Hanoch (1967), used a sample of \(1 / 1000\) of the 1960 United States Census

\footnotetext{
128 Blaug M., "The Rate of Return on Investment in Education in Great Britain", The Manchester School of Economics and Social Studies, Vol.33, 1965, pp.205-225.
}
of Population including more than 57000 males over age 14 , to calculate the male private rate of return to education. \({ }^{129}\) The special feature of this analysis was an investigation of marginal and average rates of return to education according to race (white and non-white), and region (North and South). It was found that the average rates of return for college education were \(12 \%\) for whites in the North and \(11 \%\) in South. On the other hand, the average rates of return for college for non-whites were \(9 \%\) in the North and \(7 \%\) in the South. The average rates of return for individuals at the secondary school were \(16 \%\) for whites in the North and \(19 \%\) in the South. For non-Whites living in the North, the rate of return for Secondary school was found to be \(23 \%\), while for these living in the south it was found to be merely 11\%. However rate of return to individuals at the college level was just \(10 \%\) for whites in both regions. The marginal rates of return for non-white college graduates were not available in this analysis because the data were statistically less reliable. In this study found that the higher the amount of schooling, the lower the marginal rates of return. Hanoch observed "this seems to verify the conjecture that the marginal efficiency of investment in schooling is decreasing". 130

Hines, Luther, and Martin (1970) applied a sample of \(1 / 1000\) of the 1960 United States Census of Population to investigate private and social rates of return to investment in education. Their sample included more than 107,000 persons, males and female, aged 14 years and over. 131 It represents social and private returns for U.S. white males and females, as well as those for other races. In this study, private costs estimated to be merely the income forgone. Direct private cost were assumed to be cancelled out by the earnings of students during the education time and vacation periods. Private and social returns were computed by race, sex, and region. Moreover, sensitivity analysis was made for white males by adjusting earnings by economic growth of \(2 \%\) in earnings, mortality, ability, taxes and interest \(6 \%\) on property. The unadjusted private rate of return for whole U.S., for male of 12 years schooling over \(5-7\) and 8 years were found to be \(20 \%\) and \(24 \%\) respectively. The private returns for non-white males of the same were estimated to be \(27 \%\), \(18 \%\). The adjusted private return of 12 years of schooling over 8 years for white males was calculated to be \(16 \%\). Hines et al. estimated also the social rates of

129 Hanoch Go, "An Economic Analysis of Earnings and Schooling", The Journal of Human Resources, Vol. 2, Summer 1967, pp. 310-329.

130 Ibid. P. 326.
131 Hines, \(F_{0}, T\). Luther, and R. Martin, "Social and Private rates of return to Investment in Schooling, by Race-Sex Group and Regions". The Journal of Human Resources, Vol. 5, No. 3, 1970, pp.318-340.
return. The unadjusted social rates of return for 12 years of schooling over 5-7 and 8 years for white males were found to be \(16 \%\) and \(14 \%\) respectively; and \(12 \%\) and \(17 \%\) for non-white. While the adjusted private rates of return of 12 years of schooling over 8 for white was found to be \(10 \%\). This study showed that the highest private return was calculated for white males in elementary schooling, while the lowest was calculated for other races in higher education.

Blaug, Peston and Ziderman (1967) used 1964/65 data for a sample of 2,800 males workers employed by a large automobile firm in Britain and by four British electrical engineering companies. \({ }^{132}\) In this sample, because of the availability of information, workers were distinguished not just by their terminal education, but also by the exact educational qualifications of each person. In addition, this survey was used as the basis for cost-benefit study, a study of utilization of educated manpower in industry. This survey showed on the one hand that there was a clear relationship between age, education and earnings, on other hand the age earning profiles showed the following characteristics: (i) average earnings rise with age and with level of education; (ii) the profiles flatten out, for older workers and in the case of those with lower level qualifications or no qualifications at all average earnings actually decline after age 55; and (iii) the difference between some of the age-earnings profiles widens with age, so that the greatest benefits of education accrue to older workers.

The data adjusted for tax, \(2 \%\) added for growth in real earnings, net earnings include maintenance grant. In this study the private costs equal to zero other than earnings forgone were estimated. The marginal private rate of return for secondary schooling was calculated to be \(15 \%\) (+ HNC/'A' level) and for first degree \(12 \%\) (Ist. degree/ 'A' level), and the average private rate of return were estimated to be \(11.5 \%\) for both levels. The marginal social rates of return were computed to be \(12 \%\) for secondary school and \(10 \%\) for the first degree, while average social rates of return were estimated to be \(9.5 \%\) for secondary school ('A' level) and \(10 \%\) for first degree. Blaug et al found that the social rates of return were significantly lower the private rate of return. However, the results in this study for the year 1964/65 were lower than the Blaug / Henderson steward's results (1963/64). They thought that the reason probably of due to the different comparison income profiles used to represent the expected earnings stream of persons qualifications to go on to higher education but who do not take up this option.

\footnotetext{
132 Blaug Mark, Peston Maurice and Ziderman Adrian, The Utilization of Educated Manpower in Industry, (Oliver and Boyd, Edinburgh and London), 196/.
}

Maglen and Layard (1970), In this study, the data was collected on age, earning and educational qualification of over 10,000 workers (males only) in 68 factories in the electrical engineering for 1966/67. Furthermore, information about many economic variables was collected such as output, levels, nature of product, method of manufacture and so on. Therefor, the study was able to calculate more detailed age-earnings profiles than any previously available in Britain, even though represent the pattern of earnings in only one industry. In this study, the detailed estimates of costs of different qualification were estimated, such as estimating private and social costs, estimating average costs per student in different subjects and courses, estimating costs of part-time schooling, the distribution of costs between teaching and research in university, and the costs of wastage. Maglen and Layard make two different assumptions about the costs and possible benefits associated with wastage: (i) they include the costs of educating graduates and those who drop out without a qualification, and compare these costs with the benefits to successful graduate, assuming that there is no financial return for an incomplete course, and (ii) exclude all the costs of wastage on the assumption that the benefits of an incomplete course are proportional to the costs incurred.

In this study, the proportion of earnings differentials that are attributable to education was estimated to be \(1.00,0.66\), and 0.50 . The authors conclude that the returns to full-time higher education are quite modest, when the social returns are taken into account. The highest social rate of return to first degree ( \(6.5 \%\) adjusted for dropout and ability 0.50 and \(10 \%\) unadjusted) and the lovest positive rate of return was to secondary schooling ('A' level); the social rates of return to master's degree when compared with first degree were negative; and the social rates of return to doctorate is positive but lower than for a first degree. Therefore, the study concludes that "it seems difficult to sustain the argument of the Manpower Reports that there has been substantial underinvestment in this type of scientific and engineering education". \({ }^{133}\) one other hand, the rates of return to part-time education are considerably higher than the return to full-time education, for example, the authors estimate the rate of return to a part-time HNC (High National Certificate) is \(13.5 \%\) (adjusted for dropout and ability) compared with \(7.5 \%\) for a full-time first degree course; they explanation that " the part-time education may be poor quality and it products may be not common higher salaries, but it is very cheep". \({ }^{134}\) they found also that the private rates of return consistency higher than the social rates of return (expect the rate of return to

\footnotetext{
133 Maglen Leo and Layard Richard, "How Profitable is Engineering Education?" Higher Education Review, Vol. 2, no. 2, Spring 1970, pp. 51-67.
}

\section*{master's degree is negative).}

Selby-Smith (1970), this study is based on a very detailed analysis of costs in further education, including estimates of average and marginal cost for different courses in six technical college during 1964/65 academic year and one college over six year period. \({ }^{135}\) These technical college were selected in three regions of England (The Southern, South - Western and East and west Riding Regions). Two colleges were chosen in each area. Age-earning profiles were calculated for 17,500 men collected from a small of firms. The proportion ( \(\alpha\) ) of the additional earnings associated with a higher formal educational qualification which is due to it was assumed to be \(0.50,0.65\) or 0.80 to examine the allocation of resources within the sector, to see whether there was any evidence of misallocation. The earnings differentials were adjusted also for tax. Migration effect was ignored, both within Britain and between it and the rest of the world.

The author conclusions that there was strong evidence that the popular view that further education is "education on the cheap" may be not so obviously true as it appears to be at first seeing. There was also a distressing abundance of evidence for the view that output is not maximised given the inputs into further education. He concludes that is technical college to favour more advance academic work, and more expensive courses, even though the benefit-cost ratios are often lower in these courses. This study for example shows that degree-level courses appear less attractive, in cost-benefit terms, than HNC and the author concludes that "it has been frequently argued that the nation's most pressing shortage in skilled labour is graduate engineers and scientists. however, it appeared that there were other levels of work in these fields which had a stronger claim to priority than first degrees". 136

In 1971 Morris and Ziderman calculated the economic social rates of return to seven different levels of education for men, and a university first degree for women. 137 Using questionnaires sent to 15,000 qualified men and women in England and Wales, and information on level and type of educational qualification. In this study, alternative estimates were

\footnotetext{
134 Ibid p. 64.
135 Selby-Smith C. "Costs and Benefits in Further Education: Some Evidence from a Pilot Study", Economic Journal, Sept. 1970, pp 583-604.

136 Ibid p. 600.
137 Morris V. and A Ziderman, "The Economic Return as Investment in Higher Education In England and Wales", Economic Trends, May 1971, pp. xx-xxxi.
}
calculated, based on different assumption about research costs and the effect of ability on earnings. Research costs were excluded, earnings differentials were adjusted for ability ( 0.66 was adopted) and \(2 \%\) for economic growth. Morris and Ziderman found that the Higher National Certificate (HNC) courses appear to be highly profitable and postgraduate courses highly unprofitable.

The rates of return were \(20 \%, 3 \%\) respectively. The rates of return to postgraduates were negative under certain assumption. They found also that the social return to first degree graduates was around \(10 \%\). The rates of return to "A" level and Ordinary National Certificate (ONC) were about 7\%. In this study, the rate of return to university education for women was estimated to be lower than for men. This is not surprising, since economic benefits are measured only in terms of earnings differentials, and many women leave the labour force after marriage, or work part-time in low-income occupation. The authors stated that this study does not take account of any of consumption or indirect economic benefits of education. The low rates of return for postgraduate qualifications (the high cost which are not sufficiently offset by the extra earnings) and average high rates of return to HNC and HNC-PQ qualification (the lower earnings being more than compensated by small expenditure cost and earning forgone).

In 1970 Kahanna and Bottomley, estimated the marginal private and social rates of return and benefit/cost ratios to university graduates in nine different programs at Bradford University for the academic year 1966/67. \({ }^{138}\) The data on the costs were obtained from the University of Bradford for year 1966/67. The earnings data were taken from Corn-market survey results for 1967. But the Corn-market figures ceased at age 45. Therefore, the authors chose to extrapolated British earnings from age 45 to 65 on the basis of American data for graduate earnings for year 1949 to obtain the qualified earnings profiles. Data from Blaug, Peston, and Ziderman's figures for earnings of school-leavers with 'A' level qualification in 1964-65 using the change in the index of average earnings ( + 17) to obtain the unqualified profile. In this study, the part-time vacation and industrial training earnings of university students were subtracted from earnings forgone. The data were adjusted for the secular growth in real income (2\%), were not adjusted for ability, and excluded research costs which were estimated about \(10 \%\). The author found that the marginal social rates of return vary across programs category, but in general are much lower than those estimated by Morris and Ziderman. The marginal private rates of return were calculated with full grant and without grant. The private rates of return (with no grant) were about

138 Khanna R. K. and A. Bottomley, "Cost and Return on Graduates of University of Bradford", Accounting and Business Research, 1970, pp. 56-70.
one-half the marginal private rates of return with grant, all private rate of return higher than the social rates of return, finally not all the rates of return were higher than the cost to British government of borrowing, money at \(7 \%\).

Ziderman 1973, calculated average and marginal private rates of return to investment in higher education for males and females (full and part-time). 139 Three levels of educational qualification were taken (Higher university degree or equivalent, first degree and qualification below first degree - such as HNC, HND, Teaching Certificate and Nursing awards - and persons with no qualification) from survey concerned with earnings of qualified manpower in England and Wales 1966/67, prepared to DES for first three levels and for person with no qualification from DHSS. The author assumes that 0.66 of the earnings differentials are due to extra education. The private returns on investment in higher education were calculated by comparing systematically the monetary benefits of the higher education with the costs of acquiring it. Then, calculating an internal rate of return on this educational investment, which the person could compare with going, or expected, rates on interest and with his time preference rate. The major conclusion in this study is that at each age earnings are higher the greater the level of educational achievement. In this study, it was found that the investment on first degree and higher degree, offer high rates of return to the individual, under two terms free tuition and maintenance grant, and if the possibility of dropping out is not taken into account. The results of this study show that average returns on investment in first degree for women are higher than for men, and the individual rates of return to first degree and higher education are too close.

Morris 1973 estimated the marginal and average social returns on investment in different qualification (such as ' \(A\) ' level, first degree, higher degree - M.A. and Ph.D - and vocational education - HNC, HNC- \(P Q\), and ONC) and for alternative programs within university education (such as Arts, Science, Engineering, and Social Science. 140 The data on the earnings of qualified manpower were obtained from a postal survey carried out for the Department of Education and Science by the General Register

\footnotetext{
139 Ziderman A。, Does It Pay to Take a Degree? The Profitability of Private Investment in University Education in Britain. In Baxter c, 0'Leary P. J. and Westoby, Economics and Education Policy: a reader, (Longman in Association with the \(\frac{\text { Open University Press, } 1917 .}{}\)

140 Morris Vo, "Investment in Higher Education in England and Wales: A Subject Analysis", In Carolyn Baxtor, P. J. 0'leary and Adam Vestoby, Economics and Education Policy, a reader, Longman in association with The Open University, 1971, pp. 12-91.
}

Office in 1968 as a follow-up sub-sample to the economically active persons enumerated in the 1966 10\% Sample Census of Population for England and Wales. The data excludes pension income, and the earnings of these ceasing to work during 1966/67, but includes the income of self-employed, and the actual earnings of those recording breaks in employment.

This survey is the most comprehensive and recent source of information on the earnings of qualified manpower in England and Wales. The Data was obtained by questionnaires sent to 15,000 qualified men and women in England and Wales. Total average costs vere adjusted for each year of study by income transferred (such as grant), part-time working on vacation, appropriate rates for examination failure, wastage, repetition and length of course. The earnings differentials were adjusted for the ability factor by using one-third, and adjusted for secular growth in real income by adding \(2 \%\).

The results of this study show that the returns on investment on part-time vocational courses are substantially greater than on full-time university courses; that the different in returns were greater between qualifications levels than between alternative subjects at the same level give equal earnings; that the returns on investment in first degree for men is higher than for women; and that the effect from the costs on the rates of return was more that the effect from earnings, for example comparative return of graduate and postgraduate; that the returns on investment in postgraduate science and engineering were higher than in arts and social science; that the return on investment in vocational qualification is fairly high for engineering compared with science reflecting lower earning and high cost of science at this level; and finally, that the return on investment in first degrees were higher in arts and social science than science and engineering, reflecting the fact that the higher science and engineering cost were not met by extra earnings. But this pattern was reversed for postgraduates qualification with higher return to science and engineering than to arts program (i.e. at this level the extra earnings offset the higher costs).

Ziderman 1973, concentrated on the direct investment benefits to individuals and society as a whole. In this study the rates of return were estimated for major education qualifications: HNC, HNC-PQ, first degree, postgraduate (M.A. and Ph.D.). \({ }^{141}\) Using the data from the follow-up Census of Population Survey for England and Wales in the 1966. The earnings stream associated with each educational qualification was adjusted for ability by reducing mean annual earnings differential by one-third, labour

\footnotetext{
141 Ziderman, A., "Rate of Return on Investment in Education: Recent Results for Britain", The Journal of Human Resources, Vol. 8, no. 1, 1973, pp. 85-97.
}
force participation, unemployment, and mortality as well as for prequalification earnings, but was not adjusted for the secular growth of incomes. No estimates were provided of consumption benefits, and of externalities which are important in the case of social rate of return. The results show that the private rate of return were substantially above the social rates; reflecting that the effect of taxes in reducing the private net present value is very much less than that of the high costs in reducing social net present value; that the private rates of return to part-time technical (HNC and \(H N C-P Q\) ) programs were greater than other educational qualifications due to the low earnings forgone; that the private returns on investment in 'A' level were the lowest private rate of return among all educational qualification; that the first degree give higher private rate of return than the postgraduate. The results for social rate of return show the low rates of return are to graduate qualification (the high costs of which are no sufficiently offset by the extra earning), and high returns are to HNC and HNC-PQ qualifications (the low earning being more than compensated for by small expenditure costs and earning forgone). From the result of private and social rate of return, the author discussed that the private rate of return were more than \(20 \%\) in part-time technical courses and first degree which suggest that there is underinvestment in education, and less than \(8 \%\) in ' \(A^{\prime}\) level and \(11 \%\) in ONC qualification which suggest there is overinvestment in these level of education. The high social rates of return to investment in part-time technical programs showed that there was under investment in this type of education. While the social returns to investment in 'A' level, ONC and first degree seem to had been right order magnitude. The low returns shown on social investment at postgraduate level which suggests that this part of the university sector was overexpanded, hovever, the author point out that the validity of such a conclusion could depend upon the weight to be given to the externalities effect of higher education.

Dodge 1972, published the case study of return to investment in university training in some Canadian qualified. \({ }^{142}\) He estimated an earnings determination model for Canadian chartered accountants, engineers and scientists. On the basis of this model, Dodge estimated returns to investment in some fields of higher education, using data from the Survey of Highly Qualified Manpower of 1967 for selected occupations. The conclusion of this Study were that the social monetary return to investment in graduate degree for accountants, engineers and scientists were negative at a discount rate of \(5 \%\) or greater except the monetary

\footnotetext{
142 Dodge, D. A. "Returns to Investment in University Training: The Case of Canadian Accountants, Engineering, and Scientists", International and Labour Relations Center, Queen's University, Canada, 1972 .
}
return to a doctorate in engineering was positive at a rate of \(5 \%\), but even these were negative if a discount rate of \(10 \%\) was used; furthermore decline in monetary return to investment was likely because of the rapid increase in the supply of graduates (relative to demand for them, for these reasons it seems that the estimates of returns to graduate training made on basis of 1966 earnings data will be overestimates of the monetary returns in 1970s) and estimated private return were much higher than the social return; Finally the returns to investment in higher education were underestimated because the external and personal non-monetary benefits were not taken into account. However Dodge emphasised the requirement for "much move conceptual and quantitative work on the external benefits of higher education and on the external and personal non-monetary benefits were not taken into account so that the return on investment in higher education was underestimated, however, non-monetary return are so much greater that overall return might be quite similar.

Social monetary returns to investment in higher education within occupations were low; only the doctorate in engineering appears to yield a positive social return at \(5 \%\) rate of discount, unadjusted for effect of growth \(2 \%\) or a \(7 \%\) allowing for a \(2 \%\) natural growth rate.

Hansen and Weisbrod (1969), Published a book in the field in 1969 entitled " Benefits, Costs, and Finance of public Higher Education". \({ }^{143}\) It was a revision of the original study commissioned in 1967 by the Joint Committee on Higher Education, established by the Legislature of California's State in 1965. This study attempts to identify, classify, and measure the economic and social benefits and costs of higher education. Hansen and Weisbrod conclude that many people other than students benefit financially from the increased income which are received by college educated individuals. But because of the population mobility process, these benefits may accrue to other taxing unit not subsidize the education; that forgone income is a major part of college cost, especially for students from low income families. In order to offset the high cost to students and their families of giving up much of their immediate earning capacity, substantial grants (negative tuition) are provide; that public subsidies for higher education in California tend to go unequally to students from relatively high income families and are received in quite different amounts by people even within given income classes. For example, small group of people receive high substantial subsidies whereas high percentage of student age population does not receive any subsidy; and that the person attending public higher education in California receives considerable benefits. He receives more in the form of direct educational

\footnotetext{
143 Hansen Lee W., Burton A. Heisbrod, "Benefits, Costs, and Finance of Public Higher Education", Markham Publishing Co., U.S.A., 1969.
}
benefits than he and his family pay through the tax system during the period of schooling attendance. Also the tax he pays out of the additional income attributable to his higher education (during entire his working lifetime after graduation) fall considerable short, on a present value basis, of the average subsidy he received.

Freeman (1982) published a report to the 0. E. C. D., in which the changing economic value of higher education in the major O.E.C.D. countries was analysed. \({ }^{144}\) In this study data on earnings by education or earning in occupation were composed of persons with different educational attainments. It was suggested that the heralded decline in the economic value of higher education in the U.S. was not a unique North American phenomenon, but rather was appearing throughout the developed world. This study also suggested that the decline in the premium to educated people reflected movement along a reasonably well-defined demand for graduates schedule due to the growth of the college and university system of the various countries.

Freeman found a noticeable decline in the earnings of graduates relative to other workers, a reduction in the proportion of graduates in jobs traditionally filled by college-level workers, a noticeable increases in graduate unemployment, and he also found that the observed changes in terms of relatively simple supply-demand model of the graduates market in which the increase in relative supply of graduates exceeding increases in relative demand reduce the economic advantage of college or university training. Finally, the author found that The decline in the university premium is due to trade union or governmental efforts the maintain the earnings of the less educated in a period of slow economic growth.

Dodge and Stager (1972), provided estimates of the economic private and social returns on investment in graduate education in science, engineering and business administration in Canada based on 1966 data. \({ }^{145}\) It was demonstrated that the social returns to graduate study were much lower than those to investment in most under-graduate training. Dodge and Stager concluded that the estimates of social return to graduate study in Canada fall well bellow the American returns. Returns to graduates in Canada likewise fall well below those under-graduate degree in science and

\footnotetext{
144 Freeman, R. B., "The Changing Economic Value of Higher Education in Developed Economics, A Report to the O.E.C.D. Harvard Institute of Economic Research, Harvard University, Cambridge, Massachueets, Jan. 1982, Discussion Paper Number 874, pp 1-55.

145 Dodge D. A. and D. A. A. Stager, "Economic Returns to Graduate Study in Science, Engineering and Business," Canadian Journal of Economics, May 1972, Vol. 5, no. 2, pp. 182-198.
}
engineering in Canada. Also they concluded that unless there were very large unmeasured external benefits appearing from graduate during the 1960s, there was an over - allocation of public and private resources to investment in graduates in science and engineering. But there was no such over-allocation to graduate programs in business. However, they reported three important implications for allocation of public resources in Canada. The first implication of their finding was that resources could be shifted away from graduate education toward under-graduate training. The second implication was that within graduate study, a shift of resources avay from science and engineering toward business could be improved resources allocation. Finally, if a real social discount rate of \(4 \%\) or more was assumed resources could be shifted out of graduate programs in science and engineering regardless whether or not they were shifted into undergraduate education. If a real social discount rate of an \(8 \%\) was assumed, resources could be shifted into master's programs in business but vice versa if the appropriate rate of social discount was assumed higher than \(8 \%\).

Koch (1972), reported private internal rate of return received by individual who invested time and resources in a wide range of undergraduates majors in American colleges and Universities. \({ }^{146}\) The private internal rate of return were calculated by using income data consists primarily of cross-sectional observation of lifetime-income stream in various academic fields, whereas cost information was based upon the typical student cost of attending and obtaining a baccalaureate degree at Illinois State University in 1968-69. The income and costs data were applied after substantial adjustments had been made. In this study, it was found that the private returns on investment in agriculture, elementary education, fine arts and history were lower than in accounting, economics, geography-geology, mathematics, and phyichology. It should be noted here that the data information about income and costs more related to 1968-69 whereas the enrolment statistics related to \(1970-71\). It was suggested that The internal rates of return could be used to predict changes in student enrolment patterns in under-graduate education. The results of this study lend strong support to that hypothesis at Illinois State University. The study showed that the total number of mobile students involved in shifting pattern of undergraduate majors was not a substantial portion of the total students. However, it was clear that marginal change in internal rates of return were associated with student choice of major field of under-graduate education.

146 Koch James V., "Student Choice of Undergraduate Major Field of Study and Private Internal Rates of Return". Industrial and Labour Relations Review' Vol. 26, No.1, 1972, pp. 680-685.

Bailey and Schotta (1972), reported the results of an examination of evidence on cost and return to graduate education in United States. \({ }^{147}\) The basic data of income include salary of all faculty member in the 829 highest paying U.S. Colleges and Universities during academic year 1966. The direct costs which were used to obtain the net earning stream for these faculty staff was the average cost structure for producing Ph.D. degree in all disciplines Berkeley and Los Angeles Campues of the University of California for the same academic year. In this study, it was found that the income foregone while attending graduate school was a large element of cost in producing a graduate degree. It estimates through the use of actual salaries prevailing in occupations open only to holders of the bachelor's degree in California in fiscal year 1966. The rates of return were computed for graduate degree holders who worked for one of the 829 highest paying colleges and universities in U.S., but not for graduate degree holders employed in other sector such as governmental agencies or business organization. It was assumed that graduate education in United States occurred as a pure investment; that constant dollar amounts was used, year by year, in order to eliminate the effect of inflation. this directly gives rates of return expressed in real terms; that there was no relative change in the structure of supply and demand in labour market; that the wages of a degree holder was approximately equal to the rent on his human capital, that average product of human capital was equal to marginal product of human capital; and that the structure of the labour market was imperfectly competitive and was characterized by monopolistic and monopsonistic competition.

The conclusion of this study were that the social and private real rate of return to graduate education were either zero or less than 1 per cent; that there was overinvestment in graduate degree and underinvestment in undergraduate degree, so that need to be a reallocation of educational expenditures by government from graduate to undergraduate for more efficient resource utilization, both socially and privately. This reallocation could decrease the rate of return to investment in undergraduate education and raise the rate of return to investment in graduate education; Finally, in addition to undertaking improvement and technological revisions in human capital production process in graduate school to reduce the number of years spent in graduate school, great attention should be given to pre-selection and immediate quality control measures to reduce the dropout rate in graduate school.

Garms (1971) calculated the private and social benefits and costs of no. 1, pp. 19-31.
upward Bound Programs for white males and females, and non-white males and females, using the sample consist of 7,236 students who entered upward Bound between June 1966 and August 1968, and control group consists of their older siblings of the same sex as the students. \({ }^{148}\) Basic data came from an extensive computerised data file maintained by OEO on all Upward Bound Student. Garms found that the private net present values were positive for all four sex-race classifications at a discount rate \(5 \%\) and \(10 \%\) while the social net present values were positive at a discount rates \(5 \%\) but negative at \(10 \%\). Furthermore high rates of college attendance by siblings indicate that the Upward Bound program may function more as a device to identify those rather apt to go to college anyway rather than as a program to help those who would otherwise be very unlikely to go to college.

Yoram (1971), examined the educational and occupational choices of graduates students in the natural and social science. \({ }^{149}\) He assumed that the type and length of graduate education were subject to choice. His working hypothesis was that in making these choices, students attempt to maximize the present value of lifetime earnings. The author attempted to test whether his hypothesis was, in fact, consistent with the actual choices of scientists. To pursue the purpose of this study, the wage functions in different scientific fields were estimated with M.A and Ph.D programs in the eight fields. The main source of data was a random sample of 5,686 scientists from the 242,800 reported to the National Register of Scientific and Technical Personnel in 1966. The Scientists in the sample were classified into eight fields: chemistry, physics, earth science, mathematics, biology, agriculture, psychology, and the social science (economics, sociology, and statistics). In order to pursue the purpose of this study, the wages functions in different scientific fields were estimated; thereafter used to computed the rates of return and the lifetime earning streams associated with different types and levels of graduate education. It was found that mathematics and the social sciences were the most profitable, whereas biology and agriculture are the least profitable occupations. But if the expectations of growth in earnings were taken into account, both the amount of education and the ranking of different occupation were affected. For example, psychology and biology improve their ranking, while chemistry becomes less than \(12 \%\). Finally, the average and marginal returns on investment in Ph.D program were estimated to be \(12 \%\)

\footnotetext{
148 Garms, H. I. "A Benefit-Cost Analysis of the Upvard Bound Program", The journal of Human Resources, 1971, Vol. 6, no.2, pp. 201-220.
}

\footnotetext{
149 Yoram Weiss, "Investment in Graduate Education", American Economic Review, Dec. 1971, Vol. 61, no. 5, pp. 833-852.
}
and \(9 \%\) respectively and in M.A were estimated about \(15 \%\) and \(13 \%\).

Blaug (1972), published the article "Correlation Between Education and Earnings: What Does It Signify? \({ }^{150}\) The Purpose of this study was to examine three alternative explanations of the basic finding that amounts of education and personal earnings are positively correlated in some 30 countries studied. Blaug arbitrarily named them: (1) the "economic", (2) the "sociological, and (3) the "psychological". They corresponded, roughly speaking, to the three apparently conflicting proposition: (1) that education imparts vocationally useful skills that are in scarce supply; (2) that education disseminates definite social values by recruiting people into the ruling elite of a society; and (3) that education merely selects people in accordance with their abilities and obviously, abler people earn more than less able ones. Thus, employers pay educated people more because they expect them to be more productive than less-educated people and the expectation is borne out. It was concluded that a proper appreciation of the economic explanation in fact assimilates the other two that the action of competition in labour market that allows three explanations to hold simultaneously; that the less are the pressures to compete, the weaker is the "economic explanation" and the stronger are those of sociologist and psychologist. It was also suggested that the question whether education contributes to economic growth depends on the presence of absence of competitive labour market.

Hinchliffe (1975), attempted to explore the relationship between educational development, earnings differentials and earnings distribution. \({ }^{151}\) this study did not concentrate on the average wage and salary paid to all workers at one point of time, however, it focused on the whole of the working life for individuals educated to three different levels of education (primary, secondary and higher education) and those with no education at all. Earning data for 10 countries (United States, Canada, Israel, Mexico, Colombia, Philippines, Ghana, Kenya, Nigeria, and India) were applied in order to estimate the lifetime earning differentials. In this study, it was found that the total earnings of higher education graduates in India and Ghana were a much higher portion of overall total earning in relation to their relative size than was the case for similar educational group in the United States. It was concluded that different patterns of educational provision had different consequences for

\footnotetext{
150 Blaug Mo, "The Correlation Between Education and Earning: What Does It Signify?" Higher Education, Feb. 1972, Vol.1, No. 1, pp.53-76.
}

\footnotetext{
151 Hinchliffe Keith, "Education, Individual Earnings and Earnings Distribution", Journal of Development Studies, Jan 1975, Vol. 11, no. 2 , pp. 149-161.
}
the distribution of earnings.

Woodhall (1973), discussed the problems of measuring the rate of return to women's education, and the effects of discrimination on women's earnings and job prospects. 152 In this study, evidence was presented for nine countries and the general results were that the returns to education for men greater than for women, but in few cases the women rate of return were actually higher than the rate of return observed for men. The study, explained that because of differences in occupational distribution and because of the prevalence of part-time work and interrupted the careers, the absolute level of earnings for women would always be less that for men. The author pointed out that women's non-market work have had a positive economic value, psychic income, and the educated women may be enjoy a greater advantage than men. All of these benefits were ignored when the rate of return to education were measured, because of the difficulties to measure them. However, she suggested that some allowance must be made for the value of women's non-market work, for indirect benefits of education and for psychic income. The conclusions of this study were that a large part of the observed differential between male and female earnings was due to the concentration of women in low-income occupation; that the difference between the returns to education for men and women was less than had often been suggested, particularly if some attempt could be found to measure the non-monetary benefits and were taken into account. However, the returns to women's education could be increased, if there were changes in traditional attitudes leading to a more equal occupation distribution and better utilisation of women in the labour market.

Verry (1974), discussed some of the problems of planning for the higher educational system as a whole. \({ }^{153}\) The general conclusion of this study was that cross-section estimation is the most useful and appropriate technique for providing the information needed for improved educational planning at the sectoral level. In this study, it was pointed out that institutional studies were not without value, nevertheless, they could help to improve internal efficiency providing administrator and departmental mangers with greater knowledge of workings of their own institution. It was suggested that the reliability of the findings of such studies might be improved by applying more relevant data on the equality outputs; extend the work on publication-based measures of output; having information on the apply of

152 Woodhall M., "The Economic Returns to Investment in Women's Education", Higher Education, 1973, Vol. 2, PP. 275-300

153 Verry, D. W., "Planning Higher Education at the Sectorial Level: With Special Reference to Higher Education Costs in Britain", in Council of Europe Information Bulletin, 1974.
student time; and finally, need the standardisation of data.

Mulvey (1980), estimated private internal rates of return to the two branches of Scotland legal profession, Solicitors and Advocates. \({ }^{154}\) Using data had been collected in 1977 for the Royal Commission on Legal Services in Scotland. Earning profiles were adjusted for tax, for real income growth over the life (2\%). None of the data were adjusted for probability of labor force participation, probability of survival, dropout or probability of unemployment, because the data required to make such adjustments were unavailable. The conclusions of this paper were, that the estimated rate of return to Solicitors and Advocates in Scotland for 1977 lay, respectively, at the higher and lower ends of the range of estimates for other professions in Britain carried out during the 1960's. That is, the rates of return for a higher professional group (including Solicitors and Advocates) in 1977 were lower than those in the \(1960^{\prime} \mathrm{s}\), because the average earnings of manual workers in Britain rose by some \(555 \%\) while those of "higher professional workers rose by only \(314 \%\); that the rates of return to Solicitors and Advocate higher than rate of return to engineers and scientists which were estimated by Wilson (1977).

Birch and Calvert (1973), attempted to answer these two questions: What are the economic benefits derived from the decision to invest in a teacher's certificate, or to obtain a degree, a postgraduate teaching certificate and then follow a teaching career? Are these benefits greater than the costs involved in becoming a qualified teacher? \({ }^{155}\) All the calculations of this study were from the point of view of individual rather than from the nation's standpoint. The authors were concerned only with an economic evaluation. The data of age-earnings profiles were derived from DES Statistics of Education and the New Earning Survey 1970; information on proportions employed was obtained from the 1966 Sample Census; and the survival rates were derived from data in Registrar Generals' Decennial Supplement 1961 and Report 1968. The data were divided by sex and also, for teachers, graduates/non-graduates and primary/secondary. The earnings profiles were adjusted for the probability of survival, for mortality, for labour market participation, and for probability of obtaining a job. In this study, student's grant and vacation earnings were taken into account. The direct private costs was assumed to be equal to zero other than earnings foregone. The conclusion of this study were that in all cases the

\footnotetext{
154 Mulvey Charles, "Rate of return to the legal profession in Scotland, Scottish Economic Society, 1980, Vol. 27, no. 3, pp. 250-259.

55 Birch D. W. and J. Ro Calvert, How Profitable is Teaching? Higher Education Review, Autumn 1973, Vol. 6, no. 1, pp. 35-45.
}
rates of return were positive. Therefore, under the present free tuition and maintenance grants provisions to invest in teaching career was economically a worthwhile one; that the decision to teach was much more profitable for women than for men. But the high rate of return enjoyed by women teacher were more an explanation of the poor state of female labour market than they were evidence of high salaries for women teacher. The average private rates of return for males graduate teachers unadjusted for holiday was slightly less than \(12 \%\), and for women was \(29 \%\), And the returns after adjusted for holiday were 14.4 and \(31 \%\) respectively. The private rate of return for female graduates teachers in this study was higher than that identified by Ziderman for all graduate female graduates whereas the private rate of return was less for male graduate teachers generally. Ziderman though that most of the difference between his results and Birch and Calvert's results due to the fact that their sample is for teachers who have lower average earnings ceteris paribus, also Birch and Calvert had ignored the tax adjustments. It should be noted that Wilson 1983,156 found that the average rate of return for females higher than for male, for both graduate and non-graduate-teachers. However, Brich and Calvert estimated the rates of return for females and males higher than Wilson's estimated.

Niemi Jx. (1974), calculated the private internal rates of return on educational investment in two Western states, Texas and California, for three groups, white (including Mexicans), Mexicans and Negroes. \({ }^{157}\) The purpose of this was to determine the degree of ethnic and racial variation in return to education in the west and to see how this compared to earlier studies concerned with white and non-white differences. Using cross sectional data on mean income and educational achievement by racial-ethnic group and sex were provided by the 1970 Census. The rates of return were calculated for three completed levels of education: high school, college and postgraduate. The earnings \(d a t a\) were adjusted for mortality and taxes. It vas suggested that "racial and ethnic differences are minor and offsetting and the rationality of increased educational investment would appear to be similar for Mexicans, all whites, and blacks". Furthermore, the results of this study were much lower as compared with those obtained in earlier studies and that racial and ethnic differences in the financial return to educational investment were also insignificant compared to previous results. The author concluded that the results of this study most

\footnotetext{
156 Wilson, R. A. The Decling return to professional status in the British economy, thesis submited for Ph.D., University of Warvick, 0ct. 1983, pp. 6.58-6.70.

157 Niemi, Wo Albert Jr., "Racial and Ethnic Differences in Returns on Educational Investment in California and Texas", Economic Inquiry, 1974, Vol. 12, no. 4, pp. 398-402.
}
likely reflected the degree of progress toward equality of opportunity that had been made in the past three decades.

Carnoy and Marenbach (1975), presented the value of both social and private rates of return to primary, high school, and college education by sexes and race in the United States for the four decades from 1939 to 1969. \({ }^{158}\) In this study, returns on investment in schooling unadjusted for unschooling factors were estimated in four Census years 1940, 1950, 1960 and 1970. The authors assumed that the private costs were zero at primary level and the private costs were zero other than earnings forgone at the high school and college level. Also they assumed that earnings forgone equal to \(75 \%\) of a full year's salary of a person of the same race, sex, and age with level of schooling completed below that being taken by the observed individual.

The results of this study were that the average social rates of return to schooling had declined from \(13 \%-14 \%\) in 1939 to \(9 \%\) in 1969, the authors argued that this decline would continue gradually, both because of the continued investment in schooling relative to physical capital, and because of the greater participation of women in labour force; That the social rates to 'white' high school investment declined in the 30 -year period, while private rates might rise; that the social rates of return to college either remained stable or would, begin to decline in next decade, while the private rates of return to white males might rise; the social rates of return to graduate training rose sharply in 1959-1969: Carnoy and Marenbach argued that the change in the rate of return depend on the demand for the educated labour and on change in the relative number of educated people.

Welch (1973), published the article "Black-White Differences in Returns to Schooling". 159 In this article, the contribution of schooling to earnings were compared between blacks and whites in United States, using two bodies of data. The first was the \(1 / 1000\) sample from the 1960 Census and the second was the Survey of Economic Opportunity (SEO). Census income referred to earnings in 1959, and (SEO) refer to 1966 earnings. In this study, rates of return were calculated for blacks and whites educated for the period 1959-1966. The results were shown that returns as a fraction of earnings for blacks educated exceeded returns to whites.

Raymond and Sesnowitz (1975), computed both private and social rates of

158 Carnoy Mo and D. Marenbach, "The Return to Schooling in the United States, 1939-1969", The Journal of Human Resources, Summer 1975, Vol. 10, no.3, pp 312-331.

159 Welch Finis, Black-White Differences in Return to Schooling, American Economic review, Vol. 63, no. 5, 1973, pp. 895-907.
return to investment in one year, two years, three years, and four years of college education. \({ }^{160}\) For these purpose, Census data for 1970 were used to generate age-income distributions by educational categories. Earning data were adjusted for growth and ability differentials. The results of this study showed that the rate of return had not decreased over the 1960 s and the returns to two-year program might be much greater than previously thought.

Hoffer (1973), undertook an investigation of the impact of higher education on women's earnings. \({ }^{161}\) In this study, the internal rate of return to higher education were computed from the viewpoint of high school graduate. Monetary costs and benefits associated with education were considered. The data were derived from the 1967 Survey of Economic Opportunity (SEO). The earnings streams were not adjusted for ability, for economic growth, and for taxes. However, the rates of return to higher education for women were estimated by conservative measures. The results were shown that the rates of return for non-whites were considerably higher than those for whites; that those with 1 to 3 years of college had much smaller returns than those who completed college; that when labour force behaviour differences between men and women were held constant, the rate of return to all women with 4 years college and some women with 1 to 3 college were greater than the rate of return to white men.

Clotfelter 1976, published a study in which he examined the interstate differences in the levels of public spending for higher education. \({ }^{162}\) The author also attempted to evaluate the predictive power of two hypotheses which were implied by models in developing positive theory of public spending. The data applied in this study refer to expenditures by state and local governments on higher education in 1970 in U.S. The first hypothesis of this article were that "states with higher rates of out-migration of graduates will give less support to expenditures related to students, because migration represented the loss of future benefit streams to the state". The second hypothesis emphasizes the importance of the institutional structure of public financing. This method of public

\footnotetext{
160 Raymond R. and R. Sensnowitz, "Returns to Investments in Higher Education: Some New Evidence", Journal of Human Resources, Spring 1975, Vol. 10, no. 2, pp. 139-154.

161 Hoffer \(S_{0} N_{0}\), "Private Rate of Return to Higher Education for Vomen", Review of Economics and Statistics, Nov. 1973, Vol. 55, no. 4, pp. 482-486.

162 Clotfelter Charles \(T\). , Public spending For Higher Education: An Empirical Test of two Hypotheses, Public Finance, Vol.31, No. 2, 1976, pp. 177-194.
}
financing tend to obscure the true cost of government programs and leading to higher level of expenditure. This hypothesis depends upon the use of indirect taxes, because of including such taxes in the gross prices of goods and services. In this method, another proposition was suggested that "a complex tax structure containing many small taxes rather than a few larger ones similarly lessens the apparent burden of government spending". However the first hypothesis (Welfare - maximization was supported by this study, while the second hypothesis (Fiscal Illusion) scant support was provided. However, for another implication of the theory conclusion, that direct taxation discourage public spending relative to indirect taxation.

Greer (1976), published paper of returns to investment in undergraduate education by race and sex in 1960 to 1970.163 The purpose of this study is to analyse the changes in the returns accruing to investment in college education according to race (Whites and Non-whites) and sex (Males and Females) over the period from 1960 to 1970 in order to determine whether there had been a determination of discrimination influences upon returns for non-whites and females. Net present values of education for men and women and for whites and non-whites were calculated for 1960 and 1970; thereafter compared. The author concluded that "returns to investment in college education based upon common opportunity costs and constant dollars for non-white and unmarried females increased relative to returns for white unmarried males, respectively, during the decade of the civil right movement from 1960 to 1970". He explained the change in returns to investment in undergraduate schooling for non-whites and females to the extent of earnings for younger persons. Green also explained the increase in earnings of younger persons as a result of increase the employer demand to hire them in order to meet his positive active action goals.

Wolff (1977), studied the United States labour force using \(1 / 1000\) of 1960 and 1970 Public Use Sample Stratified by occupation with a sample size of 41,349 and 63,661 respectively. \({ }^{164}\) The purpose of this study was to find the relationship between schooling and earnings across and within occupation. He observed that even though the mean schooling between occupations fell somewhat over the period of 1960 to 1970, however, a strong correlation was evident between mean earnings and mean schooling across occupations. Wolff stated that the best paid professionals were

\footnotetext{
163 Greer C. R., "Returns to Investment in Undergraduate Education by Race and Sex in 1960 and 1970", Review of Business and Economic Research, Winter
} 1976/77, Vol. 12, no. 2, pp. 57-68.

164 Wolff E. No "Schooling and Occupational earnings", Review of Income and Wealth, Journal of the International Association for Research in Income and Vealth, Sept. 1977, Vol. 23, no. 3, pp. 259-278.
also the most highly educated. The relationship of earning to schooling seems to be negligible when schooling and earnings were considered within occupation. The author found a variation of five and half years of education in both 1960 and 1970 within occupations. He said that the difference attributable to schooling within occupations is substantial enough to warrant a further analysis of relationship of schooling to earnings. Furthermore, only within approximately one-third of the occupational groups were earnings significantly and positively related to schooling. Wolff stated that the rate of return approach for earning variations within occupation may not be appropriate because the measure may understate the effect of schooling on earnings within certain ranges of schooling and overstate it in other ranges. He reasoned as follows:
"In some occupations there may be a "threshold" level of schooling where earnings jump but at other levels of schooling there may be no incremental effect on earnings. In other occupation earnings may be rise with schooling up to a certain point a level off. In still others the schooling profile may be flat up to a certain point and then rise with schooling".

Wolff concluded that for an occupation that requires school- related skills, education will be productivity-augmenting.

Akin and Garfinkel (1977), \({ }^{165}\) attempted to develop several alternative models for estimating the effects of per pupil school expenditure on future earnings and, on the basis of the estimates, they computed a range of rates of return to increasing per pupil school expenditures. Most the data came from the University of Michigan Survey Research Center's Income Dynamics Panel. The survey contained information for the five years 1968 to 1972. The data used were for men only who were between the ages of 30 and 55 in 1972. Also, men with zero earnings and self-employed were excluded from the sample. Final sample size used was 1049, of which 716 were white and 333 were non-white. The results showed that the point estimate for rate of return to increase in per pupil school expenditures was quite respectable for whites and very high for non-whites irrespective of the model applied.

Bartlett (1979) \({ }^{166}\), estimated changes in the effects of education and work experience on annual income for males between 1939 and 1969 and attempted to determine whether the supply-demand works equally well. Bartlett concentrated on the benefits of education (i.e. total annual

\footnotetext{
165 Akin J. S. and I. Garfinkel, "School Expenditures and the Economic Returns to Schooling", The Journal of Human Resources, Fall 1977, Vol. 12, no. 4, pp. 460-481.

166 Bartlett So, "Education, Experience, and Wage Inequality: 1939-1969", The Journal of Human Resources, Summer 1978, Vol. 13 , no. 3, pp. 349-365.
}
income or annual salary and wage income). In addition, more systematic efforts were made by the author to ensure that data used for different years were really comparable. The data used in this paper came from the Census. It was found that the benefits of extra year of education decline between 1939 and 1949, but were virtually stable between 1949 and 1969. He explained the decline in the impact of education on wages between 1939 and 1949 by the supply of educated labour rose faster than demand, lowering returns. A similar model was applied to change in the effects of work experience. Finally, the analysis in this study suggested that changes in returns to education and experience from 1939 to 1949 not due to changes in the industrial mix, but were mainly due to changes in the unemployment rate.

Griffiths and Saunders (1979), estimated private and social returns on investment in higher education in the United Kingdom, for males and females for the periods: 1966/67 and 1973/74. \({ }^{167}\) The data used in the study came from 1966/67 Survey of Earnings and Qualified Manpower conducted by the Department of Education and Science, while the data for 1973/74 came from a number of Sources, namely Economic Trends, The Department of Employment Gazette, and the National Income Survey. The results showed that there was an increase in both the private and social rates of return to male graduates between 1967 and 1973. The authors explained that the major factor of these changes was the increase in males graduate - nongraduate earnings differentials. However, social rates of return increased by more than private rates. Although it might be argued that "the increase in social rates of return was the result of changes in direct taxation, private rates of return dependent only on net-earnings (i.e. after - tax) differentials are independent of this effect". In this study, it was suggested that the belief that female higher education was an unprofitable investment either for social or for the individual was unfounded, even if net benefits were measured only in terms of earnings. Finally, the results of this study suggested that the general expansion in the higher education between 1967 and 1973 did not produce a fall in investment returns.

Psacharopoulos and Layard (1979), published an article of human capital and earnings with especial reference to British evidence and a critique. \({ }^{168}\) The following two questions were attempted to answer for Britain by the

\footnotetext{
167 Griffiths G. and A. Saunders, Return on Investment: A Note on Males and Female Higher Education in United Kingdom, 1966-1973", Public Finance Quarterly, Jan. 1979, Vol. 7, no. 1, pp. 110-121.

168 Psacharopoulos, G. and R。Layard, "Human Capital and Earnings: British Evidence and a Critique", Review of Economic Studies, 1979, Vol. 46, no.3, pp. 485-503.
}
authors: "What is the private rate of return to schooling and to on-the-job training?" and "How far does human capital explain the inequality of earnings?", using a random sample of about 7,000 employed men in Britain. The authors found that there was a strong relation between schooling and post-schooling training; that the return on investment in training grows with schooling and it is much greater than the return on investment in schooling; that the estimated direct rate of return to schooling was found \(10 \%\), as in the U.S.; that the their approach applied to the rate of return to schooling "does not capture all the effect of human capital on earnings, since there are unmeasured differences between people in human capital investment"; that the human capital (meaning schooling and on-the-job training) explains about a half the variance of earnings, as much as in U.S.; finally, that it does not explain more than one-third of annual earning inequality, although Mincer's claim that human capital explains "close to two-thirds" of annual earning inequality.

Ferber and McMahon (1979), published the paper "Women's Expected Earnings and their Investment in Higher Education". 169 Ferber and McMahon proposed to explore for the influence of women's expected earnings, together with other factors, on the extent of their investment and on changes in the fields being chosen, together with several implications. The data applied came from a nation-wide survey of 2,580 students enrolled university education in the fall 1972 and expected to complete their bachelor's degree in 1976, Plus data on earned degree conferred from the U.S. National Center for Educational Statistics and on Earnings by Occupation and Education from the U.S Bureau of the Census. The major findings reported in this study was that earnings women expected at graduation and also 25 years later in male - dominated fields, were high not only in relation to women's earnings in the past, but also in relation to the earnings expected by men. The authors concluded that women's high expectation, high investment in education, particularly in formerly male-dominated fields, increasing labor force participation, and decreasing fertility all tend to reinforce each other so as to create a "benign circle", and all contribute toward reducing the female-male earning gap.

Charnsupharindr (1979), estimated the social rates of return to various types of education in Thailand on the basis of two surveys, Mark Blaug's Survey of the Bangkok metropolitan area in 1971 and the nation-wide survey by National Statistics Office. 170 Furthermore, the total investment for education was estimated for the period 1964 to 1972. The conclusions of

169 Ferber Mo A. and W. W. McMahon, "Women's Expected Earnings and their Investment in Higher education", The Journal of Human Resources, Summer 1979, Vol. 14, no. 3, PP. 405-420.
this study were that there was high variation in the estimated social rates of return to investment in different levels of education and, at higher education levels, in different fields of specialization; that the return to an engineering degree was found the highest; that the return to medical science was found the lowest return among college alternatives which was as low as the return to vocational training; that the rates of return to public upper elementary education and to private general education were estimated to be the highest; that the higher levels of education in general earned the highest returns; that total investment for education for the period from 1964 to 1972 was reported to be \(40 \%\) of total investment in Thailand; that the distribution of investment among levels of education was not related to relative return. Although the social rate of return to medical education was estimated to be lowest, public investment per student in this field was the highest.

Demetriades and Psacharopoulos (1979), estimated the returns to investment in education in Cyprus, Using data from a random sample of 29,942 wage and salary earned in 530 establishments, which corresponded to \(20 \%\) of the gain-fully employment labour force or one-third of all wage and salary earners (i.e. excluding working proprietors and unpaid family workers). 171 It was found that the returns to investment in first university degree were relatively low for those who studied in Greece and very much higher for those who studied in the United Kingdom, and the United States and Canada. The authors argued that the differences of return attributed to differences in the quality of education in the countries in question and also to the relative supply of graduates from these countries, preferences of employers and occupational differences of graduates. The rate of return to vocational training was estimated to be the lowest and to professional qualifications was estimated to be the highest. Also it was found that in general, rate of return to schooling was much high than expected.

Wilson (1980), estimated rates of return to becoming a qualified scientist or engineer in Great Britain for the period of 1966-1976. \({ }^{172}\) The

\footnotetext{
170 Charnsuphaindr \(P_{\circ}\). "The Rate of Return to Investment in Thailand Education", The Philippine Economic Journal, 1979, Vol. 18, no 3, pp.289-327

171 Demetriades E. I. and G. Psacharopoulos, "Education and Pay Structure in Cyprus", International Labour Review, Jan.- Feb. 1979, vol. 118, no. 1, pp.103-111.

172 Wilson R. A., "The Rate of Return to Becoming a Qualified Scientist or Engineer in Great Britain, 1966 - 1976", Scottish Journal of Political (Footnote continued)
}
purpose of this study was to obtain a longer term perspective on the individual return to undertaking investment in higher education, focusing on the experience of those qualified in technology and science, and engineering. Particularly, the purpose of the study was to focus upon the question of how rates of return had changed over time. The data came from a survey of the earnings of members of various professional institutes. These were combined with information from the Department of Employment's New Earnings Survey and data from the Census Population. Average private rates of return to an individual were estimated assuming that age earning profiles at a point in time could be applied as a proxy for the expected profiles of earning over his lifetime. The direct costs vere assumed to be zero. The psychic costs and benefits of education as a consumer good were ignored. It was found that the rate of return to undertaking degree level courses in scientific disciplines had declined significantly since the mid 1960s; that this decline for those taking engineering and technology was more than those taking pure sciences; that the cause of this decline was most likely to be that supply of qualified manpower had outpaced demand over this period.

McMahon and Wagner (1981), published the paper of expected return to investment in higher education. \({ }^{173}\) In this study, the expecting earnings reported by a reasonably large nationwide sample of college students were examined. Furthermore, these student estimates were compared across racial groups and across degree levels and with the actual starting salaries these individuals faced upon graduation as well. The expected earnings data came from the sample of 2,766 freshmen \(1971 / 72\), most of whom were expected to complete bachelor's degrees in 1974/75. It was found that the college freshmen appeared to understand the relative differences in earnings across field. For example, those in health, technical, and science fields expect the highest salaries; while those in education, liberal arts, and humanities expect the lovest salaries; that black college students at the B.A. level expected starting and future salaries at least comparable to those of their peers, and those planning graduate study expected even high returns than whites; that most student correctly perceived sources of payoff to advanced degree as emerging less through higher initial salaries than through a more rapid rate growth in earning later in the working life than that achieved by those with less educational level; that greater variation in future salaries than in their expected starting salaries; and

\footnotetext{
172 (continued)
Economy, Feb 1980, Vol. 27, no. 1, pp. 41-62.
}

173 McMahon W. W. and A. Po Hagner, "Expected Returns to Investment in Higher Education", The Journal of Human Resources, 1981, Vol. 16, no. 2, pp. 274-285.

Finally, the authors suggested that students appraise the potential returns to investment in higher education fairly accurately.

Mount, Bennett and Casper (1982), examined the influence of the relationship between education and wage and salary income for employees in the United States for each Census occupational class and for all occupations combined. \({ }^{174}\) In this study linear regression techniques was applied. It was indicated that the higher the level of educational achievement the higher the level of earning associated with it, with greatest positive increase associated with the highest degree category "College Degree or More". Nevertheless, it was found that there may be significant differences in the influence of education on the respective occupational categories. Also it was indicated that relative to other sociological and economic factors included in the analysis, the category, "college Degree or More" was the most significant characteristic in explaining income level variations for U.S.

Raymond and Sesnowitz (1983), published an article of the rate of return to Mexican Americans and Anglos on an investment in college education. \({ }^{175}\) Rates of return to an investment in a college schooling were estimated for Mexican Americans and Anglos male college graduates with majors in business accounting, education and liberal arts. The data used came from Pan American University Survey for 1966-1974 and 1975 graduates. The rate of return were calculated for 1967,1970 , and 1973 graduates of Pan American University. The results showed that the returns were quite substantial for all but the Anglo education majors; that the returns to the business and accounting majors substantially exceeded those to the other graduates; that returns on a college education were higher for Anglos than for Mexican Americans; And that there was some tendency appeared for the rates of return to fall over time. Moreover, there were no systematic differences between the returns to the two ethnic groups.

Psacharopoulos (1982a), analysed the structure of earnings in Greece by level of education in 1960, 1964, and 1977. \({ }^{176}\) The data employed in the

174 Mount, Ro I., R. G. Bennett, and C. A. Casper, "The Influence of Educational Differences on Income by Occupation", The American Journal of Economics and Sociology, Jan. 1982, Vol. 41, no. 1, p. 28.

175 Raymond R. and M. Sesnowitz, "The Rate of Return to Mexicans Americans and Anglos on an Investment in a College Education", Economic Inquiry, July 1983, Vol. 21, no. 3, pp. 400-411.

176 Psacharopoulos G., Earnings and Education in Greece, 1960-1977, European Economic Review, March 1982a, Vol. 17, no. 3, pp. 333-347. (Footnote continued)
study came from a special labour market survey covering nearly 12,000 workers in urban areas. The social and private rates of return were estimated for the period 1960s, 1970s. It was found that the rate of return to schooling as a whole and to investment in higher education in particular, declined extremely between the early of 1960 s and the late of 1970s. This fact was attributed to the expansion of higher education enrolment and graduates. The conclusion of this study was that a strong social demand for higher education in the period of \(1960-1977\) combined with a low returns to this level of education.

Psacharopoulos (1982b), \({ }^{177}\) calculated the social and private rates of return in selected countries. The social and private returns on investment in education were computed according to educational level and country type (developing, intermediate and advanced), the social return to university education by subject in selected countries as well. The data used for this study came from a recent Bank Survey of 44 countries at different stages of economic development. The results of this paper showed that the social returns on investment in all levels of education in developing countries were higher than \(10 \%\). It was found that social returns were the highest for investment in primary schools; that in general, the returns to investment in schooling decline as the educational level increase; that the returns to investment in education declined as the economic level increased; that returns on education in general arts subjects were often greater than those for technical training, because of the high cost of the latter and unmeasurable social benefits of education; that primary education had a significant impact on poverty and the distribution of income, in addition to being highly profitable.

Wilson (1983), extended his original analysis to consider the costs and benefits to society as a whole. \({ }^{178}\) The social and private rates of return to obtaining a degree in science or engineering were estimated. It was found that the rates of return had substantially declined in estimated value over the period under consideration. The author argued that the fall over the period might be attributed to expansion of the higher educational system during this period.

\footnotetext{
\({ }^{176}\) (continued)
177 Psacharopoulos G., "Education as an Investment", Finance and Development, Sept. 1982b, Vol. 19, no. 3, pp. 39-42.

178 Wilson R. A。, "Rates of Return: Some Further Results", Scottish Journal of Political Economy, June 1983, vol. 30, no. 2, pp. 114-127.
}

Wilson (1985) \({ }^{179}\), extended his analysis of rates of return to 1980 and 1983. In this study, the average rates of return to Chemists, Physicists, and Engineers were estimated for years prior to \(1966 / 67\) in Great Britain. The data used were derived from the Council of Engineering Institutions and Royal Commission on Doctor and Dentists Remuneration (RCDDR) for Engineers, Royal Institute of Chemistry (RIC) for Chemists, and Institute of Physics and Physical Society For Physicists. It was found that the average private rate of return to the typical professional engineering for 1955/56 was estimated to be \(14.5 \%\). It was almost exactly the same as obtained for 1967/68. But the rate of return sharply increased to around \(17 \%\) in both 1959/60 and 1962/63. For Chemists, the average private rate of return was found to be \(20 \%\) for \(1955 / 56\). This figure declined sharply to \(14.5 \%\) for 1967/68. The Result for Physicists was \(20 \%\) for \(1956 / 57\) and the figure declined sharply to \(15.5 \%\). Finally, it was found that the rate of return to Engineers, Chemists, and Physicists also decline to \(9 \%, 9 \%\), and \(10 \%\) respectively for year \(1979 / 80\), The author observed that the major cause of the declining estimated rate of return was the fact that the forgone earnings of young people at the start of their training had increased more rapidly than average earnings as a whole. It was suggested that the decline in rate of return to becoming a professional scientist or engineer between 1967 and 1980, identified in author (1980 and 1983), was part of longer term phenomenon which had been going on since at least the mid-1950s.

Hoffman (1984), published an article "Black - White Differences in Returns to Higher Education : Evidence from the 1970s". \({ }^{180 \text { In this }}\) article, an empirical update of the effects of high-school and higher education provided for young black and white males. In order to analyse the changing effects of education on earning, cross-sectional earnings function were estimated for samples of young black and white men in different years, using data from the Panel Study of Income Dynamics. It was found that the earnings differences between college educated employees and those with a high school education had continued to decline for young white males whereas for young black males, the earnings differences had expanded significantly between 1971 and 1977. It was also found clearly that the widely reported rise in the black-white earnings ration had accompanied by higher inequality in the earnings distribution for young black.

\footnotetext{
179 Wilson R. A., "A Longer Perspective on Rate of Return", Scottish Journal of Political Economy, June 1985, Vol. 32, no. 2, pp. 191-198.
}

180 Hoffman, So D., "Black - White Differences in Returns to Higher Education : Evidence from the 1970s", Economics of Education Review, 1984, Vol. 3, no. 1, pp. 13-21.

Demetriades and Psacharopoulos (1987), published a paper for educational expansion and the returns to education, with special reference to formal education in a developing country like Cyprus. \({ }^{181}\) The data were obtained from the random sample cover about 30,000 wage and salary earners from establishments in all private sectors of the economy, and some wage and salary earners in the government sector as well. The study concentrated on the two most comparable estimates in 1975 and 1984. It was found that overall returns on investment in education in Cyprus declined over the time under investigation pari passu with increases in the stock of human capital, as forecasted by economic theory. The authors argued that the decline of \(1.5 \%\) in rate of return to education in Cyprus might take approximately one decade. It was also found that secondary education was the mostly associated with this decline. The higher decline in the returns to secondary schools could be explained by the rapid expansion in number of secondary school graduates over the period under study. But the rate of return to university education declined slightly, and this be explained by the protected nature of employment sought by most university graduates in the civil service, semi government organisations, Bank and 0ffshore Companies. Finally, it was found that there was negative relationship between human capital stock and return to education. That is roughly speaking, a \(10 \%\) increase in human capital stock is associated with a \(10 \%\) decrease in the returns to education, or one percentage.

Beladi, Brunner, and Zuberi (1986), estimated the private and social rate of return to various level of schooling in Michigan. 182 It was noted that the cost of higher education increased significantly during the period of the 1970 s . Therefore, this study attempted to analyse the impact of the high cost of education in Michigan on the private and social returns to different levels of schooling. The data used were derived from 1980 Census which were collected in 1979. Furthermore, an annual average of the AAA-rated corporate bond rate for 1979 was used to compare the educational returns. The purpose of this study was to examined whether social returns to higher education would tend to exceed private return, as educational costs rose and inflation led to greater nominal earnings and greater tax rates. However, the results of this study showed that the private returns exceeded the social returns for all educational levels. It was found that the graduate with four years of college education could earn higher incomes

181 Demetriades E. I. and G Psacharopoulos, "Education Expansion and the Return to Education: Evidence from Cyprus"' International Labour Review, Sept.- Oct. 1987, Vol. 126, no. 5, pp. 597-602.

182 Beladi \(H_{0}\), Brunner \(L_{0}\). \(\mathbf{P}_{\circ}\), and Zuberi \(H_{0}\) A., "The Rate of Return on Investment in Education in Michigan", Atlantic Economic Journal, 1986, Vol. 14, no. 4, pp. 50-64.
than student with some graduate education. The highest social returns accrued to students with four years college schooling and the social and private return were the lowest for two years of college. Therefore, it was concluded that funds from community college (one year and two years of schooling) should be reallocated toward four year colleges. In this study, it was concluded that the investment in education in Michigan led to lower returns than investment in general. It was also found that private rates of return were higher for both high school graduates and for college graduates than for those students who completed levels of education not necessarily involving a degree (such as one or two years of college, some graduate study). Furthermore, this study showed that there had been some decline in the rate of return to education, when compared with the returns on alternative investments. However, in 1980, the social rate of return to education was lower than the corporate rate.

Vaillancourt and Henriques (1986), presented evidence on the monetary returns, gross and net of taxes and on the private and social costs of university schooling, for Canadian males from five Canadian regions in 1981. \({ }^{183}\) The data applied were presented for Canadian men residing in each of five regions of Canada, and they were regrouped by the Atlantic and the Prairie Provinces to those with university education and those without university education. It was found that both private and social rates of return for three years university graduates were greater than for four years university graduates in all regions under investigation; that the private return on investment in both three and four years of university were found higher than returns associated with other types of investment such as long-term government bonds in Canada which usually yield between 3 and 5 per cent in real terms; that generally, the private rates of return were higher than the social rates of return in all provinces; that the social rate of return on investment in university education were at best equal and often lower than the rate of return on investment in physical capital (It was estimated to be \(10 \%\) in 1977 in Canada). While the private returns to university education were higher than the physical capital return in three regions (Atlantic, Quebec, and Ontario), less than \(10 \%\) in Prairies and equal to physical capital return in British Columbia; finally, that the monetary rate of return to university graduates declined comparing with the returns in 1970s. The authors concluded that "it would be appropriate to increase what individuals pay to acquire university schooling (such as tuition) and decrease what society, as a whole, pays out as subsidies to these individuals".

\footnotetext{
183 Vaillancourt F. and I. Henriques, "The Returns to University School in Canadian", Canadian Public Policy, 1986, Vol.12, no. 3, pp. 449-458.
}

Blaug, Doughery, and Psacharopoulos (1982), attempted to estimated the effect of the raising the school leaving age in 1972 on distribution of earnings and distribution of schooling in Britain. \({ }^{184}\) The data applied were derived from the General Household Survey to fit earnings functions for the years 1972 and 1975, and to simulate the effect of raising of the schooling leaving age on individual earning and thus on income distribution in a new steady state. It was concluded that if other things being equal, the effect of raising of schooling leaving age on income distribution earnings with a narrow age group was of the order of 10 to 15 per cent in the degree of inequality; that if the population as a whole were taken, raising of schooling leaving age might actually increase income inequality by increasing the earnings differential between age groups.

Guisinger, Henderson, and Scully (1984), presented estimates of the rate of return to schooling and differences in these rates of return by schooling level and sectors of employment. \({ }^{185}\) The data for this study were derived from a Socioeconomic Survey conducted by the Pakistan Institute of Department Economics (PIDE) in Rawalpindi city in 1975. In this study, it was found that the rate of return to investment in education was lower comparing with the rate of return on physical capital and comparing with the rate of return to investment in education in other developing countries, the authors caused the low rate of return to a result of a conscious government policy which drastically compressed the skill - wage structure; that the rate of return had a positive relationship with educational level i.e. rate of return raising with higher education levels; that the worker in formal sector made almost \(30 \%\) more than their colleagues of like education and experience in the inform sector, however, the shift was uniform for all education levels and hence did not rise to differential in the rate of return to education in two sectors; finally, that education appeared to have little impact on the interpersonal distribution of earnings among earners of similar level of educational attainment. However, the authors argued that if anything, education appeared to moderate the normal dispersion in interpersonal earnings that is due to the innate ability and luck.

Gustman (1973) \({ }^{186}\), analysed the impact of variations in the preference

\footnotetext{
184 Blaug Mo, C. Dougherty, and Go Psacharopoulos, "The Distribution of Schooling and distribution of Earnings: Raising the School leaving Age 1972", Manchester School of Economic and Social Studies, March 1982, Vol. 50, no. 1, pp. 24-40.

185 Guisinger S.E., J.W. Henderson, and G。W. Scully, "Earning, Rates of Return to Education and the Earnings Distribution in Pakistan", Economics of Education Review, 1984, Vol. '3, no. 4, pp. 257-267.
}
on currently available estimates of rate of return to education. The data used in this article were derived from the subject report of the U.S. Census (1960). It consisted of observations for white males in all 61 occupations for which a complete set of variables was available. In this study, regression analysis was employed to estimate the rate of return to education. It was indicated that "there was substantial difference in the rate of return to education when it was estimated under the assumption of an ineffective capital market facing the student than when it was estimated under the assumption of a perfectly operating capital market". It was also found that estimates appear to be sensitive to the choice of instrumental variables employed (Such including hours as an endogenous variable in the earning function).

Blair, Finn, and Stevenson (1981), published the paper "The returns to the Associate Degree for Technicians". 187 The purpose of this study was to compare the earnings of technicians with various levels of education. Particularly, the earnings of technicians who had an associate degree were compared to earnings of technicians who had other educational background. The data applied were come from the 1972 Postcensal Manpower Survey which was conducted for the National Science Foundation by the U.S. Bureau of the Census. It was found that the cost for students in four-year colleges and university were considerably greater than costs for students at other postsecondary institutions. It: was also found that the rates of return to technicians with degree comparing to high school were slightly higher than rates of rates of return to technicians with degree comparing to one year college.

Randll H. King (1980), tried to investigate further the correlation between the business cycle and the rate of return in a more refined analysis \({ }^{188}\). The data for this study were obtained from National Longitudinal survey. In this study marginal rate of return were estimated (completion of 12 years of school with respect to completion of 11 years). It was found that completion high school education was not likely to be a profitable investment for whites in the term of expected lifetime earnings.

186 Gustman A. L., "On Estimating the Rate of Return to Education", Applied Economics, 1973, Vol. 5, no. 2, PP. 89-99.

187 Blair L. M., M. G., and Stevenson W., "The Returns to the Associate Degree for Technician", The Journal of Human Resources, Vol. 16, No. 3, pp. 449-458.

188 Randll, King H., Some Further Evidence on the Rate of Return to School and The Business-cycle, The Journal of Human Resources, Vol. 15, no. 2, 1980, pp. 264-272.

While in 1971, it was found that school completion was marginal investment for whites men and an excellent investment for black. It was also found that blacks obtained a rate of return substantially greater than that of the whites in both years. However, it was concluded that the business cycle had a strong effect on computed rates of return to education. It was also concluded that research must control for the business cycle when making rate of return computes.

Gareth Villiams and Alan Gordon (1981), provided direct evidence to support some of the assumptions of the human capital model. \({ }^{189}\) In this study, the earnings expectations of a sample of English students in their last year of compulsory education were examined in the context of various personal characteristics, their family backgrounds and their intentions regarding postsecondary education. The private rate of return to upper secondary and higher education by different groups of school leavers were calculated. The data used vere derived from a sample of 2944 students in their final year of compulsory education attending 110 secondary school in England in spring 1977. The result showed that males expected to earn more than females regardless of their education; that the young people with high intellectual ability expected to earn greater than those with lower intellectual ability independently of their education; that social background exerts very little independent influence; that students from white collar homes expected to earn more than other, but as a result of their continued education, not independently of it. It was also found that the average ex ante perceived rates of return were similar to the ex post actual rates of return estimated in previous studies. It was suggested that somewhat higher perceived rates of return are necessary to encourage working class children to stay on at school and into higher education than is necessary for their meddle counterparts leads to the prediction that when actual rates of return are high as in 1960s, the expected working class participation would rise when the actual rates of return fall, as in 1970s, the expected working class participation would fall. The authors explained that results are not aid in the prediction of the demand for higher education only, but they help to illustrate that the demand is not independent but influenced by changes in the private costs and benefits of a degree level qualification. However, they suffer from the weakness of all rate of return calculations in that they offer no guide as to how actual rates of return will move in the future.

Stephen Nord (1987), examined the influence of college on sex

189 Williams Go and Ao Gordon, "Perceived Earnings Functions And Ex ante
Rates of Return to Post Compulsory Education in England", Higher Education, Vol. 10, 1981, pp. 199-227.
discrimination and the male-female wage differential. \({ }^{190}\) In this study, the role of college education in reducing sex discrimination and narrowing the male-female wage differential in 1980 for full-time wage and salary workers was analysed. The data used for this study were come from the 1/1000 Census Population and Housing 1980: Public Use Microdata Sample Files. It was widely known that the average females worker earns less than males. However, in this study, it was found that the rates of return to females with college were higher than to males, especially females between 21 and 29 years of age (the rate of return for white females with college education was \(43 \%\) greater than for white males and \(47 \%\) higher for black females than black males). The author concluded that schooling extended the wage gap between the sexes.

The authors concluded that extra schooling is not "education on the cheap" as it seems to be at the first seeing. They stated that if it is accepted that the total costs calculated to be underestimates rather than overestimates of the level as usual. Secondly, regardless of imperfection of the benefit-cost ratios, it indicates the possibility of substantial miss-allocation with extra education. It was happen when applied to both the type and level of major courses provided and especially to the latter. For example, it had been frequently argued that nation's most serious shortage in skilled labour graduate engineers and scientists. Other levels of work in these fields were had a stronger claim to priority than first degree, on the basis of the criteria adopted. In the same way, other types of work may had been an more important need at various academic level than engineers and scientists.

Heyneman \({ }^{191}\) (1984), estimated the private and social rates of return to investment in upper secondary schooling in Malawi, using tracer study data on the destination and earnings of a sample of nearly 1000 secondary school graduates. The short-cut method was used to calculate the returns to education. This study allowed for earnings foregone, assumed unemployment at a constant level, and used an alpha-coefficient of 0.90 to adjust earnings differentials. The author found that private and social rates of return were \(50 \%\) and \(20 \%\) respectively. The rates of return were calculated for men only because from the data available in the year (1976), no women chose to enter the labour force. It was found that the results of this study explained the strong private demand for entry into secondary school

\footnotetext{
190 Nord S., "An analysis of College on Inequality in Male and Female Wages in the United States: A Human Capital", Rivista international of Science Economic Commercial, 1987 , Vol. 34 , no. \(12 \frac{\text { Rivista }}{\text { pp. } 109-128 .}\)
}

191 Heyneman, S., Educational Investment and Economic Productivity: Evidence from Malawi, International Journal of Educational Development, Vol. 4, No. 1, pp. 9-15.
and supported the case for further expansion of such schooling in Malawi
Marar and Praser \({ }^{192}\) (1986), analysed the Harijan (ex-untouchables or ex-outcasts) education program of the Kerala state government in India. Net present values were calculated for pre-degree and degree levels of education. It was found that the net present value of programs were negative. The causes of this were that about \(90 \%\) of Harijans were unable to complete their studies successfully and that their preferential inclusion in the limited number of places available entailed restrictions on the admission of Christian and higher-caste Hindu students. However, the author suggested that other less quantifiable benefits may follow in the longer run and may help to reduce the effects of caste origins and untouchability and reduce discrimination and illiteracy.

Hough \({ }^{193}\) (1987), estimated private and social rates of return to investment in college education in Mali, using a simplified method of calculation. He found that private rate of return and social rate of return were \(59 \%\) and \(2 \%\) respectively. This very large difference in results followed from a combination of a high unemployment rate (90\%) of graduates and high student grants. The writer found that the social rate of return to primary school was very low, about \(3 \%\), due to the high cost of examination failures and repetitions.

Psacharopoulos and Steiex \({ }^{194}\) (1988), examined a number of education related aspects of Venezuela's labour market in 1975-1984 using a sample of 40,000 workers from the National Household Survey. To calculate the rate of return to investment in education, a Mincerian earnings function was applied. It was found that the returns to schooling had declined by only \(2 \%\) points in a decade of educational expansion. These results support to the view that the returns to education decline over time. Also, the returns to education were calculated on the basis of earnings of those in the competitive sectors of economy (private sector employees and the self-employed) were of the same order of magnitude as those calculated on the basis of all wage earners in economy.

\footnotetext{
192 Marar, R. Po, and Fraser S.E., A Cost-Benefit Analysis of the Harijan Education Program of Kerala, India, International Journal of Educational Development, Vol. 6, No. 1, 1986, pp.

193 Hough, J. Ro, Education and the National Economy, (Croom Helm, 1987).
194 Psacharopoulos, Go, and Steier, F。 "Education and the Labour Market in Venezuela, 1979-1984", Economics of education Review, Vol. 7, No. 3, 1988, pp. 321-332.
}

Al-Qudsi \({ }^{195}\) (1989), calculated sectorial earnings functions for three groups of workers in Kuwait using data from a 1983 National Survey. Returns to investment in education in Kuwait were estimated by using the Mincer method. It was found that the return to education was relatively low. However, the returns for those in the private sector were considerably higher than for those in the public sector (overall, 8\% against \(5 \%\) ). It was found that there was discrimination between Kuwaiti workers and non-Kuwaiti nationals, and the former were paid considerably more than the latter, especially in the public sector. About \(90 \%\) of public sector workers were nationals but returns were highest, at \(9 \%\), for those Kuwaiti nationals who were in the private sector.

For primary, secondary, and higher education in the Philippines, Tan and Paqueo \({ }^{196}\) (1989) used a Mincerian function approach to estimate returns to education. Data used for this study came from the 1985 family income and expenditure Survey of the National Census and Statistics Office. It was found that returns to investment in education in the Philippines were lover than the average for developing countries. The average social rate of return was about \(13 \%\), and the private rate of return to primary school was higher than for higher levels of education. The private rate of return was estimated to be \(18 \%\) but dropped to \(12 \%\) when the earnings foregone of primary school pupils were taken into account. Hovever, the return to primary and secondary education were lower when pupils failed to complete a cycle. It was also found that the private returns exceeded social returns by the largest margin in primary rather than higher education. Finally, the average private rate of return for all education was \(8 \%\).

Gomez-Castellanos and Pscharopoulos \({ }^{197}\) (1990), used data from the 1987 Household Survey to explore the relationship between education and earnings in Ecuador. Social rates of return were estimated for three different levels of education, using the Mincer method. The results indicated that there was a sharp difference in earnings associated with higher education between men and women (in favor of men) They found that average social returns were \(12 \%\) for primary and university education and \(9 \%\) for secondary schooling. It was found that the primary and university education were
\({ }^{195}\) Al-Qudsi, S. S. "Returns to Education, Sectoral Pay Differentials and Determinants in Kuwaitis", Economics of Education Review, Vol. 8, No. 3, 1989, pp. 263-276.
196 Tan, J-P, and Paqueo, V. B., The Economic Returns to Education In the Philippines, International of Educational development, Vol. 9, No. 3, 1989, pp. 243-250.
more equity-enhancing on account of pronounced sex discrimination in the case of forms of employment associated with higher education.

Grootaert \({ }^{198}\) (1990), computed social and private returns for secondary vocational and technical education (VTE) in the Ivory Coast by using a Mincerian function approach. The writer found that social and private returns for secondary vocational education were \(4 \%\) and \(16 \%\) respectively, and for technical education level (the private rate of return was 21\% against a social rate of return of \(4 \%\) ). Since all the social returns were below the social opportunity cost of capital, "to justify the investment in VTE thus requires the invocation of non-quantifiable benefits, such as general externalities from having a pool of vocational and technically trained manpower available". Alongside formal VTE, which chiefly led on to becoming an employee, informal apprenticeships led on to informal labour markets and yielded broadly analogous returns.

Hinchliffe \({ }^{199}\) (1990), estimated the social rate of return to investment in vocational training in Botswana, using three sets of data: age-education-earnings data, and average earnings of workers with and without training by education level based on an employment census of over 129,000 workers in 1986. The author found that the social returns were \(20 \%\) for the three years of junior secondary schooling, \(35 \%\) for the two years of senior secondary, and extremely high earnings increases following vocational training. Returns were estimated to be \(51 \%, 82 \%, 52 \%\), and \(30 \%\), for those with no schooling, those with primary, those with junior secondary, and those with senior secondary. It was found that the vocational training was socially very worthwhile.

Knight and Sabot \({ }^{200}\) (1990), estimated social returns to education in Kenya and Tanzania. They found that average rates of return to education in Kenya and Tanzania to be about 13\%. However, since the expansion in education over time compressed the educational structure of salaries and wages, the marginal return could be well less than average.

197 Gomez Castellanos, B., and Psacharopoulos, Go, Earnings and Education in Ecuador : Evidence from the 1987 Household Survey, Economics of Fgibcation Review, Vol. 9, No. 3, 1990, pp. 219-227.

Grootaert, C. Returns to Formal and Informal Education in Cote d'Ivoire: The Role of the Structure of Labour Market, Economics of Education Review, Vol. 9, No. 4, 1990, pp. 309-319.

199 Hinchliffe, K., The Returns to vocational training in Botswana-Research Note, Economics of Education Review, Vol. 9, No. 4, 1990, pp. 401-404.

200 Knight, J. B. and Sabot, R. H., Education, Productivity and Inequality, The East African National Experiment (Oxford University Press), 1990.

For primary, secondary, and university education in Chile, Riveros \({ }^{201}\) (1990), estimated private and social internal rates of return over the period 1960-1985, using both the Mincer method and elaborate methods. The former gave an average rate of return to all education of \(11 \%\), whereas the latter gave private returns of \(28 \%, 11 \%\), and \(10 \%\) for primary, secondary, and university education respectively, and social returns \(12 \%, 9 \%\), and \(7 \%\) respectively. It was found that returns declined over time. Riveros mentioned the ability adjustment problem, but did not take this factor into account in his computation. He stated that a Mincerian method was unsatisfactory since it failed to adjust for the fact that his income-related data excluded the unemployed, who were mainly those with less schooling: therefore an overestimation of rates of return to education was likely.

Tannen \({ }^{202}\) (1991), estimated the social and private returns to schooling in Brazil in 1980, using the Mincer method and data for working men. Data were derived by fitting earnings function to census microdata. The author found that the average private rate of return was around \(12 \%-13 \%\). The results were considerably lower than previous estimates (in 1970). He mentioned that the adjustment for the probability of unemployment might reduce the results by \(1 \%\) or \(2 \%\) that regional data enabled the computation of geographical variations but these were not considerable; that the incorporation in the Mincer approach of estimates of subsides enabled social rates of return to be calculated but these involved some "guesstimates" relating to public expenditure figures; that social and private returns for vocational training in industrial skills were higher than for an academic curriculum at the primary school level. It was found that the only remarkable discrepancy in returns between private and public employees occurred for individuals who had attended high school; they were paid considerably less in public sector.

Psacharopoulos and Alam \({ }^{203}\) (1991), applied a Mincerian function and elaborate method to estimate the returns to investment in education in

201 Riveros, L. A. The economic Return to Schooling in Chile. An Analysis of its long-term Fluctuations, Economics of Education Review, Vol. 9, No. 2, 1990, pp. 111-121

202 Tannen, M. B., New Estimates of the Returns to Schooling in Brazil, Economics of Education Review, Vol. 10, No. 2, 1991, pp. 123-135.

203 Psacharopoulos, Go and Alam, Ao, Earnings and Education in Venezuela: An Updated from 1987 Household Survey, Economics of Education Review, Vol. 10, No. 1, 1991, pp. 29-36.

Venezuela. This study used data from the 1987 Household Survey. The results of this study were compared to those available for 1975 and 1984. The writers found that average return was \(11 \%\) ( \(10 \%\) for men, \(13 \%\) for women). It was found that the return for females higher than for males; that returns were higher for workers in urban areas; returns had not fallen remarkably over time, even with the educational expansion in Venezuela; Finally, calculation by using the "elaborate method" found higher figures, up to \(16 \%\) for the private primary return, with some indication of rates falling over the foregoing decade.

Psacharopoulos \({ }^{204}\) (1989), presented evidence on the over time behaviour of the rate of return to investment in education in a large number of countries ( 39 countries). In this study, rates of return to education were estimated for 23 countries by applying the "elaborate method" and for 16 counties by applying a Mincerian function method. The purpose of this paper is to examine whether returns to schooling were declining over time. The evidence presented in this study was that the rates of return largely declined over time following educational expansion. It was found that in the majority of counties rates of return were declining and the tendency was quite smooth; that returns to education continued to be high in developing countries, usually above a conservative measure of the opportunity of capital such as \(10 \%\).

Jain \({ }^{205}\) (1991), re-examined Pscharopoulos's (1985, 1989) cross country data on the returns to education. He pointed out that cross country analysis has its limitations because the variables which influence the returns to schooling differ across countries, and on the other hand, time-series data on the returns to education are not been available. It was found that only weak support for the declining rate-of-return hypothesis, especially when temporary, cyclical, variations local economies were taken into account. This represented an indication that there is an influence of factors other than income on the return to education, which suggested that the behaviour of the returns to education is, to a large extent, an empirical matter. The author pointed out that "point-to-point comparisons are unlikely to give a reliable picture of the trends in the returns to education because of the cyclical variation in the returns.

\footnotetext{
204 Psacharopoulos, Gog Time Trend of the Returns to Education CrossNational Evidence, Economics of Education Review, Vol. 8, No. 3, pp. 225-231. Economics of Education Review, Vol. 10, No. 3, 1991, pp. 253-258.
}

\section*{\(\mathbb{C H} \mathbb{A} \mathbb{P} \mathbb{E} \mathbb{R} \mathbb{F} O \mathbb{R}\)}

\section*{}

\section*{\(A \mathbb{N} \mathbb{A} \mathbb{Y} \mathbb{I} \mathbb{N} \mathbb{N}\). \(\mathrm{H} \mathbb{I} \mathbb{H} \mathbb{E} \mathbb{R} \mathbb{D} \mathbb{C} \mathbb{C} \mathbb{T} \mathbb{O} \mathbb{N}\)}

\subsection*{4.1 Introduction}

The discussion in this chapter will be confined to the specific issues of applying cost-benefit analysis to investment in higher education, and particularly to the case of Iraq.

The general objective of cost-benefit analysis is to provide a useful picture of the costs and benefits from investment and to focus attention on the objective of economic efficiency. The "efficiency" objective was defined by Herfindahl and Kneese (1974) \({ }^{1}\) as:
"maximization of national income ... the positive difference between willingness to pay for output and the cost of providing it.".
Senesa and Taussig (1974) \({ }^{2}\) argued that:
"Benefit-cost analysis is the systematic appraisal of all benefits and all costs of a contemplated course of action, or the several alternative courses of action. The benefit cost criterion for whether to undertake a given course of action is that the additional benefits to be derived from taking the action exceed the corresponding additional costs. In even simpler terms, this criterion means that the course of action be undertaken only if the sum of all the expected course of action be undertaken only if the sum of all the expected in this way, the benefit cost criterion is nothing more than a description of rational behaviour."

Cost benefit analysis implies the enumeration and evaluation of all costs and benefits and involves the calculation of net present value, internal rate of return, and the ratio of net benefits to costs.

Interest in cost-benefit analysis has grown vastly because of the increasing role of governmental expenditure in the social and economic activities of nations. Nations pushed by various social welfare goals, fiscal policies, employment targets or a number of other economic and noneconomic objectives are led to make huge expenditures. They want to know

\footnotetext{
1 Herfindahl, \(\mathbf{O}_{0}\) C., and Kneese, A. \(H_{0}\). Economic theory of natural resources. Columbia: Charles E. Merrill Publishing Co. 19/4, p. 222.

2 Seneca J. J. and Taussig, M. K. Environmental Economics. (Englewood Cliffs. N. J.: Prentice-Hall, Inc., 1974), p.12
}
how far these expenditures or large investment made by them, which absorb vast amounts of resources and are spread over a long range period are really worth taking in terms of their effect on the finances of their present organization, economic growth and social development. And they can know it, among other methods, by calculating one of cost benefit analysis approaches

Cost benefit techniques can be applied to a variety of fields such as water-supply projects, land usage, health, transportation, education , and so on. In this study the application was confined to the field of higher education in Iraq.

Conceptually, the most difficult aspect of dealing with educational investments is the fact that education serves a number of purposes at the same time. Among its many goals, education is said to serve as a means of personal fulfilment, an instrument for social continuity and cohesion, a mechanism for social mobility, a means to promote social equality, and as an 'economic investment' for individuals and society. \({ }^{3}\)

The relative importance of these goals is a matter of subjective judgement. Furthermore, even if these goals could be valued (i.e weighted) "objectively", such valuation will vary considerably from one country to another, and indeed within the same country from one stage of development to the next. And even if one were to consider these goals for one particular country and in the short run only, it is difficult to see how it would be possible to measure the achievement of some of them.

For these reasons most of the cost benefit studies of education have been confined to the last of these goals, namely, education as an "economic" investment for individuals and society. Therefore, such studies can only be claimed to be "social returns to education" in a narrow sense, since most intangibles and externalities as well as the consumption benefits of education are excluded.

Turvey and Prest (1965) \({ }^{4}\) listed some difficulties facing cost-benefit studies in education:
(1) the danger in using a current cross-section analysis to predict a future time series;
(2) the question of whether incomes reflect marginal productivity sufficiently well to be used as a measure of social returns;
(3) the value of extra education includes the value of the option which it contain of obtaining still further education; and

\footnotetext{
3 Maddison Angus, What is education for? LLoyds Bank Review, no 112, (April 1974), p. 19. Also see, The Social Responsibility of the University in Asian Counties, paper of International Association of Universities, no 12, (Paris, 1973), especially pp. 53-54.

4 Turvey R. and Prest A. R. "Cost-Benefit Analysis: A survey". The Economic Journal, LXXV, (December, 1965), pp. 725-26.
}
(4) income depends on other variables besides age and education. This leads to use of the multivariate analysis.

Blaug (1965) \({ }^{5}\) examined the first and second problems, and Weisbrod \({ }^{6}\) discussed the third problem.

Woodhall (1970) emphasised that cost-benefit analysis "cannot be the sole criterion for educational planning but... what such an analysis should be an important element in decision making ... all planning consists of a choice between alternatives" \({ }^{7}\)

Some educators have argued that cost-benefit analysis is not applicable to education. Woodhall (1970) \({ }^{8}\) observed that:
"... some educationists have argued that cost-benefit analysis is inapplicable to education, because of the multiplicity of educational objectives and the importance of non-economic benefits."

Woodhall (1970) \({ }^{9}\) still believed that cost-benefit analysis was useful, especially to the developing countries:

However, once it is recognised that investment in education does produce significant economic benefits, the need to analyse the nature and magnitude of these benefits in relation to costs must also be recognized, even though this concentrates on only part of the total picture. In view of importance which planners in developing countries now attach to the goal of maximizing economic growth, it is extremely important to have some means of assessing the economic impact of education."

However, Woodhall \({ }^{10}\) observes that cost-benefit analysis of education has been criticized on the ground that:
"it neglects indirect economic benefits, as well as non-economic benefits, and the use of cross-section data which reflect present and past supply and demand conditions, raises some doubts about the usefulness of cost-benefit analysis as a guide to future policy decisions".

\footnotetext{
5 Blaug, H. "The Rate of Return on Investment in Education in Great Britain". Manchester School, Vol 33, No. 3, 1965.

6 Weisbrod, B. A. "Education and Investment in Human Capital". Journal of Political Economy, LXX, No. 5, part 2, 1962.

7 Woodhall, M. "Cost-Benefit ..... op. cit., p. (ii).
8
Woodhall, M. Cost-Benefit .... op. cit., p. 12.
9 Woodhall, M. Cost-Benefit .... op. cit., p. 12-13.
10 Woodhall, M. Cost-Benefit .... op. cit., p. 13.
}

\begin{abstract}
Woodhall and other economists such as Vaizey (1962), Balogh (1963), Blaug et al. (1969), Merrett (1966), mentioned that the theoretical objections, especially, to its use in developing countries, can be summarized as follows: \({ }^{1}\)
(1) The earnings differentials which were observed to be associated with different amounts and types of education can not be used solely as a measure of the pure benefits of education. Earning differentials reflect other factors such as native ability, motivation, social background, education of parents, on-the-job training, sex, and so on, of workers as well as differences of education.
(2) Earning differentials do not adequately measure differences in productivity of workers because of imperfections in the labour market, so that the differences in earnings do not provide a measure of direct economic benefits of education.
(3) The rate of return measures only the direct benefits of education to individuals, ignoring altogether the indirect or external, or neighbourhood benefits, the spillover of education, as they are some time called, which cause the marginal social product of educated labour to exceed marginal private product.
(4) In calculating the rate of return to education in developing countries to assume full employment of educated workers is not realistic, because many developing countries are experiencing unemployment of graduates and secondary school leavers.
(5) Age-earnings profiles, drawn from cross-section data which provide the basis for rate of return calculations, reflect present and past demand and supply conditions, whereas it is future demand and supply that concern the planner; therefore, rates of return provide a poor tool for educational planning.
\end{abstract}

\footnotetext{
11 Woodhall, 1970., pp 25-26; also see woodhall 1972, p 40; Vaizey, J. The Economics of Education, London, 1962; Balogh \(\mathcal{C}_{8}\) Streeten, \(P_{0} P_{0}\) The Co-efficient of ignorance, Bulletin of the Oxford University Institute of Economics and Statistics, (May 1963); reprinted in Blaug Mo (ed.), Economics of Education: Selected Readings, Vol. 1, 1968. Harmohdsworth, MiddIesex, Penguin Books, pp(383-395) (penguin Modern economics); Merrett S., The rate of return to education: A Critique, Oxford Economic Paper, Oxford, Clarendos press (November 1966); and Blaug M. Layard, P. R. G. and Woodhail, M. The cases of Graduate Unemployment in India, London, Allen Lane, The Penguin press, 1969.
}
(6) Private rates of return are meaningless, because individuals do not making educational choices as though they were making a purely financial investment decision.
However, cost-benefit analysis may be useful in decision - making in a number of ways. For example:
(1) it can be used to point to the need for changes in resource allocation in favour of those types of education that offer the highest rate of return. It can provide a directional indicator.
(2) it may be used to suggest ways of increasing the "profitability" of education by either increasing its benefits or lowering costs.
(3) it provides a conceptual framework for the examination of the costs of education in relation to the relative earnings of educated manpower.

In the reminder of this chapter, each of the above objections will be discussed individually and, where possible feasible remedies will be suggested particularly as they apply to the case of Iraq.

\section*{\(4.2 \mathbb{C o r r e l a t i o n ~} \mathbb{B e t w e e n}\) 'Ability' And Education}

In cost benefit analyses of education it is assumed that education is a major determinant of observed earning differentials between people with different levels of education. But it would be naive to assume that the whole differential is due to education. Wilson (1983) said that "more serious from the point of view of estimating social rates of return is the question of whether without undertaking higher education the more able individual would have obtained an above average income. If this is the case, then only a part of differential between the 'qualified' and 'unqualified' earnings profiles can be attributed to undertaking the course of education, the remainder being due to the individual's inherent ability" \({ }^{12}\) Bowen (1964), \({ }^{13}\) Prest and Turvey (1965), \({ }^{14}\) Thias and Carnoy (1972), \({ }^{15}\) Maglen and Layard (1970), \({ }^{16}\) Blaug (1965), \({ }^{17}\) Psacharopoulos (1973,

\footnotetext{
12 Vilson, R. A. The Declining Return to Professional Status in the British Economy (with special reterence to scientists and engineers). Thesis submitted tor Ph.D., Department of Economics, University of Warwick, 1983, pp. 2.6-7.

13 Boven, \(W_{0}\) G。Economic Aspects of Education: Three Essays. Princeton, N. J.: Industrial Relations Section, Princetion, University, 1964, P. 4.

14 Prest, A. R. and Turvey, R. Cost Benefit Analysis: A 'Survey'. The Economic Journal, Vol. LXXV, No. 300, (Dece., 1965), P. 726.
}

1975, and 1987), \({ }^{18}\) Woodhall (1970, and 1987), \({ }^{19}\) and others argued that part of earning differentials should be attributed to differences in other factors such as natural ability, socio-economic background, race, sex, occupation, education of parents, on-the-job training and the like. The differential may also arise from the varying abilities of the person, from his family background, from his sex and his occupation. However each of these are highly correlated with education; and "what is worse, is the degree to which all of these factors are interconnected, so that the effort to measure one of them frequently picks up the effects of some of the others". \({ }^{20}\) In other words, the so-called independent variables factors such as individual ability, social background, family status ... etc. are not really independent of each other and it is difficult to infer cause and effect.

Factors that affect earnings are likely to do so through the medium of education or to be associated with level of education. For instance, ability is a factor leading to more education, which in turn would result in higher earnings. With regard to family background, richer people get more education because they can afford it. These factors that explain earning differentials are operative before and after schooling. \({ }^{21}\)

\footnotetext{
15 Thias, Hans Heinrich, and Martin Carnoy, Cost Benefit Analysis in Education. A case study of Kenya. Baltimore, Maryland: The Johns Hopkins press, 19/2, pp. (2-6).
}

16 Maglen Leo and Layard Richard, 'How Profitable is Engineering Education? High Education Review, Vol. 2, (spring 1970), P. 57.

17 Blaug Mo, "The Rate of Return on Investment in Education in Great Britain". The Manchester School of Economic and Social Studies, Manchester, (September, 1965) pp. 213-218.

18 Psacharopoulos, G. Econonics of Education: Research and Studies. (Peramon Book Ltd. 0xford, 1987), P. 219; Also see Psacharopoulos \({ }_{\text {G }}\) G Kates of Return: An International Comparison. (Elestvier Scientific Publishing Company, London, 1973), p. 28; and the same author Earning and Education in OECD Countries. Organisation for Economic Co-operation and Development, paris, \(19 / 5 \mathrm{P} .18\).

19 Educationall, \(A_{\text {. Cost-Benefit } \ldots \text { op. cit., p. 26. And Earning and }}\) Studies. (Peramon Book Ltd. 0xfod, 1987), pp. (212-213).

20 Blaug, M. An Introduction.... op. cit., p. 33. Woodhall said that "Education tends to be highly correlated with a number of other factors, all of which help to determine earning". See Woodhall, Mo, Cost-Benefit ......., op. cit., p. 26.

21 Morgan, J. and David M., "Education and Income". Quarterly Journal of (Footnote continued)

It is not whether education has an effect on earnings, but rather "how much of the observed earnings differential between various levels of education is due to the extra education received? " \({ }^{22}\) This has been a complicated problem in the economics of education. However, some progress has been made towards isolating the pure effect of education on earnings, and research in the U.S.A., Sweden and Mexico all suggest that, even when some of these factors are held constant, education alone has a strong effect on workers' earnings. The American studies concluded that (1) the length of schooling was the single most powerful factor explaining differences in earnings; (2) there was a strong relationship between length of schooling and earnings when intelligence quotient scores (I.Q'S) were held constant; (3) brothers with different levels of education obtain unequal earnings, i. e. that brothers with more education had correspondingly higher earnings; and (4) factors other than education do have some effect on earnings which are distinct from the effect of education such as ability, family background or simply motivation. But the question arises "how much of the observed earnings differentials of educated workers is attributable to extra education?" \({ }^{23}\)

In order to determine the part of earnings differentials due solely to education, most studies, and particularly those relating to the U.S.A., are in agreement that "roughly two-thirds of earnings differentials of educated workers can be explained by their education rather than by other factors, such as 'ability'. 24 Therefore, the observed income differentials were reduced by applying an adjustment factor. This adjustment, the so-called alpha coefficient, could have a value between zero and one. \({ }^{25}\)

\footnotetext{
21 (continued)
Economics, LXXII, (August, 1963), PP. (429-437).
}

22 Psacharopoulos, G. Economics of Education .... op. cit., pp.(342-344); Also see the same author, Earning and Education .... op. cit. pp. 18-61; And furthermore see Woodhall, Cost-Benefit ...., pp. (26-28).

23 Woodhall, Mo, Cost-Benefit ... op. cit., pp. 26-28.
24 Woodhall, M., Cost-Benefit ... op. cit., pp. 26-28.

25 Simply stated, that alpha coefficient means that if the average annual earning of university graduate is, say \(£ 5000\) while that of secondary school graduates is \(£ 2000\), then the net effect of higher education on the observed earning differential is the alpha coefficient ( \(\alpha\) ) multiplied by the observed earning differential \(\alpha\) (Vs-Ws-1). In this example when alpha coefficient is assumed equal to \(2 / 3\), the effect of higher education is \(2 / 3(£ 5000-£ 2000)=£ 2000\), whereas the effect of other factors rather than (Footnote continued)

The value of the alpha coefficient is of course fairly arbitrary and still a matter for speculation. \({ }^{26}\)

The alpha coefficient usually includes adjustments for ability, personal motivation, socio-economic background and the like. It must be noted also that the alpha coefficient is not the same for all age groups or all levels of education. It has been suggested that the effects of natural ability may be stronger at some ages, or for some categories of educated workers, than others. Intuitively, it would seem reasonable to assume that the higher the level of education, the larger is the alpha coefficient, since at the university level, for example, the divisive influence of race, religion, sex, social background, etc. would presumably have largely ceased to operate. So, different values should be attached to the alpha coefficient for different calculations. \({ }^{27}\) David and Morgan have estimated an alpha factor for U.S.A. which is 60 per cent for gross earning differentials for age groups 18 to 34 years old, but for the age group 35 to 75 is estimated as 88 per cent. 28

Accordingly, in as much as the purpose of the present study is to compare the returns to investment in university education, it might be argued that the choice of the alpha coefficient is not of major consequence. However, if these rates of return are intended for comparison purposes with those of other levels of education, or with investments in the national economy at large, then the "correct" alpha coefficient must be applied. Since it is beyond the scope of this study to estimate "correct" alpha coefficient for university education in Iraq, three values for the alpha coefficient will be used ( \(1,2 / 3\), and \(1 / 2\) ) which will in fact test the sensitivity of the results to a variety of assumptions about the influences of education and other factors upon earnings.

\footnotetext{
25 (continued)
education is: \((1-2 / 3)(£ 5000-£ 2000)=£ 1000\). Becker's original data the alpha-cofficient referred solely to males.

26 Woodhall, Mo, Cost-Benefit ... op. cit., pp. 28.
27 Blaug, \(M_{0}\), "The Rate of Return on Investment in Education in Great Britain", The Manchester School of Economic and Social Studies, Manchester, Vol. 33, No. 3 , 1965, pp. ( \(215-216\) ); reprinted as "The Rate of keturn on Investment in Education", in Mo Blaug (ed.), Economics of Education, Vol. 1 , (Penguin Book Ltd., 1968), P. 226. Blaug also stated that the alpha coefficient "typically varies from 0.60 to 1.00 , rising as we move up the educational ladder through secondary to higher education". See Blaug, An Introduction .. Op. cit., p. 201.
}

28 Morgan J. and David M. Education and Income, Quarterly Journal of Economics, (August 1963), pp. 436-437.

\subsection*{4.3 Comrelation \(\mathbb{B}\) etween \(\mathbb{E}\) arnings And \(\mathbb{P r o d u c t i v i t y}\)}

Generally, educated people earn higher wages or salaries than those who have completed less schooling and/or have lower educational qualifications. There is a relationship between education and earnings whether in developed or underdeveloped countries, in capitalist or socialist countries.

Woodhall (1987) states that "the basic assumption of the notion that education is a form of investment in human capital is that education raises the productivity of workers and that the higher earnings of the educated reflect the value of their product" \({ }^{29}\). Obviously, education increases productivity by giving knowledge and skills which make a worker more valuable in the labour market than less educated workers.

In most countries, and especially in developing countries, a high percentage of qualified manpower is employed by government in the public sector at administered salaries where the salary structure is both archaic and rigid. Blaug (1972) \({ }^{30}\) points out that more often than not, however, the public sector gears its pay scales to relative rates of reward in the private sector. This pattern of salary scales still reflects the salaries that were paid to colonial administrators before the country achieved independence. But when earnings reflect differences in marginal productivity, the extra earnings of educated workers measure their contribution to output. Also, the significant body of classical and neoclassical economic theory depend on the assumption that relative prices of goods and services and the relative salaries and wages of workers reflect their relative scarcity and then, in the case of workers, their productivity. \({ }^{31}\)

However, the relationship between earnings and education has two implications, when this assumption is accepted. First, the extra earnings of the educated workers can be used as a measure of contribution of education to the growth of national income, over time. \({ }^{32}\) Secondly, the

\footnotetext{
29 Woodhall, M. Earnings and education. In Psacharopoulos, G. Economics of Education ... op. cit., p. 216 .

30 Blaug, M. An Introduction .... Op. cit., p. 205.
31 Psacharopoulos G., 1987, p. 216.
32 This approach was applied by Denison \((1962,1967)\) who analysed the rate of economic growth in United States and later in various European countries. In the case of United States, he found that between 1930 and 1970 about 23 percent of the rate of growth of national income was due to the increased education of the labour force, which increase their knowledge and skills, and hence raised their productivity. See Demison E. F. The sources of Economic Growth in the United states and the Alternatives Before (Footnote continued)
}
earnings differentials can be used as a measure of the economic benefits of education in calculations of social rate of return to educational investment. However, this basic assumption that earnings reflect productivity depends on, in turn, the assumption that markets, including the labour market, are basically competitive, so that prices reflect scarcities. There are two assumptions here: (i) if markets are perfectly competitive, then earnings provide a completely satisfactory measure of productivity; and (ii) if there are some imperfections in the degree of competition, earnings will still reflect differences in productivity provided the forces of demand and supply ensure that scarce factors command higher prices than plentiful factors of production. 33 Since highly educated workers are scarcer than those who have lower educational qualifications, this is enough to ensure that they are paid more, in terms of average salaries and wages.

However, in both developed and developing countries it is well recognized that there are imperfections in the labour market due to a number of factors such as rigidities in the labour market, the momentum of custom and tradition in determining wage rates, the power of trade unions and professional associations, obstacles to geographic mobility of labour force and many others \({ }^{34}\).

Some economists, who oppose the idea of measuring the return to education in terms of extra earnings, point to imperfections in the labour market, particularly in developing countries, and argue that earnings differentials tell us nothing about the relative contributions of these workers to the total output. Since "much of higher earnings (of the better educated) is not a return on education but a monopoly rent" \({ }^{35}\). Also, they

Us. Committee for Economic Development, (New York 1962). Also the same author Why Growth Rates Differ: Post War Experience in Nine Vestern Countries. (Washington, D. C.: Brookings Institution, 1967).

33 Psacharopoulos G., 1987, p. 216.
34 Blaug states that "the shoe is really on other foot: if relative earnings reflect not relative contributions to national output, but family connexions, traditional conventions, the snob-value of a university degree, nepotism, entry restriction in trade unions and professional organization, politically administered pay scales or any other market imperfection one might care to mention, how is it that so large proportion of gross earnings differentials associated with education turn out to be due to education alone?" See Blaug, M. An Introduction ... op. cit. p. 206.

35
Balogh, \(T\). and Streeten \(P_{0}\) P. "The Coefficient of Ignorance" Bulletin of the Oxford University Institute of Economics and Statistics, Vol. 25 , no. 2 (May 1963); reprinted as "The Planning of Education in poor Countries" In Mo Blaug (ed.) Economics of Education, Vol. 1 (Penguin Books Ltd., 1968, p 387.
(Footnote continued)
argue that earnings reflect historical, administrative, and other non-economic factors, and therefore can not possibly be used as a measure of productivity. Blaug (1972) explains that "provided labour markets function competitively, earnings are a satisfactory measure of productivity ... but this is precisely the point at which the misgivings begin" \({ }^{36}\). There have been some attempts to measure the productivity of educated workers in physical terms, rather than in the terms of relative earnings.

Obviously, it would be irrational to deny that the foregoing factors have a distorting effect on relative wages. Nevertheless, to argue that because of these distortions relative wages must be rejected completely as a measure of relative demand for different skills is an extreme view indeed. Carried to its ultimate result, such a notion would involve a rejection of the entire price system of an economy \({ }^{37}\), also, one of the three basic methods for calculating the national income (namely the aggregation of factor incomes received by persons, businesses, and non-profit - making institution \({ }^{38}\).

The point of the present objection is not essentially whether imperfections exist in the labour market (they certainly do), but whether these imperfections are sufficiently significant so as to render rate-of-return calculations misleading \({ }^{39}\). Vaizey (1962) believes also that "the wages-system is, in fact, a system of administered prices, not market prices. Therefore, these measurements are measuring the consequences of a process of market imperfection so serious as to invalidate the results if they are used to estimate return to education" \({ }^{40}\).

The basic assumption of cost-benefit analysis is that relative prices and salary structures reflect, even if imperfectly, the balance between supply and demand for different skills 4 . So that the earnings of educated
\({ }^{35}\) (continued)
36 Blaug, M. Correlation between education and Earnings: What does it signify? Higher Education, Vol. 1, No. 1, 1972, p. 73.
37 Woodhall, Cost-Benefit ..... op. cit,. p. 29.
38 Haseeb, \(K_{0}\), The National Income of Iraq, 1953-1961, (Oxford University Press, 1964), p. 4 .

39 Blaug, M. An Introduction .... op. cit., p. 207.
40 Vaizey, J., The Economics of education .... op. cit., pp. 45.
41 Hoodhall, Cost-Benefit .... op. cit., p. 29. Blaug states that "the general notion that earnings by and large do reflect the push and pull of (Footnote continued)

Workers reflect their value in the market.
If certain categories of educated people are paid significantly more or less than their economic value, then one may have to construct "shadow prices", which more closely reflect the real productivity of workers, and use these "shadow prices" instead of actual wages and salaries for the rate-of-return calculation.

However, to construct these 'shadow prices', would be a mammoth task. 42
"When the price system is irrational, in the sense of failing to reflect relative scarcities, text-books on economic planning tell us to impute 'shadow prices' to resources. In the present context, this implies that we should impute specific scarcity - prices to people with different educational qualifications. This is easier said than done. Short of developing a complex dynamic programming model of the economy
... there would seem to be no way of estimating shadow prices."
One attempt has been made by Psacharopoulos (1970) to construct a price for educated workers in Greece, using a linear programming model. The results were used to calculate shadow rates of return to education \({ }^{43}\).

Of course, it is not the purpose of the present study to construct shadow prices for educated workers in Iraq and the required data to estimate shadow salaries and wages were not available.

It is essential before concluding this section to illustrate what is meant by income (or earnings). Some cost-benefit studies have used census statistics which are based on the total income of people rather than on their earned income. This can be misleading as such data reflect not only the earnings attributable to a certain type and level of education, but also earnings arising from ownership of other forms of wealth.

In the present study, therefore, the incomes data used exclude all unearned income (i.e. income from inherited financial and physical assets) and are limited to earnings attributed only to the type and level of educational acquired.

\footnotetext{
\({ }^{41}\) (continued)
market force". Blaug, M. An Introduction .... op. cit., p. 206.
42 Blaug, M. 1972, pp.209-210. Shadow prices for educated labour have also been imputed by constructing a simplified linear programming model for a "two sector" economy (education as one sector versus the rest of the economy as the other sector). See Psacharopoulos g Go "Estimation of Shadow \(^{\text {Gion }}\) Rates of Return to Investment in Education" Journal of Human Resources, Vol. 5, (Winter 1970), PP. (34-50)

43 Psacharopoulos, Estimation of Shadow .... op. cit., pp. 34-50
}

\section*{4. 4 Identification and Valuation of \(\mathbb{E} x t e r n a l i t i e s\)}

In chapter 3, attention was focused on the external benefits (spillover benefits) from education. So that, in this chapter the spillover benefits will be discussed briefly. Because of difficulties of measure the external benefits, most of the writers who have dealt with the subject have felt obliged to discuss the items which have been ignored. In excluding externalities, the benefits of education were underestimated and thereby the rates of return to education were also underestimated. Some economists such as Blaug, \({ }^{44}\) Bowman, \({ }^{45}\) and Weisbrod, \({ }^{46}\) have provided an explicit account of some unmeasurable benefits. Weisbrod, for example, classified external benefits into residence-related (e.g., mothers who are able to go out work when her children are at school); Employment related (e.g., correlative benefits given by employees in a factory); and those which accrue to society in general. The width of the latter category obviously depends on angle of viev: international benefits (allowing for migration) are greater than national, and the latter in turn greater than regional.

Because of the difficulties (in some cases, sheer impossibility) involved in quantifying all the external, indirect and intangible aspects of education, most studies of "the return to education are agreed that this is the biggest unsolved riddle of all" \({ }^{47}\).

For these reasons, some writers have rejected cost - benefit analysis \({ }^{48}\), and most rate of return studies emphasize that their estimates of the rate of return are an under - estimate of the real economic returns to society from investing in education. This problem, hovever, is not limited to the field of education. Indirect or external costs and benefits

\footnotetext{
44 Blaug, M. "The Rate of Return on Investment in Education in Great Britain". The Manchester School, Vol 33, No. 3, 1965, p. 234.

45 Bowen, W. G. Economic Aspects of Education: Three Essays. Princeton, N. J.: Industrial Relations Section, Princeton University, 1964, pp. 22-23.

46 Weisbrod, B. A. "Education and Investment in Human Capital". Journal of Political Economy, Vol. 70, no. 5, part 2, 1962, pp. 106-23; and External Benetits of Public Education: An Economic Analysis, Princeton University Press, 1964, PP. 28-34.

47 Boven, W. G. "Assessing the Economic Contribution of Education". Economics of Education. Edited by Blaug, M., 2 Vols, (penguin Books Ltd. 1971), P. 86.

48 Woodhall, M., 1970, Op. Cit. ...... P. 30. Psacharopoulos observes that "the external or indirect benefits of education to society or to individual have provide to be the greatest stumbling block to acceptability of rate of return analysis to many people. See Psacharopoulos G., Return to Education... op. cit., p. 32.
}
occur in any major public investment，\({ }^{49}\) be it an oil refinery in Scotland， a third airport for London，or a dam on the Colorado river．However it has to be admitted that educational investments are much＂more likely to generate indirect benefits than any other single activity of comparable scope＂\({ }^{50}\) ．

The benefits that education imparts to an individual can suitably be classified into＂consumption＂and＂investment＂．Individuals may demand education as a form of consumption，but there is no justification for ignoring or denying that education also adds to future income，and is a form of investment．

Consistently，cost－benefit studies of education have concentrated on investment aspects of education，and on the measurable economic effects of education，and have ignored most of the intangible and indirect impacts， arguing that even though education involves＂social costs as well as social benefits ．．．．there is no doubt that on balance the positive benefits are paramount＂ 51.

Actually some educationalists have gone even further and claimed the net external benefits of education are so massive that they are far more relevant to national planning than direct economic benefits．Blaug \({ }^{52}\) ， nevertheless，has warned against over exaggeration．

The idea that external or indirect benefits of education to society as a whole are enormous in magnitude and vastly exceed the direct personal benefits to the＇educatees＇is one of myths of our times that has gained wide currency in the literature as the one sure basis of an economic case for state education ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．
therefore，we may reject the proposition that the indirect benefits of education are greater than the direct benefits as being extremely unlikely．But the fact that the net externalities of education are nevertheless positive must be continuously kept in mind．

The problem of fully measuring all externalities cannot be resolved at the moment，and it is possible that it will never be solved．For the present most economists have accepted that external benefits are positive， that no techniques yet exist for measuring them，and that social rates of return，calculated from earnings data，represent underestimates of the return to education \({ }^{53}\) ．

As far as this study is concerned，the preceding problems do not

49 Vaizey，J．，The Economics Educational ．．Op．cit．，p． 92.
50 Boven W．Go，Assessing the Economic ．．．op．cit．，p． 85.
51 Bowen \(⿴ 囗 十 ⺝ 丶 . G . A s s e s s i n g ~ t h e ~ E c o n o m i c ~ . . ., ~ 1971, ~ P . ~ 86 . ~\)
52 Blaug，M．An Introduction ．．．Op．Cit．，p． 107 and 114.
represent such a serious threat. The essential purpose of this study is to analyse and compare the returns to investment in various areas of specialization within university education, and there is no reason to believe that the magnitude of externalities generated by one specialization will vary appreciably from another. Blaug (1972) stated that "within the educational budget, there is no general presumption that one level of education systematically generates larger indirect benefits than another" \({ }^{54}\).

\subsection*{4.5 Effectof Unemploymenton Ratesof Return}

Age-earnings profiles often require a downward adjustment because of the probability of unemployment although most cost-benefit analyses of education have presumed full employment among educated labour.

In some developing countries, however, the problem of unemployment is often very serious \({ }^{55}\) and adjustments need to be made in order to take account of among the different levels and types of educated workers. Perlman (1973) claimed that "the high school worker is more likely to suffer unemployment than college graduate". \({ }^{56}\) He also argued that the higher income of educated workers outweighed the effect of a lower unemployment rate in leading to an adjusted differential lower than the level before unemployment was considered.

Data collected from samples referring to employed persons and pay scales do require an unemployment adjustment. Woodhall (1970) said that "it is perfectly possible to make such an adjustment when measuring social rates of return" \({ }^{57}\). An adjustment factor for unemployment would be applied

53 Woodhall, M. 1970, Op. Cit., ...... P. 31.
\({ }^{54}\) Blaug, M. An Introduction .... op. cit., p. 205. On this same issue. Woodhall states that "II the purpose of cost - benefit analysis is to the profitability of two form of education, the problem is less important. For while it is generally accepted that education generates external benefits, it is less obvious that, for example, higher education yields more indirect benefits than primary schooling. Thus, for purposes of comparing the returns to different levels or types of education, the fact that rates of return present under-estimates does not necessarily introduce an important bias. See Woodhall, M. Cost-Benefit op. cit., P.31.

55 Woodhall, M. Cost-Benefit .... op. cit., p. 32 .
56 Perlman Ro, The Economics of Education. (Mcgraw - Hill Book Company, London, 1973), p. 30.

57
Woodhall, M. Cost-Benefit .... op. cit., p. 32 .
(Footnote continued)
in calculating social costs (foregone earnings) as well as social return. Adjustment should be made when different rates of unemployment of workers with different educational achievement levels are given.

Unfortunately, dependable data on unemployment rates are usually unavailable for most developing countries. Therefore, "some estimates must be made of the average rates of employment for workers of different ages in each educational category" \({ }^{\text {. }}\). In Iraq, for example, the Central Bureau of Statistics periodically publishes unemployment figures; these data, however, refer to general categories of skill rather than to various areas of specialization or to specific levels of educational achievement. 59 In addition, the data are collected from the number of unemployed people who register officially at the employment department and are not necessarily indicative of the total number of unemployed individuals in Iraq.

When precise data on unemployment are available, and when these are of a significant magnitude, it becomes necessary to estimate unemployment rates for the various educational specializations and thereafter weight the earnings by the probability of employment in respective specializations. 60 Alternatively, this could also be achieved by estimating the average time it takes graduates with different educational qualifications to get their first job (assuming they will remain continuously employed thereafter until retirement), and add this period to arrive at the zero time for discounting the costs and benefits. 61

In Iraq unofficial estimates indicate that the unemployment rate among university graduates is practically zero or very close to zero. Certainly the present demand for university graduates far exceeds the supply and regardless of the efforts to increase the number of university graduates, it is expected that this situation will continue over the next fifteen years. The shortage of university graduates has been so severe that the Iraqi government was motivated in 1975 to offer generous economic incentives for all higher education graduates (and particularly those working abroad) in an effort to attract these graduates back to Iraq. 62

According to the 1987 Census of Population in Iraq, the unemployment
57 (continued)
58 Woodhall, M. Cost-Benefit .... op. cit., p. 32.
59 Republic of Iraq, Ministry of Planning, Annual Abstracts of Statistics, (Baghdad: Central Statistical Organization), p. 35I.

60 Woodhall, M. Cost-Benefit .... op. cit., P. 32 .
61 A similar approach was suggested in a study of graduate unemployment in India; see Blaug, Mo, Layard, R. and Woodhall, M., The Causes of Graduate Unemployment in India, (Allen Lane, 1969).
rate among secondary school graduates, was very low (about 3.5 per cent), whereas the unemployment among university graduates was about 3.3 per cent. \({ }^{63}\) However, it must be emphasized that all data and estimates of unemployment rates in Iraq should be viewed with some caution because there has not been available precise data of unemployment people classified according to the level, kind of education, and occupation.

In the current study, age-earning profiles will not be adjusted for unemployment because the rate of unemployment of university graduates is very close to the unemployment rate of secondary graduates.

\subsection*{4.6 Relation Between Present And \(\mathbb{F}\) uture}

Cost-benefit analysis of education consistently entails a time-series projection of lifetime earnings from cross- section data based on past investment policies. The current objection amounts to a rejection of the view that it is useful to project past trends and present relationships into the future. This must be investigated at two levels. \({ }^{64}\) First, in calculating the rate of return on education, the present value of the costs of education is needed. Regularly this needs the projection of past costs into the future. However, which costs should be used for this aim, marginal costs or average costs? \({ }^{65}\) Cost-benefit analysis is essentially a form of marginal analysis, and the rates of return which are discussed are marginal rates, so that it would seem incorrect to use average costs of such calculations. Generally, if the additional students enrolled in a school could be absorbed in current scale of operation, marginal costs would be the logical basis for the calculation. However if the additional

62 These incentives included such benefits as free air travel to Iraq for the graduates and their families, duty free import of a private car and household furniture, and long-term low interest loans. In some cases these benefits exceeded \(£ 10,000\).

Republic of Iraq, Ministry of Planning, Central statistical Organization, The 1987 Census of Population in Iraq, 1988, Table 32, pp. (125-129)

Woodhall, M. Cost-Benefit ..... op. cit., p. 32. Also see Blaug, M. An Introduction ...., op. cit., pp. (212-213).

65 Marginal costs is the additional costs incurred when one additional student is enrolled. i.e., the additional costs attributable to one extra student is called marginal costs, or, sometimes incremental costs. Whereas average costs per student is simply the total costs or expenditure divided by total number of student enrolled in the school or level of education. Also, when the total costs is divided by the total number of graduates, this gives the average cost per graduate. Voodhall M. "Cost Analysis In Education". In Psacharopoulos, G. (ed.) Economics of Education .... op. cit., p. 394.
students enrolled in a school would need a shift in the scale of operation (such as establishing a new school), \({ }^{66}\) average costs would perhaps be the best available approximation that might be used although they would probably be somewhat on the high side due to some external economics of scale. \({ }^{67}\)

It must be emphasized that this problem arises only when calculating social costs and not the private costs. The private costs- at least in the short run - are not affected by whether it is a marginal change or a change in the scale of operation. Actually in countries where students do not pay directly for their education the private costs of education bear no relationship to either the marginal or the average costs of education. In such circumstances the private costs are only the opportunity costs to the student (i. e. the income foregone which he could earn were he not a student) plus such incidental items as the cost of books and similar education needs.

Secondly, the objection is that cost-benefit analysis measures the "profitability" of past levels of investment, in terms of the present relationship between demand and supply for labour. This objection is closely related to the previous one in that a large-scale expansion of the educational system would cause an essential change in the balance between the supply and demand for educated labour. Since the rate of return is marginal concept, it will not provide a good estimate of the profitability of a large - scale expansion of the education system. Therefore Woodhall (1970) pointed out that "the rate of return will serve as an estimate future of profitability only if the present relationship between supply and demand is maintained". 68 And "if the educational planner is contemplating non - marginal changes in the educational system, he must not assume that present rates of return will continue in the future, but try to predict the future pattern of earnings differentials, in the light of a massive increase in supply". \({ }^{69}\) Although it has been argued that sudden and radical changes in the relative earnings pattern of educated labour are unlikely to

\footnotetext{
66 The purpose sometimes is to double or triple the number of students enrolled or graduates in a particular country.... which is so usual a proposition in some developing countries. In Iraq, For example, the number of university graduates was increased to five times by the Ministry of Higher Education in certain specializations between 1975 and 1980.

67 Since future investment in higher education in Iraq is expected to be a very large significant corresponding to past levels, cost projection in the present thesis will be based on average cost per graduate. The method for calculating average costs will be discussed in the following chapter.
}

Woodhall, M. Cost-Benefit .... op. cit., P. 32
69 Woodhal1, M. Cost-Benefit .... op. cit., P. 32 .
occur in economically and educationally advanced countries, the same cannot be said for developing countries.

What is worse, however, is that projection of historical costs and earnings data into the future makes the implicit assumption that the level of real income will remain constant (economic growth can raise both future earnings and costs), that the quality of education will be remain fixed (changes in the quality of education over time can affect earnings profiles), that no fundamental changes in technology or in the economy at large will occur (whereas technological change in the composition of demand for trained personnel), and in brief, that no future change in the relative price are expected.

Factors that are assumed to be responsible for inaccuracies in the returns to education have been identified. While some factors are likely to increase the rate-of-return, others have a tendency to decrease it. The effect of these positive and negative factors on earnings may possibly balance each other, so that the rate-of-return based on the measurable monetary returns and other relevant data may reflect the real return on educational investment. Psacharopoulos (1973) reviewing the study made by Hines et. al. (1970) observed that "one of the things this study demonstrates is that, after all adjustments are made, it is possible that the final rate of return figure will be very similar to the unadjusted one, since many of the adjustments act in opposite directions and therefore cancel out". 70

Perhaps the only reasonable answer to these difficulties is that all of these factors only affect earnings well into future and since the process of discounting gives much less weight to future earnings than to present earnings, 71 it is some consolation to conclude that "rate-of-return calculations are less sensitive to inaccuracies in the measurement of benefits in the distant future than to inaccuracies in early years of a person's working life". \({ }^{72}\)

\subsection*{4.7 Consumptionn Beneritsof \(\mathbb{E}\) ©}

The benefits which an individual obtains from education can conveniently be classified into either "investment", or "consumption" or

\footnotetext{
70 Psacharopoulos, G. Returns to Education ...., op. cit., p. 39
71 For example, using an annual discount rate of \(10 \%\), the present value of earnings received ten years from now amounts to less than half of the actual earnings, while the present value of earnings attained thirty years from now amounts to less than one-tenth (i. e. the present value of \(£ 1000\) earned ten years from now is £386, and thirty years from now is \(£ 57\).

72 Woodhall, M. Cost-Benefit ...... op. cit., p. 33.
}
both together. When products or services provide satisfaction in a single period only, they are considered to belong to the consumption category. Whereas they would be called a pure investment goods (or services) when they are expected to yield satisfaction in future periods. Some goods (or services) are both consumption and investment simultaneously. That is, they provide satisfaction now and are expected to yield some satisfaction in the future as well \({ }^{73}\). Therefore education is both an investment and a consumption good. It is investment because it make possible higher productivity and benefits in future; it is consumption because it provides utilities now \({ }^{74}\).

Generally, expenditures on schooling are considered to be investment in human capital because they increase the economic productivity of people. But these expenditures yield consumption benefits for the educated individuals in the form an enjoyment and self-fulfillment. Therefore, education can be regarded as a "joint cost problem in which essentially the same inputs are transforms simultaneously into two end-products (professional preparation and pleasure)" \({ }^{75}\).

Cost-benefit analysis of education usually measures the benefits only by consideration of earning streams. This does not mean that researchers in this field have ignored other benefits to the individuals which flow from schooling. Nevertheless, it points to the theoretical and practical difficulties of measuring these consumption benefits. The effect of consumption benefits in aggregate are always positive and probably quite large \({ }^{76}\). This is perhaps not true. The suggestion by Schultz that \(50 \%\) of educational costs are consumption is arbitrary. Schultz (1967) said when he surveyed the earlier literature, that "all these studies omit the

73 Cohn, \(\mathbf{E}_{0}\) The economics of education .... op. cit. p. 126. Atkinson said that "investment goods are usually those which are used to produce other benefits in the future". And he defined the consumer goods and services as "those which give or aim to give satisfaction to consumers". See Atkinson G. Bo J. The Economics of Education. (Hodder and Stoughton, London, 1983, p. 35.

74 Atkinson, G. B. J. The Economics .. op. cit., pp. 35-36.
75 Bowen W. G. Assessing the Economic .... op. cit., p. 89.
\({ }^{76}\) Schultz suggests arbitrarily that \(50 \%\) of the costs may be treated as being for consumption purposes. See Schultz, T. W. The Economic Value of education. ( N . Y.: Columba University press, 1963), p. 56. Also McMaKon 1987 tound that "education makes positive contribution to many types of non-market activities involving significant cognitive or education-related affective attributes, activities such as maintaining the health of family members, earning a high rate of return on savings, improving the children's school achievement and preschool IQ, increasing the efficiency of household purchasing, and staying out of jail. See McMahon, W. W. "Consumption and 0ther Benefits of education". In Psacharopoulos G。 (eds.) Economics of Education ... op. cit., p. 129.
consumption value of education .... It is a serious omission .... The available estimates of earnings from education in this respect all underestimate the real value of education" 77 .

There are three ways to include the consumption benefits in calculating rate of return: (1) an arbitrary estimate of the consumption benefits of education; (2) alternatively consumption benefits may be regarded as an additional output which must be added to the benefits derived from total educational investment; and (3) perhaps most logically, the statement can be made that the rate of return based on earnings alone are underestimated, and refer only to the investment component of education. \({ }^{78}\)

Since it is generally agreed that the consumption benefits of education may often be very large (particularly in higher education), it would seem unacceptable to ignore them. On other hand, since any estimate of these benefits would be methodologically unjustifiable, it would be irresponsible to include them in the rate of return approach. In this study, consumption benefits are ignored because of quantification difficulties and all education costs are treated as being for investment. Accordingly, rates of return of higher education in Iraq, will be underestimated.

\footnotetext{
77 Schultz, T.H. The Rate of Return in Allocating investment Resources to Education. Journal of Human Resources, Vol. 2, 1967, P. 300.

78 Schultz, T. W. The Economic ... op. cit. pp. 8, (54-56).
}

\section*{\(\mathbb{C H A P T} \mathbb{E} \mathbb{R} \mathbb{I} \mathbb{E}\)}

\section*{ANALYSIS OF THE COSTS OFUNIVERSITY \(\mathbb{E D U C A T I O N} I N \mathbb{R} \mathbb{A} Q\)}

This chapter will examine the costs of higher education in Iraq in the fields of Science, Engineering, Medicine, Pharmacy, Dentistry, Nursing, Veterinary Medicine, Agriculture, Administration and Economics, Law and Politics, Arts, Education, Physical Education, Fine Arts, and Alsharia (Islamic religion and Arabic Language). Three separate cost computations will be undertaken, each from a different point of view, namely: (1) institutional or college cost; (2) private cost; and (3) social cost.

\subsection*{5.1 The Institutional Costs}

The cost data were compiled from basic financial statements and accounting records of the University of Baghdad and its Colleges, because of a lack of published cost data for other higher education institutions in Iraq. To have compiled the data for all universities in Iraq would have been an extremely arduous task. Therefore, it was decided to undertake a comprehensive and thorough analysis of the costs of the largest university, and use the results obtained as approximations to the average costs of higher education in Iraq.

The University of Baghdad is the largest of the six universities in Iraq, in the terms of total expenditures, number of colleges, number of students enrolled and number of graduates. Tables 5.1, 5.2 (p. 138), 5.3 and 5.4 (p. 139) respectively illustrate this.

All data on institutional costs in this chapter are collected from the financial statements and records of the University of Baghdad covering a six-year period from 1982 to 1987. The calculation of the average institutional cost per student, and per graduate, are adjusted to 1987 prices in order to be consistent with the data on the earnings profiles of university graduates in Iraq, which are available only for the 1987 financial year. The year 1987 will be treated as the base year, and all costs and benefits will be adjusted by the 1987 composite price index (see Table A-37).

Expenditures vere derived for each financial year from 1982 through to 1987 using audited financial statements. The expenditures comprise of two
major categories: (i) operating costs and (ii) capital costs. The operating expenditures include the day-to-day outlays on items such as salaries and wages, services (such as maintenance, advertising, printing, insurance etc.), goods and commodities (such as materials, fuel and oil, stationary .. etc.), rent of fixed assets, and so on. The capital expenditures consist of purchases of land, buildings, equipment, motor vehicles, and so on. As such they do not represent an "economic" cost but rather a long-term investment in capital assets. The "economic" cost of such capital assets is the opportunity cost of using them. Opportunity cost may be assessed by imputing a rental value for the land and buildings, or by "charging" interest on the capital cost of such assets. Cohn (1972), stated that "Depreciation charges on the wear and tear of old building and equipment should be added to current educational costs. But if the capital costs are added to current expenditures when incurred, depreciation charges or estimated implicit interest costs need not be added to current costs. Adding both of these items would result in "double counting". \({ }^{1}\) Therefore, the total economic costs of education are defined as the operating outlays plus the opportunity cost of capital assets.

\subsection*{5.20perating \(\mathbb{E} x \mathrm{penditures}\)}

Firstly, the operating expenditures were divided into five main categories, each category comprising a number of expenses items. These categories are: (1) salaries and wages (including allowances, overtime payments, social security contributions for officials and workers; (2) goods and commodities (such as materials, spare parts, employees supplies, water and electricity, educational books, supplies and requirements; (3) services expenses (such as maintenance services for buildings, equipment, motor vehicles, and furniture, advertising, printing and publication, entertainment, research and consultancy services, fairs expenses, hospitality, travelling and delegation, general contacts, insurance, etc.); (4) rent of fixed assets (such as rent of buildings, equipment, motor vehicles etc.); and (5) transferable expenses (such as donation to others, compensations and penalties, debts written off etc.). The actual expenditures on each item which were incurred by each college of Baghdad University and the four services offices (Administration, Registration, Dormitory, and Central Library) are shown in Tables A-1 to A-6 for years 1981/82 to \(1986 / 87\) respectively.

First, the data on operating costs were compiled. The second process was to allocate the indirect operating expenditures (for the four services

\footnotetext{
1 Cohn B., The Economics of Education (Lexington Books D. C. Heath and Company Lexington, Massachusetts Toronto), 1972, pp. 104
}
offices) to each of fifteen colleges. This will be explained later.

\subsection*{5.3 Capital Expenditure}

Educational spending includes investment in capital or fixed assets (such as buildings, equipment, furniture etc.), in addition to outlays on current activities (such as salaries to teachers, maintenance, water and electricity). Capital expenditures must not be counted as current costs, unless part or all of such outlays are consumed during the period. Inclusion of capital expenditures in the current period would have the effect of overestimating current cost. Therefore, schooling costs may not correspond to outlays. \({ }^{2}\)

Capital costs at the University of Baghdad refer entirely to the purchase of land and buildings either through direct market purchases or through construction contracts. These capital outlays are financed from two basic sources: the University of Baghdad Budget and the national five-year Plan. Capital costs also include all equipment, e.g. tools and furniture, and motor vehicles, which are required in the University. However, all capital expenditures - regardless of source of financing, and regardless of whether they are purchased or whether they are constructed have an economic or opportunity cost.

The purchase price of these capital assets does not represent their economic cost. In cost-benefit analysis, the economic cost of such assets is defined as their opportunity cost. In general, the opportunity cost of capital assets may be estimated either by imputing a rental value for the assets (i.e. the estimated cost of leasing such assets in the market), or by "charging" the long-term market borrowing rate on the total accumulated value of the capital assets. In this study, the second approach is used, because of the difficulty of ascertaining a market rental value for special - purpose buildings such as students' dormitories, libraries, laboratories and so on, where there is not an established market. The actual rate of interest used in this thesis, as a surrogate for the opportunity cost of capital, is 7 per cent per annum, which is based on the banks' prime lending rates in Iraq. \({ }^{3}\) This approach is used to calculate the opportunity cost of the land and buildings. In this calculation, the value of capital assets was based on the historical cost of acquisition in the case of

\footnotetext{
2 Cohn E., The Economics of Education (Lexington Books D.C. Heath and Company Lexington, Massachusetts Toronto), 1972, pp. 77

3 The banks' lending rate on secured loans in Iraq has been extremely consistent over the past fifteen years. The actual rate since 1975 has been phactically unchanged at around \(61 / 2 \%\) per annum ; but after adding miscellaneous bank charges, the effective rate is close to \(7 \%\).
}
purchased properties and contractual construction cost in the case of constructed. The estimated opportunity cost of capital for the years 1981/1982 - 1986/87 are given in the Tables A-9 to A-24.

To calculate the opportunity cost of land and buildings of the University of Baghdad, the cumulative inventory of all land and buildings for university during each of the six years has been investigated.

However, it must noted, that since laboratory equipment, motor vehicles, furniture, tools, etc. are not "used up" in the year in which they are acquired, the initial cost of these items must be distributed over the estimated life of the assets. The method used in this study for distributing these expenditures is a straight line method for calculating depreciation. In this method, the initial cost of the assets is distributed according to a constant percentage applied each year. The formula for this calculation is:
\[
\mathbb{D}=\mathbb{R} \times \mathbb{C}
\]

Where \(D\) is the prorated cost for each year; \(R\) is a constant rate; and \(C\) is the initial cost. \({ }^{4}\) In the accounting system in Iraq this method is used to calculate the depreciation cost.

A distinction must also be made between direct and indirect costs. Some costs are incurred by the individual colleges, whereas other costs are incurred by the University's administration office, registration office, dormitory office, and central library on behalf of all the colleges. Such costs are called indirect costs and must be allocated to the various colleges of the University of Baghdad. Obviously, some indirect expenditures benefit some colleges more than others. The costs of the administration office, the registration office and the central library are allocated according to the proportion of students enrolled in each college. The total number and the percentage of students enrolled in each college are given in Table A-7. Thus, for example, the total operating cost of the Administration Office in 1982/83 amounted to ID 1,225,883 (see Table A-2). In accordance with the figures given in Table A-7, the college of Science is allocated 7.71 per cent of this amount (i.e. ID 94,516), the college of Medicine is allocated 6.30 per cent (i.e. ID 77,231), and so forth, (see Table A-26).

\footnotetext{
4 Alternatively, the following formula can be used where the life of assets is estimated:

}

Where \(D\) is the prorated cost for each year; \(C\) is the initial cost; and \(T\) is the estimated life of asset.

The costs of the Dormitory office are allocated according to the proportion of dormitory students enrolled in each college. The total number and percentage of dormitory students by college and year are shown in Table A-8. Thus, the indirect boarding and living expenses in 1982/83 amounted to ID \(3,438,467\) of which 5.03 percent (i.e. ID 172,955) is allocated to the College of Science; 3.62 per cent (i.e. ID 124,473) to College of Medicine and so forth (see Table A-26).

\subsection*{5.4 Cost Perstudent}

After the indirect operating costs and the indirect opportunity costs of using capital assets have been allocated, the total institutional cost of each college is simply the operating costs (direct costs), opportunity cost of capital assets and indirect costs (indirect operating cost and indirect opportunity cost). The average institutional cost per student in a particular year is the total institutional cost of the college in that year divided by the number of students in the college in that year. For example, the total institutional costs of the College of Science in 1981/82 amounted to ID 2,290,684 (see Table A-31) when the total number of students in the college was 2,632 (see Table A-7). So, the average institutional cost per student was ID 870. The total institutional cost and average institutional cost per student for each of fifteen colleges are shown in the Tables A-31 to A-36. These costs are adjusted to 1987 prices (Table A-38), and the results are summarized in Table 5.5 (p. 140).

The implicit assumption made in calculating the average institutional costs per student is that within the same college students share the college costs equally regardless of their particular specialization or level. For example, the average institutional cost per student in Education program was calculated on the basis of the total student enrolment in the College of Education. However this College consists of two broad categories of subject i.e. (i) social subjects (such as Arabic language, English language, History, Geography, Psychology, Sociology, etc.) and (ii) scientific subjects (such as Physics, Chemistry, Botany, Zoology, etc.) The cost of a student who is studying in the department of science is probably higher than the cost per student studying in the social department because the former uses rather more equipment (such as laboratories, materials and so on). Most Colleges of Baghdad University are in similar situation. For this reason, this approach to calculating the average institutional cost per student is not entirely correct. However, because we lack the information to enable us to determine the cost for the various specialism in each college, this approach has been adopted.

\subsection*{5.5 Cost Per Graduate}

From an economic point of view, it is useful to think of educational programmes and institutions as production systems. Production has been defined as " any process or procedure designed to transform a set of input elements into a specified set of output elements". 5 Any production system, therefore, can be divided into three elements: input, process and output. This is illustrated diagrammatically in Figure (5.1).


Figure 5.1 The General Production System

A university can be thought of as corresponding to the above definition of a production system. \({ }^{6}\) Thus, a university, like any production system acquires raw materials of a specified quality (high school graduates) which are directed through a production process (the College curriculum) in order to produce an output (university graduates). The production process consists of a number of consecutive operations (levels or courses) each requiring a certain minimum time. At each stage the units of production are subject to quality control (examinations). If they meet the quality control standards, they are passed to the next level. If they fail to meet the quality control standards, they are either returned to processing (repeaters) or they are rejected as wastage or "sold" as incomplete goods (dropouts). When a unit of production has passed all the operations of the

\footnotetext{
5 Starr M. K., Production Management; System and Synthesis, Prentice Starr Mo K.
Hall,
1964, See Eugene C. Bell "A College of Business Administration as a production system", Academy of Management Journal, Vol. 17, no.2, (June 1974).
}
production process, it is "sold" as a finished product (university graduate).

It should be clear that at any time, such a production system has unfinished products at various levels of development. It is quite possible that, during any one year, the volume of resources consumed on production may result in a far greater increase in the inventory of the unfinished goods than in final goods, so that it would be incorrect to divide the total expenditures by the number of units of finished goods which are produced during the period. Such a method can only be justified if the production system is completely uniform and the inventory of work in process (unfinished goods) remains constant (i.e. there is no change in the inventory of work in process at the beginning and at the end of any period).

To calculate the cost of a graduate, two methods will be suggested: the net - value added method, and the cost - per - student - year method. In order to discuss these two methods, a simplified college model is proposed. This hypothetical model is shown in Figure 5.2 (p. 137). This model expresses the flow of students over an eight-year period in a recently created college. In order to illustrate this hypothetical model the following assumptions have been made: \({ }^{7}\)
(a) The college programme consists of four consecutive levels and the minimum period of the study for each level is one year.
(b) New students are admitted only to the first level just before the beginning of an academic year.
(c) All students are enrolled on a full-time basis.
(d) Three kinds of student are distinguished at the end of the year. These are: (i) students who meet the college requirement and who pass to the next level,(ii) students who do not meet the college requirements and who need to repeat the same level in the next year (repeaters) or (iii) those who are required to withdraw from the college (dropouts).
(e) All students are required to withdraw from the college if they fail (i) two consecutive years or (ii) more than two-thirds of subjects in any level of college, or (iii) for breaking the rules of the university and so on. In addition, students might leave the college freely for various reasons. However, all dropouts are assumed to leave the College at the end of an academic year.

In Figure \(5.2^{8}\) it is seen that at the beginning of the first year, the

\footnotetext{
7 All these assumptions from item (a) to item (e) are derived from the university education system in Iraq.
8
Abu Al-Abbas, A and Dr. AL-Ravi, M. The Dropout in the primary level in Iraq, Educational and Psychological Research Center, University of (Footnote continued)
}
total student enrolment is 250 students all of whom are in the level (1). By the end of the first year, 210 students are transferred to level (2), 30 students need to repeat level (1) and 10 students are required to withdraw from the college. At the beginning of the second year, therefore, there are 510 students, of whom 210 students are in level (2) having transferred from level 1, and 300 enter level (1), of whom 30 are repeaters and 270 are new admissions. The stream of students can be followed during the whole of the eight-year period of this model \({ }^{9}\)

To calculate the costs of the hypothetical college in this model, and for the sake of clarity of presentation, the following simplifying assumptions have been made: \({ }^{10}\)
(a) There are no capital costs.
(b) Total cost is made up entirely of variable cost which is assumed to be a linear function of the total student enrolment.
(c) The average total cost per student, at any level, is assumed to be ID 250 per year, for all years. The total cost of the college in this model in accordance with the above assumptions is calculated for each year of the eight years. \({ }^{11}\) The results are shown in Table 5.6 (p. 141).

\subsection*{5.5.1 The \(N e t-V a l u e-A d d e d M e t h o d\)}

In order to satisfy the graduation requirement of this hypothetical college, a student needs to complete successfully the four educational levels, each of which needs a minimum of one year. So, it is impossible for any student to graduate in less than four years, but it is possible that a student might need five or more years to graduate. All graduates must have successfully completed the four educational levels, but not necessarily in consecutive years. Therefore, if we are able to calculate the average cost of a successfully completed level, we should be able to estimate the average cost of a graduate. From the data on the flow of
\({ }^{8}\) (continued)
Baghdad, Al-Huriha press, 1972, p. 63.
9 To illustrate the methods of calculation the cost of student and cost of college graduation, all numbers in the figure 5.2 are assumed arbitrary.

10 Although these assumptions on costs are not realistic, the conceptual basis of the discussion to follow is not affected.

11 In real situations, of course, the average cost is derived from the total cost, and not vice versa.
students through the hypothetical system given in Figure 5.2, we can make a schedule of students who have completed levels at the beginning and end of each year. It is to be noted that for students in the first level, the number of completed levels (CL) is zero since such students have not completed any level yet; for students in the second, third and fourth levels, CL equals 1,2 and 3 respectively; whereas for graduating students, CL equals 4. The number of students (inventory) who have completed levels at the beginning and the end of each of the eight years are shown in Table 5.7 (p. 142). 12

To illustrate, take year 7 as an example. At the beginning of this year the number of students in the successive levels is \(775,618,450\) and 370 respectively. So the inventory of completed levels is :
\((775 \times 0)+(618 \times 1)+(450 \times 2)+(370 \times 3)=2628\)
Similarly, at the end of year 7, the inventory of completed levels is:
\((90 \times 0)+(700 \times 1)+(585 \times 2)+(460 \times 3)+(250 \times 4)=4250\)
Thus the net increase in inventory during this year is:
\(4250-2628=1622\)

It must be noted that at the beginning of the following year the number of previous graduates has been eliminated from the inventory calculations. This is of course proper since graduates have completed the "production process".

Once the increase in the inventory of completed levels during each year has been calculated, the average cost per student who has completed each level is simply the total cost divided by the increase in completed levels as shown in Table 5.8 (p. 143). From the data in this table and from Figure 5.2, the average cost per graduate can now be estimated in a number of ways. The simplest approach is to multiply the average cost per completed level for the entireperiod (ID 342.71) by number of completed

\footnotetext{
12 In some sense this is identical to assigning discreet weights to students at the various educational levels where the weights represent the number of completed levels. Thus the inventory of completed levels may be calculated by the following formula:
Inventory of \(C L=\sum_{\mathbf{i}=1}^{n+1} S_{i} \times C L_{i}\)
Where CL \(=\) number of Complete levels CL \(_{i}=(\mathbf{i}-1) ; \quad \mathbf{S}=\) number of students; \(\mathbf{i}=\) the educational level of the stutlent; \(\mathbf{n}=\) levels of required for graduation (i.e. \(n=4\) ).
}
levels required for graduation (4). This would result in an average cost per graduate of (ID 1370.86). The accuracy of this Table 5.8 ( p . 143) estimate may be easily checked. Total costs incurred by the college during the eight-year period (ID \(2,657,750\) ) must equal the cost of all graduates (final products) plus the cost of the increase in the inventory of completed levels (inventory in process or unfinished goods) during this period. When the beginning inventory of completed levels in this hypothetical case (Figure 5.2) is zero, the increase in inventory during this period is equivalent to the inventory at the end of year 8 (or at the beginning of year 9) which is equal to (3615) see Table 5.7 (p. 142). Therefore, the cost of the increase in the inventory of completed level is equal to ( 3615 x ID 342.7143 ) \(=\) ID \(1,238,912\). On other hand, the total number of graduates during this period is (1035), and their cost is (1035 x ID 1370.86 ) \(=\) ID \(1,418,838\). The total cost of the two items in the above is:
ID \(1,238,912+\) ID \(1,418,838=\) ID \(2,657,750\) which corresponds to the estimated total cost figure in Table 5.6 ( \(p\). 141).

In calculating the average cost per graduate, it is not necessary, however, to consider the data over the whole eight-year period \({ }^{13}\). Indeed to do so would be a disadvantage as the calculated cost per graduate would be the same for all years, and thus it would not be possible to discover the existence of a trend in these costs. Therefore in using the net value - added method, it is preferable to estimate the average cost per graduate in any one year on the basis of the sum of the average cost per completed level over the previous four years. \({ }^{14}\) These calculations for each year's graduates of the hypothetical college model are shown in the Table 5.9 ( p . 144). The net-value-added method makes an implicit, and controversial assumption. This assumption is that the dropouts are a total waste - a useless but unavoidable by-product of higher education. Thus the cost of the finished output of higher education (i.e. the cost of college graduates) must include the cost of dropouts. If it could be proved that the economic value of college dropouts is equal to the economic value of high school graduates having no college training whatever, the resources

\footnotetext{
13 In actual cases, a college may have been operating for long time. To consider data over its whole operating life would not only be difficult, but also it would often be impossible because of the lack of data expect the more recent years. On the other hand, even if reliable historical statistics are available, it could be misleading to incorporate the early data in calculation of current and recent estimates because of the probable changes in the quality of education over the long run.

14
This is represented by the following formula:
\[
\text { AC/graduate in year } y=\sum_{y-n+1}^{y}(A C / C L) y
\]

Where, \(\mathbf{y}=\) year of graduation; \(\mathbf{n}=\) number of levels required for graduation
}
spent on dropouts during their college years must be considered as a necessary and integral part of the cost of graduates, \({ }^{15}\) in much the same way as heat losses are considered as an inherent cost in the production of electricity, or as the net cost of defective steel bars recycled with iron ore in a steel mill is an inherent cost in the production of steel.

However college dropouts may be economically more productive than high school graduates with no college training. \({ }^{16}\) If so, then cost-benefit analysis of higher education may be pursued in two ways. The first possibility is to separate (mathematically) the cost of graduates from the cost of dropouts, and treat the graduates and dropouts as though they were independent products of the educational system each with its own costs and benefits. The second possibility is to consider the cost of graduates inclusive of the cost of dropouts, and then proceed by including the benefits of the dropouts as a completed part of the benefits of the graduates. In other words, graduates and dropouts are to be considered as joint products and their costs are the total costs of the system, whereas the benefits refer to the value of the entire output.

In the example of the production of electricity, if through some amazing advancement in heat transfer technology, it became possible to get back the heat losses in a power plant and sell them to a neighbouring thermal plant, then the benefits derived by the power plant would not be limited to the value of the primary output (electricity), but they would also include the value of the by-product \({ }^{17}\) (recuperated heat losses). In the situation of education, however, the benefits relate to human beings, and therefore cannot be transferred from one entity to another by artificial accounting entries. Consequently even if the benefits of graduates and dropouts are known, cost-benefit analysis carried out on this basis can only be meaningful from a total social point of view, for in the private calculus there is no way that the individual graduates could be made to bear the costs, or get the benefits of the dropouts.

College dropouts are a necessary by-product of the educational production system. It is impossible to produce college graduates without concurrently producing a certain proportion of college dropouts. From a

\footnotetext{
15 Metcalf \(D_{\text {. }}\) "The rate of return to investing in a doctorate: A case study", Scottish Journal of Political Economy, Vol. 20, no. 1, (February 1973), pp. 48-50.
\({ }^{16}\) See Becker, Human Capital, 1964, pp 91.
17 The term by-product is generally used by businessmen and accountants to denote one or more products of relatively small value that are produced simultaneously with a product of greater value. The product with the greater value, commonly called the "main product" is usually produced in greater quantities than by-products. See Matiz A., O. J. Carry and G. W. greater quantities than by-products. See Matiz Ao, Oo O. Cost Accounting, South-Western Publishing Co., Ohio, 1967, p 443.
}
production point of view, therefore, college graduates and college dropouts may be considered as joint products each of which accounts for a certain percentage of the total cost of the system. \({ }^{18}\) However, if data on the benefits derived from the production of dropouts are not available and therefore cannot be included in the social cost-benefit calculus of higher education, then it would be incorrect to rely on the cost per graduate estimates obtained by the net - value - added - method in its present form as this would mean that dropouts would be included in the cost side of the equation but excluded from the benefit side. In such circumstances, therefore it would seem best to disregard altogether the effect of dropouts on both the costs as well as the benefits of higher education. We would then need an alternative method for estimating the cost per graduate exclusive of the cost of dropouts.

\subsection*{5.5.2 The Cost-Per-Student-Year Method}

It is possible to think of the output of the education system as those students who have left the system (graduates and dropouts) and those who are still in the college. It is also possible to think of an ideal college model in which students never fail. In the latter case the student requires four years to graduate (in a four-level college). Also, a student who drops out, say at the end of the third level, must have spent three years in college; whereas a current student beginning his fourth level must have spent exactly three college years, and so forth.

The hypothetical college model of Figure 5.2 may be conceptually idealized on the above lines by assuming - temporarily - that the repeaters are simply another kind of output. Thus, there would be four conceptual college outputs, namely: graduates, repeaters, dropouts, and current students. Based on the same simplifying assumptions made at the beginning of section 5.5 (pp. 117-118), the number of student-years "used up" by each of these conceptually distinct outputs may be calculated for each of the eight years of the hypothetical model. The results (see Table 5.10, p. 145) show that over the entire period, the numbers of student-years used up by repeaters, dropouts, current students, and graduates are: 1391, 1485, 3615 and 4140 respectively. \({ }^{19}\) Since it is also assumed that the average

\footnotetext{
18 For an economic analysis of the costs of joint products produced in fixed and variable proportions, see Eugene F. Brigham and James L. Pappas, Managerial Economics, (London, Holt, Rinehart and Winston, 1974), pp. 304-309.

19 it is to be noted that the number of student-years used up by repeater, dropouts, or graduates (i.e. by the conceptual outputs which have left the (Footnote continued)
}
cost per student-year is ID 250 for all years, then the total costs are: ID 347,750 , ID 371,250 , ID 903750 , and ID \(1,035,000\) respectively which amount to ID \(2,657,750\) which is total cost of the college system over the whole eight - year period (see Table 5.6, p. 141).

In this idealized model, the average cost per graduate is equal to the average cost per student-year summed up over the previous four years (in the hypothetical case at hand, it would be: \(4 \times\) ID \(250=\) ID 1000 in view of the assumption of constant cost per student-year. In the actual hypothetical model, the real outputs are graduates, dropouts, and current students. Repeaters are in fact artificial outputs as they are really part of the three real outputs, so that the cost of the repeaters has to be allocated to the 'real' outputs. If we assume that the whole cost of repeaters is allocated to the graduates alone (this assumption is arbitrary), the maximum possible cost per graduate would be:
\((\) ID \(347750+\) ID 1035000\() \div 1035=\) ID 1336

Acordingly, the average cost per graduate must lie somewhere between a minimum of ID 1000 and a maximum ID 1336.

Allocation of the entire cost of repeaters to the graduates alone is not realistic, as the dropouts and current students have not been repeaters at all. A more practical approach (when no other data are available) is to allocate the cost of repeaters in proportion to the cost of student - years consumed by each of them. Thus the cost of the real outputs in the idealized case is:

ID \(371,250+\) ID \(903,750+\) ID 1,035,000 \(=\) ID \(2,310,000\)

The part of the cost of repeaters allocated to the graduates would be:

ID 1,035,000
ID \(347750 \times\) ID 155810; and the total cost of ID \(2,310,000\)
graduates would be the ideal cost plus the allocated cost of repeaters, that is (ID 1,035,000 + ID \(155,810=\) ID 1190810). therefore the average cost per graduate would be:

ID \(1,190,810 \div 1035=\) ID 1150.54

\footnotetext{
19 (continued)
system) is the sum of these data for each year over the entire period under consideration; whereas the number of student-years used up by current students is the difference between the data at the beginning and end of the period.
}

In the same way the total cost of other real outputs, can be calculated. Table 5.11 ( p .146 ) shows these results.

In accordance with the previous method, the cost of dropouts is allocated to the remaining two outputs (graduates and current students). Therefore, the average cost per graduate (inclusive of the allocation of repeaters and dropouts) is ID 1370.86 (see Table 5.12, p. 146). Calculating the average cost per graduate by this approach, is somewhat arbitrary, but this way may be reasonable when no other data are available. However, if detailed data on individual graduates are available, then it is possible to allocate the cost of repeaters more accurately. For example, the number of graduates in year 8 (see Figure 5.2) is 375, of whom 240 had graduated in four years, 100 in five years, 25 in six years, and 10 in seven years. Therefore the cost of these graduates may be calculated on the basis of the cost of student-years actually consumed by them.

Thus the cost of a graduate who consumed four years is the cost per student-year summed up over the previous four years, whereas the cost of a graduate spending five years to graduate is the cost per-student-year summed up over the previous five years, and so forth. In this hypothetical model, the cost per student-year is assumed to ID 250 for all years, then the total cost of graduates in year 7 is ID 250 times the total number of student-years spent by these graduates, i.e.:

ID \(250[(240 \times 4)+(110 \times 5)+(25 \times 6)+(10 \times 7)]=\) ID 420,000
Then the average cost per graduate is:
ID \(420,000 \div 375=\) ID 1,120

The result above is not only less arbitrary than that arrived at in Tables 5.11 and 5.12 (p. 146), i.e. ID 1150.54 and ID 1370.86 respectively, but also provides an indication of the trend in the average cost per graduate over time.

Although both methods rely essentially on the same raw data, the important distinction between them is in the underlying assumption about the treatment of the cost of dropouts. Whichever method is to be employed in educational cost analysis, it is important that this assumption is explicitly stated. The view expressed in this thesis is that there is no logical basis for including the cost of college dropouts in the social cost-benefit calculus of higher education, while simultaneously excluding their benefits, as such an approach would imply that college dropouts with one or more years of college training are "economically" no more valuable than secondary school graduates with no college training at all. However, neither intuition nor the meagre empirical evidence available corroborates such a view. Therefore, to estimate the average cost per graduate in this
thesis, the actual calculus will be based on the cost - per - student year method.

\subsection*{5.6 Cost \(\mathbb{P}\) er \(G\) rad duate- The \(A c t u a l \mathbb{C}\) alculus}

In order to calculate the cost per graduate (based on the cost-per-student-year method) for each of the fifteen colleges of Baghdad University, two essential sets of data are needed: first, the cost - per student - year data, and secondly, the number of years in which the graduates were actually enrolled as students in the respective colleges. The cost - per - student - year data for each college were calculated in the previous section (see p. 115) for the years 1981/82 to 1986/87. However, the data for the number of student-years actually required before graduation by the students of the respective colleges are not readily available, so had to be compiled from individual graduates' personal files at the Registration Office of each college of the university. This data is summarized for the graduates of each college in Tables A-39 to A-53. Thus, for example, there were 669 Engineering graduates in 1982/83 (see Table A-40), of whom 2 were first admitted to the college in 1975/76 (i.e. graduated in eight years), 6 were first admitted in 1976/77 (i.e. graduated in seven years), 29 were admitted in 1977/78 (i.e. graduated in six years), 109 were admitted in 1978/79 (i.e. graduated in five years), and 523 were admitted in 1979/80 (i.e. graduated in four years).

Accordingly, the total cost of each year's graduates was calculated for each college as shown in Tables A-54 to A-68. The average institutional cost per graduate for each of years \(1981 / 82\) to \(1986 / 87\) as well as the weighted average cost per graduate for these years is summarized in Table A-69. In Table A-69, some differences can be seen in the average cost per graduate of various the colleges. The average cost of the Veterinary Medicine program graduate is (ID 8,505) which is about 2 times the average cost of both the Science program graduates (ID 4,492), the Engineering program graduates (ID 4,280), and the Pharmacy program graduates (4,366); more than 2.5 times the Law and Politics graduates (3,332), Physical Education (ID 3,234) and Fine Arts Graduates (ID 3,404); about 4.8 times the average cost of Administration and Economics program graduates (1770); more than 3 times the average cost of the programs of: Arts (ID 2,548), Education (ID 2,422), and Alsharia (ID 2,492). In fact it is even higher than that of the Medicine program graduates (ID 8,434) despite the fact that the latter undergo a six-year program compared with a five-year program in the College of Veterinary Medicine. Generally, it is seen that the trend in the cost of all colleges is declining.

In concluding this section, it should be recalled that the average cost
of the graduates of the respective colleges arrived at in Table A-69 refer to the institutional costs of producing these graduates. In other words, these costs represent the average cost per graduate from the point of view of respective colleges, and not from the point of view of the individual graduate himself or from the point of view of society at large. These results, indeed have no direct bearing at all on the private cost of higher education. Furthermore, the institutional costs calculated in this section must be adjusted by deducting all direct and indirect taxes and all transfer payments before they can be incorporated into social costs of higher education.

\subsection*{5.7 The \(\mathbb{P r i v a t e} C\) ost}

The private cost of higher education, generally consists of three cost elements incurred by the individual student himself (or by his family), namely: (1) tuition and other college fees; (2) opportunity costs or income foregone (3) incidental college - related costs such the cost of books and supplies. \({ }^{20}\) However, Sheehan states: " Of course public policy plays an important part in determining such outlays, and in certain circumstances with full provision of tuition, books, transport, etc. to pupils the direct cost could be zero." 21 The private cost of higher education in Iraq is equivalent to the opportunity costs incurred by the students because there are no tuition costs. Also, most books and related educational materials are supplied (or loaned) by the university to students free of charge. In other words, the private cost of higher education in Iraq is tantamount to the stream of income foregone by the college student which he could have earned as a high school graduate had he not chosen to pursue a college education.

It must be emphasized that the opportunity cost to the individual college graduate is not only the foregone earning stream during his college years, but rather it is the foregone earning (equal to that of a high school graduate) over his entire life. For in choosing to pursue a college education, an individual is, in effect, losing the life-time earning stream of a high school graduate in return for a life-time income stream of a college graduate beginning some years later. Therefore, in estimating the private costs and benefits of higher education, the problem can be viewed

\footnotetext{
20 Hansen, W. Lee "Total and Private Rate of Return to Investment in Schooling", Journal of Political Economy, Vol.71, No.2, 1963; reprinted as "Rate of Return to Investment in Schooling in United State" in M. Blaug, Economics of Education, Vol.1, (Penguin Book Ltd.), 1968, P.141.

21 Sheehan J., The Economic of Education (George Allen and Unvin Ltd., Printed in Great Britain), 1973, P. 35.
}
as a choice between two mutually exclusive alternatives where the total benefits of one alternative are merely the opportunity costs of the other.

In the vast majority of the literature on this topic, however, the opportunity cost of undertaking higher education is defined as the foregone earnings of the college student during his college years. Thus, for example, Hansen states: "...at age eighteen the opportunity cost for the person undertaking four years of college is the income that the high-school graduate would obtain from ages eighteen to twenty-one". \({ }^{22}\) However such a conceptually erroneous definition of the opportunity cost of college education, is "rectified" in the subsequent rate of return analysis in which the income streams of college graduates are taken not on the basis of their actual income, but rather on the basis of the income differentials between college and high school graduates of the same age. 23

\subsection*{5.8 The \(\mathbb{F}\) oregone \(\mathbb{E}\) arnimg \(\mathbb{D}\) ata}

In educational cost-benefit analysis, the data on foregone earnings are usually obtained directly from the age-earnings profiles. In most advanced countries, the basic sources of such data are the national "Census of Population" reports which often provide income distributions by age and level of schooling. However, as is often the case in empirical studies, the available data are not quite in the form ideally suited for the research. Thus, in most age-earnings profiles used in such studies, the earnings refer to total income and therefore reflect not only the earnings attributed to educational achievement, but also receipts from other assets such as physical capital and inherited wealth. This can have a distorting effect on the true rate of return to educational investments. This issue can be especially problematic in developing countries where the type and level of educational achievement is influenced - at least to some extentby the social or economic background of the individual.

Also, in most census reports the income patterns of individuals with various educational attainments are usually reported according to age. However, for the purposes of appraising educational investments, it would seem more relevant to compare the earnings of individuals according to number of years since completion of the last educational level rather than according to age. In most countries - and certainly in Iraq - the former criterion is far more instrumental in influencing salary scales. However,

\footnotetext{
22 Hansen W. Lee, "Total and Private Rate of Return to Investment in Schooling", Journal of Political Economy, Vol. 71, No. 2, 1963, pp. 130-131

23 Blaug Mark,
Penguin press, 1970 An Intro,\(~ p .46 . ~\)
}
the correlation between these two criteria is probably very high (due to age restrictions in high school and college admission policies), and therefore the use of the age criterion should not cause an appreciable bias. Indeed in many such studies, the number of years since completing the various educational levels is derived from the respective age-earning profiles by assuming an average age of completion for each level of schooling. \({ }^{2}\)

In Iraq none of annual census reports has ever published data on age-earnings profiles for any type or level of education. However in 1972 the Central Statistical Organization of the Iraqi Ministry of Planning conducted a national survey which covered the vast majority of government and public sector employees in Iraq. \({ }^{25}\) The survey included a total of 595,200 employees in the public sector of whom 40,069 were college graduates (with a bachelor's degree only) and 76,797 were high school graduates. \({ }^{26}\) Based on this survey, a data bank was instituted. The data include a comprehensive list of employees' characteristics and particulars from which a series of tables have been constructed and published in two volumes. \({ }^{27}\) Unfortunately, none of the published data include age earnings profiles for any type or level of education, but the staff of the Central Statistical Organization (CSO) Computer Center have prepared earnings profiles using the data for the survey of public employees. Because these data were obtained in 1972, they have been adjusted for salary increases between 1974 - 1987. 2
The adjusted earning profiles are shown in Tables B-1 to B-7.

24 For example, Hansen states: "In order to make the task of estimating the rates of return more manageable, the age-income profiles were assumed to commence at the 'average' age of completion of each level of schooling". In a footnote Hansen add : "this is an oversimplification, but it did not seem worthwhile to deal with this in a more detailed fashion". See Hansen, op. cit., p. 127.

25 All members of the armed forces as well as all cabinet Ministers and members of the Revolutionary Command Council were excluded from the survey.

26 derived from this survey :
\begin{tabular}{lr} 
Total labour force & \(2,858,000\) \\
Total unemployed & 181,400 \\
Employed labour force & \(2,676,600\) \\
Agricultural employment & \(1,486,200\) \\
Non-Agricultural employment & \(1,190,400\) \\
Public sector employment & 595,200
\end{tabular}

Public sector employment
595,200
The above data on the Iraqi labour force (except the last) were estimated by the United Nations manpower expert, Nils Storm. See Republic of Iraq, Statistical Abstracts, 1973, op. cit., p. 358.

\subsection*{5.9 The \(\mathbb{E}\) arnings Profiles}

There is no data published on the incomes of private sector workers according to the educational level and age, and so the salaries of secondary school graduates and college graduates working in the public sector are used in this thesis. The annual gross salaries of secondary school graduates employed in the public sector in Iraq and covering a forty- year period since graduation are shown in Table B-1, while Tables \(B-2\) to \(B-7\) represent the annual gross salaries of graduates of the colleges. These are grouped into six categories (according to the amount of a graduates' salary), because some of colleges are similar in number of programme levels, and average salary (before auxiliary income). These groups are: (1) Science and Nursing; (2) Medicine; (3) Engineering; (4) Pharmacy, Dentistry, and Veterinary Medicine; (5) Agriculture; and (6) Administration and Economics, Law and Politics, Arts, Education, Physical Education, Fine Arts and Alsharia \({ }^{29}\) It is to be noted that these earnings profiles are not generated according to age, \({ }^{30}\) but rather according to the number of years since high school or college graduation, as the case may be. Thus, in Table B-1, for example, it is seen that there were 1708 27 Republic of Iraq, Ministry of Planning, Survey of Public employees, in Arabic, (Baghdad, 1973), Vols. I and II.

28
offichree increases vere effected in the salaries and wages of the officials and workers in the public sector in Iraq. The first was on February 8, 1974, the eleventh anniversary of February 8, 1963 Revolution. Salaries were raised by ID 120 per year, according to the republic of Iraq Revolutionary Command Council Resolution No. 95 on February 7, 1974; the second was in 1979, on eleventh anniversary of the July 17-30, 1968 Revolution, effecting certain increases of ID 210 per year. It was according to the Republic of Iraq Revolutionary Command Council Resolution No. 1044 on August 11, 1979. The last increase was in 1980, on the twelfth anniversary of the July 17-30, 1968 Revolution bringing an increase ID 240 per year to all those working in the public sector according to the Iraq Revolutionary Command council resolution No. 1118 on July 14, 1980. The summary of all increases through the period 1974 - 1980 were ID 570 per year.

\section*{29}

Gross salaries are for the 1972 financial year; they are calculated on basis of twelve times the gross (public sector) salaries during the month of 1972; the latter adjusted for pay increases through the period 1974 1980 (see footnote 28, p. 129).

30 In order to transform these results to age-earning profiles, the " average" age of completion of each type of education must be added to the data in the first of these tables; refer to footnote 24 on p. 128.

31 In creating these earnings profiles for high school and college graduates, any employees whose date of first employment in the public sector preceded the date of their graduation were excluded from the sample. This condition was introduced in order to eliminate the upward bias on average earnings that would result from including graduates whose earnings (Footnote continued)
employees who had graduated from high school within one year. The total gross annual salaries of these employees amounted to ID 686,844, and accordingly, the average gross salary was ID 402.1. The latter average earnings figure is adjusted for the government increase (ID 570) to become ID \(972.1^{32}\) (see Table B-1).

All of the earnings data in these tables refer to employment-related earnings in the public sector. They exclude all income from private capital as well as all auxiliary income derived from private professional practice or from part-time employment in the private sector. The grounds for excluding income derived from private capital were explained earlier (see chapter 4 section 3 and page 117). However, there are no grounds for excluding auxiliary income derived from private sector employment or from private practice, as such income is directly related to the type and level of the educational attainment of the individual. Indeed in the case of the graduates of some colleges, their auxiliary income from private practice can be as high as their income from public sector employment. Auxiliary income will be discussed and estimated in the next chapter.

However, the auxiliary income of high school graduates, from the private sector is assumed to be nil, for on the one hand their educational qualifications are not sufficiently specialized as to yield them any income from "professional" private practice, while on the other hand, the private sector demand for part-time employment of high school graduates is negligible. In any case, the law in Iraq prohibits high school graduates who are employed in the public sector from taking any part-time employment in the private sector.

Therefore, the private cost of any type of higher education in Iraq is tantamount to the life-time stream of income foregone by the college graduate which he could have earned as a high school graduate if he had not chosen to pursue a college education. Thus, the earning profiles of secondary school graduates (Table B-1) form the basis for calculating the private (i.e. opportunity) cost of university education in Iraq.

Earnings profiles represent gross earnings (i.e. earnings before deduction of income tax). They must be adjusted to net earnings in order to reflect the net opportunity cost to college graduates. 33

\footnotetext{
\({ }^{31}\) (continued)
reflect not only their educational attainment but also previous practical experience and training prior to graduation. Because of this condition, the size of secondary school graduates sample in Table B-1 is 65,675 whereas the size of sample in the national survey is 76,797 (see p. 128)

32 See footnote no. 28, p. 129.
33 In order to calculate the private returns to higher education, the net opportunity costs must be used; whereas to calculate the social returns to (Footnote continued)
}

In Iraq, all earnings, including those of employees who were working in public sector, were taxable according to income tax law no. 44, 1968, but at the end of 1974 this law was cancelled by the government. Accordingly, all public sector employees salaries became tax free. therefore, the private costs of higher education in Iraq are equivalent to the gross earnings of high school graduates. It \(\frac{i s}{34}\) these data that comprise the private costs of higher education in Iraq. \({ }^{34}\)

\subsection*{5.10 The Social Cost}

Social costs, differ from private and institutional costs in two essential ways: in scope and in evaluation. The scope of social costs includes all costs incurred by the individual, by the State, and every member of society. Thus the social costs of higher education consist of educational costs incurred by students (both direct costs and indirect costs i.e. opportunity costs), educational costs incurred by the university (institutional costs) and the costs incurred by the rest of the community (spillover or third-party costs). In the case of higher education, however, it is generally agreed that the relative importance of the third-party costs is small and may therefore be ignored. The second difference relates to the question of who should evaluate resources and on what basis. \({ }^{35}\) If it is assumed that the price system does reflect the relative scarcities of resources, then this issue ceases to be relevant, at least to a large extent, since individuals and firms "seeking to maximize private gains by making the best allocation of resources according to private valuations will also be allocating to social valuation". \({ }^{36}\) However, in view of some imperfections in the labour market, which was discussed in chapter 4 (pp. 98-101), \({ }^{37}\) the social opportunity costs of resources are, in the present thesis, assumed to be equal to their private opportunity cost- after adjustments for taxes and transfer payment are

\footnotetext{
33 (continued)
higher education, the gross opportunity costs must be used. In the social rate of return, all costs and benefits must be taken on a before-tax basis, since taxes are neither social costs nor social benefits; they are only transfer payments from one sector of the community to another.

34 In fact the gross earnings profiles of high school graduates arrived at
in Table B-1 require adjustments for factors such as mortality rates, in Table B-1 require adjustments for factors such as mortality rates, unemployment rates, and the "ability" or alpha coefficient. These factors will be discussed in the following chapter.

35
Lispey, R. G. and Peter 0. S, Economics, (2nd), (ed.), New York: Harpar and Row, \(1969, \mathrm{p} .219\).

Ibid. p. 220.
}
made. This assumption has been made in nearly all educational cost-benefit analyses. Indeed to reject such an assumption would entail a rejection of all conventional economic analysis based on the market price system.

Accepting this assumption does not imply that the social cost of resources is necessarily identical to the market price. For "hidden" in the market price are all the direct and indirect taxes; and whereas from the individual's or firm's point of view taxes do represent real costs, from the point of view of society at large taxes are merely transfer payments from one section of the community to another. \({ }^{38}\) Though such transfer payments do alter the distribution of income in society, \({ }^{39}\) they do not in themselves constitute social costs nor social benefits-in the sense that they neither increase nor decrease the aggregate vealth of society.

In evaluating the social costs of higher education in this thesis, therefore, the procedure to consider the total private and institutional costs i.e., the total resource costs-taken on a before tax basis. \({ }^{40}\)

With regard to the private costs, the earning streams of high school graduates were originally obtained on a before tax basis (see Table B-1), and therefore they can be incorporated into the social costs without any adjustment. The institutional costs calculated in this chapter, however, include a variety of taxes and transfer payments. To "transform" the institutional costs into social costs, all taxes and transfer payments have to be deducted. Clearly, it would be a near impossible task to try to extricate all the direct and indirect taxes from the complex web of the constituent elements of the institutional cost. In the present study, therefore, these deductions will be limited to the following four major items: (1) customs duty on equipment and laboratory equipment; (2) customs duty on vehicles; (3) taxes on the capital cost of building; and (4) the "pure" subsidy component of payments to students for boarding and living allowances.

\footnotetext{
37 Such as the momentum of custom and traditional in determining wage rates, the power of trade unions and professional associations, obstacles to geographical mobility of the labour force, and many others.

38 Alfered V. Stonier and Douglas C. Hague, A Textbook of Economic Theory, (London: Langman Group, 1972), pp.440-441

39 For a brief discussion on whether transfer payments constitute a force for increasing the equality of income distribution, see Lipsey and Steiner op.cit., pp. 462-463.
}

40 Blaug, An introduction ... , op.cit., pp. 175-176.

\subsection*{5.10.1 Customs \(\mathbb{D}\) utyon \(\mathbb{E}\) quipment}

Customs duty is a tax on imported goods and as such it is a transfer item which must be eliminated from the calculation of social cost. Although customs duty varies according to the type of imported good, for the purposes of this study it was estimated at \(25 \%\) of the invoice price (i.e. at \(20 \%\) of book value of all laboratory equipment and other equipment). This figure was arrived at on the basis of the actual customs paid as a percentage of total cost of equipment imported by all the colleges at the University of Baghdad and by the University itself, over the six-year period from \(1981 / 82\) to \(1986 / 87\). 41 The customs duty on equipment which was imported by the University of Baghdad for use in the services offices (Administration Office, Dormitory Office, and Library Central) was allocated in the same way as that used to allocate the indirect costs. \({ }^{42}\) The customs duty on this item is calculated for each college as set out in Tables A-70 to A-75.

\subsection*{5.10.2 Customsduty onvelnicles}

This is a tax on imported vehicles and it represents a transfer item which must be deducted in order to arrive at social costs. Customs duty on vehicles also varies according to the type, model and producer country. For the purpose of this thesis, it was estimated as \(100 \%\) of the purchase price (equivalent to \(50 \%\) of the book value - including customs duty). In order to calculate customs duty on vehicles, the same basis in 5.10 .1 above is applied. the results are shown in Table A-77.

\subsection*{5.10.3 The Tax Componentof the Capital Cost of Buill in g}

The value of buildings at the University of Baghdad was evaluated on

\footnotetext{
41 The total cost of equipment imported each year by college of science, for example, during the period from 1981/82 to \(1986 / 87\) was ID 506,657; ID 205,603; ID 62,122; ID 48,0.52; ID 153,041; and ID 20,910 respectively (these import whether are financed by Budget of Baghdad University or by Five-Year Plan budget). The customs duty are calculated on basis \(20 \%\) of initial cost (ID 101,331, TD 41,121, ID 12,424, ID 30608, and ID 4,182 respectively. See Tables A-70 to A-75.

42 To allocate the customs duty an equipment of the services office, the number of students is used as a basis to allocate the customs on equipment of Administration Office and Library Central (see Table A-7), whereas the number of dormitory students is used to allocate the customs on equipment of Dormitory Office (see Table A-8)
}
the basis of the actual cost (historical cost) of purchase or construction. An important portion of construction costs in Iraq, however, represents taxes and particularly customs duty on imported construction materials. Although no data are available on the magnitude of the "tax component" in such costs, it is estimated that, on average, taxes account for \(5 \%\) of the capital cost of buildings. \({ }^{43}\) Accordingly, the estimated cost of buildings excludes the "tax component" from the social cost. The results are shown in Table A-76.

\section*{ Boarding And \(L\) iving Allowances.}

In the system of higher education in Iraq, the university supplies out-of-town students with an allowance for room and board. These subsidies cover the costs of accommodation and expenditures on food. From the viewpoint of the university as an institution, all such payments - whether pecuniary or otherwise - represent costs. From the social point of view, however, these subsidies resemble grants paid by the university to certain students and as such, it can argued, they constitute transfer payments which must not be included the social cost of higher education.

These subsidies are not entirely transfers of resources from one section of community to another, but at least partially they constitute social costs. To illustrate what is really happening, let us say a student living at home costs his family ID200 per year, of which say \(40 \%\) goes for food consumption while the remaining \(60 \%\) represents the cost of accommodation. If such a student were to be offered free accommodation and board at the university, how would this affect his family's household expenditures? It would seem that in so far as expenditures on accommodation are a fixed cost, the family would continue to bear this cost even when the student is being provided with free accommodation at college. \({ }^{44}\) On other hand, the family's household budget would be relieved of the student's food consumption expenditures which are - almost entirely - a variable cost. Thus from a social point of view, the pure subsidy portion of the allowance provided by the university to the student is equivalent to the income "saved" by the student or his family, i.e., the \(40 \%\) cost of food; the remaining \(60 \%\) must be considered a social cost for it

\footnotetext{
43 This figure was estimated by Dr. Abbas Al-khafaji, Professor of Civil Engineering at the University of Mosul.

44 maller house, to shift its scale of operation - such as moving to a university
}
represents not alternative, but rather a net additional input of resources.
In Table A-78, the pure subsidy component of the students' boarding and living allowances was estimated on this basis as \(55 \%\) of such allowances. Although this percentage cannot be more than a rough approximation, it is neither arbitrary nor altogether intuitive, for it is based on the results of the 1972 survey of the Household Budget and Living Conditions in Iraq-the only officially conducted survey on household expenditures in Iraq to date. \({ }^{45}\) The institutional costs can now be converted to their equivalent social costs by deducting all taxes and transfer payment from them, as set forth in the Table A-86 to A-91. These costs will be referred to as the social institutional costs of higher education which include the private costs as well. The social costs per student (see Table A-92) as derived to each year, and are adjusted for 1987 prices.

Finally, the social institutional costs per graduate for all fifteen colleges are calculated based on the cost-per- student-year method following the procedure outlined earlier in this chapter. The results are set forth in Tables A-93 to A-107, and are summarized in Table A-108. A comparison between the institutional cost per graduate and social institutional cost per graduate for each college at the University of Baghdad is provided in Table 5.13 (p. 147).

Finally, the total social cost per graduate is simply can be obtained by adding the private costs (earnings foregone) per graduate to social institutional costs per graduate. The results are summarized in Table 5.14 (p. 148). It shows that total social costs per graduate for Medicine is the highest among university subjects while the Administration and Economics subject is the lowest. The total social costs of Medicine graduate is more than 100 per cent higher than the social costs of graduate of Law and politics, Arts, Education, Physical Education, Fine Arts; about 100 per cent higher than Alsharia; about 74 percent higher than the social cost of the Science and Engineering graduates; about 150 per cent higher than the social cost of Administration and Economics graduates; more than 55 per cent higher than the social costs of The Pharmacy graduates; more than 45 per cent higher than Agriculture graduates; and about 9 per cent, 18 per cent and 32 per cent higher than the social costs of Veterinary Medicine, Dentistry, and Nursing Graduates respectively.

\subsection*{5.11 Sumanary}

The total costs of higher education differ according to the frame of

\footnotetext{
45 The results of this survey show the mean household expenditure on food accounted for \(47.5 \%\) of total household budget among urban families ( \(63.6 \%\) among rural families; and \(53.0 \%\) among urban and rural families). See Republic of Iraq, Statistical Abstracts, 1973, op. cit., p. 558 and Table 384.
}
reference from which they are viewed. Where tuition is entirely free, and where other education-related expenses are negligible, the costs of higher education to the private individual amount simply to the stream of net (after tax) earnings foregone. In Iraq, this is equivalent to the gross earnings streams of high school graduates because no income tax is levied on employees' salaries.

The institutional costs of higher education are the costs incurred by colleges in providing the educational services. These costs comprise the operating expenses and opportunity costs of capital assets used in the educational production process.

The social costs of higher education are the costs incurred by society at large. They include the private and institutional costs as well as costs incurred by the rest of society. Social costs, however, must be taken on a before tax basis, since from a social point of view, taxes are merely transfer payments.

Similarly, the cost per graduate will differ according to the above view points. Two methods are suggested for calculating the institutional cost per graduate: the net- value-added method and the cost-per-studentyear method. In the former approach, the cost of dropouts is assumed to be an inherent cost of "producing" graduates, whereas in the latter approach dropouts and graduates are treated as joint products each of which accounts for a proportion of the total institutional cost. If the benefits of dropouts are not known, the appropriate methodology for calculating the cost per graduate - in the cost-benefit context - is the cost- per- student -year method. It is this approach which is used in this thesis.

HIGURE 5.2 FLOU OF STUDENTS IN A HYPOTHETICAL COLLBGE MODEL


Source:
Dr. Abu Al-Abbas, A and Dr. AL-Ravi, M., The Dropout in the primary level in Iraq, Educational and Psycholoical Research Center, University of Baghdad, Al-Huriha press, 1972, p. 63.

\section*{Note:}

Where \(A\) is New Admission; \(P\) is Passed to next level; \(D\) Dropouts; \(R\) is Repraters (Failures); \(G\) is Graduates; and \(Y\) is Year.

Table 5.1 Schedule of expenditures of Traqi Universities, 1986/87, (In thousands ID).
\begin{tabular}{|l|c|c|}
\hline University & \begin{tabular}{c} 
Expenditures \\
(to nearest 1000 ID)
\end{tabular} & \begin{tabular}{c} 
Percentage \\
\(\%\)
\end{tabular} \\
\hline Baghdad & 27,904 & 38 \\
Mosul & 16,200 & 22 \\
Basrah & 10,482 & 14 \\
Al-Moustansirai & 8,471 & 11 \\
Salah Al-Dean & 6,066 & 8 \\
Technologai & 4,993 & 7 \\
\hline Total & 74,116 & 100 \\
\hline
\end{tabular}

Source: Republic of Iraq, Central Statistical organization, Annual Abstracts of Statistics, Unpublished report 1986/87.
\(\begin{array}{ll}\text { Table 5.2 Schedule of Number of Colleges at Traqi } \\ & \begin{array}{c}\text { Universities } \\ \text { Un }\end{array} 1986 / 87\end{array}\)
\begin{tabular}{|lr|}
\hline University & Number \\
\hline Baghdad & of \\
Mosul & 15 \\
Basrah & 11 \\
Al-Moustansirai & 8 \\
Salah Al-Dean & 8 \\
Technologai & 6 \\
Technical Institutes Foundation & 9 \\
Al-Anbar* & 22 \\
AL-Qadissiya* & 4 \\
Tikreet* & 3 \\
Al-CuoEah* & 3 \\
\hline
\end{tabular}

Source: Republic of Iraq, Central Statistical Organization, Annual Abstracts of Statistics, 1986/87.
* These Universities were established in 1987.

Table 5.3 Schedule of number of students enrolled in Iraqi Universities, \(1986 / 87\) 。
\begin{tabular}{|l|c|c|}
\hline University & \begin{tabular}{c} 
Number of students \\
Enrolled
\end{tabular} & \begin{tabular}{c} 
Percentage \\
\(\%\)
\end{tabular} \\
\hline Baghdad & 42,784 & 40 \\
Mosul & 20,033 & 19 \\
Basrah & 11,746 & 11 \\
Al-Moustansirai & 16,879 & 16 \\
Salah Al-Dean & 7,495 & 7 \\
Technologai & 7,692 & 7 \\
\hline Total & 106,629 & 100 \\
\hline
\end{tabular}

Source: Republic of Iraç, Central Statistical organization, Annual Abstracts of Statistics, 1986/87.

Table 5.4 Schedule of number of Graduates from Tragi Universities, 1986/87.
\begin{tabular}{|l|c|c|}
\hline University & Number of Graduates & Percentage \(\%\) \\
\hline Baghdad & 5,904 & 39 \\
Mosul & 3,159 & 21 \\
Basrah & 1,828 & 12 \\
Al-Moustansirai & 1,975 & 13 \\
Salah Al-Dean & 984 & 6 \\
Technologai & 1,359 & 9 \\
\hline Total & 15,207 & 100 \\
\hline
\end{tabular}

\footnotetext{
Source: Republic of Iraq, Central Statistical Organization, Annual Abstracts of Statistics, 1986/87.
}

Table 5.5 Average institutional cost per student by college and year, University of Baghdad. 1981/82-1986/87, (In 1987 prices).
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Year } \\
\cline { 2 - 7 } & Subject & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) \\
\hline & & & & & \(1986 / 87\) \\
\hline Science & 886 & 730 & 671 & 724 & 766 & 876 \\
Engineering & 1004 & 983 & 786 & 664 & 866 & 1123 \\
Medicine & 1231 & 957 & 961 & 985 & 1120 & 1369 \\
Pharmacy & 917 & 709 & 693 & 735 & 803 & 978 \\
Dentistry & 1478 & 1189 & 1136 & 1336 & 1509 & 1588 \\
Nursing & 1114 & 1331 & 1542 & 1549 & 2537 & 1612 \\
Vet. Medicine & 1453 & 1275 & 1418 & 1738 & 1734 & 2186 \\
Agriculture & 1307 & 975 & 1103 & 1569 & 1148 & 1452 \\
Admin.\& Econ. & 545 & 300 & 296 & 337 & 340 & 390 \\
Law \& Politics & 992 & 817 & 758 & 841 & 851 & 1073 \\
Arts & 658 & 514 & 466 & 532 & 534 & 436 \\
Education & 554 & 412 & 421 & 475 & 501 & 536 \\
Physical Educ. & 787 & 591 & 588 & 682 & 677 & 848 \\
Fine Arts & 810 & 707 & 536 & 561 & 489 & 686 \\
Alsharia & 591 & 462 & 457 & 530 & 471 & 649 \\
\hline
\end{tabular}

Source: Table A-38

Table 5.6 Total cost of hypothetical college model of rigure 5.2
\begin{tabular}{|c|c|c|c|}
\hline & \begin{tabular}{c} 
Average cost \\
per student \\
(In ID)
\end{tabular} & \begin{tabular}{c} 
Total number \\
of students
\end{tabular} & \begin{tabular}{c} 
Total cost of \\
the college \\
(In ID)
\end{tabular} \\
\hline 1 & & & \\
2 & 250 & 250 & 62,500 \\
3 & 250 & 510 & 127,500 \\
4 & 250 & 800 & 200,000 \\
5 & 250 & 1,085 & 271,250 \\
6 & 250 & 1,895 & 348,750 \\
7 & 250 & 2,213 & 455,750 \\
8 & 250 & 2,555 & 653,250 \\
Total & & 10,631 & \(2,657,750\) \\
\hline
\end{tabular}
Inventory of completed levels in the hypothetical college model of Figure 5-2
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Year & & Ist level
\[
\left(C x_{1}=0\right)
\] & 2nd level
\[
(C T=1)
\] & 3xd level
\[
\left(C \mathbb{I}_{s}=2\right)
\] & Ath level
\[
(\mathrm{CI}=3)
\] & Graduates
\[
(\mathbf{C L}=4)
\] & Total & Change in CL \\
\hline (I) & \[
\begin{aligned}
& \text { Beginning } \\
& \text { Ending }
\end{aligned}
\] & \[
\begin{array}{r}
250 \times 0=0 \\
30 \times 0=0
\end{array}
\] & \(210 \times 1=210\) & & & & 210 & 210 \\
\hline (2) & \[
\begin{aligned}
& \text { Beginning } \\
& \text { Ending }
\end{aligned}
\] & \[
\begin{array}{r}
300 \times 0=0 \\
25 \times 0=0
\end{array}
\] & \[
\left|\begin{array}{l}
210 \times 1=210 \\
275 \times 1=275
\end{array}\right|
\] & \(170 \times 2=340\) & & & 210
615 & 405 \\
\hline (3) & \[
\begin{aligned}
& \text { Beginning } \\
& \text { Ending }
\end{aligned}
\] & \[
\begin{aligned}
& 55 \times 0=0 \\
& 45 \times 0=0
\end{aligned}
\] & \[
\begin{aligned}
& 275 \times 1=275 \\
& 315 \times 1=315
\end{aligned}
\] & \[
\begin{aligned}
& 170 \times 2=340 \\
& 240 \times 2=480
\end{aligned}
\] & \(125 \times 3=375\) & & 615
1170 & 555 \\
\hline (4) & \begin{tabular}{l}
Beginming \\
Ending
\end{tabular} & \[
\begin{array}{r}
405 \times 0=0 \\
35 \times 0=0
\end{array}
\] & \[
\left.\begin{array}{l}
315 \\
365 \\
3 \\
x
\end{array}\right]=265=1=265
\] & \[
\begin{aligned}
& 240 \times 2=480 \\
& 310 \times 2=620
\end{aligned}
\] & \[
\begin{aligned}
& 125 \times 3=375 \\
& 175 \times 3=525
\end{aligned}
\] & \(100 \times 4=400\) & 1170
1910 & 740 \\
\hline (5) & Beginaing Encing & \[
\left\lvert\, \begin{array}{rll}
545 \times 0 & =0 \\
65 \times 0 & =0
\end{array}\right.
\] & \[
\begin{aligned}
& 365 \times 1=365 \\
& 490 \times 1=490
\end{aligned}
\] & \[
\begin{aligned}
& 310 \times 2=620 \\
& 345 \times 2=690
\end{aligned}
\] & \[
\begin{aligned}
& 175 \times 3=525 \\
& 273 \times 3=819
\end{aligned}
\] & \(140 \times 4=560\) & 1510
2559 & 1049 \\
\hline (6) & Beginning Encling & \[
\begin{array}{r}
715 \times 0=0 \\
85 \times 0=0
\end{array}
\] & \[
\begin{aligned}
& 490 \times 1=490 \\
& 618 \times 1=618
\end{aligned}
\] & \[
\begin{aligned}
& 345 \times 2=690 \\
& 450 \times 2=900
\end{aligned}
\] & \[
\begin{aligned}
& 273 \times 3=819 \\
& 370 \times 3=1110
\end{aligned}
\] & \(170 \times 4=680\) & \[
\begin{aligned}
& 1999 \\
& 3308
\end{aligned}
\] & 1309 \\
\hline (7) & Beginning Ending & \[
\begin{array}{r}
775 \times 0=0 \\
90 \times 0=0
\end{array}
\] & \[
\begin{aligned}
& 618 \times 1=618 \\
& 700 \times 1=700
\end{aligned}
\] & \[
\begin{aligned}
& 450 \times 2=900 \\
& 585 \times 2=1170
\end{aligned}
\] & \[
\begin{aligned}
& 370 \times 3=1810 \\
& 460 \times 3=1380
\end{aligned}
\] & \(250 \times 4=1000\) & \[
\begin{aligned}
& 2628 \\
& 4250
\end{aligned}
\] & 1622 \\
\hline (8) & Beginning
Ending & \[
\begin{array}{r}
810 \times 0=0 \\
95 \times 0=0
\end{array}
\] & \[
\begin{aligned}
& 700 \times 1=700 \\
& 735 \times 1=735
\end{aligned}
\] & \[
\begin{aligned}
& 585 \times 2=1170 \\
& 630 \times 2=1260
\end{aligned}
\] & \[
\begin{aligned}
& 460 \times 3=1380 \\
& 540 \times 3=1620
\end{aligned}
\] & \(375 \times 4=1500\) & \[
\begin{aligned}
& 3250 \\
& 5115
\end{aligned}
\] & 1865 \\
\hline (9) & Beginning & \(775 \times 0=0\) & \(735 \times 1=735\) & \(630 \times 2=1260\) & \(540 \times 3=1620\) & & 3615 & \\
\hline
\end{tabular}

Table 5.8 Average Cost per Completed Level in Hypothetical College Model of Fig. 5.2
\begin{tabular}{|c|c|c|c|}
\hline Year & \begin{tabular}{l}
Total cost \\
(In ID) \\
(1)
\end{tabular} & \begin{tabular}{l}
\(\triangle C L\) \\
(2)
\end{tabular} & Average Cost Per Completed Level
(in ID) (3) \\
\hline 1 & 62,500 & 210 & 297.62 \\
\hline 2 & 127,500 & 405 & 314.82 \\
\hline 3 & 200,000 & 555 & 360.36 \\
\hline 4 & 271,250 & 740 & 366.55 \\
\hline 5 & 348,750 & 1049 & 332.46 \\
\hline 6 & 455,750 & 1309 & 348.17 \\
\hline 7 & 553,250 & 1622 & 341.09 \\
\hline 8 & 638,750 & 1865 & 342.49 \\
\hline Total & 2,657,750 & 7755 & 342.7143 \\
\hline
\end{tabular}

Source: Col. (1) from Table 5.6; Col. (2) from Table 5.7; Col. (3) from Col. (1)/Col. (2).

Table 5.9
Average Cost per Graduate in the Hypothetical College Model of Fig. 5.2.
\begin{tabular}{|c|c|c|c|c|c|}
\hline & \multicolumn{6}{|c|}{ Average Cost Per Graduate } \\
\cline { 2 - 7 } Year & Year (4) & Year (5) & Year (6) & Year (7) & Year (8) \\
\hline \(\mathbf{1}\) & 297.62 & & & & \\
\(\mathbf{2}\) & 314.82 & 314.82 & & & \\
\(\mathbf{3}\) & 360.36 & 360.36 & 360.36 & & \\
4 & 366.55 & 366.55 & 366.55 & 366.55 & \\
5 & & 332.46 & 332.46 & 332.46 & 332.46 \\
6 & & & 348.17 & 348.17 & 348.17 \\
7 & & & & 341.09 & 341.09 \\
8 & & & & & 342.49 \\
\hline Total & 1339.35 & 1374.19 & 1407.54 & 1388.27 & 1264.21 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|}
\hline \[
\begin{aligned}
& \tilde{N} \\
& \omega \\
& 0 \\
& \ddot{0} \\
& .
\end{aligned}
\] & \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { n } \\
& 0 \\
& 0 \\
& 0 \\
& 0 \\
& 0 \\
& 0 \\
& 0
\end{aligned}
\]} & \multicolumn{2}{|l|}{} &  & －¢ \\
\hline  & & \multicolumn{2}{|l|}{\[
\begin{aligned}
& \text { H } \\
& \text { 冒 }
\end{aligned}
\]} &  & \\
\hline \[
\begin{aligned}
& \text { g } \\
& \stackrel{0}{0} \\
& \stackrel{\rightharpoonup}{0} \\
& 0
\end{aligned}
\] & \multirow[t]{2}{*}{} & \[
\begin{aligned}
& H \\
& \text { H } \\
& 1 \\
& \dot{i}
\end{aligned}
\] & \[
\begin{aligned}
& \text { 苞 } \\
& \dot{0}
\end{aligned}
\] &  & \multirow[t]{2}{*}{} \\
\hline  & & \[
\begin{aligned}
& \text { y } \\
& \text { 曾 }
\end{aligned}
\] &  &  & \\
\hline \[
\begin{aligned}
& \text { IH } \\
& 0 \\
& 0 \\
& 0
\end{aligned}
\] & \multirow[b]{2}{*}{\[
\begin{aligned}
& \text { n } \\
& \text { 若 } \\
& \AA_{0} \\
& 0
\end{aligned}
\]} & \multicolumn{2}{|l|}{\[
\begin{aligned}
& H \\
& H \\
& 1 \\
& \ddot{i n}
\end{aligned}
\]} &  & \(\stackrel{\sim}{\sim}\) \\
\hline  & &  &  &  & \\
\hline  &  &  & &  & \[
\underset{\substack{\underset{\sim}{2} \\ \hline}}{ }
\] \\
\hline － & & & 㟧 & H N m y n 0 － & \\
\hline
\end{tabular}

Table 5.11
Allocation of the Cost of Repeater to the Real outputs in the Hypothetical College of rig. 5.2.
\begin{tabular}{|l|r|r|r|r|}
\hline \multirow{2}{*}{ Description } & \multicolumn{4}{|c|}{ Outputs } \\
\cline { 2 - 5 } & Repeaters & Dropout & \begin{tabular}{l} 
Students \\
Current
\end{tabular} & Graduates \\
\hline Idealized Cost & 347,750 & 371,250 & 903,750 & \(1,035,000\) \\
Allocated Cost & \((347,750)\) & 55,888 & 136,052 & 155,810 \\
\hline Total Cost & 0 & 427,138 & \(1,039,802\) & \(1,190,810\) \\
\hline
\end{tabular}
```

Average Cost per Graduate 1150.54

```

Table 5.12
Allocation of the cost of dropouts to graduates and current students in the hypothetical college model of rigure 5.2.
\begin{tabular}{|c|c|c|c|}
\hline & \multicolumn{3}{|c|}{Outputs} \\
\hline Description & Dropout & Students Current & Graduates \\
\hline Total Cost - including the Allocation Cost of Repeaters Allocated Cost & \[
\begin{gathered}
427,138 \\
(427,138)
\end{gathered}
\] & \[
\begin{gathered}
1,039,802 \\
199,111
\end{gathered}
\] & \[
\begin{array}{r}
1,190,810 \\
228,027
\end{array}
\] \\
\hline Total Cost & 0 & 1,238,910 & 1,418,837 \\
\hline
\end{tabular}
\begin{tabular}{|ll|}
\hline Average Cost per Graduate & 1370.86 \\
\hline
\end{tabular}

Table 5.13
Comparison between the Institutional Cost per Graduate and Social Institutional Cost per Graduate, by College, University of Baghdad, (ID in 1987 Price).
\begin{tabular}{|c|c|c|}
\hline Subject & Institutional cost per Graduate* & Social Institutional Cost per Graduate** \\
\hline Science & 4,492 & 3,780 \\
\hline Engineering & 4,280 & 4,006 \\
\hline Medicine & 8,434 & 7,867 \\
\hline Pharmacy & 4,366 & 3,900 \\
\hline Dentistry & 7,261 & 6,752 \\
\hline Nursing & 7,074 & 6,645 \\
\hline Veterinary Med. & 8,505 & 7,820 \\
\hline Agriculture & 6,064 & 5,642 \\
\hline Admin. \& Econ. & 1,770 & 1,486 \\
\hline Law and politics & 3,332 & 2,809 \\
\hline Arts & 2,548 & 2,223 \\
\hline Education & 2,422 & 2,004 \\
\hline Physical Educ. & 3,234 & 2,807 \\
\hline fine Arts & 3,404 & 3,022 \\
\hline Alsharia & 2,492 & 2,032 \\
\hline
\end{tabular}

\footnotetext{
Source: * From Table A-69.
}
** From Table A-108.

Table 5. 14
Total Social Costs per Graduate by Subjects, University of Baghdad, 1986/87 (In ID) 。
\begin{tabular}{|c|c|c|c|}
\hline Subject & Private Costs Foregone Earnings & Institutional Costs per Graduate & \begin{tabular}{l}
Total Social \\
Costs \\
Per Graduate
\end{tabular} \\
\hline 1 & 4,129 & 3,780 & 7,909 \\
\hline 2 & 4,129 & 4,006 & 8,135 \\
\hline 3 & 6,341 & 7,867 & 14,208 \\
\hline 4 & 5,231 & 3,900 & 9,131 \\
\hline 5 & 5,231 & 6,752 & 11,983 \\
\hline 6 & 5,231 & 6,645 & 10,774 \\
\hline 7 & 4,129 & 7,820 & 13,051 \\
\hline 8 & 4,129 & 5,642 & 9,771 \\
\hline 9 & 4,129 & 1,486 & 5,615 \\
\hline 10 & 4,129 & 2,809 & 6,938 \\
\hline 11 & 4,129 & 2,223 & 6,352 \\
\hline 12 & 4,129 & 2,004 & 6,133 \\
\hline 13 & 4,129 & 2,807 & 6,936 \\
\hline 14 & 4,129 & 3,022 & 7,151 \\
\hline 15 & 4,129 & 2,032 & 6,161 \\
\hline
\end{tabular}

Source private costs (foregone earnings) from table b-1; social institutional costs from Tables A-108.

\section*{\(\mathbb{C H} \mathbb{A} \mathbb{P} \mathbb{E} \mathbb{R} \mathbb{S} \mathbb{X}\)}

\section*{ \(\mathbb{E} \mathbb{D} \mathbb{C} A T \mathbb{T} \mathbb{O} \mathbb{N} \mathbb{N} \mathbb{R} \mathbb{Q}\)}

The benefits of higher education will be analysed in this Chapter. The benefits to the individual, to the society as \(a\) whole and to the institution will be discussed separately.

\section*{}

It was noted in the previous Chapter that one of the main private costs of higher education to the college graduate is the discounting foregone life-time income stream of a high school graduate. In losing the opportunity to earn this income stream, however, a prospective college student is exchanging the present value of this opportunity for the present value of opportunity of earning the life-time income stream of a college graduate commencing some years later. \({ }^{1}\) In principle, such an exchange is identical to an exchange of \(£ X\) today for \(£ X(1+i)\) in a year's time, where \(i\) is the interest rate.

\subsection*{6.2 The \(\mathbb{E}\) arnings Profiles}

The data on the income streams of college graduates in Iraq were created from the Survey of Public Employees referred to in the previous chapter. The annual gross salaries \({ }^{2}\) of graduates of the various Colleges grouped into six categories, (see page 129) are shown in Tables B-2 to B-7. It is to be noted that the salary data in these tables are generated according to the number of years since college graduation \({ }^{3}\) and cover \(a\) forty three year period. The size of the samples used in creating these

\footnotetext{
1 Of course, this is oversimplified as no adjustments are made for differentials in mortality and unemployment rates among college and high school graduates.

2 For the 1972/73 financial year, adjusted for the increase in the salaries of public sector employees of ID 570 introduced by the government in 1974, 1979 and 1980 (see footnote 28, p. 129).
}
data for each category of graduates are as follows:
\begin{tabular}{lc} 
College & size of sample \\
Science & 1186 \\
Medicine & 1180 \\
Engineering & 2985 \\
Agriculture & 823 \\
Arts & 10081 \\
Dentistry & 566
\end{tabular}

As the income streams of college graduates in Tables B-2 to B-7 refer to income derived from employment in the public sector in Iraq, they suffer from two difficulties. First, the salary data become unreliable after the age of 49 , because of various factors such as the size of the sample, \({ }^{4}\) the effect of retirement, and the inclusion in the sample of part-time employees and consultants. \({ }^{5}\) For these years (i.e. age 50 and over), it was therefore necessary to estimate the annual salaries of college graduates. These estimates were obtained by linear regressions of the respective data for the first twenty-six years since graduation (see Tables C-1 to C-15 column 2). 6

The second difficulty with these data is that they exclude all auxiliary income derived from professional practice or from part-time

3 In generating these earning profiles for high school and college graduates, any employee whose date of first employment in the public sector preceded the date of his graduation was excluded from the sample. This condition was introduced in order to eliminate the upward bias on average earnings that would result from including graduates whose earnings reflect not only their educational attainment but also previous practical experience and training prior to graduation. Because of this condition, the size of the secondary school graduates sample in Table B-1 is 65,675 whereas the size of the sample in the national survey is 76,797 (see page 128).

\section*{4}

4 In our sample, For example, the number of graduates of the Agriculture program for the last 14 years was only six, whereas 10 year of whom (year no 29, 30, and years 33 to 40) the number was nil (see Table B-6). The situation is similar, though less harsh, with graduates of other program. This may be due to mortality and retirement, but in the main cause may be due to the fairly recent origins of higher education in Iraq.

5
Through the official retirement age in Iraq is sixty years, any employee who has completed 30 years of service in the public sector may choose to retire regardless of age.

6 There are of course no grounds to assume that these earnings increase linearly. However, minor errors in estimates of earning well into future have an insignificant effect on the rate of return because of discounting;
employment in the private sector. As discussed in the previous chapter, such income is directly related to the type and level of educational attainment of the graduate. To exclude this income from the cost-benefit calculus would introduce a downward bias to the earnings of university graduates and would not reflect the real returns to their educational investment. Therefore, the auxiliary income of university graduates had to be estimated and incorporated in the private benefits. The estimates used for this purpose are based upon the findings of a number of governmental agencies in Iraq which have estimated the auxiliary income either as a percentage of their nominal salaries \({ }^{7}\) or as an absolute amount of public sector employees with various educational specialism and attainments. Thus the auxiliary income of the graduates of the colleges of Science, Arts, Education, Physical Education, The Academy of Fine Arts, and Alsharia, have been estimated at a fixed amount of ID 240 yearly. The auxiliary income of graduates of the colleges of Engineering, Medicine, Pharmacy, Dentistry, Nursing, Veterinary Medicine, Agriculture, Administration and Economics, and Law and Politics have been respectively estimated as \(100 \%\), \(120 \%\), \(60 \%\), \(80 \%, 50 \%, 75 \%, 50 \%, 25 \%\), and \(35 \%\) of their nominal salary. 8
All of these estimates were used by the government as a basis for calculating the supplementary professional allowances which were consequently incorporated into the salary structure of all public sector employees who choose not to pursue private practice or part-time employment in the private sector. These supplementary allowances were introduced by the government in an attempt to update the salary structure in the public sector and to equalize the earnings of comparable employees in the public and private sectors in Iraq. The resulting auxiliary income profiles of the graduates of each college are shown in column (5) of Tables C-1 to C-30; in column (6) of each table the gross earnings are calculated. It is the data in this last column (i.e. gross earnings) that make up the private benefits of higher education in Iraq. It should be recalled that in the previous chapter we said that the income of public sector employees in Iraq is not taxed.

\footnotetext{
Nominal salary is the gross salary exclusive of the cost living allowance.

For example, for engineering graduates, see Republic of Iraq Revolutionary Command Council Resolution No. 1325 (12th May 1976); For medical, pharmacy, dentistry and nursing graduates, see Republic of Iraq Revolutionary Command Council No. 1119 (14th July 1980); For science, arts, education, physical education, academy of fine arts, and Alsharia graduates, see Republic of Iraq Revolutionary Command Council No. 82 (23th Jan. 1976); for Agriculture graduates, see Republic of Iraq Revolutionary Command Council No. 391 ( 5 th February 1974).
}

\subsection*{6.3 The Social Bencfits}

The social benefits of investment in higher education consist of the total benefits derived from such investments, either directly or indirectly, by each and every member in the society . However, because of salaries and wages of employees in public and private sector in Iraq untaxed, all such benefits, the social and private benefits were taken as a gross. Thus in calculating the social benefits of higher education, the earnings streams of the various college graduates must be based on their gross earnings. The gross earnings profiles of the graduates of the respective colleges in Iraq are shown in column (6) of Tables C-1 to C-30. Similarly the institutional benefits must also be taken on a before tax basis. The institutional benefits which will be discussed later in this chapter were calculated exclusive of any tax, and so they can be incorporated directly into the social benefits without any adjustments.

The social benefits of investments in higher education are not limited to institutional and private benefits, but also include a variety of spillover benefits associated with, and resulting from, a system of higher education. Since higher education serves both economic and non-economic objectives at the same time, the mere listing of the spillover benefits is a demanding task. To attempt to quantify these benefits however, would be as impractical and controversial as trying to quantify the benefits of industrialization or urbanization. \({ }^{9}\) Indeed all educational cost benefit studies have been guilty of excluding from the analysis both the economic and the non-economic spillover benefits, \({ }^{10}\) and consequently the social rates of return derived in these studies have been consistently underestimated. This thesis is no exception in this respect.

However, some spillover benefits of a system of higher education, can be quantified with little or no controversy. And though it may be argued that such estimates should not be included in the actual rate of return calculus (on the grounds that the resulting social rate of return would not be useful for comparative or ranking purposes), an independent appraisal of their magnitude in monetary terms will at least serve as an aid to decision makers in the planning of higher educational investments within the framework of a national economic plan.

9 Blaug Mo, An introduction to the economics of education, op. cit. p. 108.

10
Such criticism is not unique to cost - benefit analysis; it is equally applicable to "all the other competing approaches to educational planning, such as the manpower requirements approach or the 'social demand' approach. We simply do not know how to quantify external effects and all economists, whatever approach they have used, have been guilty of ignoring these benefits". Ibid., p. 204.

Thus, for example, some of the common by-products of a typical college of agriculture are the various farm and dairy products which are produced on experimental farms. Such by-products are normally sold by the educational institution at current market prices and so there is no doubt that the revenue thus derived constitutes a benefit for the institution. Indeed such revenue was one of the constituent elements of the institutional benefits at the University of Baghdad will be discussed in next section.

Let us now assume that these same by-products are not sold for the benefit of the educational institution, but rather they are distributed free of charge to the community at large. How does such an assumption alter these benefits? Clearly the magnitude of the benefits has not changed; all that has occurred is a transfer of these benefits from one entity (the educational institution) to another (the community at large), and hence, the overall social benefits are not affected at all.

In many areas of higher education there are a number of benefits (particularly in the form of services) which are provided free to the community and are therefore not directly reflected in the benefits of the educational institution. Typical examples of such services are free medical and dental care, free technical and consulting work, and the free availability of libraries, museums, art galleries, etc. for the general public. Almost invariably, such free services provided by institutions of higher education have been ignored or, at best, referred to parenthetically in the literature. Such an omission obviously distorts the true contribution of higher education investments by undervaluing (often appreciably) the full impact of their social benefits.

In this thesis an attempt will be made to quantify some of the free economic spillover benefits which derive from the routine day-to-day operation of the College of Medicine at the University of Baghdad. Although the valuation of these benefits will not be incorporated in the calculation of the social rates of return, it is hoped that they will at least provide an indication of the relative importance of the spillover benefits and encourage further in-depth research to ascertain and to evaluate such benefits in every area of higher education.

There remain a number of factors which affect both the costs and benefits of higher educational investments in Iraq for which no adjustment or estimates have been made. For example, the private benefits (i.e., the net earning streams) of college graduates have not been adjusted for the "ability" fraction, the so-called alpha coefficient. Unfortunately, in most countries and especially in developing countries- there are no data from which the alpha coefficient can be estimated. The only possibility is to calculate the rate of return "on the basis of several alpha coefficients, In order to check whether the results are sensitive to ability adjustment". 11 In the next chapter the private and social rate of
return will be calculated using three values for the alpha coefficient (1, \(2 / 3,1 / 2\) ). Although this approach begs the question of the ability adjustment, it is at least intellectually fairer "than assuming that all the earning differentials associated with different amounts of education are entirely attributable to education". \({ }^{12}\)

Ideally, the earnings profiles of college graduates should also be adjusted for the probability of failure or delay in completing the college requirements for graduation, and consequently, in the commencement of graduate employment and earnings. On other hand, differences in unemployment rates between college and high school graduates should be accounted for. However, because of the lack of data on these questions in Iraq, the appropriate adjustment cannot be made. But in the context of the present study, this may not be a serious omission as these two adjustments would tend to cancel each other out. While the probability of failure or delay in completing the college requirements would increase the cost of higher education, the presumed lower unemployment rates among college graduates relative to high school graduates in Iraq would decrease the opportunity cost of higher education. Ignoring these two adjustments, therefore, may not have a serious effect on the overall rate of returns of this study.

Finally, the consumption benefits of higher education are conspicuously missing from the cost-benefit balance sheet. Though the fact that higher education yields consumption benefits is not questioned, there is at present no accepted methodology for quantifying these benefits. Nevertheless, recognition of the consumption benefits of higher education is important in the development of national social and economic plans and particularly as this has a bearing on the supply of educated labour in the field of manpower planning. This is especially true in the case of developing countries where the policy objectives of manpower planning are influenced not only by considerations of economic efficiency, but also and perhaps often more importantly- by considerations of social equality and political ideology. Such objectives, however, are in different dimensions and the science of economics is simply incapable of dealing with them collectively.

When objectives are in different dimensions, every addition of values implies a set of weights and it is precisely these weights which constitute the problem of decision making.... The point of calculating the social rate of return is simply that it provides summary of the measurable economic effects of education. If it is decided that other effects are more important, the only question is: how much more important? This would be a difficult question to answer even if ve know all about the financial profitability of education to the country as a

\footnotetext{
11 Blaug Mo, An Introduction ....P. 201.
12 Blaug \(M_{0}\), An Introduction.....P. 54
}
whole. It is an impossible question to answer, however, if we do not. \({ }^{13}\)

\section*{6.A Thellnstitutional Benefits}

Generally, tuition fees paid by the students are the main source of revenue of universities. Universities also derive revenue from miscellaneous sources such as consulting services to industry, rents for their fixed assets (such as equipment, buildings, and other facilities), sale of goods produced in laboratories and on experimental farms, and receipts from various facilities and activities such as museums, sporting events, etc. However, all these sources of revenue account for but a fraction of the total revenue of a university. The income of most universities today (and especially that of state universities) is derived almost entirely from governmental grants and subsidies. Grants and subsidies, however, are essentially transfer payments and must not therefore be viewed as benefits in cost-benefit studies.

As mentioned in chapters 2 and 5, the case of the University of Baghdad (as for all Universities in Iraq), since tuition is entirely free, its operations finance by government throughout two ways (i) the annual budget and (ii) the Economic Development Plan Budget. Moreover, the University achieves other revenue from miscellaneous sources such as consulting services to industry, rents for its assets (such as Equipment, Building and so on), sale goods products by Laboratories .. etc. However, the latter source are very limited and of magnitude of such revenue is very small when compared with other two sources. Thus for example, the total institutional revenue of College of Science in \(1986 / 87\) amounted ID 116,425 compared with total institutional cost (which is financed by the budgets) of ID \(2,620,306\). Therefore the revenue accounts for only 4.4 per cent of total institutional costs. Table 6.1 ( \(p\). 157) shows a comparison between the total institutional revenue and total institutional costs of Colleges of Baghdad University in 1986/87.

The total institutional revenue of Baghdad University as a whole in 1986/87 amounted to ID \(1,572,640\) compared to a total institutional cost of ID 31,700,079. Institutional income represented 5 per cent of total institutional cost. Table 6.2 ( p . 158) gives a comparison between the institutional income and total cost at the University of Baghdad over the period 1981-82 to 1986-87.

The major single source of revenue at the University of Baghdad is from the sale of services and goods produced in laboratories and on the experimental farms, rentals from fixed assets (such as equipment, houses rented to the staff of the University, the student cafeteria, and so on),

\footnotetext{
13 Blaug M., An Introduction.....P. 202
}
sale of fixed assets, compensation and penalties, ... etc. Thus for example, the revenue from the sale of vegetables and animal products at the College of Agriculture and College of Veterinary Medicine in 1986/87 amounted to ID 97,858 and ID 11,737 respectively. Revenue from fixed assets rental was ID 40,114 at the Agriculture College in 1986/87, ID 29,096 of which represented house rental, the remaining ID 10,018 represented cafeteria rental. At the Veterinary Medicine college, fixed assets rentals amounted to ID 12,283, ID 8,983 being for house rentals and ID 3,300 from cafeteria rentals.

Benefits-like costs- could be classified into direct and indirect benefits. Direct benefits achieve by the faculties them selves, whereas the indirect benefits achieved by the Services office (Administration Office, Dormitory Office, Registration office and Central Library). The latter are allocated to various Colleges of Baghdad University. The benefits of the Administration Office, the Registration Office, and the Central Library are allocated according to the proportion of students enrolled in each college as a percentage of the total students enrolled in Baghdad University (see Table A-7). The benefits of the Dormitory Office are allocated according to the proportion of dormitory students enrolled in each college as a percentage of total number of dormitory students (see Table A-8). Our results of revenue allocation are shown in Tables B-12 to B-26 items b, \(c\), and d.

Having allocated the total institutional revenue to various colleges, the revenue per student and the revenue per graduate were calculated following identical procedure used in the previous chapter for calculating the cost per student and cost per graduate. The results are shown in Tables B-12 to B-26 (for revenue per student), in Tables B-28 to B-42 (for revenue per graduate), and in Table B-43 (weighted average revenue per graduate).

In the following chapter the private and social rate of return on investment on university education in Iraq will be calculated, using the private and social costs which have been estimated in chapter 5, and the private and social benefits which have estimated in current chapter. However, the above difficulties and limitations, and particularly the omission of the "economic" external benefits and "non-economic" consumption benefits from the rate of return calculus must be kept in mind. Decision makers must be at least aware of the existence of the external (spillover) and consumption benefits of higher education even though the full magnitude and the proper weighting of such benefits must at remain present an open question.

Table 6.1
Institutional Revenue and cost, Colleges of Baghdad University, 1986/87.
\begin{tabular}{|c|c|c|c|}
\hline & \begin{tabular}{l}
Total \\
Revenue
\end{tabular} & \begin{tabular}{l}
Total \\
Cost
\end{tabular} & Revenue as \% of Cost \\
\hline College & (1) & (2) & (3) \\
\hline Science & 116,425 & 2,620,306 & 4.4 \\
\hline Engineering & 130,348 & 4,273,732 & 3.0 \\
\hline Medicine & 137,422 & 2,718,262 & 5.0 \\
\hline Pharmacy & 56,087 & 873,308 & 6.4 \\
\hline Dentistry & 62,893 & 1,333,282 & 4.7 \\
\hline Nursing & 19,050 & 530,052 & 3.6 \\
\hline Veterinary Medicine & 86,248 & 1,998,249 & 4.3 \\
\hline Agriculture & 268,412 & 3,543,445 & 7.6 \\
\hline Administration and Economics. & 114,127 & 1,983,511 & 5.8 \\
\hline Law and Politics & 82,394 & 1,197,231 & 6.9 \\
\hline Arts & 145,685 & 3,285,214 & 4.4 \\
\hline Education & 216,302 & 4,010,694 & 5.4 \\
\hline Physical Education & 56,561 & 1,316,001 & 4.3 \\
\hline Fine Arts & 43,266 & 1,243,148 & 3.5 \\
\hline Alsharia & 37,420 & 773,644 & 4.8 \\
\hline Total & 1,572,640 & 31,700,079 & 5.0 \\
\hline
\end{tabular}

Source:
Column (1) from Tables B-12 to B-26; Column (2) from Tables A-31 to A-36, Column (3) from Column (1)/Column (2).

Table 6.2
Institutional cost and revenue, University of Baghdad, 1981/1982-1986/1987.
\begin{tabular}{|l|c|c|c|}
\hline \multirow{2}{*}{ Year } & \begin{tabular}{c} 
Total \\
Revenue
\end{tabular} & \begin{tabular}{l} 
Total \\
Cost
\end{tabular} & \begin{tabular}{l} 
Revenue as \\
\% of cost
\end{tabular} \\
\cline { 2 - 4 } & \((1)\) & \((2)\) & \((3)\) \\
\hline \(1981 / 82\) & 394,260 & \(28,134,812\) & 1.4 \\
\(1982 / 83\) & 525,531 & \(26,322,697\) & 2.0 \\
\(1983 / 84\) & 494,997 & \(26,294,851\) & 1.9 \\
\(1984 / 85\) & 528,608 & \(29,226,500\) & 1.8 \\
\(1985 / 86\) & 850,628 & \(33,138,835\) & 2.6 \\
\(1986 / 87\) & 1572,640 & \(31,700,079\) & 5.0 \\
\hline
\end{tabular}

Source:
Column (1) from Tables B-12 to B-26; Column (2) from Tables A-31 to A-36; Column (3) from Column (1) \(\div\) Column (2).

\section*{\(\mathbb{C} \mathbb{H} \mathbb{P} \mathbb{T} \mathbb{E} \mathbb{R} \mathbb{E} \mathbb{E} \mathbb{N}\)}

\section*{\(\mathbb{P} \mathbb{R} \mathbb{V} A T \mathbb{E} \mathbb{E} \mathbb{D} \mathbb{S} \mathbb{C} \mathbb{I} \mathbb{L} \mathbb{R} A T \mathbb{T} \mathbb{O} \mathbb{R} \mathbb{T} \mathbb{T} \mathbb{N}\) \(\mathbb{T O} \mathbb{U} \mathbb{I} \mathbb{E} \mathbb{R} \mathbb{S} \mathbb{T} \mathbb{E} \mathbb{D} \mathbb{C} \mathbb{C} T \mathbb{O} \mathbb{N} \mathbb{N} \mathbb{R} \mathbb{A} \mathbb{Q}\)}

\begin{abstract}
In Chapters 5 and 6, we have estimated the costs and benefits of various university programs in Iraq. The purpose of this chapter is to estimate the rate of return on investment in various university subjects in Iraq, from both the private and social point of view. The institutional rate of return will not be calculated, however, as such a rate is meaningless for institutions that do not function as real economic entities and whose revenue is derived, almost entirely, from governmental grants and subsidies. The private rate of return to investment in university education will be estimated for individuals who commenced their programs at the age of eighteen (i.e. immediately after secondary school graduation) and for those who started their studies at later ages. The social rate of return will be estimated for different university programs.

In section (7.1) the private internal rate of return (PIRR) on investment in different university subjects at age eighteen will be estimated. The social internal rate of return (SIRR) to the same programs will be calculated in section (7.2). The (PIRR) to investment in different university programs for persons who started their programs at other ages, will be estimated in section 7.3.
\end{abstract}

\section*{}

The private internal rate of return to an individual's investment in an increment of education, encapsulates the relationship between the extra life-time earnings received by the student as a result of this education and the costs (including income foregone during the period of his education) incurred by the individual. To estimate the private internal. rate of return to investment in education, the earnings and the costs (earnings forgone) are taken as a gross because all salaries and wages in Iraq are untaxed. Consider a person aged 18 with secondary school achievement, who decides to get: a job immediately after graduation. His expected life-time income might be represented by the curve OABD in Figure 7.1 (see page 182). \({ }^{1}\) The earnings of the individual up to the time he graduates from secondary school are equal to zero, but his earnings begin
from age 18 until he retires at age 60. On other hand, if he had continued his studies and gone to university, his expected life-time earnings profile might be represented by the curve OEFG in Figure 7.1 (p. 182). There is no income until the age of graduation (i.e. until age 21). On graduation, expected earnings rise to a very much higher level, and continue to be higher until retirement at age of 60 . The net monetary benefits of university education are equal to the area OEFG minus the area OABD. This can be looked at a different way. Since the OECD is common for both profiles, therefore two areas are obtained: DCFG represents the earnings differential of those with university education and \(A B C E\), represents the cost of the investment in terms of earnings foregone i.e. the opportunity cost of education. In Iraq, all the tuition costs of higher education are entirely free, and most of books and related educational materials are supplied (or loaned) by the University to students free of charge, \({ }^{2}\) thus opportunity costs are the only costs that the student incurs.

The calculation of the private rate of return for each university program involves a comparison of costs and benefits of education through the life-time cost-earnings stream. The internal rate of return is the rate that equates the present value of costs stream with the present value of earnings stream. In other words the internal rate of return is that rate of discount which when used to discount future net benefits will equate them to zero. The internal rate of return is then found by solving the following formula:
\[
\sum_{t=1}^{n}-\frac{E_{t}-c_{t}}{(1+r)^{t}}=0
\]

Where \(E_{t}\) is differential earnings in year \(t\); \(C_{t}\) is costs in year \(t\) (earnings foregone) measured by the alternative income profile i.e. the earnings of secondary school;
\(n\) is the length of working life; and
\(r\) is the internal rate of return.

The costs occur in the early years when he/she remains at school (i.e. from age 18 to age of graduation) and the benefits are the future earnings differential due to that education (i.e. from age of graduation to age of retirement). Therefore, by deducting the earnings profiles of secondary

\footnotetext{
1 In this Figure we compare secondary school graduates with Engineering college graduates.

2 See chapter 5 p 116.
}
school leavers from the earning profiles of university graduates we obtain the earnings differential and can use it in our calculations.

In calculating the rate of return to university education it is assumed that graduates find jobs in the first year after graduation. The private net marginal earnings streams of the graduates of the respective Colleges in the University of Baghdad are calculated in column (8) of Tables C-1 to C-15. The marginal earnings streams which are shown in these tables are calculated from differences between the private earnings (life-time earnings of university graduate, given in column 6) and private costs (given in column 7) for each year after secondary school graduation. It should be noted that in Iraq the incomes of all those who work in public sector are untaxed. So, gross earnings are taken in this study. The cash flows of university graduates over a period begin with secondary school graduation and end at age of retirement plus an end of service award which is equal to the salary of the last six months before the date of retirement. That is, both costs and benefits stream begin at age of 18 ( immediately after secondary school graduation). The age of retirement is assumed to be 60 years which is the normal age for retirement in Iraq. In any case, because of discounting, a slight error in the mean retirement age should have a negligible effect on the overall results.

As mentioned in chapter six, the extra earnings differentials of university graduates in Iraq have been reduced by an adjustment factor (alpha coefficient) in order to arrive at a net differential earnings attributable to education. In calculating the internal rate of return, three values of the alpha coefficient (1, \(2 / 3\), and \(1 / 2\) ) are used to adjust earnings differentials.

The private internal rates of return, given in Table 7.1 (p. 171), were calculated for graduates of the respective colleges on the basis of an alpha coefficient equal to one. The private internal rates of return calculated using the two other values for the alpha coefficient are given in the Table 7.2 (p. 172).

To summarise, the ability adjustment assumes that the foregone earnings of a graduate are not the earnings stream of a secondary school graduate, but rather the earnings stream of a potential graduate who has chosen not to pursue higher education.

The alpha coefficient is normally only applied when the earnings differentials are positive. However, for all years prior to university graduation, the earnings differentials are consistently negative, since the earnings of students attending university are assumed to be zero. However, if the alpha coefficient is used on the net earnings profiles after university graduation while at the same time ignoring its effect during the period spent in university education, this would be inconsistent. The notion of the ability adjustment does not suddenly arise upon completion of a certain educational level. It affects the earnings differentials during
the early years of the educational investment, when "errors" in the data are only slightly discounted.

Therefore, the real opportunity costs (the real earnings foregone) of university graduates through attendance must be estimated in order to be consistent with the assumed value of the alpha coefficient. Because there is no generally accepted method for doing this, these estimates were reached by linear regression of the ability-adjusted cost streams (real opportunity cost) of the graduates of various programs for the years between university graduation and retirement. Thus, having adjusted the positive post-university earnings differentials for the assumed alpha coefficient in the usual way, the real opportunity costs stream of graduates of various university programs are calculated \({ }^{3}\) (see Tables C-1 to \(\mathrm{C}-15\) ). From these data, the opportunity cost of college graduates for the years spent in university education (before college graduation) are estimated by linear regression. The formula for this calculation is:
\[
y=a+b x
\]

Where \(y\) is the opportunity cost; \(\mathbf{a}\) and \(\mathbf{b}\) are the estimated parameters; and x is the year. Using these estimates, the private internal rates of return, are calculated for each assumed value of the alpha coefficient. Table 7.2 ( \(p .172\) ) shows the comparative results.

Table 7.2 shows that the private rates of return to Engineering, Medicine, Dentistry, Veterinary Medicine, and Pharmacy education in Iraq are considerably greater than the private return to education in Science, Economics and Administration, Law and Politics, Arts, Education, Physical Education, Fine Arts, and Alsharia regardless of the value of the alpha coefficient. Also the private rates of return of the latter group, are lower than the private return to education in Nursing and Agriculture. However, it may be misleading to compare the internal rates of return to the various specializations on the basis of the same alpha coefficient.

Differences in "ability" vary considerably between students from the various university programs in Iraq, where policies relating to university admissions have traditionally relied heavily, indeed almost exclusively, on the average grade attainment by students in the secondary school baccalaureate examinations. \({ }^{4}\) Accordingly, admission to engineering, medicine, pharmacy, dentistry, and veterinary medicine is limited to

\footnotetext{
Real opportunity cost streams are calculated by subtracting the adjusted earnings differentials for the assumed alpha coefficient (see Tables C-1 to C-15, Column 9), from after-tax earnings (see Tables C-1 to c-15, Column 6).

The secondary school baccalaureate examinations are similar to the "0" level examination in U.K.
}
secondary school graduates with higher average grades, whereas admission to the remaining colleges requires only marginally more than the minimum passing grades \({ }^{5}\)

The average attainment grades of secondary school graduates in the baccalaureate examination cannot be used on their own as proxies for the ability factor, although it seems reasonable to propose that they might serve as crude evidence of it. This is especially true in the present study because the earnings profiles were generated by excluding all earnings derived from inherited wealth and capital. \({ }^{6}\) Thus the alpha coefficient in most cases is influenced by inherent ability such as personal motivation and natural intelligence, rather than by external factors such as the social, and family background of the graduates.

Accordingly, one might reason that the higher the average grade achieved in the baccalaureate examinations, the lower the alpha coefficient would be and vice versa. In accordance with current and past policies on university admissions in Iraq, one might expect the alpha coefficient to be relatively low for engineering, medicine, pharmacy, dentistry, and veterinary medicine graduates, while relatively high (perhaps close to one) for science, economics and administration, law and politics, arts education, physical education, fine arts, and Alsharia, whereas nursing and agriculture graduates lie somewhere between the two values of alpha coefficient. It is quite possible that no ability adjustment is required at all for the second group of graduates (science, economics and administration ... etc.) as their observed earnings differential might very well be attributable entirely to education.

Therefore, from a planning point of view, it is probably more sensible to compare the private rates of return on the basis of different values of the alpha coefficient for each university specialization even if such a value is based upon intuition and subjective judgment. This is not to say that hypothesis and guesswork are recommended, but rather it is to reject the hypothesis that the same ability adjustment is equally appropriate to all college graduates regardless of specialization-a hypothesis which, at least in relation to the Iraqi system of higher education, seems to be clearly unjustified.

It would be useful to compare the private internal rates of return on the basis of various sets of alpha coefficients to check whether the results are sensitive to such assumptions. In Table 7.3 ( \(p\). 173) the private internal rates of return of the graduates of the various colleges are compared on the basis of one such combination of alpha coefficients.

The results for rates of return on investment in university education

\footnotetext{
5 The minimum passing grade in Iraq is 50 per cent.
6 See Chapter 5, p. 130.
}
in Iraq, can be compared with rates of return to physical capital. Because the latter have not been estimated in Iraq, two rates of return are chosen arbitrarily. These are \(7 \%\) and \(12 \%\) respectively. They provide the worth of the investment to two classes of decision-makers: \(7 \%\) was considered an appropriate rate for those persons who are satisfied with a return which, indicates the worth of the investment in education when compared with a 'risk free' rate (this rate is available from investment in savings accounts in the Iraqi banks) and \(12 \%\) is chosen to give some measure of the worth of the investment in education when that investment is vieved as leading to some degree of risk, or if the investor has to borrow money to finance his education.

The results show in Table 7.1 (p. 171) that Engineering, Medicine, Pharmacy, Dentistry, Veterinary medicine, Nursing, and Agriculture programs are favourable if the results are compared to rates of \(7 \%\). Whereas Science, Education, Economics and Administration, Law and Politics, Arts, Physical Education, Fine Arts and Alsharia achieved rates of return less than \(7 \%\). Finally, If the results are compared to the rate of \(12 \%\), Engineering, Medicine, Pharmacy, Dentistry, and Veterinary Medicine would pass the test.

The results show that Engineering graduates achieve the highest rate of return among other university programs, and that Administration and Economics is the lowest.

\subsection*{7.2. The Socialluternal \(\mathbb{R}\) atesof \(\mathbb{R}\) eturn}

The calculations of the social internal rates of return upon educational investments should be based on all the costs incurred, and all the benefits realized from such investments by society as a whole.

The procedure for calculating the rate of return is similar to that employed for calculating private internal rates of return. The difference between private and social rates of return lies in what is included, both on the benefits side and on the costs side. In private returns calculations, the costs consist of all the costs incurred by the student himself or by his family such as tuition and other schooling fees; opportunity cost (earnings foregone); and incidental school-related costs incurred by an individual. In social return calculations, to private costs is added expenditure by the state on education. Therefore, social costs consist of educational costs incurred by individuals; educational costs incurred by the state (institutional costs); and the earnings foregone incurred by individuals themselves. In our thesis the private costs are assumed to be equal to the earnings forgone only. Therefore the social costs are the earnings foregone plus the annual per student costs of
education paid by the government which are different for each university program. In private returns calculations, the benefits from education are direct benefits to an individual or his family, whereas the social benefits from investment in education consist of the total benefits derived from such investments, either directly or indirectly, by each and every member in the society. But the indirect benefits (external benefits) and costs are in practice extremely difficult to measure, so that we have ignored them. Therefore, the calculations for social returns to investment in education are only social in a narrow sense of the term as only direct returns and earnings foregone to the immediate beneficiaries are included. External (spillover) benefits or indirect benefits, except those going to immediate beneficiaries, are excluded.

Generally, the net value of externalities and spillover in educational investments is invariably positive, so that the social internal rates of return calculated in this section express the minimum values of the "true" social returns.

In previous Chapters the measures which change private and institutional costs and benefits to their social equivalents vere discussed. Tables \(C-16\) to \(C-30\) column 8 show the gross earnings differentials for the graduates of respective colleges of Baghdad University. In these tables column 9 and column 11, the marginal earnings streams are adjusted for an alpha coefficient of two-thirds and one-half respectively, following the procedure which was used in calculating the private internal rates of return (see pp. 159 to 164 ).

To transform the institutional costs and benefits to their social equivalents, all data must be taken exclusive of taxes and transfer payments. The transformation of institutional cost per graduate to social cost was discussed in chapter 5, pages 131 to 135 . The weighted average of the social institutional costs per graduate for the years 1981/82-1986/87 (all adjusted to 1987 prices) are taken in calculating the social internal rates of return of respective colleges of Baghdad University (see Table A-108). This, it was felt, would be a more accurate reflection of the average institutional cost than the same data for any one particular year because the data in this study are taken for the period of 1981/87.

The institutional benefits per graduate were also calculated as a weighted average for the years 1981/82-1986/87 (see Table B-27). But as the institutional benefits were initially calculated exclusive of any taxes, no adjustments were necessary to transform them to social benefits.

\footnotetext{
7 If the \(1986 / 87\) data rather than the weighted average data are used, the social institutional cost per graduate of Science, Medicine, Pharmacy, Dentistry, Veterinary Medicine, Agriculture, Administration and Economics, Arts, Education, Fine Arts, and Alsharia would decrease by 15\%, 20\%, 5\%, \(11 \%, 2 \%, 11 \%, 19 \%, 22 \%, 11 \%, 24 \%\), and \(4 \%\) respectively, while for Nursing, Law and Politics, and would increase by \(7 \%\) and \(10 \%\) respectively. Engineering and Physical Education are Approximately the same.
}

The private net monetary earnings profiles are given as a (forty three-year) stream of annual cash flows beginning with secondary school graduation. However, the institutional costs and benefits per graduate amount to a single lump-sum figure. This cost or benefit figure obviously is not incurred wholly at the same time, but rather it accrues progressively during the years spent in college. However, to make the calculations more meaningful, the benefits were assumed to be concentrated at the midpoint of the graduate's college program. Therefore, with respect to medicine (which consists of a six-year program), pharmacy, dentistry, and veterinary medicine colleges (five-year programs), the social institutional benefits per graduate are assumed occur at the end of the third year; while in the remaining colleges - which consist of a four-year program - these benefits are assumed to be concentrated at the end of the second year (see Tables C-16 to C-30). The social institutional costs per graduate are divided by length of the program to find the total social costs for each year of study. The latter is added to the earnings foregone for each year of the period of study. 8

Following the same procedures, and making the same assumptions, as those used in calculating the private internal rates of return (see previous section), the social internal rates of return on investments in the fifteen areas of higher education in Iraq investigated in this study were calculated. The results are summarized in the Table 7.4 (p. 174).

From Table 7.5 ( \(p .175\) ), it can be seen that the social internal rates of return to investment in Engineering, Medicine, Pharmacy and Dentistry education are significantly higher than the social returns to educational investments in Science, Agriculture, Economics and Administration, Law and Politics, Arts, Physical Education, Academy of Fine Arts, Alsharia, regardless of the value of the alpha coefficient. However the rate of return in the latter group is less than the social returns to education in Veterinary Medicine, Nursing, and Education only when the same value of the alpha coefficient is used.

As stated in the previous section, it is the view of this study that the ability adjustment should vary from one higher educational specialization to another. According to this belief, a set of subjective estimates for the alpha coefficient was suggested. In Table 7.6 ( \(p\). 176) the social internal rates of return of the graduates of various college are compared on the basis of several sets of alpha coefficients.

The same set of subjective estimates is used to compare the social internal rates of return and complementary private internal rates of return. The results are summarized in Table 7.7 (p. 177).

\footnotetext{
8 See Tables \(\mathrm{C}-16\) to \(\mathrm{C}-30 \mathrm{Col.7}\) from ages 18 to age 21 for 4-year programs, from age 18 to age 22 for 5 -year programs, and for 6 -year program age 18 to age 23.
}

Our results show that the private internal rates of return to investment in higher education in Iraq are higher than the corresponding social internal rates of return. The difference between private and social rates of return is due to the heavy subsidy paid to the educational sector by the state. \({ }^{9}\) The relationships between private and social rates of return by higher educational specialization are shown in Table 7.8 ( \(p\). 178) and Figures 7.2 (p. 183), 7.3 (p. 184), and 7.4 (p. 185).

It must be emphasized again that not only are the above estimates based on a subjective judgment of the ability factor, but they also ignore any indirect or 'spillover' benefits (external benefits) of education, and the non-monetary 'consumption' benefits of education which in all probability, vary from one area of specialization to another. For these reasons some writers have rejected cost-benefit analysis because it can provide no more than a narrow economic evaluation of education. They argue that this cannot be the sole criterion for educational planning. However the 'investment approach to educational planning' rests on the belief that such an analysis should be an important element in decision-making.

As mentioned in Chapter 3 and Chapter 4, although any indirect economic benefits of education may outweigh the direct, monetary benefits, the techniques for measuring indirect benefits are as yet very crude. Some of the indirect benefits may be easy to specify but difficult to measure. Although we believe that the external benefits of education are positive, no techniques as yet, exist for measuring them, and so the social rate of return, calculated from direct earnings, represents an underestimate of the returns to education. This is important if we wish to compare the yield of education with other forms of social investment, although even here it is helpful to have first an estimate of the direct economic benefits of education compared with, say health expenditures. If the purpose of cost-benefit-analysis is to compare the profitability of two levels or types of education, the problem may be less important. For while it is generally accepted that education generates external, indirect, and intangible benefits, it is less obvious that higher education yields more indirect benefits than secondary school or medical education less than arts. Although planners cannot afford to ignore the existence of unmeasured (and sometimes unmeasurable) externalities in higher education, it does not follow that knowledge of the relative magnitudes of the measurable factors is not useful for economic and education planning.

The results in Table 7.4 ( p . 174) show that the only engineering education among the university programs could achieve a rate of return of

\footnotetext{
9 The difference between private and social returns is clearer in developing countries than in advanced countries, because they subsidize their educational sector more heavily (see George Psacharopoulos, Return to Education: An international Comparison, (Elsevier Scientific Pūblishing company, London, 1973).
}
more than 12\%. Medicine, Pharmacy, Dentistry, and Veterinary Medicine could achieve more than \(7 \%\). However, all four-year programs (except the Engineering program) could not achieve 7\%. Finally, the results show that the social rate of return for engineering programs is the highest, whereas for Fine Arts it is lowest.

\subsection*{7.3 Estimatesofthe \(\mathbb{P}\) rivaternternal \(\mathbb{R}\) ateof \(\mathbb{R}\) eturn According to CommencementAge}

In section 7.1, the private returns to investment in university of education in Iraq for individuals who commenced their programs at the age of 18 years (i.e. immediately after secondary school graduation) were discussed for various university education programs. In this section we examine the private returns to investment in various university programs for those who started their studies at a later age. For this purpose the ages of \(18,20,22,24,26\), and 28 as examples will be taken. The private costs, marginal earnings, and private internal rate of return will be discussed in this section.

\subsection*{7.3.1 \(\mathbb{P r i v a t e C o s t}\)}

As mentioned in chapter five, foregone earnings represent the major private cost of university education in Iraq. Table 7.9 (p. 179) shows the private costs for fifteen programs commencing at ages of \(18,20,22,24\), 26 , and 28 respectively. In this analysis, it is found that the private costs (foregone earnings) for four-year programs ranged from 4,129 ID for individuals who commenced their programs at age 18 to 5,319 ID for individuals who commenced at age 28. The private costs for five years subjects ranged from 5, 231 ID for persons who started his studies at age 18 to 6,724 for a person who started at age 28. Finally, the foregone earnings for a six years course in medicine ranged from 6,341 for one who commenced his course at age 18 to 8,174 ID for one at age 28.

The conclusion of this analysis is that for older investors in university education in Iraq, foregone earnings are definitely greater than for young or entrants. In other words, there is a positive relationship between commencement age and foregone earnings.

\subsection*{7.3.2 \(\mathbb{E}\) aruings \(\operatorname{Differentials}\)}

According to chapter six, the private benefits to investment in
university education in Iraq were assumed to include only those benefits of education that can be translated into monetary terms; government salary scales were used because the government employs the majority of the labour force on the one hand, and the lack in the earnings data in Iraq on the other. It was also assumed that graduates start to earn immediately after their graduation.

In this analysis, it was found that medicine graduates receive the highest total marginal earnings among the university education programs at any commencement age under consideration. While the arts graduates achieve the lowest marginal earnings at all the commencement age (see Table 7.10 p . 180).

The conclusion of this analysis is that medicine graduates receive the highest total marginal earnings at all commencement ages. \({ }^{10}\) It was also found that marginal earnings were negative for science, arts and administration and economics graduates when commenced their studies at age 26 or later, and law and politics graduates achieve negative marginal earnings when started their studies at age 28 or over. That is, the total earnings forgone are higher than the total earnings lifetime for graduates who commenced in these subjects at age 26,28 or later respectively. It should be noted that the ranking of marginal earnings are the same for all commencement ages.

The conclusion of this study is that the relationship between the commencement age and marginal earnings due to university education is negative, that is the older graduates receive marginal earnings less than the young ones.

\subsection*{7.3.3 Internal \(\mathbb{R}\) ateof \(\mathbb{R}\) eturn}

The private internal rates of return (PIRR) to investment in different university subjects have also been calculated for individuals who commenced their programs at different ages, using the same procedures which were used in previous sections.

The results are summarized in Table 7.11 (p. 181). Table 7.11 shows the IRR for all programs at commencement ages of \(18,20,22,24,26\) and 28. In order to examine these rates, the same rates of return which were used to compare the results in last two sections of this chapter will be applied. The university prograns are classified into four groups according

\footnotetext{
10 For example at the commencement age of 18 the marginal earnings of medical program was 1.21 times, 1.46 times, 1.53 times, 1.78 times, 3.54 times, 3.88 times, 5.45 times, 7 times, 7.20 times and 8 times the marginal earnings of Engineering, Dentistry, veterinary Medicine, Nursing, Agriculture, Law, Science, Economics and Administration and Arts respectively.
}
to the IRsR to investment in University education: (1) programs which could not earn \(7 \%\) at any commencement age; (2) programs which realise higher than \(7 \%\) at some commencement age; (3) programs obtaining over than \(12 \%\); and (4) programs which achieve higher \(12 \%\) and less. First group consist of Science, Education, Economics and Administration, Law and Politics, Arts, Fine Arts, Physical Education and Alsharia programs. The second group includes Nursing and Agriculture programs. Each of them achieved a return higher than \(7 \%\) for persons who entered such programs at any age between 18 and 20. The third group includes Engineering, Medicine. These programs obtain a return greater than \(12 \%\) for individuals who commenced the programs at any age under determination. \({ }^{11}\) Finally, the fourth group includes Pharmacy, Dentistry, and Veterinary Medicine. Pharmacy program obtains higher than \(12 \%\) if the persons commenced their study at any age between 18 and 20, thereafter rates of return are less than \(12 \%\) but more than \(7 \%\). Dentistry and Veterinary programs achieve higher than \(12 \%\) when persons entered such programs at any age between 18 and 22 , thereafter rates of return are higher than \(7 \%\) but less than \(12 \%\) (see Table 7.11 p . 181).

In this section, it was found that the rate of return on investment in some subjects was affected highly by commencement age. This was especially true for Science, Agriculture, Administration and Economics, Arts and Law and Politics. While the other subjects were affected only marginally. For example, the decline in the rate of return to Arts becomes \(138 \%\) of the rate achieved at age 18, for the persons who commenced his study at age 28, while the decline in the rate of return to Engineering become \(33 \%\) of the rate achieved at age 18 for persons who commenced at age 28. This is due to the differences in total lifetime earnings differentials of university subjects.

\footnotetext{
11 It should be mentioned that Medicine program achieve less than \(12 \%\) when the persons commenced at age 28 and over.
}

Table 7.1
Private Rates of Return by Subject Group, in Iraq, 1986/87, (Assuming no Ability Adjustment).
\begin{tabular}{|lc|}
\hline & \\
Subject Group & Private Internal \\
Rate of Return
\end{tabular}\(|\)\begin{tabular}{l} 
Science \\
Engineering \\
Medicine \\
Pharmacy \\
Dentistry \\
Nursing \\
Veterinary Medicine \\
Agriculture \\
Economics \& Administration \\
Law \& Politics \\
Arts \\
Education \\
Physical Education \\
Fine Arts \\
Alsharia
\end{tabular}

Source: Tables C-1 to C-15.
Note: * The private rates of return of science graduates and Education graduates are the same because the earnings and foregone earnings are for both graduates are equal.
** The private rates of return of Arts Graduate, Physical Education Graduate, Fine of Arts Graduate, and Alsharia Graduate are the same because costs and earnings for all these graduates are the same.

Table 7.2
Comparative Private Internal Rates of Return to University Education in Iraq, 1986/87, Under Subjective Estimates of the Alpha Coefficient.
\begin{tabular}{|c|c|c|c|}
\hline \multirow[b]{2}{*}{Subject Group} & \multicolumn{3}{|l|}{Private Internal Rates of Return} \\
\hline & \(\alpha=1\) & \(\alpha=2 / 3\) & \(\alpha=1 / 2\) \\
\hline Science & 6.9 * & 4.5* & 3.0* \\
\hline Engineering & 21.3 & 14.2 & 11.0 \\
\hline Medicine & 16.0 & 11.8 & 9.5 \\
\hline Pharmacy & 13.1 & 9.7 & 7.6 \\
\hline Dentistry & 14.8 & 10.7 & 8.6 \\
\hline Veterinary medicine & 14.4 & 10.4 & 8.3 \\
\hline Nursing & 9.3 & 7.0 & 5.6 \\
\hline Agriculture & 8.9 & 6.5 & 5.1 \\
\hline Economics \& Administration & 5.6 & 4.0 & 3.0 \\
\hline Law \& Politics & 6.8 & 5.0 & 3.9 \\
\hline Arts & \(6.1 * *\) & \(3.8 * *\) & 2.5 ** \\
\hline Education & 6.9 * & 4.4* & 3.0* \\
\hline Physical education & 6.1 ** & 3.8 ** & 2.5 ** \\
\hline Fine Arts & 6.1 ** & 3.8** & \(2.5 * *\) \\
\hline Alsharia & \(6.1^{* *}\) & 3.8** & \(2.5 * *\) \\
\hline
\end{tabular}

Source: Tables C-1 to C-15.

Note: * The private rates of return of science graduates and Education graduates are the same because the earnings and foregone earnings are for both graduates are equal.
** The private rates of return of Arts Graduate, Physical Education Graduate, Fine of Arts Graduate, and Alsharia Graduate are the same because costs and earnings for all these graduates are the same.

\section*{Table 7.3}

Comparative private Internal Rates of Return to University Education in Iraq, 1986/87, Under Subjective Estimates of the Alpha Coefficient.
\begin{tabular}{|l|c|c|c|}
\hline Subject group & Alhpa \\
Coefficient & \begin{tabular}{l} 
Private \\
IRR \(\%\)
\end{tabular} & Rank \\
\hline Science & & & \\
Engineering & 1 & 6.9 & 7 \\
Medicine & \(1 / 2\) & 11.0 & 1 \\
Pharmacy & \(1 / 2\) & 9.5 & 2 \\
Dentistry & \(1 / 2\) & 7.6 & 5 \\
Nursing & \(1 / 2\) & 8.6 & 3 \\
Veterinary Medicine & \(2 / 3\) & 7.0 & 6 \\
Agriculture & \(1 / 2\) & 8.3 & 4 \\
Economics \& Administration & \(2 / 3\) & 6.5 & 9 \\
Law \& Politics & 1 & 5.6 & 11 \\
Arts & 1 & 6.8 & 8 \\
Education & 1 & 6.1 & 10 \\
Physical Education & 1 & 6.9 & 7 \\
Fine Arts & 1 & 6.1 & 10 \\
Alsharia & 1 & 6.1 & 10 \\
\hline
\end{tabular}

\footnotetext{
Source: Tables \(\mathrm{C}-1\) to \(\mathrm{C}-15\).
}

\section*{Table 7. 4}

Social Rates of Return to University Education in traq. 1986/87, (Assuming no Ability Adjustment).
\begin{tabular}{|lc|}
\hline & \\
Subject Group & Social Internal \\
Rate of Return \\
Science & \\
Engineering & 3.6 \\
Medicine & 13.7 \\
Pharmacy & 9.8 \\
Dentistry & 9.2 \\
Veterinary Medicine & 8.7 \\
Nursing & 7.9 \\
Agriculture & 4.4 \\
Economics \& Administration & 4.5 \\
Law \& Politics & 4.3 \\
Arts & 4.5 \\
Education & 3.9 \\
Physical Education & 4.8 \\
Fine Arts & 3.5 \\
Alsharia & 3.4 \\
\hline
\end{tabular}

Source: Tables C-16 to C-30.

Table 7.5
Comparative Social Internal Rates of Return to University Education in Traq, 1986/87, Under Various Estimates of the Alpha Coefficient.
\begin{tabular}{|l|c|c|c|}
\hline & \multicolumn{3}{|c|}{ Social \begin{tabular}{c} 
Internal Rates of \\
Return \(\%\)
\end{tabular}} \\
\cline { 2 - 4 } Subject Group & \(\alpha=1\) & \(\alpha=2 / 3\) & \(\alpha=1 / 2\) \\
\hline & & & \\
Science & 3.6 & 1.7 & \(0.5 *\) \\
Engineering & 13.7 & 9.5 & 7.3 \\
Medicine & 9.8 & 7.1 & 5.4 \\
Pharmacy & 9.2 & 6.5 & 4.9 \\
Dentistry & 8.7 & 6.1 & 4.5 \\
Veterinary Medicine & 7.9 & 5.5 & 4.0 \\
Nursing & 4.4 & 2.7 & 1.5 \\
Agriculture & 4.5 & 2.7 & 1.5 \\
Economics \& Administration & 4.3 & 2.9 & 1.8 \\
Law \& Politics & 4.5 & 2.9 & 1.8 \\
Arts & 3.9 & 2.0 & \(0.8 *\) \\
Education & 4.8 & 2.7 & 1.5 \\
Physical Education & 3.5 & 1.7 & \(0.5 *\) \\
Fine Arts & 3.4 & 1.5 & \(0.4 *\) \\
Alsharia & 4.1 & 2.2 & \(1.0 *\) \\
\hline
\end{tabular}

\footnotetext{
Source: Tables C-16 to C-30.
* Note:

The social internal rates of return to college of Science, Arts, Physical Education, Fine Arts, and Alsharia are very low when the alpha coefficient is equal to \(1 / 2\), because the costs (earnings foregone and institutional costs) of these colleges are very high compared with the earnings differentials after college graduation. The percentage of total cost of these college relative to total earnings differentials are equal to 96 per cent, 89 per cent, 95 per cent, 99 per cent, and 84 per cent respectively.
}

\section*{Table 7.6}

Comparative Social Internal Rate of Return of College Graduates (Relative to Secondary School Graduates) in Iraq, 1986/87, Under Subjective Estimates of the Alpha Coefficient.
\begin{tabular}{|c|c|c|c|}
\hline Subject Group & \begin{tabular}{l}
Social \\
IRR \\
\%
\end{tabular} & Alhpa Coefficient & Rank \\
\hline Science & 3.6 & 1 & 12 \\
\hline Engineering & 7.3 & 1/2 & 1 \\
\hline Medicine & 5.4 & 1/2 & 2 \\
\hline Pharmacy & 4.9 & 1/2 & 3 \\
\hline Dentistry & 4.5 & 1/2 & 5 \\
\hline Veterinary Medicine & 4.0 & 1/2 & 9 \\
\hline Nursing & 2.7 & 2/3 & 15 \\
\hline Agriculture & 2.7 & 2/3 & 14 \\
\hline Economics \& Administration & 4.3 & 1 & 7 \\
\hline Law \& Politics & 4.5 & 1 & 6 \\
\hline Arts & 3.9 & 1 & 10 \\
\hline Education & 4.8 & 1 & 4 \\
\hline Physical Education & 3.5 & 1 & 11 \\
\hline Fine Arts & 3.4 & 1 & 13 \\
\hline Alsharia & 4.1 & 1 & 8 \\
\hline
\end{tabular}

Source: Tables c-16 to C-30.

\section*{Table 7.7}

Comparative Private and Social Internal Rates of Investment in Higher Education in Iraq, 1986/87, Using Subjective Estimates of the Alpha Coefficient.
\begin{tabular}{|l|r|c|c|c|c|}
\hline & & Social & & Private & \\
Subject Group & & IRR \% & Rank & IRR \% & Rank \\
\hline & & & & & \\
Science & 1 & 3.6 & 12 & 6.9 & 7 \\
Engineering & \(1 / 2\) & 7.3 & 1 & 11.0 & 1 \\
Medicine & \(1 / 2\) & 5.4 & 2 & 9.5 & 2 \\
Pharmacy & \(1 / 2\) & 4.9 & 3 & 7.6 & 5 \\
Dentistry & \(1 / 2\) & 4.5 & 5 & 8.6 & 3 \\
Veterinary Medicine & \(1 / 2\) & 4.0 & 9 & 8.3 & 6 \\
Nursing & \(2 / 3\) & 2.7 & 15 & 7.0 & 4 \\
Agriculture & \(2 / 3\) & 2.7 & 14 & 6.5 & 7 \\
Economics \& Administration & 1 & 4.3 & 7 & 5.6 & 10 \\
Law \& Politics & 1 & 4.5 & 6 & 6.8 & 8 \\
Arts & 1 & 3.9 & 10 & 6.1 & 10 \\
Education & 1 & 4.8 & 4 & 6.9 & 7 \\
Physical Education & 1 & 3.5 & 11 & 6.1 & 9 \\
Fine Arts & 1 & 3.4 & 13 & 6.1 & 9 \\
Alsharia & 1 & 4.1 & 8 & 6.1 & 9 \\
\hline
\end{tabular}

\section*{Source:}

Social internal rates of return from tables \(\mathrm{C}-16\) to \(\mathrm{C}-30\); private internal rates of return from tables \(C-1\) to \(C-15\).

Table 7.8
Comparative private and Social Internal Rates of Investment In Higher Education in 1 raq, 1986/87, Using Subjective Estimates of the Alpha Coefficient.
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Subject Group} & \multicolumn{2}{|c|}{\(\alpha=1\)} & \multicolumn{2}{|l|}{\(\alpha=2 / 3\)} & \multicolumn{2}{|l|}{\(\alpha=1 / 2\)} \\
\hline & Private & Social & Private & Social & Private & Social \\
\hline Science & 6.9 & 3.6 & 4.4 & 1.7 & 3.0 & 0.5 \\
\hline Engineering & 21.3 & 13.7 & 14.2 & 9.5 & 11.0 & 7.3 \\
\hline Medicine & 16.0 & 9.8 & 11.8 & 7.0 & 9.5 & 5.4 \\
\hline Pharmacy & 13.1 & 9.2 & 9.5 & 6.5 & 7.6 & 4.9 \\
\hline Dentistry & 14.8 & 8.7 & 10.7 & 6.1 & 8.6 & 4.5 \\
\hline Veterinary Med. & 14.4 & 7.9 & 10.5 & 5.5 & 8.3 & 4.0 \\
\hline Nursing & 9.3 & 4.4 & 7.0 & 2.7 & 5.6 & 1.5 \\
\hline Agriculture & 8.9 & 4.5 & 6.5 & 2.7 & 5.1 & 1.5 \\
\hline Econ. \& Admin. & 5.6 & 4.3 & 4.0 & 2.9 & 3.0 & 1.8 \\
\hline Law \& Politics & 6.8 & 4.5 & 5.0 & 2.9 & 3.9 & 1.8 \\
\hline Arts & 6.1 & 3.9 & 3.8 & 2.0 & 2.5 & 0.8 \\
\hline Education & 6.9 & 4.8 & 4.4 & 2.7 & 3.0 & 1.5 \\
\hline Physical Educ. & 6.1 & 3.5 & 3.8 & 1.7 & 2.5 & 0.5 \\
\hline Fine Arts & 6.1 & 3.4 & 3.8 & 1.5 & 2.5 & 0.4 \\
\hline Alsharia & 6.1 & 4.1 & 3.8 & 2.2 & 2.5 & 1.0 \\
\hline
\end{tabular}

\section*{Source:}

Social internal rates of return from tables \(\mathrm{C}-16\) to \(\mathrm{C}-30\); private internal rates of return from tables \(\mathrm{C}-1\) to \(\mathrm{C}-16\).

Table 7.9
Private Cost of University Education per Student by Program and Commencement Age, Baghdad University, In Iraqi Dinar.
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{3}{*}{Type of Program} & \multicolumn{6}{|c|}{Commencement Age} \\
\hline & 18 & 20 & 22 & 24 & 26 & 28 \\
\hline & Foregone Earnings & Foregone Earnings & Foregone Earnings & Foregone Earnings & Foregone Earnings & \begin{tabular}{l}
Foregone \\
Earnings
\end{tabular} \\
\hline \multirow[t]{4}{*}{\(1^{*}\)} & 972 & 1045 & 1102 & 1182 & 1220 & 1255 \\
\hline & 1027 & 1085 & 1110 & 1223 & 1240 & 1310 \\
\hline & 1045 & 1102 & 1182 & 1220 & 1255 & 1372 \\
\hline & 1085 & 1110 & 1223 & 1240 & 1310 & 1382 \\
\hline Total & 4129 & 4342 & 4617 & 4865 & 5025 & 5319 \\
\hline \multirow[t]{5}{*}{\(2^{* *}\)} & 972 & 1045 & 1102 & 1182 & 1220 & 1255 \\
\hline & 1027 & 1085 & 1110 & 1223 & 1240 & 1310 \\
\hline & 1045 & 1102 & 1182 & 1220 & 1255 & 1372 \\
\hline & 1085 & 1110 & 1223 & 1240 & 1310 & 1382 \\
\hline & 1102 & 1182 & 1220 & 1255 & 1372 & 1405 \\
\hline Total & 5231 & 5524 & 5837 & 6120 & 6397 & 6724 \\
\hline \multirow[t]{6}{*}{\(3^{* * *}\)} & 972 & 1045 & 1102 & 1182 & 1220 & 1255 \\
\hline & 1027 & 1085 & 1110 & 1223 & 1240 & 1310 \\
\hline & 1045 & 1102 & 1182 & 1220 & 1255 & 1372 \\
\hline & 1085 & 1110 & 1223 & 1240 & 1310 & 1382 \\
\hline & 1102 & 1182 & 1220 & 1255 & 1372 & 1.405 \\
\hline & 1110 & 1223 & 1240 & 1310 & 1382 & 1450 \\
\hline Total & 6341 & 6747 & 7077 & 7430 & 7779 & 8174 \\
\hline
\end{tabular}

Source: Table B. 1.
* Four-year programs are Science, Engineering, Nursing, Agriculture, Economics and Administration, Law and Politics, Education, Arts, Physical Education, Fine of Arts and Alsharia.
** Five-year programs are Pharmacy, Dentistry, and Veterinary Medicine.
*** Six-year Program is Medicine only.

Table 7. 10
Lifetime Earnings Differentials Attributed to Various Programs, and Various Age, Baghdad University, 1987.
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Program} & \multicolumn{6}{|c|}{Commencement Age} \\
\hline & 18 & 20 & 22 & 24 & 26 & 28 \\
\hline Science & 14246 & 9977 & 6114 & 4593 & -762 & -3802 \\
\hline Engineering & 82219 & 73686 & 64438 & 55692 & 47559 & 39901 \\
\hline Medicine & 99571 & 87396 & 76729 & 65489 & 55058 & 45305 \\
\hline Pharmacy & 55886 & 48242 & 40614 & 33316 & 26605 & 20344 \\
\hline Dentistry & 68040 & 59740 & 50936 & 42656 & 35014 & 27873 \\
\hline Veterinary Med. & 65002 & 56906 & 48357 & 40323 & 32914 & 25993 \\
\hline Nursing & 28718 & 22834 & 17376 & 12299 & 7711 & 3476 \\
\hline Agriculture & 25643 & 19869 & 14803 & 10089 & 5840 & 1927 \\
\hline Arts & 12305 & 8053 & 4243 & 707 & -2442 & -5343 \\
\hline Econ. \& Admin. & 13823 & 9525 & 5147 & 1191 & -2330 & -5752 \\
\hline Law \& Politics & 18270 & 13569 & 8911 & 4595 & 734 & -2819 \\
\hline
\end{tabular}

Note : The ranking of differential earnings of various programs is the same at all commencement ages.

Table 7.11
A Comparison of Private Internal Rate of return to investment in Various Programs of University Education at Various Ages, Baghdad University, 1987.
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Program} & \multicolumn{6}{|c|}{Commencement Age} \\
\hline & 18 & 20 & 22 & 24 & 26 & 28 \\
\hline Science & 6.9 & 5.3 & 3.5 & 2.5 & -1.0 & -2.6 \\
\hline Engineering & 21.3 & 19.8 & 18.4 & 16.9 & 15.7 & 14.3 \\
\hline Medicine & 16.0 & 15.0 & 14.1 & 13.1 & 12.2 & 11.0 \\
\hline Pharmacy & 13.1 & 12.0 & 10.9 & 9.7 & 8.6 & 7.3 \\
\hline Dentistry & 14.8 & 13.7 & 12.6 & 11.4 & 10.3 & 9.1 \\
\hline Veterinary Med. & 14.4 & 13.3 & 12.2 & 11.0 & 9.9 & 8.6 \\
\hline Nursing & 9.4 & 8.0 & 6.6 & 5.1 & 3.8 & 3.0 \\
\hline Agriculture & 8.9 & 7.6 & 6.1 & 4.6 & 3.0 & 1.1 \\
\hline Arts & 6.2 & 4.4 & 2.6 & 0.5 & -2.1 & -5.2 \\
\hline Econ. \& Admin. & 5.6 & 4.1 & 2.5 & 0.6 & -1.7 & -3.9 \\
\hline Law & 6.9 & 5.4 & 3.9 & 2.2 & 0.4 & -2.1 \\
\hline
\end{tabular}





\section*{CHAPTER EIGHT}
\(S U M M A \mathbb{R}, C O \mathbb{C} \mathbb{C} \mathbb{S} I O \mathbb{N}, \mathbb{A} \mathbb{N} \mathbb{R} \mathbb{C} O M \mathbb{M} \mathbb{N} D A T I O N S\)

\subsection*{8.1 Summary of This Study}

The major purpose of this study was to measure the monetary returns to investment in different programs of university education in Iraq. It has not included the additional benefits to society that might be inadequately expressed in the reported incomes of university graduates. Such "external" benefits potentially exist but because of estimation difficulties, they were ignored. Cost-benefit analysis has been used in this study, and relative rates-of-return for fifteen different programs of university education in Baghdad University, were established.

In this study, it was assumed first of all that the individual has decided to invest in the university education rather than in some form of physical capital; that the costs of university education were treated as investment i.e. consumption benefits were ignored because of estimation difficulties ; that monetary benefits and costs only were taken into account, i.e. the external benefits and costs were ignored; that no students work part-time when attending university; that all graduates continue their studies directly after secondary school graduation and complete their work for an undergraduate degree without interruption; that secondary school graduates enter the labour force at age 18 and retire at age 60 , while university graduates enter the labour force at ages 22, 23, and 24 depending upon the kind of programs studied. All retire at the age of 60 . finally, it was assumed that academic salaries in the universities were allocated completely to the teaching function.

Educational planners should base their resource allocation decisions on the evaluation of total benefits and costs and resources available now and expected in the future. Investment efficiency questions of resource use are partially answered by comparing rates of return to university programs with non-human capital alternatives. Because the rates of return on investment in non-human capital were not available, two rates of return were chosen arbitrarily i.e. \(7 \%\) and \(12 \%\). The first represents the savings account available in Iraqi banks (a rate which is "risk free") and the second represents the rate with some degree of risk.

Obtaining adequate cost data generally has not been a major problem in studies of returns to the general levels of education, but it has been
studies of returns to the general levels of education, but it has been difficult to get detailed expenditure data for different programs within a level of education. However, this study used information for the University of Baghdad which produces an annual budget which allocates all expenditures to the faculties and other service offices (Administration, Registration, Dormitory Office and Library Central). Each of these Faculties and Service \(0 f f i c e s\) has a separate accounting system.

Cost data were derived from the financial statements of the faculties and the University of Baghdad, and the accounting records of the annual Budget and the Five Year Plans. The total costs of education vary according to the point of view taken. In this study, the costs of university education were estimated from point of view three entities: (i) the private individual; (ii) the institution (the university); and (iii) society at large. Since university education in Iraq is entirely free, and other education - related expenses are insignificant, the costs of university education to the student amount simply to a stream of earnings foregone. This is equivalent to the earnings of secondary school graduates. The institutional costs of university education are the costs incurred directly by faculties for providing the educational services. These costs consist of the operating costs and opportunity costs of capital assets used in the educational production process. The costs of service offices were allocated to the faculties according to the proportion of students enrolled in each faculty. From this information the institutional cost per student can be obtained by dividing the total institutional costs (operating costs, opportunity cost, and allocated costs) by the number of students enrolled in each faculty. The social institutional cost per student was also calculated by deducting the taxes and transfer payments from total institutional cost. All the costs were adjusted to 1987 prices by using a weighted average composite price index number.

In order to calculate the institutional cost per graduate, two methods were suggested. The net-value-added method assumes that the cost of dropouts is inherent in the cost of producing graduates, i.e the dropouts are treated as normal waste and the finished good should include this cost. The cost-per-student-year method assumes that the dropouts and graduates are treated as a joint products in the educational system each with their own separate costs, i.e dropouts are treated as abnormal waste.

Total social costs per graduate were calculated by adding the private cost per graduate (earnings foregone) to social institutional cost per graduate.

The benefits for each of the fifteen subject groups, resulting from the kind of university education acquired, were estimated by finding the marginal earnings between a secondary school graduate's earnings and the earnings of a university graduate from each program. This procedure involved the estimation of earnings streams for secondary school graduates
and for each of the fifteen cohorts of graduates.
The earnings streams for secondary school graduates and for university graduates were derived from the \(1972 / 73\) survey of public sector employees in Iraq conducted by the Ministry of Planning. The data were then adjusted for salary increases between 1974 and 1987.

The extra earnings associated with various levels of education are due not only to additional education acquired but also to other factors such as social background, natural ability, age, region of work, occupation, and so on. Thus to estimate the economic benefits of education, all of these factors should be taken into account. Since it is beyond the scope of this study to estimate the "correct" alpha coefficient for university education in Iraq, three values for the alpha coefficient were applied ( \(1,0.67\), and 0.5 ) to test the sensitivity of the results to a variety of assumptions about the influences of education and other factor upon earnings.

The streams of costs and benefits are used to calculate the private and social rates of return to investment in various university subjects. Rates of return were calculated for individuals who started their programs at the age of secondary school graduation (age of eighteen) and for those who commenced their studies at later age.

The internal rates of return so derived have been compared with the rates of return on investment in non-human capital, in order to judge whether the internal rate is relatively low or high. As mentioned above two rates were chosen ( \(7 \%\) and \(12 \%\) ) for this purpose. It should be noted that the rates of return were estimated for university graduates employed in the public sector in Iraq, but not for university graduates employed in the private sector, or who are self employed. Accordingly the benefits of university education only include salaries and wages of public sector employees. Because of this limitation, the result of this study may underestimate both the benefits and rates of return from university education. Also the social internal rates of return derived must be viewed in a narrow sense since they are based on "economic" costs and benefits. The external effects of university education are excluded from the calculus. An attempt to estimate these effects, in a limited way, is provided in Appendix (D).

\subsection*{8.2 Findingsof Thisstudy}

The results of this study are summarized as follows:
1. Generally, it was found that the private rates of return were higher than the social rates of return in all fields of specialization in university education in Iraq.
2. It was found that private and social rates of return for six year university education program (Medicine program) were higher than for either five years and four year programs, except for Engineering.
3. It was found that both private and social rates of return to an Engineering degree were the highest, whereas the private rate of return to Administration and Economics and the social rate of return to Fine Arts were the lowest rates of return among university programs alternatives.
4. The private rates of return on investment in five subjects (Engineering, Medicine, Dentistry, Pharmacy, and Veterinary Medicine) were found to be higher than returns associated with other types of investment, (i.e. to exceed \(12 \%\) ). The social rates of return on investment in all four year university education programs, except Engineering, were found lower than \(7 \%\). The social rates of return in five and six year (Medicine) were found to be higher than \(7 \%\). While the social rate of return in Engineering was higher than \(12 \%\).
5. It was found that the graduates from Medicine could gain the highest earnings stream of all university programs.
6. The results of this study show that the total social and private costs of medicine program and five years programs were greater than four year programs except Nursing. It was also found that the graduate social cost of Nursing and Agriculture programs was the highest among the four year programs. It was also found that the weighted average social institutional cost per student year for Nursing program was the highest among all the remaining university programs for year 1981/82-1986/87.
7. Earnings foregone (private costs) were a large proportion of total social costs in most programs under consideration. For example the percentage of total costs contributed by foregone earnings can be seen in the Table 8.1 below.

Table 8.1
The Percentage of Foregone Earnings to Total Costs
\begin{tabular}{|c|r|r|r|r|r|r|r|r|r|r|r|r|r|r|r|}
\hline Program & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline\(\%\) & 52 & 51 & 45 & 38 & 40 & 42 & 74 & 60 & 65 & 67 & 60 & 65 & 60 & 58 & 80 \\
\hline
\end{tabular}
8. It was found that there was a positive relationship between commencement age and foregone earnings (private cost).
9. It was found that there was a negative relationship between the commencement age and the private internal rate of return.
10. Because it neglects the non-market effects of education, the calculated private and social rates of return were probably underestimates.
11. It was found that the average period required to graduate from the

Science program was the highest among four year programs and was lowest for Nursing. In five year programs Veterinary Medicine was the highest and Dentistry was the lowest. Table 8.2 gives the average period needed to graduate from the subjects under investigation.

Table 8.2
Average Period Required to Graduate from Various University Rducation programs in Iraq.
\begin{tabular}{|c|c|c|c|c|c|}
\hline Program & \begin{tabular}{c} 
Average \\
Period
\end{tabular} & Program & \begin{tabular}{c} 
Average \\
Period
\end{tabular} & Program & \begin{tabular}{c} 
Average \\
Period
\end{tabular} \\
\hline 1 & 4.75 & 6 & 4.17 & 11 & 4.28 \\
2 & 4.52 & 7 & 5.26 & 12 & 4.36 \\
3 & 6.10 & 8 & 4.28 & 13 & 4.30 \\
4 & 5.15 & 9 & 4.28 & 14 & 4.43 \\
5 & 5.14 & 10 & 4.34 & 15 & 4.37 \\
\hline
\end{tabular}
12. In the present study, it was found that the examination failure rate for all of the University of Baghdad was about \(17 \%\) in \(1984 / 85\), \(11 \%\) in 1985/86, and \(21 \%\) in 1986/87. In \(1984 / 85\) the highest failure rate was in Administration and Economics \(43 \%\) and the lowest was in Medicine and Dentistry \(5 \%\). In \(1985 / 86\) the highest failure rate was in Arts \(27 \%\) and the lowest was in Dentistry 1\%. Finally in \(1986 / 87\) the highest failure rate was \(33 \%\) in Physical Education and the lowest was in Veterinary Medicine \(1 \%\).

\subsection*{8.3 Implicationfor Further \(\mathbb{R}\) esearch}

Further research could be worthwhile. First the kind of analysis pursued in this study can be applied to other kinds of education in Iraq. Such analysis could estimate the returns on investment in different kinds of secondary schooling in Iraq, such as Academic, Agricultural, Industrial, or Commercial secondary school. Also, it could be used to evaluate the returns from investment in various technical institutes such as Technical Medicine Institute, Administration Institute, Technical Agricultural Institute, and others.

Second, because separate data have not been available for women, the present study did not include an examination of the female labour force and rates of return to women's education. An attempt could be made to rectify this shortcoming, as an increasing proportion of women are re-entering the labour market.

Third, rate of return analysis could be used to evaluate the returns to investment in different tiers of education in Iraq, such as primary, elementary, secondary school, and university education. Moreover, this analysis could be used to examine the rates of return on investment in
diverse levels of higher education e.g. undergraduate, master, and doctorate. Such a comparison would aid planners in determining resource allocation between these levels.

Fourth, it has been stated several times that this study takes account only of the economic benefits reflected in the earnings received by way of salaries and wages. In order to use the rate of return results more effectively to plan university resource allocation, we would need to undertake the measurement of external benefits (non-market benefits).

Fifth, the present study did not include any allowance for the mortality of the (male) labour force. The inclusion of this factor in rate-of-return analysis would likely reduce the lifetime earnings of the labour force, thereby reducing the rates of return.

Sixth, because of the lack data, the present study did not include the incomes of university graduates working in the private sector. Moreover, the data used were obtained from the \(1972 / 73\) Survey of Public Sector Employees in Iraq, which is now somewhat out of date. New data could now be derived from the 1987 Census for different sectors. Using this data in rate of return analysis may produce results different from those reported in this study.

Seventh, the present study included the total labour force without regard to occupation. A study of income differences among graduates of by occupation displays substantial differential between private employees, public employees and self-employed. The inclusion of occupational classification in the rate of return analysis would probably produce different returns for the same specialism.

\subsection*{8.4 Problemsof Data Available}

The problems of data availability may be summarized in the following points:
1. A large amount of fundamental data which is directly connected with the operation of the educational system and could be used for educational planning is unavailable. For example, student costs, graduate costs, and wastage through dropout and repetition.
2. This study utilities the \(1972 / 73\) national survey of government and public sector employees in Iraq, for analysing salaries and wages. However, these data were adjusted for increases in salary and wages for period 1973 and 1987. The writer recommends to use the 1987 Census to establish income data for university education graduates and other levels of education in Iraq.
3. Cost and cost accounting systems in the education area have not been developed in Iraq. As a result, the cost data in this area vere not
readily available and the researcher faced difficulties in collecting them. In order to provide cost data for different subjects in the university and different levels of education we would need to construct a cost accounting system for all faculties of university of Baghdad and other universities, institutes, and other schools. However, cost data produced by this system would enable planners and researchers to undertake more detailed and accurate analyses of returns by subject group.
4. Because of the lack of data and the absence of a cost accounting system, it was assumed that the average cost per student within the same faculty was equal regardless of the specialization or level. For example, the average institutional cost per student in the Education program was calculated on the basis of the total student enrolment in the Faculty of Education as whole. But this Faculty consists of two groups of subject (i) social humanities subjects such as languages, history, geographic etc. and (ii) scientific subjects such as physics, chemistry, botany etc. The cost of students studying in former group is probably lower than the cost of students studying the latter group because the second group are more likely to use expensive equipment, materials, and buildings. Calculating the cost per student by using the average cost may increase the rate of return to the scientific subject, and decrease the rate of return to the other subject group. If the cost accounting system is established, the cost will be classified according to department (scientific and humanities) and subject as well. This will provide cost data by subject and department which is convenient for planning and making comparisons between different subjects and universities.
5. Most adjustments refer to the benefits side. However, there are a few adjustments of the cost side as well. It may be the case that the typical graduate of a particular type of education has spent in school more than minimum number of years required by that cycle of education. In this case, costs have to be increased according to the number of repeaters. In the same way, if \(50 \%\) of the entrants into a particular level of education fail to complete the cycle, then to produce one graduate at this educational level requires that two individuals must enter and therefore the cost of producing one graduate must include the cost incurred by the dropout. This will obviously lower the rate of return. In this study, because data on failures and droppouts are not available for the period under investigation, the costs are not adjusted for probability of failure and droppingout. The percentage failure rates which are mentioned in current chapter, section 2 are high because of the Iraq-Iran war. Students preferred to repeat the educational level instead of participating in the military service, so that these data do not reflect the real percentage of the failures and dropouts.

Nevertheless, the rates of return to investment in university education in Iraq are probably overestimated by not taking into account failure rates.

\subsection*{3.5 Recommendations of This Study}

Following this study, several recommendations have been suggested for future planning in order to reduce the cost of education as well as using limited resources more efficiently and wisely. The recommendations are as follows:

\section*{1. Shift Resources}

The first implication of our findings is that resources should be shifted from university education programs which achieve low rates of return (Science, Nursing, Agriculture, Administration and Economics, Law and Politics, Arts, Fine Arts, Education, Physical Education, and Alsharia) toward the programs which achieve high rates of return (Engineering, Medicine, Pharmacy, Dentistry, Veterinary Medicine). In other words, the results seem to point in direction of expansion in Engineering, Medicine, Pharmacy, Dentistry, and Veterinary Medicine.

\section*{2. Reducethe Costof \(\mathbb{E l u c a t i o n}\)}

Costs per student at all programs could be reduced by solving the problem of wastage, at the same time raising the quality of university education. This might be achieved by doing some of the following things, although we have not undertaken an evaluation of their effectiveness.
(i) the government could provide welfare, Security, income promotion for teachers. The government could also encourage the production of adequate textbooks, and provide the teaching materials.
(ii) the reason for dropouts is not always due to economic reasons or native talent of the student. It is due to the shortage of teachers.
(iii)administration could be improved. The responsibility for the administration of education in Iraq is divided among: (1) the Ministry of Education which the responsibility concentrate on secondary (Academic and Vocational) teacher training institutes, and elementary school; (2) the Ministry of interior which is responsible for the administration of primary education, fundamental education and literacy programmes; and (3) higher education is administered by the Ministry of Higher Education and Science Research. More co-operation and co-ordination among the ministries need to increase the efficiency
with which resources are allocated and reduce the costs of all educational levels.
(iv) the planning of economic, education and social affairs should be co-ordinated, so that each can provide each other with necessary and precise information at the right time and in the right form as well. Moreover, these planner should responsible for performing at the lowest possible cost.

\section*{3. Shifta Large Partof Total Cost Toward individuals}

An important portion of total costs could be shifted from society toward the individuals who acquire university schooling through some form of tuition fee. This would increase the cost of university studies for those who benefit from them. This policy is potentially politically explosive, however. A portion of the student population has recently demonstrated against it, as being a further barrier to students of limited financial means. This problem could be solved if this policy accompanied by adopting an appropriate program of grants and/or loans.

Under this policy those able to pay a greater part of their university costs would do so while those unable to pay would be subsidized or allowed to finance their studies by obtaining a loan, which is repaid from their future income.

\section*{4. Recovera Greater Portionof total Costsby taxing} the Incomeof University Graduates

Society could recover a large part of its costs by taxing income derived from university education. This might take the form of an educational surtax on university earnings with different rates for graduates of various subjects. Such a policy could also be used to encourage the development of specialism most desired by "society" and/or its planners.

It should be noted that the rate of return is not the only criterion for educational planning. For example, a country may adopt a policy of expansion of university education for political reasons, regardless of monetary costs and benefits associated with it. or it may be politically infeasible to slow down the expansion of university education, even if the economic returns to such investment are low, because the government not need the people feel that the policy of higher education has been failed. In Iraq the number of students enrolled in higher education (universities and institutes) in 1987 was three times the number of students in 1979. Also, it must be emphasized that the recommendations are made in the
absence of non-market benefits estimates. The existence of such benefits would raise the social benefits, and the social rates of return without affecting private rates of return, thus reducing the differences between the two.

In this study, it was concluded that the resources in university education should be shifted from low rates of return programs to high rates of return programs. Also, it was concluded that those who receive the benefits of university education should pay a larger portion of total cost, so that a system of tuition fees or a surtax on professional income would be recommended. However, cost-benefit studies in this case were based on direct monetary returns to education accruing to individuals and society, thus indirect (external) benefits were excluded. It is likely, therefore, that the total benefits and the rates of return were underestimated. Therefore, one reason for retaining a substantial public investment in any university education may be because it offers greater indirect benefits than the other levels of education.

APPENDIX A
SUPPLEMENT TO CHAPTER 5

Table A-1
Operating Espenditure, University Of Baghdad, 1981/82, (In ID).
\begin{tabular}{|c|r|r|r|r|r|r|}
\hline \multirow{2}{*}{ College } & \multicolumn{6}{|c|}{ Expenditure } \\
\cline { 2 - 7 } & \multicolumn{8}{|c|}{31} & \multicolumn{6}{|c|}{32} & \multicolumn{1}{|c|}{33} & \multicolumn{1}{|c|}{37} & \multicolumn{1}{|c|}{38} & Total \\
\hline 1 & 1331300 & 28683 & 307306 & 129464 & 2866 & 1799619 \\
2 & 1941366 & 145105 & 317120 & 577260 & 528 & 2981379 \\
3 & 1602664 & 85338 & 342365 & 158512 & 40695 & 2229574 \\
4 & 449780 & 11790 & 68176 & 23742 & 588 & 554076 \\
5 & 699358 & 17841 & 121956 & 54811 & 19732 & 913698 \\
6 & 232341 & 6224 & 99813 & 9627 & 0 & 348005 \\
7 & 1079282 & 63934 & 363466 & 10406 & 6446 & 1523534 \\
8 & 1952432 & 62798 & 717611 & 206448 & 21056 & 2960345 \\
9 & 632909 & 28515 & 225178 & 1321 & 1343 & 889266 \\
10 & 514954 & 84596 & 161339 & 1490 & 0 & 762379 \\
11 & 1419769 & 27205 & 257043 & 62591 & 600 & 1767208 \\
12 & 1657426 & 81530 & 173140 & 100743 & 1950 & 2014789 \\
13 & 313020 & 61641 & 207286 & 7 & 0 & 581954 \\
14 & 458022 & 13816 & 68780 & 17561 & 344 & 558523 \\
15 & 170164 & 6255 & 87221 & 3992 & 300 & 267932 \\
16 & 783777 & 59126 & 653365 & 46603 & 249456 & 1990387 \\
17 & 21661 & 5179 & 270 & 0 & 0 & 27110 \\
18 & 1327206 & 93479 & 2265278 & 316111 & 779 & 4002853 \\
19 & 123076 & 3014 & 25104 & 8160 & 614 & 159968 \\
\hline
\end{tabular}

Source: Compiled from the audited trial balance, Accounting office Administration and Finance Department, University of Baghdad.

Table \(A-2\)
Operating Expenditure, University Of Baghdad, 1982/83, (In ID).
\begin{tabular}{|c|r|r|r|r|r|r|}
\hline \multirow{3}{*}{ College } & \multicolumn{6}{|c|}{ Expenditure } \\
\cline { 2 - 7 } & \multicolumn{7}{|c|}{31} & \multicolumn{1}{|c|}{32} & \multicolumn{1}{|c|}{33} & \multicolumn{1}{|c|}{37} & \multicolumn{1}{|c|}{38} & \multicolumn{1}{c|}{ Total } \\
\hline 1 & 1232137 & 37889 & 471746 & 176192 & 500 & 1918464 \\
2 & 1594315 & 102251 & 353549 & 751798 & 2200 & 2804113 \\
3 & 1469782 & 74800 & 373110 & 207566 & 2062 & 2127320 \\
4 & 491099 & 11076 & 101220 & 38511 & 0 & 641906 \\
5 & 703116 & 14342 & 118730 & 111429 & 0 & 947617 \\
6 & 230312 & 44511 & 60970 & 10179 & 1516 & 347488 \\
7 & 1009624 & 68760 & 326696 & 27056 & 940 & 1433076 \\
8 & 1784246 & 56847 & 537705 & 229225 & 800 & 2608823 \\
9 & 591949 & 31088 & 137186 & 1378 & 0 & 761601 \\
10 & 509316 & 54860 & 162638 & 2290 & 400 & 729504 \\
11 & 1362525 & 37001 & 282801 & 79679 & 600 & 1762606 \\
12 & 1553401 & 99120 & 164226 & 102824 & 1582 & 1921153 \\
13 & 335071 & 66604 & 125495 & 720 & 527951 \\
14 & 425740 & 18674 & 81586 & 26037 & 1200 & 553237 \\
15 & 229895 & 8223 & 23088 & 4024 & 800 & 266030 \\
16 & 872153 & 34280 & 220312 & 97288 & 1850 & 1225883 \\
17 & 59747 & 1509 & 3989 & 00000 & 0000 & 65245 \\
18 & 1254671 & 94552 & 1730803 & 356659 & 1782 & 3438467 \\
19 & 110960 & 2286 & 26125 & 10761 & 418 & 150550 \\
\hline
\end{tabular}

Source: Compiled from the audited trial balance, Accounting office Administration and Finance Department, University of Baghdad.

Table A-3
Operating Expenditure, University Of Baghdad, 1983/84, (In ID).
\begin{tabular}{|c|r|r|r|r|r|r|}
\hline \multirow{3}{*}{ College } & \multicolumn{7}{|c|}{ Expenditure } \\
\cline { 2 - 7 } & \multicolumn{8}{|c|}{31} & \multicolumn{1}{|c|}{32} & \multicolumn{2}{|c|}{33} & \multicolumn{1}{|c|}{37} & \multicolumn{1}{|c|}{38} & Total \\
\hline 1 & 1215100 & 64109 & 437506 & 196416 & 1380 & 1914511 \\
2 & 1522224 & 110226 & 348939 & 791473 & 1107 & 2773969 \\
3 & 1465987 & 52756 & 472498 & 211603 & 75 & 2202919 \\
4 & 494755 & 7452 & 52549 & 47755 & 0 & 602511 \\
5 & 687628 & 16516 & 202668 & 130069 & 400 & 1037281 \\
6 & 255411 & 28607 & 29548 & 11314 & 200 & 325080 \\
7 & 941896 & 89986 & 373771 & 32358 & 2757 & 1440768 \\
8 & 1767164 & 73317 & 393683 & 240831 & 750 & 2475745 \\
9 & 535845 & 45787 & 125545 & 2028 & 0 & 709205 \\
10 & 509865 & 58085 & 181632 & 11495 & 700 & 761777 \\
11 & 1372683 & 157463 & 185936 & 79924 & 1000 & 1797006 \\
12 & 1558919 & 111750 & 353302 & 134673 & 600 & 2159244 \\
13 & 349376 & 68586 & 91231 & 371 & 320 & 509884 \\
14 & 436240 & 70952 & 77545 & 48599 & 400 & 633736 \\
15 & 296622 & 14055 & 51902 & 4471 & 0 & 367050 \\
16 & 822304 & 43006 & 425270 & 106084 & 1342 & 1398006 \\
17 & 60332 & 1173 & 8465 & 0 & 0 & 69970 \\
18 & 1139465 & 97663 & 1228944 & 368494 & 1380 & 2835946 \\
19 & 107521 & 2318 & 29922 & 16408 & 120 & 156289 \\
\hline
\end{tabular}

Source: Compiled from the audited trial balance, Accounting Office Administration and Finance Department, University of Baghdad.
Table \(A-4\)
Operating Expenditure, University Of Baghdad, 1984/85, (In ID).
\begin{tabular}{|c|r|r|r|r|r|r|}
\hline \multirow{3}{*}{ College } & \multicolumn{6}{|c|}{ Expenditure } \\
\cline { 2 - 7 } & \multicolumn{7}{|c|}{31} & \multicolumn{1}{|c|}{32} & \multicolumn{1}{|c|}{33} & \multicolumn{1}{|c|}{37} & \multicolumn{1}{|c|}{38} & Total \\
\hline 1 & 1230090 & 104006 & 372701 & 212294 & 1844 & 1920935 \\
2 & 1575889 & 167498 & 566038 & 814044 & 1726 & 3125195 \\
3 & 1458269 & 110282 & 389976 & 223201 & 4536 & 2186264 \\
4 & 463290 & 15082 & 91623 & 53427 & 1400 & 624822 \\
5 & 745364 & 19257 & 262224 & 134907 & 4354 & 1166106 \\
6 & 269437 & 33620 & 42921 & 18382 & & 364360 \\
7 & 956214 & 150479 & 511814 & 49728 & 3553 & 1671788 \\
8 & 1736485 & 181430 & 1050040 & 255248 & & 3223203 \\
9 & 566552 & 74752 & 211609 & 7577 & 4067 & 864557 \\
10 & 497864 & 86581 & 174822 & 17565 & 200 & 777032 \\
11 & 1347987 & 142913 & 248552 & 85042 & 2400 & 1826894 \\
12 & 1553623 & 143423 & 326588 & 150000 & 4064 & 2177698 \\
13 & 356296 & 61904 & 183732 & 7363 & & 609295 \\
14 & 430513 & 58021 & 210318 & 57681 & 200 & 756733 \\
15 & 300000 & 24742 & 129780 & 11254 & 200 & 465976 \\
16 & 785794 & 62287 & 463996 & 157820 & 1988 & 1471885 \\
17 & 55022 & 1385 & 15155 & 0 & 0 & 71562 \\
18 & 1102756 & 168577 & 1857575 & 456192 & 1889 & 3586989 \\
19 & 119086 & 4926 & 14987 & 30028 & 211 & 169238 \\
\hline
\end{tabular}

Source: Compiled from the audited trial balance, Accounting office Administration and rinance Department, University Of Baghdad.

Table A-5
Operating Expenditure, University of Baghdad, 1985/86, (In ID).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow{2}{*}{College} & \multicolumn{6}{|c|}{Expenditure} \\
\hline & 31 & 32 & 33 & 37 & 38 & Total \\
\hline 1 & 1260188 & 240335 & 650970 & 246474 & 1916 & 2399883 \\
\hline 2 & 1673317 & 180291 & 615932 & 841404 & 1829 & 3312773 \\
\hline 3 & 1514578 & 82761 & 615371 & 306312 & 1307 & 2520329 \\
\hline 4 & 498940 & 53309 & 129354 & 61808 & 400 & 743811 \\
\hline 5 & 741633 & 79653 & 449051 & 135236 & 2656 & 1408229 \\
\hline 6 & 271474 & 70612 & 260673 & 23345 & 248 & 626352 \\
\hline 7 & 992428 & 40582 & 450144 & 70713 & 4545 & 1558412 \\
\hline 8 & 1842284 & 100476 & 795551 & 270308 & 0 & 3008619 \\
\hline 9 & 587671 & 148151 & 465983 & 17614 & 800 & 1220219 \\
\hline 10 & 501403 & 150002 & 165539 & 21125 & 200 & 838269 \\
\hline 11 & 1370688 & 312378 & 700945 & 91905 & 1400 & 2477316 \\
\hline 12 & 1596148 & 431779 & 990118 & 219088 & 600 & 3237733 \\
\hline 13 & 410403 & 107516 & 352937 & 21336 & 1256 & 893448 \\
\hline 14 & 499191 & 41580 & 248736 & 75462 & 1144 & 866113 \\
\hline 15 & 329323 & 41520 & 168503 & 13749 & 200 & 553295 \\
\hline 16 & 845602 & 70097 & 663628 & 184395 & 3037 & 1766759 \\
\hline 18 & 1112034 & 509480 & 1221783 & 468313 & 2800 & 3314410 \\
\hline 19 & 132796 & 3968 & 27499 & 32665 & 1000 & 197928 \\
\hline
\end{tabular}

Source: Compiled from the audited trial balance, Accounting office Administration and Finance Department, University of Baghdad.

Table A-6
Operating Expenditure, University of Baghdad, 1986/87, (In ID).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow{2}{*}{College} & \multicolumn{6}{|c|}{Expenditure} \\
\hline & 31 & 32 & 33 & 37 & 38 & Total \\
\hline 1 & 1328821 & 127136 & 557165 & 249976 & 1741 & 2264839 \\
\hline 2 & 1686542 & 132394 & 555692 & 881472 & 2019 & 3258119 \\
\hline 3 & 1556170 & 141977 & 407753 & 313347 & 0000 & 2419247 \\
\hline 4 & 520813 & 66191 & 114454 & 63567 & 600 & 765625 \\
\hline 5 & 765255 & 77050 & 266629 & 139241 & 1156 & 1249331 \\
\hline 6 & 286665 & 37064 & 134604 & 24712 & 0000 & 483045 \\
\hline 7 & 1020080 & 99143 & 458927 & 86285 & 1600 & 1666035 \\
\hline 8 & 1912255 & 303155 & 661494 & 277467 & 400 & 3154771 \\
\hline 9 & 661689 & 104885 & 507374 & 22788 & 1200 & 1297936 \\
\hline 10 & 488680 & 157098 & 212182 & 21125 & 400 & 879485 \\
\hline 11 & 1354303 & 228702 & 634529 & 95434 & 400 & 2313368 \\
\hline 12 & 1710261 & 289745 & 693829 & 223050 & 3043 & 2919928 \\
\hline 13 & 483789 & 113320 & 492391 & 42121 & 200 & 1131821 \\
\hline 14 & 587206 & 75572 & 289287 & 80620 & 200 & 1032885 \\
\hline 15 & 340879 & 92508 & 135690 & 15121 & 200 & 584398 \\
\hline 16 & 805997 & 58098 & 527336 & 191144 & 2837 & 1585412 \\
\hline 18 & 931146 & 124419 & 745201 & 470170 & 1194 & 2272130 \\
\hline 19 & 140070 & 4065 & 24537 & 37593 & 400 & 206665 \\
\hline
\end{tabular}

Source: Compiled from the audited trial balance, Accounting office Administration and Finance Department, University Of Baghdad.

Table \(A-7\)
\(\frac{\text { Table } A-7}{\text { Number and Percentage of Students by College, University of Baghdad, }}\) 1981/82-1986/87.
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{\[
\begin{aligned}
& \text { Col- } \\
& \text { lege }
\end{aligned}
\]} & \multicolumn{2}{|l|}{1981/82} & \multicolumn{2}{|l|}{1982/83} & \multicolumn{2}{|l|}{1983/84} & \multicolumn{2}{|l|}{1984/85} & \multicolumn{2}{|l|}{1985/86} & \multicolumn{2}{|l|}{1986/87} \\
\hline & No & \% & No & \% & No & \(\%\) & NO & \% & No & \% & No & \% \\
\hline 1. & 2632 & 7.87 & 2577 & 7.71 & 2722 & 8.16 & 2535 & 7.70 & 3009 & 7.50 & 3152 & 7.37 \\
\hline 2 & 4092 & 12.24 & 3328 & 9.96 & 4092 & 12.27 & 4474 & 13.58 & 4282 & 10.67 & 4092 & 9.56 \\
\hline 3 & 1917 & 5.73 & 2106 & 6.30 & 2118 & 6.35 & 2106 & 6.39 & 2044 & 5.09 & 2056 & 4.81 \\
\hline 4 & 836 & 2.50 & 894 & 2.68 & 854 & 2.56 & 834 & 2.53 & 877 & 2.19 & 944 & 2.21 \\
\hline 5 & 719 & 2.15 & 785 & 2.35 & 791 & 2.37 & 813 & 2.47 & 854 & 2.13 & 939 & 2.19 \\
\hline 6 & 350 & 1.05 & 250 & 0.75 & 198 & 0.59 & 212 & 0.65 & 214 & 0.53 & 338 & 0.79 \\
\hline 7 & 1417 & 4.24 & 1276 & 3.82 & 1126 & 3.38 & 1023 & 3.11 & 977 & 2.43 & 1025 & 2.40 \\
\hline 8 & 2455 & 7.34 & 2702 & 8.09 & 2227 & 6.68 & 1907 & 5.79 & 2594 & 6.46 & 2657 & 6.21 \\
\hline 9 & 4318 & 12.92 & 4345 & 13.01 & 4013 & 12.03 & 3960 & 12.02 & 5076 & 12.64 & 5683 & 13.28 \\
\hline 10 & 1206 & 3.61 & 1238 & 3.71 & 1148 & 3.44 & 1124 & 3.41 & 1182 & 2.94 & 1182 & 2.76 \\
\hline 11 & 4317 & 12.92 & 4095 & 12.26 & 4404 & 13.21 & 4200 & 12.75 & 6886 & 17.15 & 8093 & 18.92 \\
\hline 12 & 6383 & 19.10 & 6889 & 20.63 & 6441 & 19.31 & 6233 & 18.92 & 7468 & 18.60 & 7955 & 18.59 \\
\hline 13 & 1080 & 3.23 & 1049 & 3.14 & 931 & 2.79 & 915 & 2.78 & 1308 & 3.26 & 1591 & 3.72 \\
\hline 14 & 863 & 2.58 & 944 & 2.83 & 1255 & 3.76 & 1416 & 4.30 & 1839 & 4.58 & 1820 & 4.25 \\
\hline 15 & 843 & 2.52 & 921 & 2.76 & 1033 & 3.10 & 1186 & 3.60 & 1536 & 3.83 & 1257 & 2.94 \\
\hline Total. & 33428 & 100\% & 33399 & 100\% & 33353 & 100\% & 32938 & 100\% & 40146 & 100\% & 42784 & 100\% \\
\hline
\end{tabular}

Source:
Compiled from the "Student's Records", statistical Department of College Baghdad University.

Table \(A-8\)
Number and Percentage of Dormitory Students by College, University of Baghdad, 1981/82-1986/87.
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{College} & \multicolumn{2}{|l|}{1981/82} & \multicolumn{2}{|l|}{1982/83} & \multicolumn{2}{|l|}{1983/84} & \multicolumn{2}{|l|}{1984/85} & \multicolumn{2}{|l|}{1985/86} & \multicolumn{2}{|l|}{1986/87} \\
\hline & No & \% & No & \% & No & \% & No & \% & No & \% & No & \% \\
\hline 1 & 723 & 6.17 & 612 & 5.03 & 562 & 4.93 & 481 & 4.56 & 906 & 5.80 & 645 & 5.59 \\
\hline 2 & 870 & 7.42 & 990 & 8.13 & 1070 & 9.39 & 1024 & 9.70 & 1177 & 7.54 & 1003 & 8.70 \\
\hline 3 & 436 & 3.72 & 441 & 3.62 & 465 & 4.08 & 391 & 3.70 & 468 & 3.00 & 399 & 3.46 \\
\hline 4 & 242 & 2.07 & 220 & 1.81 & 237 & 2.08 & 198 & 1.87 & 211 & 1.35 & 172 & 1.49 \\
\hline 5 & 93 & 0.79 & 70 & 0.58 & 86 & 0.76 & 79 & 0.75 & 98 & 0.63 & 78 & 0.68 \\
\hline 6 & 111 & 0.95 & 129 & 1.06 & 133 & 1.17 & 82 & 0.78 & 128 & 0.82 & 70 & 0.61 \\
\hline 7 & 584 & 4.98 & 425 & 3.49 & 450 & 3.95 & 415 & 3.93 & 414 & 2.65 & 334 & 2.90 \\
\hline 8 & 472 & 4.03 & 828 & 6.80 & 838 & 7.36 & 642 & 6.08 & 1055 & 6.76 & 653 & 5.66 \\
\hline 9 & 963 & 8.22 & 1058 & 8.69 & 885 & 7.77 & 746 & 7.07 & 1357 & 8.69 & 1048 & 9.09 \\
\hline 10 & 910 & 7.77 & 876 & 7.20 & 866 & 7.60 & 810 & 7.67 & 1175 & 7.53 & 964 & 8.36 \\
\hline 11 & 1479 & 12.62 & 1525 & 12.53 & 1538 & 13.50 & 1605 & 15.20 & 3026 & 19.38 & 2179 & 18.90 \\
\hline 12 & 3317 & 28.31 & 3297 & 27.08 & 2697 & 23.68 & 2661 & 25.20 & 3399 & 21.77 & 2604 & 22.58 \\
\hline 13 & 656 & 5.60 & 574 & 4.72 & 447 & 3.93 & 331 & 3.13 & 573 & 3.67 & 458 & 3.97 \\
\hline 14 & 313 & 2.67 & 418 & 3.43 & 471 & 4.14 & 404 & 3.83 & 572 & 3.67 & 328 & 2.85 \\
\hline 15 & 548 & 4.68 & 710 & 5.83 & 645 & 5.66 & 689 & 6.53 & 1052 & 6.74 & 595 & 5.16 \\
\hline Total & 11717 & 100\% & 12173 & 100\% & 11390 & 100\% & 10558 & 100\% & 15611 & 100\% & 11530 & 100\% \\
\hline
\end{tabular}

\section*{Source:}

Compiled from "Student's Records", Dormitory Department, University of Baghdad.

Source : from the "Construction Project" records, Five - Year Economic Development Plan
Compiled
Section, Administration And Finance Department, University of Baghdad. Section, Administration And Finance Departmen.
Table A-10 Opportunity and Capital Cost of Engineering College, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{Capital cost \({ }^{*}\) (to nearest id 100)} \\
\hline & 1981 & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 \\
\hline Additional floors construction & 86800 & 64000 & & & & & \\
\hline Wrgent requirement and & & & & & & & \\
\hline Laboratory Equipments & 579300 & 961000 & 470000 & 154800 & 2200 & 5800 & 167200 \\
\hline Tools, Equipment and Vehicles & & 23200 & 12600 & 100 & 6200 & & \\
\hline Lalooratory Equipments & & 32800 & & & & & \\
\hline Annual total & & 1081000 & 482600 & 154900 & 8400 & 5800 & 167200 \\
\hline Previous cumulative total & & 666100 & 1747100 & 2229700 & 2384600 & 2393000 & 2398800 \\
\hline Cumulative total & 666100 & 1747100 & 2229700 & 2384600 & 2393000 & 2398800 & 2566000 \\
\hline Opportunity cost (at \%7 of capital cost per annual) & & 122297 & 156079 & 166922 & 167510 & 167916 & 179620 \\
\hline
\end{tabular}
Compiled from the "Construction Project" records, Five-Year Economic Development Plan Section, Administration And Finance Department, University of Baghdad
Table A-11 \(\begin{aligned} & \text { Opportunity and Capital cost of Medicine college, University of Baghdad, } \\ & \text { 1981/82-1986/87, (Iraqi } \\ & \text { Dinars) }\end{aligned}\),
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{Capital cost* (to nearest ID 100)} \\
\hline & 1981 & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 \\
\hline Development in College Building & 105000 & & & & & & \\
\hline Laboratory \(\begin{aligned} & \text { gquipment } \\ & \text { Additional } \\ & \text { floors construction }\end{aligned}\) & & 172400 & 9700 & & & & \\
\hline Annual total & & 153900 & 9700 & & & & \\
\hline Previous cumulative total & & 357400 & 811300 & 821000 & \[
821000
\] & 821000 & 821000 \\
\hline Cumulative total Oportunizy cost (at \% of & 357400 & 811300 & 821000 & 821000 & 821000 & 821000 & 821000 \\
\hline  & & 56791 & 57470 & 57470 & 57470 & 57470 & 57470 \\
\hline
\end{tabular}
Source \(\begin{gathered}\text { Compiled from the "Construction Project" records, Five-Year Economic Development Plan }\end{gathered}\) Section, Administration And Finance Department,
* Capital cost is the actual historical cost.
Table A-12 opportunity and Capital cost of Pharmacy college, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{Capital cost* (to nearest ID 100)} \\
\hline & 1981 & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 \\
\hline Lecture, Halls and Rooms & & & & & & & 10 á2 \\
\hline Tools, and Equipment & 3400 & & 9700 & & & & \\
\hline Shads Construction & & & 9700 & & & & 104200 \\
\hline Previous cumulative total & & 3400 & 3400 & 13100 & 13100 & 13100 & 13100 \\
\hline Cumulative total & 3400 & 3400 & 13100 & 13100 & 13100 & 13100 & 117300 \\
\hline Opportunity cost (at \%7 of & & 238 & 917 & 917 & 917 & 917 & 8211 \\
\hline
\end{tabular}
Source \({ }^{\text {Compl from the "Construction Projecti" records, Five-Year Economic Development Plan, }} \begin{aligned} & \text { Cominile } \\ & \text { Administration And Finance Department }\end{aligned}\) University of Baghdad. cost.


A. 7
Table A-13 Opportunity and Capital cost of Dentistry College, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{Capital cost \({ }^{*}\) (to nearest ID 100)} \\
\hline & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 & 1987 \\
\hline Tools, and Equipment & & & \(\triangle 6800\) & 200 & 3300 & & \\
\hline Annoratory Equipment &  & & & 200 & & & \\
\hline previous cumulative total & & 13100 & 13100 & 59900 & 60100 & 63400 & 63400 \\
\hline Cumulative total & 13100 & 13100 & 59900 & 60100 & 63400 & 63400 & \(63 \triangle 00\) \\
\hline Opportunity cost (at %7 of capital cost per annual) & 917 & 917 & 4193 & 4207 & 4438 & 4438 & A1438 \\
\hline
\end{tabular}
Cource \({ }^{\text {Com }}\) from the "Construction Project" records, Five-Year Economic Development Plan Section, Administration And Finance Department
\(\begin{array}{ll}\text { Table A-14 } & \begin{array}{l}\text { Opporiunity and Capital cost of } \\ \text { Baghdad, } 1981 / 82-1986 / 87 \text {, (Iragi } \\ \text { Dinars }) \text { ). }\end{array}\end{array}\)
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Descripition} & \multicolumn{7}{|l|}{Capital cost* (to nearest ID 100)} \\
\hline & 1981 & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 \\
\hline Fashing and Laundry Unit & \(93 \triangle 00\) & 51400 & & & & & \\
\hline Development of falter dirty water station & 117400 & 197600 & 50000 & & & & \\
\hline Pools for dipping sheeps & 10000 & & & & & & \\
\hline Tools, and Equipment & & 500 & 1600 & & & & \\
\hline Laboratory Equipments & & 600 & & & & & \\
\hline Annual total & & 250100 & 51600 & & & & \\
\hline Previous cumulative total & 220800 & 220800
470900 & 470900
522500 & 522500 & 522500
522500 & 522500 & \[
\begin{aligned}
& 522500 \\
& 522500
\end{aligned}
\] \\
\hline Cumulative total
Opportunity cost (at \(\% 7\) of capital cost per annual) & 220800 & 470900
32963 & 36575 & 36575 & 36575 & 36575 & 36575 \\
\hline
\end{tabular}
Courciled from the "Construction Project" records, Five-Year Economic Development Plan

Source \(\overline{\bar{c}}\) from the "Construction Project" records, Five-Year Rconomic Development plan
Compiled
Section, Administration Anc Finance Departmenti, University of Baghdad.
Table A-16 opportunity and capital cost of Lak and politics college, University of baghdad
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{Capital cost** (to Nearest Id 100)} \\
\hline & 1981 & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 \\
\hline Reception room Lecture halls and rooms & & & & & & 7200
29100 & \\
\hline \({ }^{4}\) Land Rooms construction & 627500 & & & & & & 13000 \\
\hline Annual total & & & & & & 36300 & 13000 \\
\hline & & 628200
628200 & 628200
628200 & & & 664500 & 677500
677500 \\
\hline Cumulative total & 627600 & 628200 & 628200 & 628200 & 628200 & 664500 & 677500 \\
\hline Opportunity cost (at ol of
capital cost per annual) & & 43974 & 397 & 43974 & 43974 & 465 & 47425 \\
\hline
\end{tabular}
Source \({ }^{\text {Compiled frora the "Construction Project" records, Five-Year Rconomic Development plan }}\) A. 9
Table A-17 opportunity and Capital cost of Administration And Economic college, University
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{Capital cost* (to nearest ID 100)} \\
\hline & 1981 & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 \\
\hline Two buildings construction
Land for Development requirement & \[
\left.\begin{array}{|r|}
325600 \\
1862300
\end{array} \right\rvert\,
\] & 82800
1900 & & & & & \\
\hline Annual total & & \(\begin{array}{r}84700 \\ \hline 18700\end{array}\) & & & & & \\
\hline Previous cumulative total & 2187900 & 2187900
2272600 & 2272600
2272600 & 2272600
2272600 & 2272600
2272600 & 2272600
2272600 & 2272600
2272600 \\
\hline opportunity cost (at \%7 of capital cost per annual) & & 159082 & 15908 & 159082 & 159082 & 159082 & 82 \\
\hline
\end{tabular}
Source
Compiled from the "Construction Project" records, Five-Year Economic Development plan
Section Section, Administration And Finance Departmen
Capital cost is the actual historical cost.

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{Capital cost** (to nearest ID 100)} \\
\hline & 1981 & 1982 & 1983 & 1984 & 198 & 19 & 1987 \\
\hline Tools and Equipment & 47600 & & & & & & \\
\hline Laboratory Equipment
Annual
total & & 1600 & & & & & \\
\hline Previous cumulative total & & 47600 & 49200 & 49200 & 49200 & 49200 & 49200 \\
\hline cumulative total & 47600 & 49200 & 49200 & 49200 & 49200 & \(\underline{4} 9200\) & 49200 \\
\hline Opportunity cost (at \%7 of & & & & & & & \\
\hline capital cost per annual.) & & 3444 & 3444 & 3444 & & & \\
\hline
\end{tabular}
Source \({ }^{\text {Ged }}\) from the "Construction Project" records, Five-Year Economic Development, Plan
Cempile
Section, Administration And Finance Department, University of Baghdad. Section, Administration And Finance Department,
\(=\) Capital cost is the actual historical costi.


Table A-20 opportunity and capital cost of Physical Education college, Jniversity of


\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|l|}{Table A-21 Opportunity and capital cost of Academy Baghdad, 1981/82-1986/87, (Iraqi Dinars).} \\
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{Capital cosṫ \({ }^{\text {cto }}\) (to neaxest ID 100)} \\
\hline & 1981 & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 \\
\hline Lecture halls and rooms & 131500 & 89000 & 124300 & 2000 & & 107100 & \\
\hline Shades construction & 11500 & 71100 & & & & & \\
\hline Tools and equipment & & 70100 & & & & & \\
\hline Workshop construction Annual total & & 160200 & & & & 107100 & 36400
36400 \\
\hline Previous cumulative total & & 143000 & 303200 & 427500 & 429500 & 429500 & 536600 \\
\hline Cumulative total & 143000 & 303200 & 427500 & 429500 & 229500 & 536600 & 573000 \\
\hline Opportunity costi (at \%7 of capital cost per annual) & & 21224 & 29925 & 30065 & 30065 & 37562 & 40110 \\
\hline
\end{tabular}
Cource Comiled from the "Construction Project", Five-Year Kconomic Development Plan Section, Administration And Finance Department, Universi
\(\stackrel{y}{c}\) Capital cost is the actual historical cost.
Table A-22 Opportunity and capital cost of Administration Office, Oniversity of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{6}{|l|}{Capital cost* (to nearest ID 100)} \\
\hline & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 \\
\hline Tool, Equipments and Vehicles Compater & 203400 & 142800 & 9200
100 & 16000
103000 & 123700 & 21700 \\
\hline Annual total & 203400 & 142800 & 9300 & 119000 & 123700 & 21700 \\
\hline Previous cumulȧive total & & 203400 & 346200 & 355500 & 474500 & 598200 \\
\hline Cumulative total & 203400 & 346200 & 355500 & 474500 & 598200 & 619900 \\
\hline  & 14238 & 24234 & 24885 & 33215 & 41874 & 43393 \\
\hline
\end{tabular}
Compiled from the "Construction Projects" records, Five-Year Economic Development Plan tctiońal Adminisis is the actual histiorical cost .
A. 12
 Source : Compiled from the "Construction Project" recoxds, Five-Year Economic Development * Capital cost is the actual historical cosṫ.
Table A-24 opportunity and capital cost of Land by college, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{College} & \multirow[t]{2}{*}{Capital Cost (To nearest ID 100)} & \multicolumn{6}{|l|}{Opportunity Cost (at \%7 of capital cost per annual)} \\
\hline & & 1982 & 1983 & 1984 & 1985 & 1986 & 1987 \\
\hline Science & 633700 & 44359 & 44359 & 44359 & \$4359 & 44359 & 44359 \\
\hline Engineering & 6300000 & 441000 & 441000 & 441000 & 441000 & \(\underline{141000}\) & 441000 \\
\hline Medicine & 863300 & 60431 & 60431 & 50431 & 60431 & 60431 & 60431 \\
\hline Pharmacy & 269000 & 18830 & 18830 & 18830 & 18830 & 18830 & 18830 \\
\hline Deatistry & 287800 & 20126 & 20146 & 20146 & 20146 & 20146 & 20146 \\
\hline Nursing & 231200 & 16184 & 16184 & 16184 & 16184 & 15184 & 16184 \\
\hline Veterinary Medicine & 2500000 & 175000 & 175000 & 175000 & 175000 & 175000 & 175000 \\
\hline Agriculture & 512800 & 35896 & 35896 & 35896 & 35896 & 35896 & 35896 \\
\hline Admin And Economics & 548400 & 38388 & 38388 & 38388 & 38388 & 38388 & 38388 \\
\hline Law And Politics & 28200 & 1974 & 1974 & 1974 & 19712 & 1974 & 1974 \\
\hline Arts & 1707800 & 119546 & 119546 & 119546 & 119546 & 119546 & 119546 \\
\hline Education & 1697000 & 118790 & 118790 & 118790 & 118790 & 118790 & 118790 \\
\hline Academy of Fine Arts & 221000 & 15470 & 15470 & 15470 & 15470 & 15470 & 15470 \\
\hline Physical Education & 47700 & 3339 & 3339 & 3339 & 3339 & 3339 & 3339 \\
\hline Administration office & 1000000 & 70000 & 70000 & 70000 & 70000 & 70000 & 70000 \\
\hline Dormitory O£fice & 1901200 & 133084 & 133084 & 133084 & 133084 & 133084 & 133084 \\
\hline Central Library & 64100 & 4487 & 4487 & 4487 & 4487 & 4487 & 4487 \\
\hline
\end{tabular}
Compiled from financial records, Accounting office, Administration And Finance Department,
Table A-25 Allocation of Indirect cost (costs of Administration office, Regisization office, Dormitory
Office and Iibrary central) to various Colleges, Jniversity of Baghdad, 1981/82, (in I.D.)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Descripition}} & \multirow[t]{2}{*}{Cost Indirect} & \multicolumn{7}{|l|}{College} \\
\hline & & & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\hline \multicolumn{10}{|l|}{Operating costs \({ }^{*}\)} \\
\hline Administration office & (a) & 1792327 & 141056 & 219381 & 102700 & 44808 & 38535 & 18819 & 75995 \\
\hline Registration Office & (a) & 27110 & 2133 & 3318 & 1553 & 678 & 583 & 285 & 1149 \\
\hline Central mibrary & (a) & 159968 & 12589 & 19580 & 9166 & 3999 & 3439 & 1680 & 6783 \\
\hline Dormitory Office & (b) & 1002853 & 246976 & 297012 & 148906 & 82859 & 31622 & 38027 & 199342 \\
\hline \multicolumn{10}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & & & & & & & & & \\
\hline Adminisitration Office & (a) & & & & & & & & \\
\hline Capital cost (except Lands) & & 14238 & 1121 & 1743 & 816 & 356 & 306 & 150 & 604 \\
\hline Capital Cost of Lrands & & 70000 & 5509 & 8568 & 4011 & 1750 & 1505 & 735 & 2968 \\
\hline \begin{tabular}{l}
Central Iibrary \\
Capital Costs of Iands
\end{tabular} & (a) & 4487 & 353 & 549 & 257 & 112 & 97 & 47 & 190 \\
\hline Dormitiory Office & (b) & & & & & & & & \\
\hline Capital Costs (except Lands) & & 107590 & 6638 & 7983 & 4002 & 2227 & 850 & 1022 & 5358 \\
\hline Capital Costs of Iands & & 133084 & 8211 & 9875 & 4951 & 2755 & 1051 & 1264 & 6628 \\
\hline Total & & 329399 & 21832 & 28718 & 14037 & 7200 & 3809 & 3218 & 15748 \\
\hline
\end{tabular}

A. 14


A. 15
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multirow[t]{2}{*}{Cost Indirect} & \multicolumn{7}{|l|}{College} \\
\hline & & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\hline Operating Costs** & & & & & & & & \\
\hline Administration Office (a) & 1398006 & 114077 & 171535 & 88773 & 35789 & 33133 & 8248 & 47253 \\
\hline Registration Office (a) & 69970 & 5710 & 8585 & 4443 & 1791 & 1658 & 413 & 2365 \\
\hline Central Library (a) & 156289 & 12753 & 19177 & 9924 & 4001 & 3704 & 922 & 5283 \\
\hline Dormitory Office (b) & 2835946 & 139812 & 266295 & 115707 & 58988 & 21553 & 33181 & 112020 \\
\hline Total \(* *\) & 4460211 & 272352 & 465592 & 218847 & 100569 & 60048 & 42764 & 166921 \\
\hline Opportunity Costs & & & & & & & & \\
\hline Administration Office (a) & & & & & & & & \\
\hline Capital Cost (except Lands) & 24885 & 2031 & 3053 & 1580 & 637
1792 & 590
1659 & 107
413 & 841
2366 \\
\hline Capital cost of lands & 70000 & 5712 & 8589 & 4445 & 1792 & 1659 & 413 & 2366 \\
\hline \begin{tabular}{l}
Central Library \\
Capital Costs of Lands
\end{tabular} & 4487 & 366 & 551 & 285 & 115 & 106 & 26 & 152 \\
\hline Dormitory Office (b) & & & & & & & & \\
\hline Capital Costs (except Lands) & 139881 & 6896 & 13135 & 5707 & 2910 & 1063 & 1637 & 5525 \\
\hline Capital Costs of Lands & 133084 & 6561 & 12497 & 5430 & 2768 & 1011 & 1557 & 5257 \\
\hline Total & 372337 & 21566 & 37825 & 17447 & 8222 & 4429 & 3780 & 14142 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Description}} & \multicolumn{8}{|l|}{College} \\
\hline & & 8 & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline \multicolumn{10}{|l|}{Operating Costs} \\
\hline Administration Office & (a) & 93387 & 168180 & 48092 & 184677 & 269955 & 39004 & 52565 & 43338 \\
\hline Registration Office & (a) & 4674 & 8418 & 2407 & 9243 & 13511 & 1952 & 2631 & 2169 \\
\hline Central Libraxy & (a) & 10440 & 18802 & 5376 & 20646 & 30179 & 4361 & 5876 & 4845 \\
\hline Dormitory Office & (b) & 208725 & 220353 & 215532 & 382853 & 671552 & 111452 & 117408 & 160515 \\
\hline Total \(\quad\) \% & & 317226 & 415753 & 271407 & 597419 & 985197 & 156769 & 178480 & 210867 \\
\hline \multicolumn{10}{|l|}{\multirow[t]{2}{*}{Apportustration Office (a)}} \\
\hline & & & & & & & & & \\
\hline Capital Cost (except Lands) & & 1662 & 2994 & 856 & 3287 & 4805 & 694 & 936 & 772 \\
\hline Capital cost of Lands & & 4676 & 8421 & 2408 & 9247 & 13517 & 1953 & 2632 & 2170 \\
\hline \begin{tabular}{l}
Central Iibxary \\
Capital Costs of hand
\end{tabular} & (a) & 300 & 540 & 154 & 593 & 866 & 125 & 169 & 139 \\
\hline Dormitory office & (b) & & & & & & & & \\
\hline Capital costs (except Lands) & & 10295 & 10869 & 10631 & 18884 & 33124 & 5497 & 5791 & 7917 \\
\hline Capital Costs of Land & & 9795 & 10341 & 10114 & 17966 & 31514 & 5230 & 5510 & 7533 \\
\hline Total & & 26728 & 33165 & 24163 & 49977 & 83826 & 13499 & 15038 & 18531 \\
\hline
\end{tabular}

\footnotetext{

}
A. 16
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Table A-28 \(\begin{gathered}\text { Allocation of } \\ \text { office and Librar }\end{gathered}\) & lirec & (costs of A various coll & ministra ges. Uni & \[
\begin{aligned}
& \text { tion of } \\
& \text { rersity }
\end{aligned}
\] & \[
\begin{aligned}
& \text { fice, } \mathrm{R}^{\prime} \\
& \text { of Baghe }
\end{aligned}
\] & \[
\begin{aligned}
& \text { egistra } \\
& \text { dad, } 19
\end{aligned}
\] & on of & (Ince, & \begin{tabular}{l}
ormitory \\
.).
\end{tabular} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Description}} & \multirow[t]{2}{*}{Cost Indixect} & \multicolumn{7}{|l|}{college} \\
\hline & & & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\hline Operating costs* & & & & & & & & & \\
\hline Adrainisizration office & (a) & 1471885 & 113335 & 199882 & 98053 & 37239 & 36356 & 9567 & 45776 \\
\hline Registration office & (a) & 71562 & 5510 & 9718 & 4573 & 1811 & 1768 & 465 & 2226 \\
\hline Central Library & (a) & 169238 & 13031 & 22983 & 10813 & 4282 & 4180 & 1100 & 5263 \\
\hline Dormitory Office & (b) & 3586989 & 163567 & 347938 & 132719 & 67077 & 26902 & 27978 & 140969 \\
\hline Total & & 5299674 & 2954.43 & 580521 & 242158 & 110409 & 69206 & 39110 & 194234 \\
\hline Opportunity Costs** & & & & & & & & & \\
\hline Administration Office & (a) & & & & & & & & \\
\hline Capital Cost (except Lands) & & 33215 & 2558 & 4511 & 2122 & 840 & 820 & 216 & 1033 \\
\hline Capital Cost of Lands & & 70000 & 5390 & 9506 & 4473 & 1771 & 1729 & 455 & 2177 \\
\hline Central Library Capital Costs of Iands & (a) & 4487 & 345 & 609 & 287 & 114 & 111 & 29 & 140 \\
\hline Dormitory office & (b) & & & & & & & & \\
\hline Capital costs (except Lands) & & 171185 & 7806 & 16605 & 6334 & 3201 & 1284 & 1335 & 6728 \\
\hline Capital Costs of Lands & & 133084 & 6069 & 12909 & 4924 & 2489 & 998 & 1038 & 5230 \\
\hline Total & & 411971 & 22168 & 44140 & 18140 & 8415 & 4942 & 3073 & 15308 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Description}} & \multicolumn{8}{|l|}{College} \\
\hline & & 8 & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline \multicolumn{10}{|l|}{Operating Costs} \\
\hline Administration office & (a) & 85222 & 176921 & 50191 & 187665 & 278481 & 40918 & 63291 & 52988 \\
\hline Registration office & (a) & 4123 & 8605 & 2440 & 9124 & 13540 & 1989 & 3077 & 2576 \\
\hline Central library & (a) & 9799 & 20343 & 5771 & 21578 & 32020 & 8705 & 7277 & 6093 \\
\hline Dormitory Office & (b) & 218089 & 253600 & 275122 & 545222 & 903921 & 112273 & 137382 & 234230 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} & 317253 & 459466 & 333524 & 763589 & 1227962 & 159885 & 211027 & 295887 \\
\hline & & & & & & & & & \\
\hline Adminisíration Ot̂fice & (a) & & & & & & & & \\
\hline Capital Cost (except tands) & & 1923 & 3993 & 1133 & 4235 & 6284 & 923 & 1428 & 1196 \\
\hline Capital cost of Lands & & 4053 & 8414 & 2387 & 8925 & 132AA & 1946 & 3010 & 2520 \\
\hline Central library & (a) & & & & & & & & \\
\hline Capital Costs of Lands & & 260 & 539 & 153 & 572 & 849 & 125 & 193 & 161 \\
\hline Dormitory office & (b) & & & & & & & & \\
\hline Capital costs (except Lands)
Capital
costs of Lands & & 10408
8091 & 12103
9409 & 13130
10208 & 26020
20229 & 43139
33537 & 5358
4166 & 6556
5097 & \(\begin{array}{r}11178 \\ 8690 \\ \hline\end{array}\) \\
\hline total & & 24735 & 34458 & 27011 & 59981 & 97053 & 12518 & 16284 & 23745 \\
\hline
\end{tabular}
\(\begin{aligned} & \text { Source: } \text { Operating costs are from Tables (A-3); ** Opportunity costs are from Tables (A-22 to A-2A) } \\ & \text { Allocation criteria as follows: (a) According to percent of students by college, (Table A-7); }\end{aligned}\)
A. 17
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multirow[t]{2}{*}{Cost Indirect} & \multicolumn{7}{|l|}{college} \\
\hline & & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\hline Operating Costs & & & & & & & & \\
\hline \begin{tabular}{l}
Administration office \\
(a)
\end{tabular} & 1766759 & \begin{tabular}{|c}
132507 \\
14845
\end{tabular} & 188513 & \({ }_{10074}^{89928}\) & 38692
4334 & 37632
4216 & 9364
1049 & 42932
4810 \\
\hline Central Library
Dormitory office & \begin{tabular}{|c|}
197928 \\
3141410
\end{tabular} & 148245
192236 & & & 44334 4 & 20881 & & \\
\hline Total (b) & 5279097 & 339588 & 459538 & 199434 & 87771 & 62729 & 37591 & 135574 \\
\hline Opportunity Costs & & & & & & & & \\
\hline Capital cost (except Lands) & 11874 & 3141 & & & & & & \\
\hline Capital cost of Lands & 70000 & 5250 & 7469 & 3563 & 1533 & 1491 & 371 & 1701 \\
\hline  & 4487 & 337 & 479 & 228 & 98 & 95 & 24 & 109 \\
\hline Dormitory Oiffice (b) & & & & & & & & \\
\hline Capital cosits (except Lands) & 174111 & 10098 & 13128 & 5223 & 2350 & 1097 & 1428 & \({ }^{4} 614{ }^{4}\) \\
\hline Capital
Total & 133087 & 7719 & 130035 & \(\underline{3993}\) & \(\frac{1797}{6695}\) & \({ }_{4}^{838}\) & \(\frac{1091}{3136}\) & 3527
10969 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Description}} & \multicolumn{8}{|l|}{college} \\
\hline & & 8 & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline Operating Cosis & & & & & & & & & \\
\hline Central Library & (a) & 114738 & 25018 & 5819 & 33945 & 36815 & 57595 & 89065 & \({ }^{7581}\) \\
\hline Dormitoxy ofixice & (a) & \(\frac{224054}{350973}\) & & & & 721547 & \(\frac{121639}{185687}\) & \(\frac{121639}{211622}\) & 223391 \\
\hline Total & & 350973 & 536358 & 307337 & 979277 & & & & 298639 \\
\hline Apminisistiration Oísice & (a) & & & & & & & & \\
\hline Capital cost (except lands) & & 2705 & 5293 & 1231 & 7181 & & & & \\
\hline Capital cost of Lands & & 4522 & 8848 & 2058 & 12005 & 13020 & 2282 & 3206 & 2681 \\
\hline Central library & ( & & & & & & & & \\
\hline Capizal costs of Lands & & 290 & 567 & 132 & 770 & 835 & 146 & 205 & 72 \\
\hline Dormitory \({ }^{\text {capital }}\) costice (except lands) & & 11770 & 15130 & 13111 & 33743 & 37904 & 6390 & 6390 & 11735 \\
\hline Capital costs of Lands & & 8997 & & 10022 & & & 4884 & 4884 & \\
\hline Total & & 28284 & 41403 & 26554 & 79491 & 88520 & 15067 & 16603 & 25162 \\
\hline
\end{tabular}

\footnotetext{

}
Table A-30 Allocation of Indirect cost (costs of Administration office, Registration office, Dormitory
office and library Central) to various colleges, University of Baghdad, 1986/87, (In I.D.).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Description}} & \multirow[t]{2}{*}{Cost Indirect} & \multicolumn{7}{|l|}{college} \\
\hline & & & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\hline \multicolumn{10}{|l|}{Operating Costs*} \\
\hline Administration office & (a) & 1585412 & 116845 & 151565 & 76258 & 35038 & 34721 & 12525 & 38050 \\
\hline Central library & (a) & 206665 & 15231 & 19757 & 9941 & 4567 & 4526 & 1633 & 4960 \\
\hline Dormitory Office & (b) & 2272130 & 127012 & 197675 & 78616 & 33855 & 15450 & 13860 & 65892 \\
\hline Total & & 4064207 & 259088 & 368997 & 164815 & 73160 & 54697 & 28018 & 108902 \\
\hline \multicolumn{10}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & & & & & & & & & \\
\hline Capital Cost (except Lands) & & 43393 & 3198 & 4148 & 2087 & 959 & 950 & 343 & 1041 \\
\hline Capital cost of Lands & & 70000 & 5159 & 6692 & 3367 & 1547 & 1533 & 553 & 1680 \\
\hline Central library & (a) & & & & & & & & \\
\hline Capital Costs of Lands & & 4487 & 331 & 429 & 216 & 99 & 98 & 35 & 108 \\
\hline Capital Costs (except Lands) & & 174111 & 9733 & 15148 & 6024 & 2594 & 1184 & 1062 & 5049 \\
\hline Capital costs of lands & & 133087 & 7440 & 11579 & 4605 & 1983 & 905 & 812 & 3859 \\
\hline Total & & 425078 & 25861 & 37996 & 16299 & 7182 & 4670 & 2805 & 11737 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Description}} & \multicolumn{8}{|l|}{College} \\
\hline & & 8 & 9 & 10 & 11 & 12 & 13 & 12 & 15 \\
\hline \multicolumn{10}{|l|}{Operating costs} \\
\hline Administration office & (a) & 98454 & 210543 & 43757 & 299960 & 294728 & 58977 & 67380 & 46611 \\
\hline Central Library & (a) & 12834 & 27445 & 5704 & 39101 & 38419 & 7688 & 8783 & 6076 \\
\hline Dormitoxy Office & (b) & 128602 & 206537 & 189950 & 429432 & 513047 & 90201 & 64756 & 117242 \\
\hline \multicolumn{10}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & & & & & & & & & \\
\hline Administration Office & (a) & & & & & & & & \\
\hline Capital Cost (except Lands) & & 2695 & 5763 & 1198 & 8210 & 8067 & 1614 & 1844 & 1276 \\
\hline Capital Cost of Lands & & 4347 & 9296 & 1932 & 13244 & 13013 & 2604 & 2975 & 2058 \\
\hline Central Library
Capital costs of lands & (a) & & 596 & 124 & 849 & 834 & 167 & 190 & 132 \\
\hline Capital Costs of Lands Dormitory Office & & 279 & 596 & 124 & 849 & 831 & 167 & & 132 \\
\hline Capital Costs (except Lands) & & 9855 & 15827 & 14556 & 32907 & 39314 & 6912 & 4962 & 8984 \\
\hline Capital Costs of Lands & & 7533 & 12098 & 11126 & 25153 & 30051 & 5283 & 3793 & 6867 \\
\hline Total & & 24709 & 43580 & 28936 & 80363 & 91279 & 16580 & 13764 & 19317 \\
\hline
\end{tabular}
Source: \(\quad \begin{array}{r}\text { Operating costs are from Tables (A-6); ** Opportunity costs are from Tables (A-22 to A-24). } \\ \text { Allocation criteria as follows: (a) According to percent of studentis by college, (Table A-7); }\end{array}\)
Table A-31 Total Institutional cosis and Institutional cost Per Student, University of Baghdad, 1981/82,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Description}} & \multicolumn{7}{|l|}{College} \\
\hline & & 1 & 2 & 3 & \(\stackrel{4}{4}\) & 5 & 6 & 7 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{3}{*}{\begin{tabular}{l}
Operating Costs (Direct costs) Opportunity costis \\
Capitial Cost (except the Lands) \\
Capièal cost of̂ Lands
\end{tabular}}} & 1799619 & 2981379 & 2229574 & 554076 & 913698 & 348005 & 1523534 \\
\hline & & & 122297 & & & & & 32963 \\
\hline & & 42359 & 441000 & 60431 & 18830 & 20146 & 1 & 175000 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{3}{*}{\begin{tabular}{l}
Total Opportunity cost Allocation Indirect Costs operating Costs \\
Opportunity Costs
\end{tabular}}} & \(66 \pm 79\) & 563297 & 117222 & 19068 & 21063 & 1618 & 207963 \\
\hline & & 402754 & 539291 & 262325 & 132354
7200 & 78179
3809 & 58811
3218 & 283269
15748 \\
\hline & & 21832 & 28718 & 14037 & 7200 & 3809 & 3218 & \\
\hline \multicolumn{2}{|l|}{Total Allocation Indirect costs} & 424586 & 568009 & 276362 & 139544 & 77988 & 62029 & 299017 \\
\hline Total Institutional Costs & (f) & 2290684 & \(\underline{4112685}\) & 2623158 & 712688 & 1012749 & 426118 & 2030514 \\
\hline Number of Students Enrolled Institutional cost Per Student & \[
\begin{aligned}
& \text { (d) } \\
& \text { (e) }
\end{aligned}
\] & 2632
870 & \[
\begin{aligned}
& 4092 \\
& 1005
\end{aligned}
\] & 1917
1365 & 836
852 & 719
1409 & 350
1217 & 1417 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{college} \\
\hline & 8 & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline \multirow[t]{2}{*}{\begin{tabular}{l}
Operating Costs (Direct Costs)
\(\frac{\text { Opportunity Costs }}{\text { Capital cost (except the Lands) }}\) \\
Capital Cost of Iancs
\end{tabular}} & 2960345 & 889266 & 762379 & 1767208 & 2014789 & 581954 & 558523 & \multirow[t]{2}{*}{267932} \\
\hline & 72940
35896 & \(\begin{array}{r}159082 \\ 38388 \\ \hline\end{array}\) & \(\begin{array}{r}34974 \\ 1974 \\ \hline\end{array}\) & \[
\begin{array}{r}
3444 \\
119546
\end{array}
\] & \[
\begin{array}{r}
26831 \\
118790
\end{array}
\] & 3339 & \[
\begin{aligned}
& 21224 \\
& 15470
\end{aligned}
\] & \\
\hline \multirow[t]{3}{*}{Total Opportunity Cost Allocation Indirect Cosís Opportunity cosits} & 106636 & 1984.70 & 45948 & 122990 & 145621 & 3339 & 3669 , & \multirow[t]{3}{*}{\(\begin{array}{r}237214 \\ 13499 \\ \hline\end{array}\)} \\
\hline & 306604 & 584775 & 382479 & 760900 & 1511274 & 288095 & 79415 & \\
\hline & 16211 & 31247 & 21904 & 41836 & 85081 & 16344 & 8715 & \\
\hline Total Allocation Indirect Costs & 322815 & 616022 & 404383 & 802736 & 1596355 & 304439 & 166659 & 250713 \\
\hline Total Institutional costs (i) & 3389796 & 1703758 & 1212710 & 2692934 & 3756765 & 889732 & 761876 & 518645 \\
\hline Number of Students Enrolled
Institutional
cost
Per Student & 2455
1381 & 4318
395 & 1206
1006 & 4317
624 & \(\begin{array}{r}6383 \\ 589 \\ \hline\end{array}\) & \(\begin{array}{r}1080 \\ 824 \\ \hline\end{array}\) & 863
883 & 843
615 \\
\hline
\end{tabular}

 Table A-32 (continued)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{College} \\
\hline & 8 & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline Operating Costs (Direct Costs) (a) & 2608823 & 761601 & 729504 & 1762606 & 1921153 & 527951 & 553237 & 266030 \\
\hline Opportunity Costs & & & & & & & & \\
\hline Capital Cost (except the Lands) Capital Cost of Lands & \[
\begin{aligned}
& 77637 \\
& 35896
\end{aligned}
\] & \[
\begin{array}{r}
159082 \\
38388
\end{array}
\] & 43974
1974 & \[
\begin{array}{r}
3444 \\
119546
\end{array}
\] & \[
\begin{array}{r}
26831 \\
118790
\end{array}
\] & 3339 & \[
\begin{aligned}
& 29925 \\
& 15470
\end{aligned}
\] & \\
\hline Total Opportunity Cost & 113533 & 197470 & 45948 & 122990 & 145621 & 3339 & 45395 & \\
\hline Allocation Indirect costs & 350147 & 486365 & 301056 & 607589 & 1228556 & 207565 & 158738 & 240253 \\
\hline Opportunity Costs & 26073 & 35956 & 22811 & 45428 & 92389 & 15653 & 11917 & 18231 \\
\hline Total Allocaition Indirect costs & 376520 & 522321 & 323867 & 653017 & 1320945 & 223218 & 170655 & 258484 \\
\hline Total Institutional Costs (f) & 3098876 & 1481392 & 1099319 & 2538613 & 3387719 & 754508 & 769287 & 524514 \\
\hline Number of Students Enxolled (d) & 2702 & 4345 & 1238 & 4095 & 6889 & 1049 & 944 & 921 \\
\hline Institutional Cost Per Student (e) & 1147 & 341 & 888 & 620 & 492 & 719 & 815 & 570 \\
\hline
\end{tabular}

Souxce: (a) Operating Costs from Tables (A-2); (b) Opportunity Costs from Tables (A-9...A-21)



Source: (a) operating Costs from Tables (A-3); (b) Opportunity Costs from Tables (A-9...A-21) Thable (A-7)
Table A-34
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{9}{|l|}{} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Description}} & \multicolumn{7}{|l|}{college} \\
\hline & & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\hline Operating Costs (Direct costs) & (a) & 1920935 & 3125195 & 2186264 & 624822 & 1166106 & 361360 & 1671788 \\
\hline \(\frac{\text { Opportunity } \text { costs }}{\text { Capital }}\) (osts (except the Lands) & & & & & & & & \\
\hline Capital costs except the lands) & & 24459 & \({ }_{441000}\) & 66031 & \[
\begin{array}{r}
917 \\
18830
\end{array}
\] & 20146 & 16184 & 36505
175000 \\
\hline Total opportunity costs & & 70518 & 608510 & 117901 & 19747 & 24353 & 16184 & 211575 \\
\hline Opportunity costs & (c) & 295443
22168 & \[
\begin{array}{r}
580521 \\
44140
\end{array}
\] & \[
\begin{array}{r}
242158 \\
18140
\end{array}
\] & \[
\begin{array}{r}
110 \pm 09 \\
8 \pm 15
\end{array}
\] & \[
\begin{array}{r}
69206 \\
4942
\end{array}
\] & \[
\begin{array}{r}
39110 \\
3073
\end{array}
\] & \[
\begin{array}{r}
194234 \\
15308
\end{array}
\] \\
\hline Total allocation costs & & 317611 & 624661 & 260298 & 118824 & 74148 & 42183 & 209542 \\
\hline Total Institutional costs & (i) & 2309064 & 4358366 & 2564163 & 763393 & 1264607 & 422727 & 2092905 \\
\hline Number of Studentis Enrolled Insti̇ù̇ional Cost Per Student & \[
\begin{aligned}
& (\mathrm{d}) \\
& (\mathrm{d})
\end{aligned}
\] & 2535
911 & 4474
974 & 2106
1218 & 831
915 & \(\begin{array}{r}813 \\ 1555 \\ \hline\end{array}\) & 212
1994 & \begin{tabular}{l}
1023 \\
2046 \\
\hline
\end{tabular} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{coilege} \\
\hline & 8 & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline \multirow[t]{3}{*}{\begin{tabular}{l}
Capital Costs of Iands \\
Capital costs (except the Iands)
\end{tabular}} & 3223203 & 864557 & 777032 & 1826894 & 2177698 & 609295 & 756733 & \multirow[t]{3}{*}{465976} \\
\hline & 80738 & 159082 & 43974 & 3444 & 34503 & & 30065 & \\
\hline & 35896 & & 1974 & 19546 & 118790 & 3339 & & \\
\hline \multirow[t]{3}{*}{Total Opportunity Costs Allocation of Indirect Costs Operating Costs
Opportunity Cost
Opportunity Costs} & 11663 星 & 197470 & 45948 & 122990 & 153293 & 3339 & 15535 & \multirow[t]{3}{*}{\[
\begin{array}{r}
295887 \\
23745
\end{array}
\]} \\
\hline & 317253 & \(\begin{array}{r}459466 \\ 34458 \\ \hline\end{array}\) & 333524
27011 & 763589
59981 & 1227962
97053 & \[
159885
\] & \[
\begin{aligned}
211027 \\
16284
\end{aligned}
\] & \\
\hline & & & & & & & & \\
\hline Total Allocation costs & 341988 & 493924 & 360535 & 823570 & 1325015 & 172403 & 227311 & 319632 \\
\hline Total Institutional costs (f) & 3681825 & 1555951 & 1183515 & 2773454 & 3656006 & 785037 & 1029579 & 785608 \\
\hline \begin{tabular}{l}
Number of Students Enrolled \\
Insti̇utional Cost Per Student
\end{tabular} & 1907
1931 & 3960
393 & 1124
1053 & 4200
660 & 6233
587 & 915
858 & 1416
727 & 1186
662 \\
\hline
\end{tabular}
 A. 23
Total A-35
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{College} \\
\hline & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\hline Operating Costs (Direct costs) (a) & 2399883 & 3312773 & 2520329 & 743811 & 1408229 & 626352 & 1558412 \\
\hline \(\frac{\text { Opportumity }}{\text { Capital }}\) costs \({ }^{\text {cost }}\) (except the lands) \({ }^{\text {a }}\) & & 167916 & & & & & 36575 \\
\hline Capital costs of the lands & 44359 & & & 18830 & & 16184 & 175000 \\
\hline Total opportunity costs & 70518 & 608916 & 117901 & 19747 & 24584 & 1618 & 211575 \\
\hline \begin{tabular}{l}
Allocation of Indirect costs \\
operating costs
\end{tabular} & \[
\begin{array}{r}
339588 \\
26545
\end{array}
\] & \[
\begin{array}{r}
459538 \\
35579
\end{array}
\] & \[
\begin{array}{r}
1994344 \\
15138
\end{array}
\] & \[
\left.\begin{array}{r}
87771 \\
6695
\end{array} \right\rvert\,
\] & \[
\begin{array}{r}
62729 \\
4213
\end{array}
\] & \[
\begin{array}{r}
37591 \\
3136
\end{array}
\] & \[
\begin{array}{r}
135574 \\
10969
\end{array}
\] \\
\hline Total Allocation of Indirect costs & 366133 & 495117 & 214572 & 94466 & 67142 & 40727 & 146543 \\
\hline Total Institutional costs (f) & 2836534 & 4416806 & 2852802 & 858024 & 1499955 & 683263 & 1916530 \\
\hline Number of Students Enrolled Institutional cost Per Student & 3009
943 & \[
\begin{aligned}
& == \\
& 4282 \\
& 1031
\end{aligned}
\] & 2044
1396 & 877
978 & \(\begin{array}{r}854 \\ 1756 \\ \hline\end{array}\) & 214
3193 & 977
1962 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{college} \\
\hline & 8 & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline \multirow[t]{2}{*}{\begin{tabular}{|l|}
\hline Operating Costs (Direct costs) \\
\begin{tabular}{l} 
Opportunity Costs \\
Oppitun \\
Capital Costs (except the Lands) \\
Capital Costs of tands
\end{tabular} \\
\hline
\end{tabular}} & 3008619 & 1220219 & 838269 & 2477316 & 3237733 & 89344 & 866113 & \multirow[t]{2}{*}{553295} \\
\hline & \[
\begin{aligned}
& 87444 \\
& 35896
\end{aligned}
\] & \[
\begin{array}{r}
159082 \\
38388
\end{array}
\] & \[
\begin{array}{r}
46515 \\
1974
\end{array}
\] & \[
\begin{array}{r}
3444 \\
119546
\end{array}
\] & \[
\begin{array}{r}
34503 \\
118790
\end{array}
\] & 3339 & \[
\begin{aligned}
& 37562 \\
& 15470
\end{aligned}
\] & \\
\hline \multirow[t]{2}{*}{\begin{tabular}{l}
Total Opportunity Costs \\
Allocation of Indirect Costs \\
Operating Costs \\
Opportunity Costs
\end{tabular}} & 123340 & 197470 & 48489 & 122990 & 153293 & 3339 & 53032 & \multirow[t]{2}{*}{\[
\begin{array}{r}
298639 \\
25162
\end{array}
\]} \\
\hline & \[
350973
\] & \[
536358
\] & \[
\begin{array}{r}
307337 \\
2 \\
\hline
\end{array} 655
\] & \[
\begin{aligned}
& 979277 \\
& \hline 790901
\end{aligned}
\] & \[
\left.\begin{array}{|r|}
1086979 \\
88520
\end{array} \right\rvert\,
\] & \[
185687
\] & \[
211622
\] & \\
\hline Total Allocation Costs & 379257 & 577761 & 333891 & 1058768 & 1175499 & 20075 & 228225 & 323801 \\
\hline Total Institutional costs (f) & 3511216 & 1995450 & 1220649 & 3659074 & 4566525 & 1097541 & 1147370 & 877096 \\
\hline Number of Studentis Eniolled Institutional cost Per Student & \[
\begin{array}{r}
2594 \\
1354 \\
\hline
\end{array}
\] & 5076
393 & 1182
1033 & 6886
531 & 7468
611 & 1308
839 & 1839
624 & 1536
571 \\
\hline
\end{tabular}
Source: (a) Operating costs from rables (A-5); (b) Opportunity Costs from rables (A-9 - A-21) (
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{College} \\
\hline & 1 & 2 & 3 & \(\underline{4}\) & 5 & 6 & 7 \\
\hline Operating costs (Direct costs) ( & 2264839 & 3258119 & 2419247 & 765625 & 1249331 & 483045 & 1666035 \\
\hline \begin{tabular}{l}
Opportunity Cosis \\
Capital costs (except the Lands) \\
capital costs of the Lands
\end{tabular} & \[
\begin{aligned}
& 26159 \\
& 44359
\end{aligned}
\] & \[
\begin{aligned}
& 167620 \\
& 441000
\end{aligned}
\] & \[
\begin{aligned}
& 57470 \\
& 60431
\end{aligned}
\] & \[
\begin{array}{r}
8211 \\
18830
\end{array}
\] & \[
\begin{array}{r}
4438 \\
20146
\end{array}
\] & 16184 & \[
\begin{array}{r}
36575 \\
175000
\end{array}
\] \\
\hline Total opportunity costs & 70518 & 608620 & 117901 & \(270 \underline{1}\) & 24584 & 16181 & 211575 \\
\hline opportunity costs & \[
\begin{array}{r}
259088 \\
25861
\end{array}
\] & 368997
37996 & \[
\begin{array}{r}
164815 \\
16299
\end{array}
\] & \[
\begin{array}{r}
73460 \\
7182
\end{array}
\] & \[
\begin{array}{r}
54697 \\
4670
\end{array}
\] & \[
\begin{array}{r}
28018 \\
2805
\end{array}
\] & \[
\begin{array}{r}
108902 \\
11737
\end{array}
\] \\
\hline Total Allocation costs & 284949 & 406993 & 181114 & 80642 & 59367 & 30823 & 120639 \\
\hline Total Institutional Costs (f) & 2620306 & 4273732 & 2718262 & 873308 & 1333282 & 530052 & 1998249 \\
\hline Number of Students Enrolled Institutional cost Per Student & \[
\begin{array}{r}
3152 \\
831
\end{array}
\] & \[
\begin{aligned}
& ==- \\
& 4092 \\
& 10 \mathrm{AL}
\end{aligned}
\] & \[
\begin{aligned}
& 2056 \\
& 1322
\end{aligned}
\] & \[
\begin{aligned}
& 9444 \\
& 925
\end{aligned}
\] & \[
\begin{array}{r}
939 \\
1420
\end{array}
\] & \[
\begin{array}{r}
338 \\
1558
\end{array}
\] & 1025
1950 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{college} \\
\hline & 8 & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline \multirow[t]{3}{*}{Operating Costs (Direct Costs) (a)
Opporiunity Costs
Capital Costs (except the Lands) (b)
Capital Costs of the tands} & 3154771 & 1297936 & 879485 & 2313368 & 2919928 & 1131821 & 1032885 & \multirow[t]{3}{*}{581398} \\
\hline & 88179 & 159082 & 47425 & 3444 & 34503 & 7392 & 40110 & \\
\hline & 35896 & 38388 & 1974 & 119546 & 118790 & 3339 & 15470 & \\
\hline \multirow[t]{2}{*}{\begin{tabular}{l}
Total Opportunity Costs \\
Allocation of Indirect Costs
\end{tabular}} & 124075 & 197470 & 49399 & 122990 & 153293 & 10731 & 55580 & \multirow[t]{2}{*}{\[
\begin{array}{r}
169929 \\
19317
\end{array}
\]} \\
\hline & \[
239890
\] & \[
444525
\] & \[
\begin{array}{r}
239411 \\
78936
\end{array}
\] & \[
768493
\] & \[
\begin{aligned}
& 846194 \\
& 91279
\end{aligned}
\] & \[
156869
\] & 140919
13764 & \\
\hline Total Allocation Costs & 264599 & 488105 & 268347 & 848856 & 937473 & 173449 & 154683 & 189246 \\
\hline Total Institutional costs (f) & 3513445 & 1983511 & 1197231 & 3285214 & 4010694 & 1316001 & 1243148 & 773644 \\
\hline Number of Students Enrolled (d) & & & & 8093
406 & 7955 & 1591 & 1820 & 1257 \\
\hline Institutional cost Per Student (e) & 1334 & 349 & 1013 & 406 & 504 & 827 & 683 & 615 \\
\hline
\end{tabular}
Source: (a) Operating costs from Tables (A-6); (b) Opportunity Costs from Tables (A-9...A-21) ( (c) Allocation Indirect costs from Tables (A-30); (d) Number of Studentis Enroiled from Table A-7;

Table A-37 Weight Average of Composite Price Inder Number in the city of Baghdad, 1973-1987.
\begin{tabular}{|lcc|}
\hline & \begin{tabular}{c} 
Composite Price \\
Base Xear \\
1973
\end{tabular} & \begin{tabular}{c} 
Index Number \\
Base Year \\
1987
\end{tabular} \\
Year & 100.0 & 43.5 \\
1973 & 100.2 & 43.6 \\
1974 & 102.2 & 44.5 \\
1975 & 132.3 & 57.6 \\
1976 & 147.3 & 64.1 \\
1977 & 149.5 & 65.1 \\
1978 & 149.5 & 65.1 \\
1979 & 149.5 & 65.1 \\
1980 & 205.6 & 89.5 \\
1981 & 269.1 & 117.1 \\
1982 & 298.3 & 129.8 \\
1983 & 304.2 & 132.4 \\
1984 & 308.0 & 134.0 \\
1985 & 295.7 & 128.7 \\
1986 & 229.8 & 100.0 \\
\hline 1987 & & \\
\hline
\end{tabular}

Source: Republic of Traq, Central Statistical Organization, Annual Abstracts of Statistics 1987, Table 7/2, P.143.

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{College} & \multicolumn{2}{|l|}{1981/82} & \multicolumn{2}{|l|}{1982/83} & \multicolumn{2}{|l|}{1983/8} & \multicolumn{2}{|l|}{1984/85} & \multicolumn{2}{|l|}{1985/86} & \multicolumn{2}{|l|}{1986/87} \\
\hline & \[
\begin{array}{|c}
\text { Actual } \\
\text { Cost }
\end{array}
\] & Aclj . Cost & Actual Cost & Adj Cost & Actual Costit & Adj. Cost & \begin{tabular}{l}
Actual \\
Cost
\end{tabular} & Aclj . Cost & Actual cost & Adj Cost & Actual Cost & Adj. Cost \\
\hline 1 & 870 & 743 & 890 & 686 & 837 & 632 & 911 & 680 & 943 & 733 & 831 & 831 \\
\hline 2 & 1005 & 858 & 1159 & 893 & 949 & 717 & 974 & 727 & 1031 & 801 & 1044 & 1044 \\
\hline 3 & 1365 & 1166 & 1176 & 906 & 1207 & 912 & 1218 & 909 & 1396 & 1085 & 1322 & 1322 \\
\hline 4 & 852 & 728 & 861 & 663 & 856 & 647 & 915 & 683 & 978 & 760 & 925 & 925 \\
\hline 5 & 1409 & 1203 & 1307 & 1007 & 1424 & 1076 & 1555 & 1160 & 1756 & 1364 & 1420 & 1420 \\
\hline 6 & 1217 & 1039 & 1658 & 1277 & 1959 & 1480 & 1994 & 1488 & 3193 & 2481 & 1568 & 1568 \\
\hline 7 & 1433 & 1224 & 1436 & 1106 & 1628 & 1230 & 2046 & 1527 & 1962 & 1524 & 1950 & 1950 \\
\hline 8 & 1381 & 1179 & 1147 & 884 & 1318 & 995 & 1931 & 14181 & 1354 & 1052 & 1331 & 1334 \\
\hline 9 & 395 & 337 & 341 & 263 & 338 & 255 & 393 & 293 & 393 & 305 & 349 & 349 \\
\hline 10 & 1006 & 859 & 888 & 684 & 961 & 726 & 1053 & 786 & 1033 & 803 & 1013 & 1013 \\
\hline 11 & 624 & 533 & 620 & 478 & 583 & 440 & 660 & 493 & 531 & 413 & 406 & 406 \\
\hline 12 & 589 & 503 & 492 & 379 & 525 & 397 & 587 & 438 & 611 & 475 & 504 & 504 \\
\hline 13 & 824 & 704 & 719 & 554 & 734 & 554 & 858 & 640 & 839 & 652 & 827 & 827 \\
\hline 1 A & 883 & 754 & 815 & 628 & 695 & 525 & 727 & 543 & 624 & 485 & 683 & 683 \\
\hline 15 & 615 & 525 & 570 & 439 & 577 & 436 & 662 & 494 & 571 & 444 & 615 & 615 \\
\hline
\end{tabular}
Institutional cost for years \(1974 / 75\) to \(1980 / 81\) are from the unpublished study of institutional cost of graduate
in Iraq by committee was consist to that purpose according to the law No. 532 , 1983 , Baghdad University, in Iraq by committee was consist to that purpose according to the law No. 532, 1983, Baghdad University,
Republic of Iraq; Institutional cost for years \(1981 / 82\) to \(1986 / 87\) are from Tables A-31 to A-36.

Table A-39
Number Of Graduates According to Graduation and Admission Years, College of Science, University of Baghdad, 1981/82-1986/87.
\begin{tabular}{|l|c|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{l} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1976 / 77\) & 20 & & & & & \\
\(1977 / 78\) & 67 & 17 & 5 & 2 & & \\
\(1978 / 79\) & 211 & 110 & 53 & 21 & 8 & \\
\(1979 / 80\) & & 277 & 104 & 74 & 23 & \\
\(1980 / 81\) & & & 324 & 151 & 69 & 25 \\
\(1981 / 82\) & & & & 285 & 118 & 47 \\
\(1982 / 83\) & & & & & 222 & 133 \\
\(1983 / 84\) & & & & & & 263 \\
\hline Total & 298 & 404 & 486 & 533 & 440 & 468 \\
\hline
\end{tabular}

Source:
Compiled from the individual graduates personal files, Registration Office, College of Science, University of Baghdad.

Table A-40
Number of Graduates According to Graduation and Admission Years, College of Engineering, University of Baghdad, 1981/82-1986/87
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1975 / 76\) & 7 & 2 & & & & \\
\(1976 / 77\) & 13 & 6 & & & & \\
\(1977 / 78\) & 77 & 29 & 8 & & & \\
\(1978 / 79\) & 491 & 109 & 27 & 9 & & \\
\(1979 / 80\) & & 523 & 246 & 62 & 17 & 7 \\
\(1980 / 81\) & & & 423 & 318 & 116 & 26 \\
\(1981 / 82\) & & & & 443 & 279 & 90 \\
\(1982 / 83\) & & & & & 376 & 248 \\
\(1983 / 84\) & & & & & & 279 \\
\hline Total & 588 & 669 & 704 & 832 & 788 & 650 \\
\hline
\end{tabular}

Source:
Compiled from the individual graduates personal files, Registration Office College of Engineering, University of Baghdad.

Table A-41
Number of Graduates According to Graduation and Admission Years, College of Medicine, University of Baghdad, 1981/82-1986/87
\begin{tabular}{|l|r|r|r|r|r|c|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{|c|c|c|c|}
\hline Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1974 / 75\) & & 1 & 1 & & & \\
\(1975 / 76\) & 3 & 5 & 3 & & & \\
\(1976 / 77\) & 243 & 13 & 3 & & & \\
\(1977 / 78\) & & 228 & 6 & 3 & 6 & \\
\(1978 / 79\) & & & 293 & 19 & 10 & \\
\(1979 / 80\) & & & & 331 & 25 & 10 \\
\(1980 / 81\) & & & & & 323 & 29 \\
\(1981 / 82\) & & & & & & 285 \\
\hline Total & 246 & 247 & 306 & 353 & 364 & 324 \\
\hline
\end{tabular}

Source: from individual graduates personal files, Registration Office College of Medicine, University of Baghdad.

Table A-42
Number of Graduates According to Graduation and Admission Years, College of Pharmacy, University of Baghdad, 1981/82-1986/87
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline \multirow{3}{*}{\begin{tabular}{|l|c|c|c|c|}
\hline \multicolumn{6}{|c|}{ Admission } & \multicolumn{6}{|c|}{} \\
\cline { 2 - 7 } & Year
\end{tabular}} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1976 / 77\) & 8 & & & & & \\
\(1977 / 78\) & 117 & 21 & & & & \\
\(1978 / 79\) & & 156 & 12 & & & \\
\(1979 / 80\) & & & 139 & 12 & 1 & 2 \\
\(1980 / 81\) & & & & 122 & 33 & 10 \\
\(1981 / 82\) & & & & & 112 & 25 \\
\(1982 / 83\) & & & & & & 143 \\
\hline Total & 125 & 177 & 151 & 134 & 157 & 180 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files, Registration Office, College of Pharmacy, University of Baghdad.

Table A-43
Number of Graduates According to Graduation and Admission Years, College Dentistry, University of Baghdad, 1981/82-1986/87.
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1974 / 75\) & 4 & & & & & \\
\(1975 / 76\) & 4 & 1 & & & & \\
\(1976 / 77\) & 4 & 3 & 2 & & & \\
\(1977 / 78\) & 84 & 8 & 4 & & & \\
\(1978 / 79\) & & 115 & 15 & 3 & 6 & \\
\(1979 / 80\) & & & 112 & 11 & 6 & 1 \\
\(1980 / 81\) & & & & 126 & 5 \\
\(1981 / 82\) & & & & & 129 & 6 \\
\(1982 / 83\) & & & & & & 146 \\
\hline Total & 96 & 127 & 133 & 140 & 140 & 153 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files, Registration Office, College of Dentistry, University of Baghdad.

Table-44
Number of Graduates According to Graduation and Admission Years, College of Nursing, University of Baghdad, 1981/82-1986/87
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1977 / 78\) & 6 & 1 & & & & \\
\(1978 / 79\) & 69 & 9 & & 1 & & \\
\(1979 / 80\) & & 70 & 3 & 2 & & \\
\(1980 / 81\) & & & 52 & 6 & 2 & \\
\(1981 / 82\) & & & & 57 & 14 & 3 \\
\(1982 / 83\) & & & & & 45 & 6 \\
\(1983 / 84\) & & & & & & 32 \\
\hline Total & 75 & 80 & 55 & 66 & 61 & 41 \\
\hline
\end{tabular}

\section*{Source:}

Compiled from individual graduates personal files, Registration Office, College of Nursing, University of Baghdad.

Table A-45
Number of Graduates According to Graduation and Admission Years, College of Veterinary Medicine University of Baghdad, 1981/82-1986/87
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1974 / 75\) & 3 & 2 & & & & \\
\(1975 / 76\) & 2 & 4 & & & & \\
\(1976 / 77\) & 18 & 3 & & 1 & 1 & \\
\(1977 / 78\) & 225 & 36 & 7 & 4 & 2 & \\
\(1978 / 79\) & & 245 & 28 & 7 & 7 & 2 \\
\(1979 / 80\) & & & 216 & 55 & 11 & 5 \\
\(1980 / 81\) & & & & 220 & 34 & 7 \\
\(1981 / 82\) & & & & & 144 & 19 \\
\(1982 / 83\) & & & & & & 130 \\
\hline Total & 248 & 290 & 251 & 287 & 198 & 164 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files, Registration Office, College of Veterinary Medicine, University of Baghdad.

Table A-46
Number of Graduates According to Graduation and Admission Years, College of Agriculture, University of Baghdad, 1982-1986/87
\begin{tabular}{|l|c|c|c|c|c|c|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1977 / 78\) & 110 & 16 & 5 & & & \\
\(1978 / 79\) & 441 & 66 & 13 & 3 & 5 & \\
\(1979 / 80\) & & 528 & 110 & 24 & & \\
\(1980 / 81\) & & & 425 & 133 & 16 & \\
\(1981 \mid 82\) & & & & 388 & 136 & 11 \\
\(1982 / 83\) & & & & & 252 & 97 \\
\(1983 / 84\) & & & & & & 200 \\
\hline Total & 551 & 610 & 553 & 548 & 409 & 308 \\
\hline
\end{tabular}

\footnotetext{
Source: Compiled from individual graduates personal files, Registration Office, College of Agriculture, University of Baghdad.
}

Table-47
Number of Graduates According to Graduation and Admission Years, College of Administration and Economics, University of Baghdad, 1981/82-1986/87.
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1975 / 76\) & 5 & & 1 & & & \\
\(1976 / 77\) & 25 & 4 & 2 & & & \\
\(1977 / 78\) & 128 & 48 & 5 & 3 & & \\
\(1978 / 79\) & 680 & 109 & 21 & 6 & & \\
\(1979 / 80\) & & 721 & 90 & 43 & 9 & \\
\(1980 / 81\) & & & 746 & 139 & 54 & 5 \\
\(1981 / 82\) & & & & 709 & 219 & 65 \\
\(1982 / 83\) & & & & & 608 & 127 \\
\(1983 / 84\) & & & & & & 552 \\
\hline Total & 838 & 882 & 865 & 900 & 980 & 749 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files, Registration Office, College of Administration and Economic, University of Baghdad.

Table A-48
Number of Graduates According to Graduation and Admission Years, College of Law and Politics, University of Baghdad, 1981/82-1986/87
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1977 / 78\) & 43 & 14 & 2 & & & \\
\(1978 / 79\) & 152 & 51 & 11 & 1 & 2 & \\
\(1979 / 80\) & & 210 & 32 & 10 & 2 & 1 \\
\(1980 / 81\) & & & 216 & 27 & 14 & 46 \\
\(1981 / 82\) & & & & 172 & 3 \\
\(1982 / 83\) & & & & & 171 & 34 \\
\(1983 / 84\) & & & & & & 142 \\
\hline Total & 195 & 275 & 261 & 210 & 235 & 180 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files, Registration Office, College of Law and Politics, University of Baghdad.

Table A-49
Number of Graduates According to Graduation and Admission Years, College of Arts University of Baghdad, 1981/82-1986/87.
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline & \multicolumn{6}{|c|}{Graduation Year} \\
\hline Year & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline 1977/78 & 110 & 25 & 3 & 2 & & \\
\hline 1978/79 & 549 & 111 & 38 & 10 & 4 & \\
\hline 1979/80 & & 553 & 135 & 39 & 16 & 2 \\
\hline 1980/81 & & & 708 & 171 & 46 & 5 \\
\hline 1981/82 & & & & 753 & 172 & 35 \\
\hline 1982/83 & & & & & 704 & 208 \\
\hline 1983/84 & & & & & & 661 \\
\hline Total & 659 & 689 & 884 & 975 & 994 & 911 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files, Registration Office, College of Arts, University of Baghdad.

Table A-50
Number of Graduates According to Graduation and Admission Years, College of Education, University of Baghdad, 1981/82-1986/87.
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1974 / 75\) & 6 & & & & & \\
\(1975 / 76\) & 12 & & 1 & & & \\
\(1976 / 77\) & 8 & 12 & 4 & & & \\
\(1977 / 78\) & 69 & 32 & 23 & 5 & 3 & \\
\(1978 / 79\) & 915 & 72 & 38 & 16 & 6 & \\
\(1979 / 80\) & & 1043 & 191 & 154 & 42 & 9 \\
\(1980 / 81\) & & & 1051 & 345 & 99 & 25 \\
\(1981 / 82\) & & & & 1029 & 306 & 88 \\
\(1982 / 83\) & & & & & 758 & 300 \\
\(1983 / 84\) & & & & & & 801 \\
\hline Total & 1010 & 1159 & 1312 & 1549 & 1124 & 1223 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files, Registration Office, College of Education, University of Baghdad.

Table A-51
Number of Graduates According to Graduation and Admission Years, College of Physical Education, University of Baghdad, 1981/82-1986/87
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1977 / 78\) & 4 & & & & & \\
\(1978 / 79\) & 209 & 18 & 2 & 2 & & \\
\(1979 / 80\) & & 265 & 44 & 17 & & \\
\(1980 / 81\) & & & 203 & 87 & 14 & \\
\(1981 / 82\) & & & & 109 & 50 & 6 \\
\(1982 / 83\) & & & & & 66 & 96 \\
\(1983 / 84\) & & & & & & 69 \\
\hline Total & 213 & 283 & 249 & 215 & 130 & 171 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files, Registration Office, College of Physical Education, University of Baghdad.

Table A-52
Number of Graduates According to Graduation and Admission Years, College of Academy of Fine Arts, University of Baghdad,1981/2-1986/87.
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{c} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1976 / 77\) & 1 & 1 & & & & \\
\(1977 / 78\) & 8 & 7 & 3 & & & \\
\(1978 / 79\) & 105 & 35 & 10 & 3 & 3 & \\
\(1979 / 80\) & & 126 & 28 & 25 & 5 & \\
\(1980 / 81\) & & & 121 & 66 & 29 & 4 \\
\(1981 / 82\) & & & & 110 & 65 & 8 \\
\(1982 / 83\) & & & & & 136 & 31 \\
\(1983 / 84\) & & & & & & 134 \\
\hline Total & 114 & 169 & 162 & 204 & 238 & 177 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files,
Registration Office, College of Academy of Fine Arts, University of Baghdad.

Table A-53
Number of Graduates According to Graduation and Admission Years, College of Alsharia, University of Baghdad, 1981/82-1986/87.
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \multicolumn{6}{|c|}{ Graduation Year } \\
\cline { 2 - 7 } \begin{tabular}{l} 
Admission \\
Year
\end{tabular} & \(1981 / 82\) & \(1982 / 83\) & \(1983 / 84\) & \(1984 / 85\) & \(1985 / 86\) & \(1986 / 87\) \\
\hline \(1976 / 77\) & 5 & & & & & \\
\(1977 / 78\) & 24 & 4 & & & & \\
\(1978 / 79\) & 153 & 12 & 4 & & & \\
\(1979 / 80\) & & 232 & 25 & 20 & 15 & \\
\(1980 / 81\) & & & 156 & 53 & 35 & 34 \\
\(1981 / 82\) & & & & 122 & 43 & 34 \\
\(1982 / 83\) & & & & & 155 & 56 \\
\(1983 / 84\) & & & & & & 115 \\
\hline Total & 182 & 248 & 185 & 195 & 248 & 205 \\
\hline
\end{tabular}

Source:
Compiled from individual graduates personal files, Registration Office, College of Alsharia, University of Baghdad.

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981/ & /82 cracir & ates & 1982 & 183 Gradua & ates & 198 & 3/84 Gradum & bates \\
\hline Year & \begin{tabular}{|l|}
\hline Instititutional cost \\
Pex Student (1987ID)
\end{tabular} & Mumber Accaitite & Number Enrolle & \[
\left\lvert\, \begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}\right.
\] & Minmber Acmitited & Mumber Enrollec & \[
\begin{aligned}
& \text { Cost } \\
& \text { (198710) }
\end{aligned}
\] & Number Acimitted & Number Enrolled & \[
\begin{array}{|c}
\text { cost } \\
(19871 D)
\end{array}
\] \\
\hline 1976/77 & 1337 & 20 & 20 & 26740 & & & & & & \\
\hline \(1977 / 78\) & 1350 & \({ }^{67}\) & 87 & & & & 22950 & 5 & 5 & \({ }_{82070} 6750\) \\
\hline \(1978 / 79\) & 1415 & & 298 & \({ }^{421570} 5\) & 117 & 127 & \({ }_{735088}^{179705}\) & - 53 & & 82070 \\
\hline 1979/80 & 1822
1315 & & 298
298 & 542956
391870 & & 204
404
404 & 736088
531260 & \({ }_{324}^{104}\) & 162
486 & \({ }^{295164}\) \\
\hline 1981/82 & 743 & & 298 & \(19161 /\) & & 404 & 259772 & & 486 & 312498 \\
\hline 1982/83 & 686 & & & & & 404 & 277144 & & 486 & 333396 \\
\hline 1983/84 & 632 & & & & & & & & 486 & 307152 \\
\hline \multicolumn{2}{|l|}{Total} & 298 & & 1692300 & 404 & & 2106919 & 486 & & 1976120 \\
\hline \multicolumn{2}{|l|}{Institutional cost / Graduate} & \multicolumn{3}{|l|}{ID 1692300/298 = ID 5,679} & \multicolumn{3}{|l|}{ID 2106919/404 = ID 5,215} & \multicolumn{3}{|l|}{ID 1976120/486 = ID 4,065} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 4/85 crack & mates & 1985 & 5/86 crad & uates & 1986 & /87 Gracua & mates \\
\hline Year & Institutional cost
per Student (1987D) & \begin{tabular}{l}
Number \\
Adnitted
\end{tabular} & Number Friolled & \[
\begin{aligned}
& \operatorname{cost} \\
& (1987 \mathrm{D})
\end{aligned}
\] & Inumber Achaitted & Mumber Enrollec & \[
\begin{aligned}
& \text { Cosi } \\
& \text { (1987ID) }
\end{aligned}
\] & Aumber Aomitite & \[
\begin{aligned}
& \text { Mumber } \\
& \text { narolled }
\end{aligned}
\] & \[
\begin{aligned}
& \operatorname{Cost} \\
& \text { (1987ID) }
\end{aligned}
\] \\
\hline 1977/78 & 1350 & 1 & 2 & 2700 & & & & & & \\
\hline 1978/79 & 1415 & 21 & \({ }_{97}^{23}\) & 32545 & & \({ }^{8}\) & 11320 & & & \\
\hline 1979980 & 1822
135 & \(\begin{array}{r}74 \\ 151 \\ \hline\end{array}\) & \(\begin{array}{r}948 \\ 248 \\ \hline\end{array}\) & \begin{tabular}{l}
176734 \\
326120 \\
\hline
\end{tabular} & 23 & 100 & 131500 & 25 & & \\
\hline 1981/82 & \({ }_{743}\) & 285 & \({ }_{533}\) & 326019 & 118 & 218 & 161974 & \({ }_{47}\) & 72 & 53496 \\
\hline 1982/83 & 686 & & 533 & 365638 & 222 & 440 & 301840 & 133 & 205 & 140630 \\
\hline 1983/84 & 632 & & 533 & 336856 & & 440 & 278080 & 363 & 468 & 295776 \\
\hline 1984/85 & 680 & & 533 & 362440 & & 440 & 299200 & & 468 & 318240 \\
\hline 1985/86 & 733 & & & & & 440 & 322520 & & 468 & 343044 \\
\hline 1986/87 & 831 & & & & & & & & 468 & 388908 \\
\hline \multicolumn{2}{|l|}{Total} & 533 & & 1999052 & 440 & & 1562916 & 468 & & 1572969 \\
\hline \multicolumn{2}{|l|}{Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID 1999052/533 = ID 3,751} & \multicolumn{3}{|l|}{ID 1562916/440 = ID 3,552} & \multicolumn{3}{|l|}{1572959/468 = ID 3,361} \\
\hline
\end{tabular}
Source: Number of graduates by year of admission from table \(\mathrm{A}-40\). Institutional cost per student-year fram table \(\mathrm{A}-38\).
\(\frac{\text { Table A－56 }}{\text { Institutional }}\) cost per Gracuate，College of Medicine，University of Baghdad，1981／82－1986／87，（In ID）．
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[t]{3}{*}{} &  & \begin{tabular}{l}
 \\

\end{tabular} & \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { N్ల゙ } \\
& \text { N్N } \\
& \underset{\sim}{N}
\end{aligned}
\]} & \multirow[t]{3}{*}{} \\
\hline &  &  & & \\
\hline & \[
\begin{aligned}
& \text { 采 } \\
& \text { 賀見 }
\end{aligned}
\] & rmmo & － & \\
\hline \multirow[t]{3}{*}{} &  &  & \multirow[t]{2}{*}{} & \multirow[t]{3}{*}{} \\
\hline &  &  & & \\
\hline &  & \[
\text { HぃM } \underset{\sim}{\infty} \underset{N}{\infty}
\] & N & \\
\hline \multirow[t]{3}{*}{} &  &  & \multirow[t]{2}{*}{} & \multirow[t]{3}{*}{O} \\
\hline &  &  NNNNN & & \\
\hline &  & \[
\text { m } \underset{\sim}{\sim}
\] & N & \\
\hline &  & \begin{tabular}{l}
 \\

\end{tabular} & & 咗 \\
\hline & \[
\begin{array}{r}
H \\
\cline { 1 - 3 } \\
\cline { 1 - 3 } \\
\hline
\end{array}
\] & \begin{tabular}{l}
 \\
 \\

\end{tabular} & － & 䓔 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 4／85 Gracur & duates & 198 & 5／86 Gradu & uates & 1986／ & ／87 Gradua & ates \\
\hline Year & Institutional Cost
per Student（1987JD） & Number Admitted & \[
\begin{aligned}
& \text { Number } \\
& \text { Rnrolled } \\
& \hline
\end{aligned}
\] & \[
\left|\begin{array}{l}
\text { Cost } \\
(1987 \mathrm{ID})
\end{array}\right|
\] & Number
Acmitited & \[
\left\lvert\, \begin{array}{l|}
\text { Number } \\
\text { Enrolled }
\end{array}\right.
\] & \begin{tabular}{l}
cost \\
（1987ID）
\end{tabular} & \[
\begin{array}{|l|}
\hline \text { Numioer } \\
\text { Acmitted }
\end{array}
\] & \[
\begin{array}{|l|}
\hline \text { Nuraber } \\
\text { Enrolled } \\
\hline
\end{array}
\] & \begin{tabular}{l}
Cost \\
（19871D）
\end{tabular} \\
\hline 1977／78 & 1739 & & 3 & 5217 & \({ }^{6}\) & \({ }^{6}\) & 10434 & & & \\
\hline 1978／79 & 2025 & 19 & 22 & 44550 & 10 & 16 & 32400 & & & \\
\hline 1979／80 & 2344 & 331 & 353 & 827432 & 25 & 41 & 96104 & 10 & 10 & 23840 \\
\hline 1980／81 & 1758 & & 353 & 620574 & 323 & 364 & 639912 & 29 & 39 & 68562 \\
\hline 1981／82 & 1166 & & 353 & 411598 & & 364 & 424424 & 285 & 324 & 377784 \\
\hline 1982／83 & 906 & & 353 & 319818 & & 364 & 329784 & & 324 & 293544 \\
\hline 1983／84 & 912 & & 353 & 321936 & & 364 & 331.968 & & 324 & 295488 \\
\hline 1984／85 & 909 & & 353 & 320877 & & 364 & 330876 & & 324 & 294516 \\
\hline 1985／86 & 1085 & & & & & 364 & 394940 & & 324 & 351540 \\
\hline 1986／87 & 1322 & & & & & & & & 324 & 428328 \\
\hline \multicolumn{2}{|l|}{Total} & 353 & & 2872002 & 364 & & 2590842 & 324 & & 2133202 \\
\hline \multicolumn{2}{|l|}{Institutional Cost／Graduate} & \multicolumn{3}{|l|}{ID \(2872002 / 353=\) ID 8,136} & \multicolumn{3}{|l|}{ID 2590842／364＝ID 7，118} & \multicolumn{3}{|l|}{ID 2133202／324 \(=\) ID 6，584} \\
\hline
\end{tabular}
Source：\({ }_{\text {Number }}\) of graduates by year of admission from table A－41．Institutional cost per student－year from table A－38．
\(\frac{\text { Table A-57 }}{\text { Institutional }}\) cost per Gracuate, College of Phammacy, University of Baghdad, 1981/82-1986/87, (In ID).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 182 Grad & duates & 1982 & \(2 / 83\) crad & urates & & 83/89 Grad & duates \\
\hline Year & Institutional cost per Student (1987ID) & Number Acdnitte & Number
Enrolled & \[
\begin{aligned}
& \text { Cosi } \\
& (1987 \mathrm{ID})
\end{aligned}
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Acmitted }
\end{aligned}
\] & Number intolled & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}
\] & Number Acimitice & nammber
Enrolled & \[
\begin{gathered}
\text { cost } \\
\text { (1987ID) }
\end{gathered}
\] \\
\hline 1976/77 & 959 & 17 & \(\stackrel{8}{8}\) & 7672
120250 & & & & & & \\
\hline 1977778 & -962 & & \({ }_{225}^{225}\) & \({ }_{151500}^{120250}\) & 21
156 & & 2120202 & & & \\
\hline 1979/80 & 1510 & & 225 & 188750 & & 177 & 267270 & 139 & & 228010 \\
\hline 1980/81 & 834 & & 225 & 104250 & & 177 & 47618 & & 151 & 12593n \\
\hline 1981/82 & 928 & & & & & 177 & 128856 & & 151 & 109928 \\
\hline & & & & & & & & & 151 & 100113 \\
\hline 1983/84 & 647 & & & & & & & & 151 & 97697 \\
\hline \multicolumn{2}{|l|}{Total} & 125 & & 663422 & 177 & & 895821 & 151 & & 676226 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Graduate} & \multicolumn{3}{|l|}{ID \(663422 / 125=\) ID 5,307} & \multicolumn{3}{|l|}{ID \(895821 / 177\) = ID 5,061} & \multicolumn{3}{|l|}{ID \(676226 / 151=\) ID 4,478} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & & 4/85 Gradu & uates & & 5/86 Gradu & mates & 1986 & /87 Grama & tes \\
\hline Year & Institutional Cost per Student (1987ID) & Number Admitte & \[
\begin{array}{|l|l|}
\hline \text { Inumber } \\
\text { Enrolled } \\
\hline
\end{array}
\] & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}
\] & Nambor & \[
\begin{array}{|l|}
\hline \text { Kinmberr } \\
\text { Enrolled } \\
\hline
\end{array}
\] & Cost (1987ID) & Number
Acimitted &  & Cost (1987m) \\
\hline 1979/80 & 1510 & \({ }_{1}^{12}\) & 13 & 18120
11756 & \(\frac{12}{33}\) & 12 & \({ }_{3}^{18120}\) & & & \\
\hline 1980/81 & 834
728 & 122 & \begin{tabular}{l}
134 \\
134 \\
\hline
\end{tabular} & \({ }^{111756}\) & r 33 & 45
157 & 37530
114296 & \({ }_{25}^{10}\) & \(\frac{12}{37}\) & \({ }_{26936}^{1008}\) \\
\hline 1982/83 & \({ }_{663}^{728}\) & & 134 & 88842 & & 157 & 104091 & 143 & 180 & 119340 \\
\hline 1983/84 & 647 & & 134 & 86698 & & 157 & 101579 & & 180 & 116460 \\
\hline 984/85 & \({ }_{760} 68\) & & 134 & 91522 & & 157 & 107231 & & 180 & 132940 \\
\hline 1985/86 & 760 & & & & & 157 & 119320 & & 180 & 136800
165500 \\
\hline 1986/87 & 925 & & & & & & & & 180 & \\
\hline \multicolumn{2}{|l|}{Total} & 134 & & 494490 & 157 & & 602167 & 180 & & 702004 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Graduate} & \multicolumn{3}{|l|}{ID 494490/134 = ID 3,690} & \multicolumn{3}{|l|}{\[
\text { ID } 602167 / 157=\text { ID } \quad 3,835
\]} & \multicolumn{2}{|l|}{ID 702004/180 = ID} & 3,900 \\
\hline
\end{tabular}
Source: Number of graduates by year of admission from table A-42. Institutional cost per student-year from table A-38.
\(\frac{\text { Table A-58 }}{\text { Tnstitutional }}\) cost per Graduate, college of Dentistry, University of Baghdad, 1981/82-1986/87, (In ID).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 1/82 Grac & cuates & 1982 & /83 cradu & uates & & 83/84 Grad & cuates \\
\hline Year & Institurional cost per Student (1987ID & Namber
Acmitted & Number Enrolled & \[
\begin{array}{|l|l|}
\hline \text { Cost } \\
\text { (1987.ID) }
\end{array}
\] & Number Acmitted & Mumber Farolled & \[
\underbrace{\text { (1987ID) }}_{\text {Cosit }}
\] & Number Acmitted & Number Enrolled & \[
\begin{gathered}
\text { cost } \\
\text { (1987ID) }
\end{gathered}
\] \\
\hline 1974/75 & 1128 & & & 4496 & & & & & & \\
\hline 1975/76 & 1064 & 4 & 8 & 8512 & & & 1064 & & & \\
\hline \(1976 / 77\) & 1158 & 4 & 12 & 138396 & 8 & \(\frac{1}{4}\) & \({ }^{1632}\) & 2 & 2 & \({ }_{9}^{2316}\) \\
\hline 1977778 & 1639
1960 & & 969 & \(\begin{array}{r}157344 \\ 188160 \\ \hline\end{array}\) & & 127 & 248968 & \({ }_{15}^{4}\) & & 98164 \\
\hline 1979/80 & 2432 & & 96 & 233472 & & 127 & 308864 & 112 & 133 & 323456 \\
\hline 1980/81 & 1790 & & 96 & 171840 & & 127 & 227330 & & 133 & 238070 \\
\hline 1981/82 & 1203 & & 96 & 115488 & & 127 & 152781 & & 133 & 159999 \\
\hline 1982/83 & 1007 & & & & & 127 & 127889 & & 133 & 133931 \\
\hline 1.983/84 & 1076 & & & & & & & & 133 & 143108 \\
\hline Total & & 96 & & 8932 & 127 & & 1091148 & 133 & & 1051874 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Graduate} & [10 8932 & 208/96 = & [1) 9,579 & \multicolumn{3}{|l|}{ID 1091148/127 = ID 8,661} & \multicolumn{3}{|l|}{ID 105187!1/133= ID 7,909} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1984 & 4/85 Gradu & uates & 1985 & 5/86 Gradu & uates & 1986/ & 187 cradua & ates \\
\hline Year & Institutional Cost
per Student (1987D) & Number Admitted & ENumber & \[
\left\lvert\, \begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}\right.
\] & \[
\left\lvert\, \begin{array}{|l|l|}
\text { Nurnber } \\
\text { Achanitt }
\end{array}\right.
\] & \[
\begin{array}{|l|}
\hline \text { Number } \\
\text { Enroilled }
\end{array}
\] & \[
\begin{aligned}
& \text { cost } \\
& (1987 \mathrm{ID})
\end{aligned}
\] & \[
\left\lvert\, \begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}\right.
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Enrolled }
\end{aligned}
\] & \[
\sum_{\text {(1987ID) }}^{\text {cost }}
\] \\
\hline 1978/79 & \({ }_{2136} 19\) & 11 & \({ }_{14}^{3}\) & \(\begin{array}{r}5880 \\ 34048 \\ \hline\end{array}\) & & & & & & \\
\hline 1979/80 & 2432
1790 & \({ }_{126}^{11}\) & 14
140 & 34048
250600 & 5 & \({ }^{6}\) & \({ }_{19690}^{14592}\) & & & \\
\hline 1981/82 & 1203 & & \begin{tabular}{l}
140 \\
140 \\
\hline
\end{tabular} & 168420 & 129 & 140 & 19690
1.6420 & \({ }_{6}^{1}\) & & \({ }_{8227}^{1790}\) \\
\hline 1982/83 & 1007 & & 140 & 140980 & & 140 & 140980 & 146 & 153 & 154071 \\
\hline 1983/84 & 1076 & & 140 & 150640 & & 140 & 150640 & & 153 & 169628 \\
\hline 1984/85 & 1160 & & 140 & 162400 & & 140
140 & 162400
190960 & & 153
153 & 177480
208692 \\
\hline 1986/87 & 1364
1420 & & & & & & & & 153 & \({ }_{217260}^{20862}\) \\
\hline Total & & 140 & & 912968 & 140 & & 847682 & 153 & & 932342 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Graduate} & \multicolumn{3}{|l|}{ID 912968/140 = ID 6,521} & \multicolumn{3}{|l|}{ID 847682/140 = ID 6,055} & \multicolumn{3}{|l|}{ID \(932342 / 153=\) ID 6,094} \\
\hline
\end{tabular}
Source: Number of graduates by year of admission from table A-43. Institutional cost per student-year from table A-38.

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 1/82 crac & cuates & 1982 & 2/83 Graci & uates & & 83/8! Gra & guates \\
\hline Year & Institutional cost per Student (1987ID) & \[
\begin{aligned}
& \text { Nusuber } \\
& \text { Acmitted }
\end{aligned}
\] & Number & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}
\] & Number Acmititec & Mumber Enrolle & \[
\begin{aligned}
& \text { cost } \\
& \text { (1987ID) }
\end{aligned}
\] & \[
\left\lvert\, \begin{aligned}
& \text { Number } \\
& \text { Acminitited }
\end{aligned}\right.
\] & Number & \[
\begin{array}{|c}
\text { cost } \\
(1987 \mathrm{ID})
\end{array}
\] \\
\hline 1977/78 & 1902 & 6 & & 11412 & & & 1902 & & & \\
\hline 1978/79 & 2475 & 69 & 75 & & \({ }_{70}\) & & \({ }_{243920}^{24750}\) & & & \\
\hline 1979/80 & 3049
1841 & & 75 & 228675 & 70 & 80
80 & 243920
147280 & 5 \({ }^{3}\) & & 9147
101255 \\
\hline 1981/82 & 1039 & & & & & 80 & 83120 & & 55 & 57145 \\
\hline 1982/83 & 1277 & & & & & & & & 55 & 72235 \\
\hline 1983/84 & 1480 & & & & & & & & 55 & 81400 \\
\hline Total & & 75 & & 641712 & 80 & & 603132 & 55 & & 319182 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Graduate} & \multicolumn{3}{|l|}{ID \(647337 / 75=\) ID 8,556} & \multicolumn{3}{|l|}{ID \(603132 / 80=\) ID 7,539} & ID 319 & 182/55 \(=\) & D 5,803 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 4/85 Gram & ates & 198 & 5/86 Grad & wates & 1986 & 187 Gradur & ates \\
\hline Year & Institutional cost per Student (1987ID) & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & Number Enrolled & Cost (1987ID) & Number Acimitited & Number & Cosi (1987ID) & Number Acmittec & Number Enrolled & cost (1987ID) \\
\hline 1978/79 & 2475 & 1 & 1 & 2475 & & & & & & \\
\hline 1979/80 & 3049 & 2 & \({ }^{3}\) & 16147 & & & & & & \\
\hline 1981/82 & 1039 & & 66 & 68574 & 14 & & 16624 & & & \\
\hline 1982/83 & 1277 & & 66 & 84282 & & 61 & 77897 & 6 & & 11493 \\
\hline 1983/84 & 1480 & & 66 & 97680 & & 61 & 90280 & & 42 & 60680 \\
\hline 1984/85 & 1488 & & 66 & 98208 & & 61 & 90768 & & 41 & 61008 \\
\hline 1985/86 & 2481 & & & & & 61 & 151341 & & 41 & 101721 \\
\hline 1986/87 & 1568 & & & & & & & & 41 & 64288 \\
\hline \multicolumn{2}{|l|}{Total} & 66 & & 376935 & 61 & & 430592 & 41 & & 302307 \\
\hline \multicolumn{2}{|l|}{Institutionalists/Gracuate} & \multicolumn{3}{|l|}{ID 376935/66 = ID 5,711} & \multicolumn{3}{|l|}{ID 430592/61= ID 7,059} & \multicolumn{3}{|l|}{ID \(302307 / 41=\) ID 7,373} \\
\hline
\end{tabular}
Source: Number of graduates by year of admission from table A-44. Institutional cost per student-year from table A-38.

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 4/85 Gradu & uates & 1985 & 5/86 Gracu & uates & 1986 & /87 Gracur & ates \\
\hline Year & Institutional Cost per Student (1987ID) & \[
\begin{array}{|l|}
\hline \text { Number } \\
\text { Achinitted }
\end{array}
\] & \begin{tabular}{l}
Fimicar \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \operatorname{Cost} \\
& (1987 \mathrm{ID})
\end{aligned}
\] & Mumber
Acmitited & Iramber & \[
\left|\begin{array}{l}
\operatorname{cost} \\
(19871 D)
\end{array}\right|
\] & Number
Achaitited & \[
\begin{aligned}
& \text { number } \\
& \text { Enrolled }
\end{aligned}
\] & \[
\left|\begin{array}{l}
\text { Cost } \\
\text { (198710) }
\end{array}\right|
\] \\
\hline 1976/77 & 1922 & 1 & 1 & 1922 & & & & 1 & 1 & 1922 \\
\hline 1977/78 & 1989 & 4 & 5 & 9945 & 2 & 2 & 3978 & & & 1989 \\
\hline 1978/79 & 2333 & 7 & 12 & 27996 & 7 & 9 & 20997 & 2 & 3 & 6999 \\
\hline 1979/80 & 2430 & 55 & 67 & 162810 & 11 & 20 & 48600 & 5 & 8 & 19440 \\
\hline 1980/81 & 1825 & 220 & 287 & 523775 & 34 & 54 & 98550 & 7 & 15 & 27375 \\
\hline 1981/82 & 1224 & & 287 & 351288 & 144 & 198 & 242352 & 19 & 34 & 41516 \\
\hline 1982/83 & 1106 & & 287 & 317422 & & 198 & 218988 & 130 & 164 & 181384 \\
\hline 1983/84 & 1230 & & 287 & 353010 & & 198 & 243540 & & 164 & 201720 \\
\hline 1984/85 & 1527 & & 287 & 438249 & & 198 & 320346 & & 164 & 250428 \\
\hline 1985/86 & 1524 & & & & & 198 & 301752 & & 164 & 249936 \\
\hline 1986/87 & 1950 & & & & & & & & 164 & 319800 \\
\hline \multicolumn{2}{|l|}{Total} & 287 & & 2186417 & 198 & & 1481103 & 164 & & 1302609 \\
\hline \multicolumn{2}{|l|}{Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID \(2186417 / 287=\) ID 7,618} & \multicolumn{3}{|l|}{ID 1481103/198 = ID 7,480} & \multicolumn{3}{|l|}{ID 1302609/164 = ID 7,943} \\
\hline
\end{tabular}
Source:
Table A-61
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 1/82 era & duates & 1982 & 2/83 Grad & uates & & 83/84 grad & duates \\
\hline Year & Institutional cost per Student (1987ID) & inumber Acmititec & Mumber
Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { cost } \\
& \text { (19871D) }
\end{aligned}\right.
\] & Number Admitted & Minmber Parolle & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}
\] & Number Achuitited & Number Fnrolled & \[
\begin{aligned}
& \text { cost } \\
& (1.987 \mathrm{ID})
\end{aligned}
\] \\
\hline 1977/78 & 1512 & 110 & 110 & 166320 & 16 & 16 & 24192 & 5 & 5 & 7560 \\
\hline 1978/79 & 1785 & \({ }_{4} 4\) & 553 & 983535 & \({ }_{5}^{66}\) & & \({ }^{146370}\) & 13 & & 32130 \\
\hline 1979/80 & 2379 & &  & \({ }_{1210829}^{131029}\) & 528 & 610 & 11551790 & \({ }_{425}\) & 128
55 & \begin{tabular}{|}
304512 \\
1134203 \\
\hline
\end{tabular} \\
\hline 1980/81 & 2051 & & 551
551 & \({ }_{6}^{1130101}\) & & 610 & \({ }^{1251110}\) & & 553
553 & 1134203
651987 \\
\hline 1981/82 & \(\begin{array}{r}1179 \\ 884 \\ \hline\end{array}\) & & & & & 610 & 7199190 & & 553
553 & -651987 \\
\hline 1983/84 & 995 & & & & & & & & 553 & 550235 \\
\hline TOTAL & & 551 & & 4240414 & 610 & & 4131292 & 553 & & 3169479 \\
\hline \multicolumn{2}{|l|}{Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID 4240414/551 = ID 7,696} & \multicolumn{3}{|l|}{\(110=\) ID 6,773} & \multicolumn{3}{|l|}{ID 5,731} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & /85 ema & bates & 1985 & 5/86 Gradu & uates & 1986 & /87 Gracua & ates \\
\hline Year & Institutional cost per Student (1987ID) & Number
Admitted & Number Enralled & Cosi (1987ID) & wamber Acmictied & \begin{tabular}{l}
Number \\
Fncolled
\end{tabular} & \[
\begin{aligned}
& \cos t \\
& (1987 \mathrm{D})
\end{aligned}
\] & sumber Acomitted & Thmoer Encolled & \[
\begin{aligned}
& \operatorname{cosit} \\
& (1987 \mathrm{ID})
\end{aligned}
\] \\
\hline 1978/79 & 1785 & 3 & 3 & 5355 & 5 & 5 & 8925 & & & \\
\hline 1979/80 & 2379 & 24
133 & \(\begin{array}{r}27 \\ 160 \\ \hline\end{array}\) & \({ }_{3}^{648233}\) & & 5
21 & \({ }_{43071}^{1185}\) & & & \\
\hline 1981/82 & 1179 & 388 & 548 & 32860
645092 & 116 & 157 & 185103 & & & 12969 \\
\hline 1982/83 & 884 & & 548 & 484432 & 252 & 409 & 361556 & 97 & 108 & 95472 \\
\hline 1983/84 & 1495 & & 548
548 & 545260
78968 & & 409
409 & 406955
58939 & & 308
308 & ( \(\begin{array}{r}306460 \\ 443828 \\ \hline\end{array}\) \\
\hline \({ }^{1984} 19858\) & \({ }_{1052}^{141}\) & & 548 & & & 409
409 & \begin{tabular}{|c}
589369 \\
430368
\end{tabular} & & 308
308 & a43828
324016 \\
\hline 1986/87 & 1.334 & & & & & & & & 308
308 & 3240872
41087 \\
\hline \multicolumn{2}{|l|}{Total} & 548 & & 2863200 & 409 & & 2037142 & 308 & & 1593617 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Gracuate} & \multicolumn{3}{|l|}{ID \(2863200 / 548=\) ID 5,225} & \multicolumn{3}{|l|}{ID 2037142/409= ID 4,981} & \multicolumn{3}{|l|}{ID \(1593617 / 30=\) ID 5,17} \\
\hline
\end{tabular}
\(\frac{\text { Tabbe A-62 }}{\text { Institutional }}\) cost per Graduate, College of Administration and Economics, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & /82 Grad & duates & 198 & 2/83 Gradi & uates & & 33/84 crac & duates \\
\hline Year & Insititutional Cosi per Student (1987ID) & ivumber Admitte & Wumber Enrolled & \begin{tabular}{l}
Cost \\
(1987ID)
\end{tabular} & Kumber & Number Enrolled & \begin{tabular}{l}
cost \\
(1987ID)
\end{tabular} & Number Admitted & Number Rnrolle &  \\
\hline 1975/76 & 495 & 5 & 5 & 2475 & & & & 1 & \(\frac{1}{3}\) & 495 \\
\hline 1976/77 & \({ }^{462}\) & 25 & 30 & \({ }^{13850}\) & , & & 1848 & 2 & & 1386 \\
\hline 1977/78 & 518 & 128 & 158 & 81844 & 48 & 52 & 26936 & I & & 4144 \\
\hline 1978/79 & 568 & 680 & 838 & 475984 & 109 & 161 & 911488 & 21 & 29 & 16772 \\
\hline 1979/80 & 817 & & 838 & 684646 & 721 & 882 & 720592 & 90 & 119 & 97223 \\
\hline 1980/81 & 754 & & 838 & 631852 & & 882 & 655028 & 746 & 865 & 652210 \\
\hline 1981/82 & 337 & & 838 & 289110 & & 882 & 297234 & & 865 & 292505 \\
\hline 1982/83 & 263 & & & & & 882 & 231966 & & 865 & 227495 \\
\hline 1983/84 & 255 & & & & & & & & 865 & 220575 \\
\hline \multicolumn{2}{|l|}{Total} & 838 & & 2173057 & 882 & & 2035054 & 865 & & 1511505 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Graduate} & \multicolumn{3}{|l|}{ID 2173057/838 = ID 2,593} & \multicolumn{3}{|l|}{\[
\text { ID } 2035054 / 882=\text { ID 2, } 307
\]} & \multicolumn{3}{|l|}{ID 1585893/865 = ID 1,747} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 4/85 Graci & uates & & 5/86 Grad & uates & 1986 & 187 Gradu & tes \\
\hline Year & Institutional cost per Student (1987ID) & Number Admitted & Enimber & \[
\begin{aligned}
& \operatorname{cost} \\
& (1987 \mathrm{ID})
\end{aligned}
\] & Number Acmitted & Number
Enrolled & \[
\mathrm{Cosit}_{\text {(1987D) }}
\] & Nismber Açmitted & Number Enrolle & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987D0) }
\end{aligned}
\] \\
\hline 1977/78 & 518
568 & \({ }^{3}\) & \({ }_{3}\) & \({ }_{5172}^{1554}\) & & & & & & \\
\hline 1979/80 & 817 & 43 & 52 & 42484 & & & 7353 & & & \\
\hline 1980/81 & 754 & 139 & 191 & 144014 & 54 & 63 & 47502 & & & \\
\hline 1981/82 & 337 & 709 & 900 & 303300 & 219 & 282 & 95034 & 65 & & \\
\hline 1982/83 & 263 & & 900 & 236700 & 608 & 890 & 234070 & 127 & 197 & 51871 \\
\hline 1983/84 & 255 & & 900 & 229500 & & 890 & 226950 & 552 & 749 & 190995 \\
\hline 1984/85 & 293 & & 900 & 263700 & & 890 & 260770 & & 749 & 219457 \\
\hline 1985/86 & 293 & & & & & 890 & 271450 & & 749 & 228445 \\
\hline 1986/87 & 34.9 & & & & & & & & 749 & 261401 \\
\hline \multicolumn{2}{|l|}{Total} & 900 & & 1226364 & 890 & & 1143129 & 749 & & 979469 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Graduate} & \multicolumn{3}{|l|}{ID 1226364/900 \(=\) ID 1,363} & \multicolumn{3}{|l|}{ID 1143129/890 = ID 1,284} & \multicolumn{3}{|l|}{469/749 = ID 1,308} \\
\hline
\end{tabular}
Source: Number of gracuates by year of admission from table A-47. Institutional cost per student-year from table A-38.
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 1/82 Grad & duates & 1982 & 2/83 Gradu & uates & & 83/84 Grad & duates \\
\hline Year & Institutional Cost per Stucani (1987ID) & \[
\begin{aligned}
& \text { Munber } \\
& \text { Acaitited }
\end{aligned}
\] & \begin{tabular}{l}
number \\
Enrolled
\end{tabular} & \begin{tabular}{l}
Cost \\
(1987ID)
\end{tabular} & \[
\begin{aligned}
& \text { Mumber } \\
& \text { Acinitited }
\end{aligned}
\] & \[
\begin{array}{|l|}
\text { Pamioer } \\
\text { Inrolled } \\
\hline
\end{array}
\] & \[
\left|\begin{array}{l}
\text { Cosi } \\
(1987 \mathrm{ID})
\end{array}\right|
\] & \[
\begin{array}{|l|}
\hline \begin{array}{l}
\text { Number } \\
\text { Acmitited }
\end{array} \\
\hline
\end{array}
\] & Number & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}
\] \\
\hline 1977/78 & 510 & 43 & 43 & 21930 & 14 & 14 & 7140 & 2 & 2 & 1020 \\
\hline 1978/79 & 524 & 152 & 195 & 102180 & 51 & 65 & 34060 & 11 & 13 & 6812 \\
\hline 1979/80 & 759 & & 195 & 188005 & 210 & 275 & 208725 & 32 & 45 & 34155 \\
\hline 1980/81 & 922 & & 195 & 179750 & & 275 & 253550 & 216 & 261 & 240642 \\
\hline 1981/82 & 859 & & 195 & 167505 & & 275 & 236225 & & 261 & 224199 \\
\hline 1982/83 & 684 & & & & & 275 & 188100 & & 261 & 178524 \\
\hline 1983/84 & 726 & & & & & & & & 261 & 189486 \\
\hline \multicolumn{2}{|l|}{Total} & 1195 & & 619810 & 275 & & 927800 & 261 & & 874838 \\
\hline \multicolumn{2}{|l|}{Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID 619810/195 = ID 3,176} & \multicolumn{3}{|l|}{ID 927800/275 = ID 3,374} & \multicolumn{3}{|l|}{ID \(874838 / 261=\) ID 3,352} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & A/85 Graci & uates & 1985 & 5/86 Eraci & duates & 1986/ & /87 Gradu & ates \\
\hline Year & Institutional Cost per Student (1987ID) & \[
\begin{aligned}
& \text { Number } \\
& \text { Acdmitted }
\end{aligned}
\] & number
Encolled & \begin{tabular}{l}
Cost \\
(19871D)
\end{tabular} & Inumber Ačmitited & \[
\begin{array}{|l|}
\hline \text { Rumber } \\
\text { Enrolied }
\end{array}
\] & Cost (1987ID) & \[
\begin{array}{|l|}
\hline \text { Mimber } \\
\text { Aciniticed }
\end{array}
\] & Number
Enrolled & \begin{tabular}{l}
Cosit \\
(198710)
\end{tabular} \\
\hline 1978/79 & 524 & 1 & 1 & 524 & 2 & 2 & 1048 & & & \\
\hline 1979/80 & 759 & 10 & 11 & 8319 & 2 & \(\underline{4}\) & 3036 & 1 & 1 & 759 \\
\hline 1980/81 & 922 & 27 & 38 & 35036 & 14 & 18 & 16596 & & 1 & 922 \\
\hline 1981/82 & 859 & 172 & 210 & 180390 & 46 & 64 & 54976 & 3 & 4 & 3436 \\
\hline 1982/83 & 684 & & 210 & 143640 & 171 & 235 & 160740 & 34 & 38 & 25992 \\
\hline 1983/84 & 726 & & 210 & 152460 & & 235 & 170610 & 142 & 180 & 130680 \\
\hline 1984/85 & 786 & & 210 & 165060 & & 235 & 184710 & & 180 & 141480 \\
\hline 1985/86 & 803 & & & & & 235 & 188705 & & 180 & 144530 \\
\hline 1986/87 & 1013 & & & & & & & & 180 & 182320 \\
\hline \multicolumn{2}{|l|}{Total} & 210 & & 685459 & 235 & & 780421 & 180 & & 630149 \\
\hline \multicolumn{2}{|l|}{Institutional Cost/Gracuate} & \multicolumn{3}{|l|}{ID 685459/210 = \(\mathrm{mb} 3,264\)} & \multicolumn{3}{|l|}{ID 780421/235 = ID 3,321} & \multicolumn{3}{|l|}{ID \(630149 / 180=\) ID 3,501} \\
\hline
\end{tabular}
Source: Number of graduates by year of admission fram table A-48. Institutional cost per student-year from table A-38.
\(\frac{\text { Table } A-64}{\text { Tnstitutional cost per Gracuate, College of Arts, University of Reghdad, 1981/82-1986/87, (In D.D.) }}\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & \(1 / 82 \mathrm{Grac}\) & cuates & 1982 & \(2 / 83\) cracil & gates & & 33/84 Erad & cuates \\
\hline Year & Institutionai cost
per Student (1987ID) & \[
\begin{aligned}
& \text { Mumber } \\
& \text { Acmitited }
\end{aligned}
\] & Murber & \[
\begin{aligned}
& \text { Cosit } \\
& (1987 \mathrm{DD})
\end{aligned}
\] & number Ancmitite & dinmber & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}
\] & Number Andmitted & Mumber Enrolled & cost \\
\hline 1977/78 & 837 & 110 & 110 & 92070 & 25 & 25 & 20925 & 3 & 3 & 2571 \\
\hline 1978/79 & 829
1174 & 549 & 659 & 546317 & \({ }_{553}^{111}\) & & \({ }_{8127484}\) & -38 & \({ }^{41}\) & \\
\hline 1979/80 & 1174 & & 659 & 773666 & & 6889 & \({ }_{623545} 8\) & \({ }_{7}^{135}\) & \({ }_{884}^{176}\) & \begin{tabular}{|}
206624 \\
800020
\end{tabular} \\
\hline 19881/82 & \({ }_{533}^{905}\) & & 659
659 & \begin{tabular}{|}
593635 \\
351247
\end{tabular} & & \({ }_{689}^{689}\) & 623545
367237 & & \({ }_{884}^{884}\) & 800020
47172 \\
\hline 1982/83 & 478 & & & & & 689 & 329342 & & 884 & 422552 \\
\hline 1983/84 & 440 & & & & & & & & 384 & 488960 \\
\hline Total & & 659 & & 2359689 & 689 & & 2262679 & 884 & & 2425828 \\
\hline \multicolumn{2}{|l|}{nal} & \multicolumn{3}{|l|}{ID 2359689/659 = ID 3,581} & \multicolumn{3}{|l|}{ID 2262679/689 = ID 3,284} & \multicolumn{3}{|l|}{ID 2425828/884 \(=\) ID 2,744} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 4/85 crad & urates & 1985 & 5/86 Grad & dates & 1986/ & /87 Gradua & nates \\
\hline Year & Institutional cost per Student (1987ID) & \begin{tabular}{l}
Number \\

\end{tabular} & Numian Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& (1987 \mathrm{ID})
\end{aligned}
\] & Number Ackitited & Tumber Farollec & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}
\] & inumber Acranicte & \[
\left\lvert\, \begin{aligned}
& \text { number } \\
& \text { Encolied }
\end{aligned}\right.
\] & \[
\begin{aligned}
& \operatorname{cost} \\
& (1987 \text { m }) \\
& \hline
\end{aligned}
\] \\
\hline 1977/78 & 837 & 2 & 2 & 1674 & & & & & & \\
\hline 1978779 & 929
1174 & \({ }_{39}^{10}\) & 51 & \({ }_{5} 99878\) & & & \(\begin{array}{r}3316 \\ 3480 \\ \hline 3\end{array}\) & & & \\
\hline 1980/81 & 905 & & 222 & 200910 & 46 & 66 & \({ }_{59730} 2318\) & & & \({ }_{6335}^{2348}\) \\
\hline 1981/82 & 533 & 753 & 975 & 519675 & & 238 & 156604 & 35 & & 22386 \\
\hline 1982/83 & 478 & & 975 & 466050 & 704 & 942 & 450276 & 208 & 250 & 119500 \\
\hline 1983/84 & 440 & & 975 & 429000 & & 942 & 414480 & 661 & 911 & 400840 \\
\hline 1984/85 & 493 & & 975 & 480675 & & 942 & 464406 & & 911 & 449123
376243 \\
\hline 1985/86 & \[
\begin{aligned}
& 413 \\
& 406
\end{aligned}
\] & & & & & 942 & 389046 & & 911 & 376243
368866 \\
\hline \multicolumn{2}{|l|}{Total} & 975 & & 2167806 & 942 & & 1931588 & 911 & & 1746641 \\
\hline \multicolumn{2}{|l|}{Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID 2167806/975 = ID 2,223} & \multicolumn{3}{|l|}{ID 1931588/942 = ID 2,051} & \multicolumn{3}{|l|}{ID 1746641/911 = ID 1,917} \\
\hline
\end{tabular}
\(\frac{\text { Table } A-65}{\text { Tnstitution }}\) cost per Graduate, college of Education, University of Bagidad, 1981/82-1986/87, (In ID)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 1/82 Grad & duates & 198 & 2/83 Gradis & uates & & 83/84 Grac & duates \\
\hline Year & \[
\left\lvert\, \begin{aligned}
& \text { Institutional Cost } \\
& \text { per Student (1987ID) }
\end{aligned}\right.
\] & Inumber Acimitted & number Enrolle & \[
\begin{aligned}
& \text { Cost } \\
& (1987 \mathrm{ID})
\end{aligned}
\] & Number Admitted & Mumber Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}
\] & Number Acimitted & Number Facolled & \[
\begin{gathered}
\text { Cost } \\
\text { (1987ID) }
\end{gathered}
\] \\
\hline 1974/75 & \({ }_{552}^{661}\) & 12 & \({ }^{6}\) & 3966 & & & & & & \\
\hline 1975/76 & 552
540 & \({ }_{8}^{12}\) & 18
26 & \(\begin{array}{r}9936 \\ \hline 14040\end{array}\) & & & & \({ }_{4}^{1}\) & \(\frac{1}{5}\) & 550
2700 \\
\hline 1977/78 & 605 & 69 & 95 & 57475 & 32 & 44 & 26620 & 23 & & 26940 \\
\hline 1978/79 & 765 & 915 & 1010 & 772650 & & 116 & & 38 & \({ }_{6}\) & 50490 \\
\hline 1979/80 & 1037 & & 1010 & 1047370 & 1034 & 1159 & 1201883 & 191 & 257 & 266509 \\
\hline 1980/81 & 834 & & 1010 & \({ }^{842340}\) & & 1159 & 966607 & 1055 & 1312 & 1094208 \\
\hline 1981/82 & 503 & & 1010 & 508030 & & 1159 & 582977 & & 1312 & 659936 \\
\hline 1982/83 & 379 & & & & & 1159 & 439261 & & 1312 & 497248 \\
\hline 1983/84 & 397 & & & & & & & & 1312 & 520864 \\
\hline \multicolumn{2}{|l|}{Total} & 1010 & & 3255807 & 1159 & & 3312567 & 1312 & & 3109145 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Graduate} & \multicolumn{3}{|l|}{ID 3255807/1010 = ID 3,224} & \multicolumn{3}{|l|}{ID 3312567/1159 = ID 2,858} & \multicolumn{3}{|l|}{ID 3109445/1312 = ID 2,370} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & G & uates & 1985 & 5/86 crad & duates & 1986/ & /87 Gradua & at \\
\hline Year & Institutional cost per Student (1987ID) & Number Admitted & Number Fnrolled & \[
\begin{aligned}
& \text { Cost } \\
& \text { (1987ID) }
\end{aligned}
\] & Number Acmitted & number & \[
\left.\right|_{(1987 \mathrm{D})} ^{\operatorname{cost}}
\] & Number Acmitted & Number Encolled &  \\
\hline \(1977 / 78\) & \({ }_{765}^{605}\) & 5 & 5 & 3025 & \({ }^{3}\) & 3 & 1815 & & & \\
\hline 1978779 & 765
1037 & 156 & \({ }_{175}^{21}\) & 1188815 & \({ }_{4}^{4}\) & 51 & 55498 & & & \\
\hline 1980/81 & 834 & 345 & 520 & 433680 & 99 & 150 & 125100 & & & 28356 \\
\hline 1981/82 & 503 & 1029 & 1549 & 779147 & 306 & 456 & 229368 & 88 & 122 & 61366 \\
\hline 1982/83 & 379 & & 1549 & 587071 & 758 & 1214 & 460106 & 300 & 422 & 159938 \\
\hline 1983/84 & 397 & & 1549 & 614953 & & 1214 & 481958 & 801 & 1223 & 485331 \\
\hline 1984/85 & 438 & & 1549 & 678462 & & 1214 & 531732 & & 1223 & 535674 \\
\hline 1985/86 & 475
504 & & & & & 1214 & 576650 & & 1223 & 580925 \\
\hline 1986/87 & 504 & & & & & & & & 1223 & 616392 \\
\hline \multicolumn{2}{|l|}{Total} & 1549 & & 3293878 & 1214 & & 26340 & 1223 & & 24775 \\
\hline \multicolumn{2}{|l|}{Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID 3293878/1549 = ID 2,126} & \multicolumn{3}{|l|}{ID 2466501/1214 = ID 2,032} & \multicolumn{3}{|l|}{ID 2477515/1223 = ID 2,026} \\
\hline
\end{tabular}
Source: Number of graduates by year of admission from table A-50. Institutional cost per student-year from table A-38.
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 1/82 Grad & cuates & 1982 & 2/83 Gracu & uates & & 33/84 Grac & cuates \\
\hline Year & Institutional Cost par Student (1987ID) & \[
\left|\begin{array}{l}
\text { Nuruber } \\
\text { Accinizted }
\end{array}\right|
\] & \[
\left\lvert\, \begin{aligned}
& \text { Inrmber } \\
& \text { Enrolled }
\end{aligned}\right.
\] & \[
\begin{aligned}
& \text { Cost } \\
& (1987 \mathrm{D})
\end{aligned}
\] & Number Acmitited & \[
\left|\begin{array}{l}
\text { Mumber } \\
\text { Eazolled }
\end{array}\right|
\] & \[
\begin{aligned}
& \operatorname{Cosit} \\
& (1987 \mathrm{D})
\end{aligned}
\] & \[
\begin{aligned}
& \text { Nomber } \\
& \text { Achitited }
\end{aligned}
\] & \[
\begin{aligned}
& \text { Mumber } \\
& \text { Enrolled }
\end{aligned}
\] & \[
\begin{array}{|c}
\text { cost } \\
(1987 \mathrm{ID})
\end{array}
\] \\
\hline 1977/78 & 837 & & \(\stackrel{\square}{1}\) & 3348 & & & & & & \\
\hline 1978/79 & 978 & 209 & 213 & 208314 & 18 & & 17609 & & & 1956 \\
\hline 1979/80 & 1247 & & 213 & 265611 & 265 & & 352901 & 44 & 46 & 57362 \\
\hline 1980/81 & 909 & & 213 & 193617 & & 283 & 257247 & 203 & 249 & 226341 \\
\hline 1981/82 & 704 & & & 114995 & & 283 & 199232 & & 249 & 175296 \\
\hline 1982/83 & 554 & & & & & 283 & 156782 & & 249 & 1737947 \\
\hline 1983/84 & 554 & & & & & & & & 249 & 137946 \\
\hline \multicolumn{2}{|l|}{Total} & 213 & & 820842 & 283 & & 983766 & 249 & & 736847 \\
\hline \multicolumn{2}{|l|}{Institutional cost/graduate} & \multicolumn{3}{|l|}{ID 820842/213 = ID 3,854} & \multicolumn{3}{|l|}{ID 983766/283 \(=\) m 3,476} & \multicolumn{3}{|l|}{ID 736847/249 \(=\) ID 2,95} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1984 & //85 Gracu & uates & & 5/86 Gradu & uates & 1986 & /87 cradu & ates \\
\hline Year & Institutional cost
per Student (1987D) & Number Admitted & Number Enrolled & \[
\begin{aligned}
& \cos t \\
& (198711)
\end{aligned}
\] & Number Acmitied & Number & \[
\begin{aligned}
& \operatorname{cost} \\
& (1987 \mathrm{D})
\end{aligned}
\] & Number Acmitted & Vuruber & \[
\begin{aligned}
& \text { Cost } \\
& (1987 \mathrm{~m})
\end{aligned}
\] \\
\hline 1978/79 & \(\begin{array}{r}878 \\ \hline 1247\end{array}\) & 17 & 2 & \({ }^{19565}\) & & & & & & \\
\hline 1979/80 & 1247 & 17 & 19 & \({ }^{23693}\) & & & & & & \\
\hline 1981/82 & 909
704 & 87
109 & \({ }_{215}^{106}\) & 96354
151360 & \({ }^{14} 5\) & \({ }_{64}^{14}\) & \begin{tabular}{l}
12726 \\
45056 \\
\hline
\end{tabular} & & & \\
\hline 1982/83 & 554 & & 215 & 119110 & 66 & 130 & 72020 & 96 & 102 & \\
\hline 1983/84 & 554 & & 215 & 119710 & & 130 & 72020 & 69 & 177 & 97734 \\
\hline 1984/85 & 640 & & 215 & 137600 & & 130
130 & 83200
83760 & & 171 & 109410 \\
\hline 1985/86 & 652 & & & & & 130 & 84760 & & 171 & 111492 \\
\hline 1986/87 & 827 & & & & & & & & 171 & 141417 \\
\hline \multicolumn{2}{|l|}{Total} & 215 & & 649183 & 130 & & 369782 & 171 & & 517815 \\
\hline \multicolumn{2}{|l|}{Institutional cost/Graduate} & \multicolumn{3}{|l|}{ID \(649183 / 215=\) ID 3,215} & \multicolumn{3}{|l|}{ID 369782/130 \(=\) ID 2,844} & \multicolumn{3}{|l|}{ID 517815/171=ID 3,028} \\
\hline
\end{tabular}

Source: \(_{\text {Number }}\) of graduates by year of admission from table A-52. Institutional cost per student-year from table A-38.
Source: Number of graduates by year of admission from table A-53. Institutional cost per student-year from table A-38.


Table A-70 Estimated Customs Paid by University of Baghdad on Equipment, by College, 1981/1982 (In ID).
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{College and Service Dept.} & \multicolumn{2}{|c|}{Equipment} & \multirow[b]{2}{*}{Total} & \multirow[b]{2}{*}{\[
\begin{aligned}
& \text { Custom } \\
& \text { Duty20\% }
\end{aligned}
\]} \\
\hline & University Budget* & \begin{tabular}{l}
Five-Year \\
Plan Budget**
\end{tabular} & & \\
\hline 1 & 276757 & 229900 & 506657 & 101331 \\
\hline 2 & 1287420 & 1017000 & 2304420 & 460884 \\
\hline 3 & 234341 & 281500 & 515831 & 103168 \\
\hline 4 & 99223 & & 99223 & 19845 \\
\hline 5 & 404359 & 13100 & 417459 & 83492 \\
\hline 6 & 21180 & & 21180 & 4236 \\
\hline 7 & 50931 & 1100 & 52031 & 10406 \\
\hline 8 & 88324 & 525400 & 613724 & 122745 \\
\hline 11 & 141783 & 1600 & 143383 & 28677 \\
\hline 12 & 95943 & 383300 & 479234 & 95847 \\
\hline 14 & 16675 & 70100 & 76775 & 15355 \\
\hline 16 & 23721 & 203400 & 227121 & 45424 \\
\hline 19 & 7974 & & 7974 & 1595 \\
\hline 18 & 81203 & & 81203 & 16241 \\
\hline
\end{tabular}

Source:
*Compiled from the Financial records, Accounting Office, Administration and Finance Department, University of Baghdad; \(* *\) From Tables A-9 to A-24; *** 20\% X Total Equipment

Table A-71 Estimated Customs Paid by university of Baghdad on Equipment and Laboratory (Prorated Cost), by College, 1982/1983 (In ID).
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{College and Service Dept.} & \multicolumn{2}{|c|}{Equipment} & \multirow[b]{2}{*}{Total} & \multirow[b]{2}{*}{\[
\begin{aligned}
& \text { Custom } \\
& \text { Duty } 20 \%
\end{aligned}
\]} \\
\hline & University Budget* & \begin{tabular}{l}
Five-Year \\
Plan Budget**
\end{tabular} & & \\
\hline 1 & 167703 & 37900 & 205603 & 41121 \\
\hline 2 & 369694 & 482600 & 852294 & 170459 \\
\hline 3 & 225033 & 9700 & 234733 & 46947 \\
\hline 4 & 62519 & 9700 & 72219 & 14444 \\
\hline 5 & 147866 & & 147866 & 29573 \\
\hline 6 & 2890 & & 2890 & 578 \\
\hline 7 & 81649 & 1600 & 83249 & 16650 \\
\hline 8 & 51718 & 46700 & 98418 & 19684 \\
\hline 11 & 83083 & & 83083 & 16617 \\
\hline 12 & 8707 & & 8707 & 1741 \\
\hline 14 & 42382 & & 42382 & 8476 \\
\hline 16 & 9774 & 142800 & 152574 & 30515 \\
\hline 19 & 3754 & & 3754 & 751 \\
\hline 18 & 26405 & & 26405 & 5281 \\
\hline
\end{tabular}

\section*{Source:}
* Compiled from the Financial records, Accounting Office, administration and Finance Department, University of Baghdad; \(* *\) From Tables A-9 to A-24; *** 20\%* Total Equipment.

Table A-72 Estimated Customs Paid by university of Baghdad on Equipment, by College, 1983/1984 (In ID).
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{College and Service Dept.} & \multicolumn{2}{|c|}{Equipment} & \multirow[b]{2}{*}{Total} & \multirow[b]{2}{*}{\[
\begin{aligned}
& \text { Custom } \\
& \text { Duty } 20 \%
\end{aligned}
\]} \\
\hline & University Budget: & \begin{tabular}{l}
Five-Year \\
Plan Budget**
\end{tabular} & & \\
\hline 1 & 57422 & 4700 & 62122 & 12424 \\
\hline 2 & 29161 & 154900 & 184061 & 36812 \\
\hline 3 & 13804 & & 13804 & 2761 \\
\hline 4 & 39519 & & 39519 & 7904 \\
\hline 5 & 46398 & 46800 & 93198 & 18640 \\
\hline 6 & 2797 & & 2797 & 559 \\
\hline 7 & 10692 & & 10692 & 2138 \\
\hline 8 & 50308 & & 50308 & 10062 \\
\hline 11 & 659 & & 659 & 132 \\
\hline 12 & 49644 & 109600 & 159244 & 31849 \\
\hline 14 & 12402 & & 12402 & 2480 \\
\hline 16 & 33283 & 9300 & 42583 & 8517 \\
\hline 19 & 7619 & & 7619 & 1524 \\
\hline 18 & 56472 & & 56472 & 11294 \\
\hline
\end{tabular}

Source:
\% Compiled from the Financial records, Accounting Office, Administration and Finance Department, University of Baghdad; ** From Tables A-9 to A-24; *** 20\%* Total Equipment.

Table A-73 Estimated Customs Paid by university of Baghdad on Equipment and Laboratory (Prorated Cost), by College, 1984/85 (In ID).
\begin{tabular}{|c|c|c|c|c|}
\hline & \multicolumn{2}{|c|}{ Equipment } & & \\
\cline { 2 - 3 } \begin{tabular}{c} 
College and \\
Service Dept.
\end{tabular} & \begin{tabular}{l} 
University \\
Budget*
\end{tabular} & \begin{tabular}{l} 
Five-Year \\
Plan Budget**
\end{tabular} & Total & \begin{tabular}{c} 
Custom \\
Duty20\%
\end{tabular} \\
\hline 1 & 32952 & 15100 & 48052 & 9610 \\
2 & 71451 & 8400 & 79851 & 15970 \\
3 & 26478 & & 26478 & 5296 \\
4 & 18532 & & 18532 & 3706 \\
5 & 15752 & 200 & 15952 & 3190 \\
6 & 10958 & & 10958 & 2192 \\
7 & 19302 & & 19302 & 3860 \\
8 & 45854 & & 45854 & 9171 \\
9 & 13550 & & 13550 & 2710 \\
10 & 17778 & & 18778 & 3756 \\
11 & 50416 & & 50416 & 3550 \\
12 & 20121 & & 20121 & 10083 \\
13 & 28255 & & 28255 & 4024 \\
14 & 15980 & & 15980 & 5651 \\
15 & 120485 & 119000 & 239485 & 3196 \\
16 & 122794 & & 122794 & 47897 \\
19 & 90676 & & 90676 & 18559 \\
18 & & & 18135 \\
\hline
\end{tabular}

Source:
* Compiled from the Financial records, Accounting Office, Administration and Finance Department, University of Baghdad; \(* *\) From Tables A-9 to A-24; *** 20\% X Total Equipment.

Table A-74 Estimated Customs Paid by university of Baghdad on Equipment, by College, 1985/1986 (In ID).
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{College and Service Dept.} & \multicolumn{2}{|c|}{Equipment} & \multirow[b]{2}{*}{Total} & \multirow[b]{2}{*}{\[
\begin{aligned}
& \text { Custom } \\
& \text { Duty } 20 \%
\end{aligned}
\]} \\
\hline & University Budget* & \begin{tabular}{l}
Five-Year \\
Plan Budget**
\end{tabular} & & \\
\hline 1 & 153041 & & 153041 & 30608 \\
\hline 2 & 96122 & 5800 & 101922 & 20384 \\
\hline 3 & 372422 & & 372422 & 74484 \\
\hline 4 & 17534 & & 17534 & 3507 \\
\hline 5 & 1357 & 3300 & 4657 & 931 \\
\hline 6 & 2890 & & 2890 & 578 \\
\hline 7 & 20337 & & 20337 & 4067 \\
\hline 8 & 55358 & & 55358 & 11072 \\
\hline 9 & 26820 & & 26820 & 5364 \\
\hline 10 & 710 & & 710 & 142 \\
\hline 11 & 12587 & & 12587 & 2517 \\
\hline 12 & 296365 & & 296365 & 59273 \\
\hline 13 & 49078 & & 49078 & 9816 \\
\hline 14 & 58044 & & 58044 & 11609 \\
\hline 16 & & 123700 & 123700 & 24740 \\
\hline 19 & 9386 & & 9386 & 1877 \\
\hline 18 & 26435 & & 26435 & 5287 \\
\hline
\end{tabular}

Source: * Compiled from the Financial records, Accounting Office, Administration and Finance Department, Baghdad University; ** From Tables A-9 to A-24; *** 20\% X Total Equipment.

Table A-75 Estimated Customs Paid by university of Baghdad on Equipment, by College, 1986/1987 (In ID).
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{College and Service Dept.} & \multicolumn{2}{|c|}{Equipment} & \multirow[b]{2}{*}{Total} & \multirow[b]{2}{*}{\[
\begin{aligned}
& \text { Custom } \\
& \text { Duty } 20 \%
\end{aligned}
\]} \\
\hline & University Budget* & \begin{tabular}{l}
Five-Year \\
Plan Budget**
\end{tabular} & & \\
\hline 1 & 20910 & & 20910 & 4182 \\
\hline 2 & 24952 & 167200 & 202152 & 40430 \\
\hline 3 & 13662 & & 13662 & 2732 \\
\hline 4 & 2905 & & 2905 & 581 \\
\hline 5 & 12571 & & 12571 & 2514 \\
\hline 6 & 3053 & & 3053 & 611 \\
\hline 7 & 4391 & & 4391 & 878 \\
\hline 8 & 32049 & & 32049 & 6410 \\
\hline 9 & 17259 & & 17259 & 3452 \\
\hline 10 & 6946 & & 6946 & 1389 \\
\hline 11 & 4798 & & 4798 & 960 \\
\hline 12 & 7995 & & 7995 & 1599 \\
\hline 13 & 17073 & & 17073 & 3415 \\
\hline 14 & 18747 & & 18747 & 3749 \\
\hline 15 & 2267 & & 2267 & 453 \\
\hline 16 & 6155 & 21700 & 27855 & 5571 \\
\hline 18 & 30492 & & 30492 & 6098 \\
\hline
\end{tabular}

Source: \(\%\) Compiled from the Financial records, Accounting Office, Administration and Finance Department, Baghdad University; ** From Tables A-9 to A-24; \(* * * 20 \% *\) Total Equipment.

Table A-76 Estimated "Tax Component" on Capital Cost of Building by Collge and Year, University of Baghdad, 1981/82-1986/87, (In ID).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{3}{*}{College} & \multicolumn{2}{|r|}{1981/82} & \multicolumn{2}{|c|}{1982/83} & \multicolumn{2}{|r|}{1983/84} \\
\hline & Capital Cost of Building* & Tax Component & Capital Cost of Building* & Tax Component & \begin{tabular}{l}
Capital \\
Cost of \\
Building*
\end{tabular} & Tax Component \\
\hline & (ID) & 5\% & (ID) & 5\% & (ID) & 5\% \\
\hline 1 & 70100 & 3505 & & & & \\
\hline 2 & 64000 & 3200 & & & & \\
\hline 3 & 172400 & 8620 & & & & \\
\hline 7 & 249000 & 12450 & 50000 & 2500 & & \\
\hline 8 & 92600 & 4630 & 103596 & 5180 & 34000 & 1700 \\
\hline 9 & 82800 & 4140 & & & & \\
\hline 14 & 90100 & 4505 & 124300 & 6215 & 2000 & 100 \\
\hline 16
19 & 4100 & 205 & 8700 & 435 & 2295 & 115 \\
\hline
\end{tabular}

Table A-76 Continued
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{3}{*}{College} & \multicolumn{2}{|c|}{1984/85} & \multicolumn{2}{|c|}{1985/86} & \multicolumn{2}{|c|}{1986/87} \\
\hline & Capital Cost of Building* & T'ax Component & Capital Cost of Building* & Tax Component & Capital Cost of Building* & Tax Component \\
\hline & (ID) & 5\% & (ID) & 5\% & (ID) & 5\% \\
\hline 4 & & & & & 104200 & 5210 \\
\hline 7 & & & & & 15681 & 784 \\
\hline 8 & 10300 & 515 & 95800 & 4790 & 10500 & 525 \\
\hline 10 & & & 36300 & 1815 & 13000 & 650 \\
\hline 12 & & & & & 51042 & 2552 \\
\hline 13 & & & 27531 & 1377 & & \\
\hline 14 & & & 110715 & 5536 & 40015 & 2001 \\
\hline 16 & & & & & 29688 & 1484 \\
\hline
\end{tabular}

Source:
* Compiled from the "Construction Project" records, Five-Year Development Plan (see Tables A-9 to A-24) and from financial records, Accounting Office, Administration and Finance Department, University of Baghdad.

Table A-77 Estimated Customs Duty Paid by University of Baghdad on Vehicle by College and By 1981/82-1986/87, (In Iraqi Dinars).
\begin{tabular}{|c|r|r|r|r|r|c|}
\hline & \multicolumn{2}{|c|}{\(1981 / 82\)} & \multicolumn{2}{c|}{\(1982 / 83\)} & \multicolumn{2}{c|}{\(1983 / 84\)} \\
\hline College & Budget \(^{*}\) & Custom \(^{* *}\) & Budget \(^{*}\) & Custom \(^{* *}\) & Budget \(^{*}\) & Custom \(^{* *}\) \\
\hline 6 & 23800 & 11900 & & & & \\
10 & 5100 & 2550 & 4000 & 2000 & 44000 & 22000 \\
16 & 1397 & 684 & 67279 & 33640 & & \\
19 & & & 16267 & 8133 & & \\
\hline
\end{tabular}

Table A-77 Continued
\begin{tabular}{|c|r|r|r|r|r|c|}
\hline & \multicolumn{2}{|c|}{\(1984 / 85\)} & \multicolumn{2}{c|}{\(1985 / 86\)} & \multicolumn{2}{c|}{\(1986 / 87\)} \\
\hline College & Budget \(^{*}\) & Custom \(^{* *}\) & Budget \(^{*}\) & Custom \(^{* *}\) & Budget \(^{*}\) & Custom \(^{* *}\) \\
\hline 1 & & & 14260 & 7130 & & \\
4 & & & 23800 & 11900 & & \\
6 & 10260 & 5130 & & & & \\
9 & 6560 & 3280 & & & & \\
10 & 14260 & 7130 & 3700 & 1350 & & \\
12 & 10260 & 5130 & & & 14200 & 7100 \\
13 & 14260 & 7130 & & & & \\
14 & 5780 & 2890 & & & & \\
19 & & & & & & \\
\hline
\end{tabular}

Source:
Compiled from Financial records, Accounting Office, Administration and Finance Department, University of Baghdad.
** The custom duty on imported vehicles to Iraq varies
appreciably according to model, purpose of imported, and country's producer. It is estimated at \(100 \%\) of the c.i.f. cost, or equivalently, \(50 \%\) of the total cost inclusive of customs duty.

Table A-78 Estimated "Pure Subsidy" of students' Boarding and Living Expenses According to College and year, University of Baghdad, 1981/1982-1986/87, (In ID).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{College} & \multicolumn{2}{|l|}{1981/1982} & \multicolumn{2}{|l|}{1982/1983} & \multicolumn{2}{|r|}{1983/1984} \\
\hline & Dormitory Office Expenses* & Pure Subsidy Component** & Dormitory Office Expenses* & Pure Subsidy Component** & Dormitory Office Expenses* & \begin{tabular}{l}
Pure \\
Subsidy Component**
\end{tabular} \\
\hline 1 & 246976 & 135837 & 172955 & 95125 & 139812 & 76897 \\
\hline 2 & 297012 & 163357 & 279547 & 153751 & 266295 & 146462 \\
\hline 3 & 148906 & 81898 & 124473 & 68460 & 115707 & 63639 \\
\hline 4 & 82859 & 45572 & 62236 & 34230 & 58988 & 32443 \\
\hline 5 & 31622 & 17392 & 19943 & 10969 & 21553 & 11854 \\
\hline 6 & 38027 & 20915 & 36447 & 20046 & 33181 & 18250 \\
\hline 7 & 199342 & 109638 & 120002 & 66001 & 112020 & 61611 \\
\hline 8 & 161315 & 88723 & 233816 & 128599 & 208725 & 114799 \\
\hline 9 & 329035 & 180969 & 298803 & 164342 & 220353 & 121194 \\
\hline 10 & 311022 & 171062 & 247570 & 136164 & 215532 & 118543 \\
\hline 11 & 505160 & 277838 & 430840 & 236962 & 382853 & 210569 \\
\hline 12 & 1133208 & 623264 & 931137 & 512125 & 671552 & 369354 \\
\hline 13 & 224160 & 123288 & 162296 & 89263 & 111452 & 61299 \\
\hline 14 & 106876 & 58782 & 117939 & 64866 & 117408 & 64574 \\
\hline 15 & 187333 & 103033 & 200463 & 110255 & 160515 & 88283 \\
\hline
\end{tabular}

Table A-78 Continued
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{College} & \multicolumn{2}{|l|}{1984/1985} & \multicolumn{2}{|l|}{1985/1986} & \multicolumn{2}{|r|}{1986/1987} \\
\hline & Dormitory Office Expenses* & Pure Subsidy Component** & Dormitory Office Expenses* & Pure Subsidy Component** & \[
\left|\begin{array}{c}
\text { Dormitory } \\
\text { Office } \\
\text { Expenses* }
\end{array}\right|
\] & Pure Subsidy Component** \\
\hline 1 & 163567 & 89962 & 192236 & 105730 & 127012 & 69857 \\
\hline 2 & 347938 & 191366 & 249906 & 137448 & 197675 & 108721 \\
\hline 3 & 132719 & 72995 & 99432 & 54688 & 78616 & 43239 \\
\hline 4 & 67077 & 36892 & 44745 & 24610 & 33855 & 18620 \\
\hline 5 & 26902 & 14796 & 20881 & 11485 & 15450 & 8498 \\
\hline 6 & 27978 & 15388 & 27178 & 14948 & 13860 & 7623 \\
\hline 7 & 140969 & 77533 & 87832 & 48308 & 65892 & 36241 \\
\hline 8 & 218089 & 119949 & 224054 & 123230 & 128602 & 70731 \\
\hline 9 & 253600 & 139480 & 288022 & 158412 & 206537 & 113595 \\
\hline 10 & 275122 & 151317 & 249575 & 137266 & 189950 & 104473 \\
\hline 11 & 545222 & 299872 & 642333 & 353283 & 429432 & 236188 \\
\hline 12 & 903921 & 497157 & 721547 & 396851 & 513047 & 282176 \\
\hline 13 & 112273 & 61750 & 121639 & 66901 & 90204 & 49612 \\
\hline 14 & 137382 & 75560 & 121639 & 66901 & 64756 & 35616 \\
\hline 15 & 234230 & 128827 & 223391 & 122865 & 117242 & 64483 \\
\hline
\end{tabular}

Source:
From Tables A-25 to A-30; ** The "pure subsidy" component is estimated at \(55 \%\) of students' boarding and living expenses (Students' Dormitory expenses). For the basis of the estimate, see pp. 11.

Table A-79 Allocation** of Customs Duty on Equipment of Administration Office and Library Central by College, University of Baghdad, 1981/82-1986/87, (In ID).
\begin{tabular}{|l|r|r|r|r|r|r|}
\hline & \(81 / 82\) & \(82 / 83\) & \(83 / 84\) & \(84 / 85\) & \(85 / 86\) & \(86 / 87\) \\
\cline { 2 - 7 } \begin{tabular}{l} 
Administration Office* \\
Library Central*
\end{tabular} & 45424 & 30515 & 8517 & 47897 & 24740 & 5571 \\
& 16241 & 5281 & 11294 & 18135 & 5287 & 6098 \\
\hline Total & 61665 & 35796 & 19811 & 66032 & 30027 & 11669 \\
\hline College & & & & & & \\
1 & & \(===========\) \\
2 & 4853 & 2760 & 1617 & 5085 & 2252 & 860 \\
3 & 7548 & 3565 & 2431 & 8967 & 3204 & 1116 \\
4 & 3533 & 2255 & 1258 & 4219 & 1528 & 561 \\
5 & 1542 & 959 & 507 & 1671 & 657 & 258 \\
6 & 1326 & 841 & 470 & 1631 & 640 & 255 \\
7 & 647 & 269 & 117 & 429 & 159 & 92 \\
7 & 2615 & 1367 & 670 & 2054 & 730 & 280 \\
8 & 4526 & 2896 & 1323 & 3823 & 1940 & 725 \\
9 & 7967 & 4657 & 2383 & 7937 & 3795 & 1550 \\
10 & 2226 & 1328 & 681 & 2252 & 883 & 322 \\
11 & 7967 & 4389 & 2617 & 8419 & 5150 & 2208 \\
12 & 11778 & 7385 & 3825 & 12493 & 5585 & 2169 \\
13 & 1992 & 1124 & 553 & 1836 & 979 & 434 \\
14 & 1591 & 1013 & 745 & 2839 & 1375 & 496 \\
15 & 1554 & 988 & 614 & 2377 & 1150 & 343 \\
\hline
\end{tabular}

Source: * From Tables A-70 to A-75. ** Allocation customs on Equipment was according to number of students (see Table A-7).

Table A-80 Allocation** of Customs duty on Equipment of Dormitory Office by College and Year, Baghdad University 1981/82-1986/87 (In ID)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Custom Duty*} & 81/82 & 82/83 & 83/84 & 84/85 & 85/86 \\
\hline & 1595 & 751 & 1524 & 24559 & 1877 \\
\hline \multicolumn{6}{|l|}{College} \\
\hline 1 & 99 & 38 & 75 & 1120 & 109 \\
\hline 2 & 118 & 61 & 143 & 2382 & 142 \\
\hline 3 & 59 & 27 & 62 & 909 & 56 \\
\hline 4 & 33 & 14 & 32 & 459 & 25 \\
\hline 5 & 13 & 4 & 12 & 184 & 12 \\
\hline 6 & 15 & 8 & 18 & 191 & 15 \\
\hline 7 & 79 & 26 & 60 & 965 & 50 \\
\hline 8 & 64 & 51 & 112 & 1493 & 127 \\
\hline 9 & 131 & 65 & 118 & 1736 & 163 \\
\hline 10 & 124 & 54 & 116 & 1884 & 141 \\
\hline 11 & 201 & 94 & 206 & 3733 & 364 \\
\hline 12 & 452 & 203 & 361 & 6189 & 409 \\
\hline 13 & 89 & 36 & 60 & 769 & 69 \\
\hline 14 & 43 & 26 & 63 & 941 & 69 \\
\hline 15 & 75 & 44 & 86 & 1604 & 126 \\
\hline
\end{tabular}

Source: * From Tables A-75 to A-75. ** Allocation customs on Equipment was according to number of Dormitory students (see Table A-8).

Table A-81 Allocation \({ }^{\text {米 }}\) of "Tax component" on Capital Cost of Building of Administration Olfice, Library Central, and Dormitory Office, by College, University of Baghtad, 1981/82-1986/87, (In ID).
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{College} & \multicolumn{2}{|l|}{Administration Office} & Dromitory & Office \\
\hline & 1983/84 & 1986/87 & 1981/82 & 1982/83 \\
\hline & 115 & 1484 & 205 & 435 \\
\hline 1 & \(===\) = = = = = = & \(==========\) & \(=\begin{gathered}==== \\ 13\end{gathered}\) & \(=======\mathrm{ma}==\)
\[
22
\] \\
\hline 2 & 14 & 142 & 15 & 35 \\
\hline 3 & 7 & 71 & 8 & 16 \\
\hline 4 & 3 & 33 & 4 & 8 \\
\hline 5 & 3 & 32 & 2 & 2 \\
\hline 6 & 1 & 12 & 2 & 5 \\
\hline 7 & 4 & 36 & 10 & 15 \\
\hline 8 & 8 & 92 & 8 & 30 \\
\hline 9 & 14 & 197 & 17 & 38 \\
\hline 10 & 4 & 42 & 16 & 31 \\
\hline 11 & 15 & 281 & 26 & 55 \\
\hline 12 & 22 & 276 & 58 & 118 \\
\hline 13 & 3 & 55 & 11 & 20 \\
\hline 14 & 4 & 63 & - 5 & 15 \\
\hline 15 & 4 & 44 & 10 & 25 \\
\hline
\end{tabular}

Source:
* From Table A-76; :" Allocation "Tax Component" was according to number of stuclents (see Table A-7) for Building of Administration Office and Library Central and according to number of Dormitory students for Building of Dormitory Office (see Table A-8).

Table A-82 Allocation \({ }^{\text {blit }}\) of Customs duty on Vehicles of Administration Office and Dormitory Office by College, University of Baghdad, 1981/82-1986/87, (In ID).
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{College} & \multicolumn{2}{|l|}{Administration Office} & Dromitory & Office \\
\hline & 1983/84 & 1986/87 & 1981/82 & 1982/83 \\
\hline & 684 & 33640 & 8133 & 2890 \\
\hline 1 & \(===-==0===\) & \(==========\) & \(==========\) & \[
\begin{gathered}
=========== \\
132
\end{gathered}
\] \\
\hline 2 & 84 & 3351 & \[
661
\] & \[
280
\] \\
\hline 3 & \[
39
\] & 2119 & 294 & 107 \\
\hline 4 & \[
17
\] & 902 & 147 & 54 \\
\hline 5 & \[
15
\] & 791 & \[
47
\] & 21 \\
\hline 6 &  & 252 & \[
86
\] & 23 \\
\hline 7 & 29 & 1285 & 284 & 114 \\
\hline 8 & \[
50
\] & 2721 & 553 & \[
176
\] \\
\hline 9 & 88 & 4377 & 707 & \[
205
\] \\
\hline 10 & 25 & 1248 & 586 & 221 \\
\hline 11 & 88 & 4124 & 1019 & 439 \\
\hline 12 & 131 & 6940 & 2203 & 729 \\
\hline 13 & 22 & 2054 & 384 & 90 \\
\hline 14 & 18 & 952 & 279 & 111 \\
\hline 15 & 17 & 928 & 474 & 188 \\
\hline
\end{tabular}

Source:
: From Table A-77; :": Allocation Customs on Vehicles of Administration Office was according to number of students (see Table A-7) and according to number of Dormitory students for Velicles of Dormitory Office (see Table A-8)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{3}{*}{college} & \multicolumn{4}{|l|}{1981/82} & \multicolumn{4}{|l|}{1982/83} & \multicolumn{4}{|l|}{1983/84} \\
\hline & \[
\begin{gathered}
\text { Customs } \\
\text { Duty }
\end{gathered}
\] & Allocation
Customs
Administ.
Zisary
Libnary
O£fice & \[
\left|\begin{array}{l}
\text { Dormitory } \\
\text { Office }
\end{array}\right|
\] & Total & Custioms Duty & Allocȧion
Custioms
Administ.
Zisiny
Iibrazy
Oİfice & \begin{tabular}{l}
Dormitory \\
Office
\end{tabular} & Total & Customs Duえy & Allocation
Customs
Administ
ह
Library
OIfice & Dormitory Office & Total \\
\hline & 1 a & 2 a & 3 a & & 13 & 2 b & 3 b & & 1 c & 2c & 3c & \\
\hline 1 & 10133 & 4853 & 99 & 106283 & 81121 & 2760 & 38 & 43919 & 12424 & 1617 & 75 & 19116 \\
\hline 2 & 460884
103168 & 7548
3533 & 118
59 & 468550
106760 & 170459
86947 & 3565
2255 & \({ }_{21}^{61}\) & \(\begin{array}{r}174085 \\ 49229 \\ \hline\end{array}\) & 36812
2761 & 2431
1258 & 143
62 & \\
\hline \(\underline{1}\) & 19845 & 1542 & 33 & 21420 & \(124 A 4\) & 959 & 14 & 15017 & 7904 & 507 & 32 & 8443 \\
\hline 5 & \(\begin{array}{r}83492 \\ 4236 \\ \hline\end{array}\) & 1326
647 & 115 & 84831
4898 & \(\begin{array}{r}29573 \\ 578 \\ \hline\end{array}\) & 841
269 & \(\stackrel{4}{8}\) & 30418
855 & 18640
559 & 4717 & \(\frac{12}{18}\) & \({ }^{19122} 694\) \\
\hline 7 & 10406 & 2615 & 79 & 13100 & 16650 & 1367 & 26 & 18043 & 2138 & 570 & 60 & 2868 \\
\hline 8 & 122745 & \({ }_{7967}\) & 64 & 127335 & 1968 ¢ & 2896 & 51 & 22631 & 10062 & 1323
2383 & 112 & \(\begin{array}{r}11497 \\ 2501 \\ \hline\end{array}\) \\
\hline \(1{ }^{9}\) & & 7967
2226 & \begin{tabular}{l}
131 \\
124 \\
\hline 1
\end{tabular} & \({ }_{2350}^{838}\) & & 4657
1328 & 55 & \({ }_{1382}\) & & 2383
681 & 118 & 2501 \\
\hline 11 & 28677 & 7967 & 201 & 36845 & 16617 & 4389 & \(9 \underline{1}\) & 21100 & 132 & 2617 & 206 & 2955 \\
\hline 12 & 95847 & 13778 & 452 & 108077 & 1741 & 7385 & 203 & 9329 & 31849 & 3825 & 361 & 36035 \\
\hline 13 & & 1992 & 89 & 2081 & & 11013 & 36
26 & 1160
9515 & 2480 & 553
745 & 60
63 & 613
3288 \\
\hline \({ }_{15}^{14}\) & 15355 & 1554 & 43
75 & 16989
1629 & 8476 & 1013
988 & \({ }_{44}^{26}\) & 1032 & & 614 & 86 & 700 \\
\hline
\end{tabular}
Table A-83 Continued
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{3}{*}{College} & \multicolumn{4}{|l|}{1984/85} & \multicolumn{4}{|l|}{1985/86} & \multicolumn{4}{|l|}{1986/87} \\
\hline & Customs
Duty & \begin{tabular}{l}
Allocation Customs Administ. \\
\(\stackrel{3}{6}\) \\
Libraxy \\
OEfice
\end{tabular} & Dormitoxy Office & Total & Customs Duty & Allocation Customs Administ. \(\stackrel{\downarrow}{6}\) Xibrary Office & \[
\left|\begin{array}{l}
\text { Dormitory } \\
\text { Office }
\end{array}\right|
\] & Total & \[
\begin{aligned}
& \text { Customs } \\
& \text { Duty }
\end{aligned}
\] & Allocation Customs \(\varepsilon\) Administ. Libraxy Office & Dormitory Office & Total \\
\hline & 1 a & 2a & 3 a & & 1.b & 2b & 3b & & 1 c & 2 c & 3 c & \\
\hline 1 & 9610 & 5085 & 1120 & 15815 & 30608 & 2252 & 109 & 32969 & 4182 & 860 & & 5042 \\
\hline 2 & 15970 & 8967 & 2382 & 27319 & 20384 & 3201 & 142 & 23730 & 40430 & 1116 & & 21546 \\
\hline 3 & 5296 & 4219 & 909 & 10424 & 74484 & 1528 & 56 & 76068 & 2732 & 561 & & 3293 \\
\hline 4 & 3706 & 1671 & 459 & 5836 & 3507 & 657 & 25 & 4189 & 581 & 258 & & 839 \\
\hline 5 & 3190 & 1631 & 184 & 5005 & 271 & 640 & 12 & 923 & 2514 & 255 & & 2769 \\
\hline 6 & 2192 & 429 & 1.91 & 2812 & 578 & 159 & 15 & 752 & 611 & 92 & & 703 \\
\hline 7 & 3860 & 2054 & 965 & 6879 & A067 & 730 & 50 & 4847
13139 & 878 & 280 & & 1158 \\
\hline 8 & 9171 & 3823 & 1493 & 14487 & 11072 & 1940 & 127 & 13139 & 6410 & 725
1550 & & 7135
5002 \\
\hline 9 & 2710 & 7937 & 1736 & 12383 & 5364 & 3795 & 163 & 9322 & 3452
1389 & 1550 & & 5002
1711 \\
\hline 10 & 3756 & 2252 & 1884 & 7892 & 142 & 883 & 141 & 1166
8037 & 1389
960 & 322
2208 & & 1711
3168 \\
\hline 11 & 3550 & 8419 & 3733 & 15702 & 2517 & 5150 & 364 & 8031 & 960 & 2208 & & \\
\hline 12 & 10083 & 12493 & 6189 & 28765 & 59273 & 5585 & 409 & 65267 & 1599 & 2169
434 & & 3768
3849 \\
\hline 13 & 4024 & 1836 & 769 & 6629 & 981.6 & 979 & 69 & 10864 & 3415 & 434
496 & & \\
\hline 14 & 5651 & 2839
2377 & 941
1604 & 7431 & 11609 & 1375
1150 & 69
126 & 13053
1276 & 3749
453 & 496
343 & & \(\begin{array}{r}4245 \\ \hline 796\end{array}\) \\
\hline 15 & 3196 & 2377 & 1604 & 7177 & & 1150 & 126 & 1276 & 153 & 343 & & 796 \\
\hline
\end{tabular}
Source: Titems la to lc Erom Tables A-70 to A-75, items 2a to 2c from Table A-79, and items 3a to 3c fron
Table A-84 Total Custom Duty on Vehicle According to College and Year, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{\[
\left|\begin{array}{l}
\text { Col- } \\
\text { lege }
\end{array}\right|
\]} & \multicolumn{3}{|l|}{1981/82} & \multicolumn{4}{|l|}{1982/83} & 1983/84 & \multicolumn{3}{|l|}{1984/85} & 1985/86 & 1986/87 \\
\hline & \[
\begin{aligned}
& \text { Allocation } \\
& \text { of customs } \\
& \text { Administ. } \\
& \text { office }
\end{aligned}
\] & Customs of Duty & Total & Customs of Duty & Allocation of Custioms office Administ & Allocation of Customs Dormitory Offíice & Total & \begin{tabular}{l}
Customs \\
of Duty
\end{tabular} & Custom of Duty & Allocation of Customs Dormitory Office & Total & Customs of Duty & Customs of Duty \\
\hline & 1 a & 2 a & & 2b & 16 & 32 & & 2 c & 2 c & 3b & & 2 e & \(2 \pm\) \\
\hline 1 & 54 & & 54 & & 2594 & 409 & 3003 & & & 1.32 & 132 & 7130 & \\
\hline & 81 & & 84 & & 3351 & 661 & 4012 & & & & & & \\
\hline 3 & 39 & & 39 & & 2119 & \({ }_{147} 294\) & \({ }_{1049} 2413\) & & & \(\begin{array}{r}107 \\ 54 \\ \hline\end{array}\) & 107
54
5 & 11900 & \\
\hline \(\stackrel{4}{5}\) & 15 & & 15 & & 791 & 147 & \({ }^{1838}\) & & & 21 & 21 & & \\
\hline 6 & 7 & 11900 & 11907 & & 252 & 86 & 338 & & 5130 & 23 & 5153 & & \\
\hline 7
8
8 & 29
50 & & 29
50 & & 1285
2721 & 288
553 & \begin{tabular}{l}
1569 \\
3274 \\
\hline
\end{tabular} & & & 1176 & 114
176 & & \\
\hline \({ }_{9}^{8}\) & 88 & & 88 & & \(\xrightarrow{2721}\) & 757 & 52081 & & 3280 & 205 & 3485 & & \\
\hline 10 & 25 & 2550 & 2575 & 2000 & 1248 & 586 & 3834 & 22000 & & 221 & 221 & 1350 & \\
\hline 11
12 & 88
131 & & \(\begin{array}{r}88 \\ \hline 131\end{array}\) & & 4124
6940 & 1019
2203 & 5143
9143 & & 7130 & 439
729 & \(\begin{array}{r}439 \\ 7859 \\ \hline 829\end{array}\) & & \\
\hline 13 & 22 & & 22 & & 1056 & 384 & 1440 & & 5130 & 90 & 5220 & & 7100 \\
\hline 14
15 & 18 & & 17 & & 958 & \begin{tabular}{l}
274 \\
\hline 18
\end{tabular} & \({ }_{1402}^{1231}\) & & 7130 & 188 & \(\begin{array}{r}7241 \\ 188 \\ \hline\end{array}\) & & \\
\hline
\end{tabular}

\footnotetext{
Source: Items la to 1 b and items 3a to 3 b from Table A-82, items 2a to 2d from Table A-77,
}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{3}{*}{College} & \multicolumn{3}{|l|}{1981/82} & \multicolumn{3}{|l|}{1982/83} & \multicolumn{3}{|l|}{1983/84} \\
\hline & Tax Component & Allocation Tax of Dormitory Office & \multirow[t]{2}{*}{Total} & Tax
Component & Allocation Tax of Dormitory Office & \multirow[t]{2}{*}{Total} & Tax
Component & Allocation Tax of Administ. Office & \multirow[t]{2}{*}{Total} \\
\hline & 1. & 2 a & & 1b & 2b & & 1 c & 3 a & \\
\hline 1 & 3505 & 13 & 3518 & & 22 & 22 & & 9 & 9 \\
\hline 2 & 3200 & 15 & 3215 & & 35 & 35 & & 14 & 14 \\
\hline 3 & 8620 & 8 & 8628 & & 16 & 16 & & 7 & 7 \\
\hline 4 & & \(\underline{1}\) & & & 8 & 8 & & 3 & 3 \\
\hline 5 & & 2 & & & \({ }_{5}\) & 2 & & 3 & 3 \\
\hline \({ }^{6}\) & & \({ }_{10}^{2}\) & & & 5
15 & 5
2515 & & 1 & 1 \\
\hline 8 & 124630 & 8 & 12460
4638 & 2500
5180 & 15
30 & 2515
5210 & 1700 & \(\frac{4}{4}\) & 1708 \\
\hline 9 & 4140 & 17 & 4157 & & 38 & 38 & & 14 & 14 \\
\hline 10 & & 16 & 16 & & 31 & 31 & & 4 & 4 \\
\hline 11 & & 26 & 26 & & 55 & 55 & & 15 & 15 \\
\hline 12 & & 58 & 58 & & 118 & 118 & & 22 & 22 \\
\hline 13 & & 11 & 11 & & 20 & 20 & & 3 & 3 \\
\hline 14
15 & 4505 & 5
10 & 4510
10 & 6215 & 15
25 & 6230
25 & 100 & \(\stackrel{4}{4}\) & 104 \\
\hline
\end{tabular}
Table A-85 Continued
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multirow[t]{3}{*}{College} & 198」/85 & 1985/86 & \multicolumn{3}{|l|}{1986/87} \\
\hline & Tax Component & Tax Component & Tax Component & Allocation Tax of Administ. Offíce & \multirow[t]{2}{*}{Total} \\
\hline & 1d & 1 e & 1.4 & 36 & \\
\hline 1 & \multirow[t]{15}{*}{515} & \multirow[t]{15}{*}{4790
1815

1377
5536} & \multirow[t]{6}{*}{5210} & 109 & 109 \\
\hline 2 & & & & 142 & 142 \\
\hline 3 & & & & 71 & 71 \\
\hline 4 & & & & 33 & 5243 \\
\hline 5 & & & & 32 & 32 \\
\hline 6 & & & & 12 & 12 \\
\hline 7 & & & \multirow[t]{3}{*}{784
525} & 36 & 820 \\
\hline 8 & & & & 92 & 617 \\
\hline 9 & & & & 197 & 197 \\
\hline 10 & & & \multirow[t]{2}{*}{650} & 41 & 691 \\
\hline 11 & & & & 281 & 281 \\
\hline 12 & & & \multirow[t]{4}{*}{\[
2001
\]} & 276 & 2828 \\
\hline 13 & & & & 55 & 55 \\
\hline 14 & & & & 63 & 2068 \\
\hline 15 & & & & 44 & 14 \\
\hline
\end{tabular}
Source:
Items 1 to if from Table A-76, items \(2 a, 2 b, 3 a\), and \(3 b\) from
table A-81.
Table A-86 Social institutional cost and Social Institutional Cost per Student, University of Baghdad, 1981/82
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{COLIEGE} \\
\hline & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\hline 1.Total Institutional Cost & 2290684 & 4112685 & 2623158 & 712688 & 1012749 & 126118 & 2030514 & 3389796 \\
\hline \(\frac{\text { 2.Customs on Equipment and laboratory Equipment }}{}\) & 106283 & 468550 & 106760 & 21420 & 84867 & 4898 & 13100 & 127335 \\
\hline 3.Customs on Vehicles & 54 & 84 & 39 & 17 & 15 & 11907 & 29 & 50 \\
\hline 4.Tax component of buildings & 3518 & 3215 & 8628 & 4 & 2 & 2 & 12460 & 4638 \\
\hline 5.Pure Subsidy Component of Boarding and Iiving Expenses & 135837 & 163357 & 81898 & 45572 & 17392 & 20915 & 109638 & 88723 \\
\hline Total Taxes and Transfer Payment & 245692 & 635206 & 197325 & 67013 & 102240 & 37722 & 135227 & 220746 \\
\hline Social Institution Cost & 2044992 & 3877479 & 2425833 & 615675 & 910509 & 388396 & 1895287 & 3169050 \\
\hline Number of Students Enrolled & 2632 & 4092 & 1918 & 836 & 719 & 350 & 1417 & 2455 \\
\hline Social Institutional Cost per Student & 777 & 850 & 1265 & 778 & 1.272 & 1116 & 1338 & 1291 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{coluege} \\
\hline & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline 1.Total Institutional cost & 1703758 & 1212710 & 2692934 & 3756765 & 889732 & 761876 & 518645 \\
\hline \(\frac{\text { Less Taxes and Txansfer Payments }}{\text { 2.Customs on Equipment and laboratory Equipment }}\) & 8098 & 2350 & 36845 & 108077 & 2081 & 16989 & 1629 \\
\hline 3.Customs on Vehicles & 88 & 2575 & 88 & 131 & 22 & 18 & 17 \\
\hline 4.Tax Component of Buildings & 4157 & 16 & 26 & 58 & 11 & 4510 & 10 \\
\hline 5. Pure Subsidy Component of Boarding and Living Expenses & 180969 & 171062 & 277838 & 623264 & 123288 & 58782 & 103033 \\
\hline Total Taxes and Transfer Payment & 193312 & 176003 & 304797 & 731530 & 125402 & 80299 & 104689 \\
\hline Social Institution Cost & 1510446 & 1036707 & 2388137 & 3025235 & 764330 & 861577 & 413956 \\
\hline Number of Students Enrolled & 4315 & 1238 & 4095 & 6383 & 1080 & 863 & 843 \\
\hline Social Institutional Cost per Student & 348 & 837 & 583 & 474 & 708 & 790 & 491 \\
\hline
\end{tabular}
Source: (1) From Table A-31; (2) From table A-83; (3) From table A-84; (4) From table A-85; (5) From table A-78.
Table A-87 Social institutional cost and Social Institutional Cost pex Student, University of Baghdad, 1982/83,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{coldege} \\
\hline & 1 & 2 & 3 & 1 & 5 & 6 & 7 & 8 \\
\hline 1.Total institutional cost Less Taxes and Transfer Payments: & 2292693 & 3855787 & 2476369 & 769986 & 1026364 & 414492 & 1832778 & 3098876 \\
\hline 2.Customs on Equipment and Laborȧory Equipment & 43919 & 174085 & 49229 & 15417 & 30418 & 855 & 18043 & 22631 \\
\hline 3 -Customs on Vehicles & 3003 & 4012 & 2413 & 1049 & 838 & 338 & 1569 & 3271 \\
\hline 4.Tax Component of Buildings & 22 & 35 & 16 & 8 & 2 & 5 & 2515 & 5210 \\
\hline 5. Pure Subsidy Component of Boarding and Living Expenses & 95125 & 153751 & 68460 & 34230 & 10969 & 20046 & 66001 & 128599 \\
\hline Total Taxes and Transfer Payment & 142069 & 331883 & 120118 & 5070A & 42227 & 2124 \({ }^{4}\) & 88128 & 150374 \\
\hline Social Institution Cost & 2150624 & 3523904 & 2356251 & 719282 & 984137 & 393248 & 17A® 650 & 2948502 \\
\hline \begin{tabular}{l}
Number of Students Enroiled \\
Social Institutional Cost per Student
\end{tabular} & \[
\begin{array}{r}
2577 \\
835
\end{array}
\] & \[
\begin{aligned}
& 2328 \\
& 1514
\end{aligned}
\] & \[
\begin{aligned}
& 2106 \\
& 1119
\end{aligned}
\] & \[
\begin{aligned}
& 894 \\
& 804
\end{aligned}
\] & \[
\begin{array}{r}
785 \\
1254
\end{array}
\] & \[
\begin{array}{r}
250 \\
1573
\end{array}
\] & \[
\begin{aligned}
& 1276 \\
& 1367
\end{aligned}
\] & \[
\begin{aligned}
& 2702 \\
& 1091
\end{aligned}
\] \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{COLIEGE} \\
\hline & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline 1.Total Institutional Cost & 1481392 & 1099319 & 2538613 & 3387719 & 754508 & 769287 & 524514 \\
\hline \(\frac{\text { hess }}{\text { 2.customs on Equaspment and Iaboratory Equipment }}\) & 4722 & 1382 & 21100 & 9329 & 1160 & 9515 & 1032 \\
\hline 3. Customs on Vehicles & 5084 & 3834 & 5134 & 9143 & 1440 & 1231 & 1402 \\
\hline 4.Tax Component of Buildings & 38 & 31 & 55 & 118 & 20 & 6230 & 25 \\
\hline 5.Pure Subsidy Component of Boarding and Living Expenses & 164342 & 136164 & 236962 & 512125 & 89263 & 64866 & 110255 \\
\hline Total Taxes and Transfer Payment & 174186 & 141411 & 263251 & 530715 & 91883 & 81842 & 112714 \\
\hline Social Institution Cost & 1307206 & 957908 & 2275362 & 285700 A & 662625 & 687445 & 411800 \\
\hline \begin{tabular}{l}
Number of Students Enrolled \\
Social Institutional Cost per Student
\end{tabular} & 4345
301 & 1238
774 & 4095
556 & 6889
415 & 1049
632 & 7448 & 4214 \\
\hline
\end{tabular}
Source:
(1) From Table A-32; (2) From table A-83; (3) From table A-84; (4) From table A-85; (5) From table A-78.
Table A-88 Social institutional cost and Social Institutional cost per Student, University of Baghdad, 1983/84,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{college} \\
\hline & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\hline 1.Total Institutional Cost & 2277890 & 3885308 & 2557114 & 731049 & 1126097 & 387808 & 1833205 & 2935612 \\
\hline Less Taxes and Transfer Payments: & & & & & & & & \\
\hline 2.Customs on Equipment and Laboratory Equipment & 14116 & 39386 & 4081 & 8443 & 9122 & 694 & 2868 & 11497 \\
\hline \begin{tabular}{l}
3.Customs on Vehicles \\
A-Tax Component of Buildings
\end{tabular} & 9 & 14 & 7 & 3 & 3 & 1 & \(\underline{4}\) & 1708 \\
\hline 5.Pure Subsidy Component of Boarding and riving Expenses & 76897 & 146462 & 63639 & 32443 & 1185 & 18250 & 61611 & 114799 \\
\hline Total Taxes and Transfer Payment & 91022 & 185862 & 67727 & 40889 & 20979 & 18945 & 64483 &  \\
\hline Social Institution Cost & 2186868 & 3699446 & 2489387 & 690160 & 1105118 & 368863 & 1768922 & 2807608 \\
\hline Number of Students Enrolled & 2722 & 4092 & 2118 & 854 & 791 & 198 & 1126 & 2227 \\
\hline Social Institutional Cosit per Siudent & 803 & 90.4 & 1175 & 808 & 1397 & 1863 & 1571 & 1261 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{coliege} \\
\hline & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline 1.Total Institutional Cost & 1355593 & 1103295 & 2567392 & 3381560 & 683491 & 872789 & 596448 \\
\hline \(\frac{\text { Eess Taxes and Transfer Payments: }}{\text { 2.Customs on Equipment and laboratory }}\) & 2501 & 797 & 2955 & 36035 & 613 & 3288 & 700 \\
\hline 3.Customs on Vehicles & & 22000 & & & & & \\
\hline 4.Tax Component of Buildings & 14 & & & & 3 & 104 & \(\stackrel{4}{3}\) \\
\hline 5.Pure Subsidy Component of Boarding and living Expenses & 121194 & 118543 & 210569 & 369354 & 61299 & 64574 & 88283 \\
\hline Total Taxes and Transfer Payment & 123709 & 141344 & 213539 & 405411 & 61915 & 67966 & 88987 \\
\hline Social Institution Cost & 1231884 & 961951 & 2353853 & 2976149 & 621576 & 804823 & 507461 \\
\hline Number of Studenṫs Enrolled
Social Institutional cost per Student & 4013
307 & 1148
838 & \(\begin{array}{r}4404 \\ 534 \\ \hline\end{array}\) & 6441
462 & 931
668 & 1255
641 & 1033
491 \\
\hline
\end{tabular}
(1) From Table A-33; (2) From table A-83; (3) From table A-84; (4) From table A-85; (5) From table A-78.
Table A-89 Social institutional cost and Social Institutional cost per Student, Jniversity of Baghdad, 1984/85,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Descripetion} & \multicolumn{8}{|l|}{coluege} \\
\hline & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\hline 1.Total Institutional Cost & 2309061 & 4358366 & 2564263 & 763393 & 1264607 & 422727 & 2092905 & 3681825 \\
\hline  & 15815 & 27319 & 10424 & 5836 & 5005 & 2812 & & \\
\hline 3. customs on vehicies & 132 & 280 & 107 & 54 & 21 & 5153 & 114 & 176 \\
\hline 4.-Tax component of buildings & & & & & & & & 515 \\
\hline 5. Juiving Expenses & 89962 & 191366 & 72995 & 36892 & 14796 & 15388 & 77533 & 119949 \\
\hline Total maxes and Transfer Payment & 5909 & 18965 & 83526 & 12782 & 19822 & 3353 & 84526 & 135127 \\
\hline Social Institution Cost & 2203155 & 4139101 & 2480937 & 720611 & 1244785 & 39937』 & 2008379 & 3546698 \\
\hline Number of Students Enrolled & 2535 & 4474 & 2106 & 834 & 813 & 212 & 1023 & 1907 \\
\hline Social Institutionai Cost pex Student & 869 & 925 & 1178 & 864 & 1531 & 1884 & 1963 & 1860 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{coluege} \\
\hline & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline 1.Total Institutional Cost & 1555951 & 1183515 & 2773454 & 3656006 & 785037 & 1029579 & 785608 \\
\hline \(\frac{\text { Less Taxes and Transfer Payments: }}{\text { 2.customs on }}\) Equipment and taboratory Equipment & 12383 & & 15702 & & & & \\
\hline 3. Customs on Vehicles & 12385 & 221 & 439 & \(\begin{array}{r}28759 \\ \hline 85\end{array}\) & 5220 & 7241 & 188 \\
\hline 4.Tax Component of Buildings \({ }^{\text {5. Pure Subsidy }}\) Component ofy (earding and Living Expenses & 139480 & 151317 & 299872 & 497157 & 61750 & 5560 & 128827 \\
\hline Total taxes and Txansfer Payment & 155348 & 159430 & 316013 & 533781 & 73599 & 92232 & 136192 \\
\hline Social Institution cost & 1400603 & 1024085 & 2457481 & 3122235 & 711438 & 937347 & 649416 \\
\hline Number of Students Enrolled
Social Institutional Cost per Student & \[
\left.\begin{array}{r}
3960 \\
354
\end{array} \right\rvert\,
\] & \[
\begin{array}{r}
1124 \\
911
\end{array}
\] & \(\begin{array}{r}4200 \\ 585 \\ \hline\end{array}\) & 6233
501 & 915
778 & 1416
662 & 1186
548 \\
\hline
\end{tabular}
(1) From Table A-34; (2) From table A-83; (3) From table A-84; (4) From table A-85; (5) From table A-78.
Table A-90 Social institutional cost and Social Institutional cost pex Student, University of Baghdad, 1985/86,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{commege} \\
\hline & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\hline 1.Total Institutional Cost & 2836534 & 4416806 & 2852802 & 858024 & 1499955 & 683263 & 1916530 & 3511216 \\
\hline \(\frac{\text { Less Taxes and Transfer Payments: }}{\text { 2.customs on Equipment and Laboratory Equipment }}\) & 32969 & 23730 & 76068 & 4189 & 923 & 752 & 4847 & 13139 \\
\hline 3.Customs on Vehicles & 7130 & & & 11900 & & & & \\
\hline 4.Tax Component of Buildings & & & & & & & & 4790 \\
\hline \begin{tabular}{l}
Living Expenses \\
5. Pure Subsidy Component of Boarding and
\end{tabular} & 105730 & 1371218 & 54688 & 24610 & 11485 & 14948 & 48308 & 123230 \\
\hline Total Taxes and Transfer Payment & 1185829 & 161178 & 130756 & 40699 & 12408 & 15700 & 53155 & 141159 \\
\hline Social Institution Cost & 2690705 & 1061614 & 2579420 & 817325 & 1487547 & 667563 & 1863375 & 3370057 \\
\hline Number of Students Enrolled & 3009 & 4282 & 2044 & 877 & 854 & 214 & 977 & 2594 \\
\hline Social Institutional cost per student & 894 & 994 & 1332 & 932 & 1742 & 37.19 & 1907 & 1299 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{} & \multicolumn{7}{|l|}{college} \\
\hline & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline 1.Total Institutional cost & 1995450 & 1220649 & 3659074 & 4566525 & 1097541 & 147370 & 877096 \\
\hline \(\frac{\text { Taxes }}{\text { 2.customs }} \frac{\text { Transfer }}{\text { on Equipment }}\) Pand Laboratory Equipment & 9322 & 1166 & 8031 & 65267 & 10864 & 13053 & 1276 \\
\hline 3.customs on Vehicles & & 1350 & & & & & \\
\hline 4.Tax Component of Buildings & & 1815 & & & 1377 & 5536 & \\
\hline 5.Pure Subsidy Component of Boarding and Living Expenses & 158412 & 137266 & 353283 & 396851 & 66901 & 66901 & 122865 \\
\hline Total Taxes and Transfer Payment & 167734 & 141597 & 361311 & 462118 & 79142 & 85490 & 124141 \\
\hline Social Institution Cost & 1827716 & 1079052 & 3297760 & 4104407 & 1018399 & 61880 & 752955 \\
\hline Number of Students Enrolled
Social Institutional Cost per Student & \[
\begin{array}{r}
5076 \\
360
\end{array}
\] & \[
\begin{array}{r}
1182 \\
913
\end{array}
\] & \[
\begin{array}{r}
6886 \\
479
\end{array}
\] & 7468
550 & 1308
779 & 1839
577 & 1536
490 \\
\hline
\end{tabular}
(1) Froum Table A-35; (2) From table A-83; (3) From table A-84; (4) From table A-85; (5) From table A-78.
Table A-91 Social institutional cost and Social Institutional Cost per Student, University of Baghdad, 1986/87,
(In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{8}{|l|}{college} \\
\hline & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\hline 1.Total Institutional Cost & 2620306 & 4273732 & 2718262 & 873308 & 1333282 & 530052 & 1998249 & 3543445 \\
\hline \(\frac{\text { Less Taxes and Transfer Payments: }}{\text { 2.Customs on Equipment }}\) and Laboratory Equipment & 5042 & 41546 & 3293 & 839 & 2769 & 703 & 1158 & 7135 \\
\hline 2. Customs on Equipment and Laboratory Equipment
3.Customs on Vehicles & & 41546 & & & & & & \\
\hline 4.Tax Component of Buildings & 109 & 142 & 71 & 5243 & 32 & 12 & 820 & 617 \\
\hline 5.Pure Subsidy component of Boarding and Living Expenses & 69857 & 108721 & 43239 & 18620 & 8498 & 7623 & 36241 & 70731 \\
\hline Total Taxes and Transfer Payment & 75008 & 150409 & 16603 & 24.702 & 11299 & 8338 & 38219 & 78483 \\
\hline Social Institution Cost & 2545298 & 4123323 & 2671659 & 848606 & 1321983 & 521714 & 1960030 & 3464962 \\
\hline Number of Students Enrolled & 3152 & 4092 & 2056 & 944 & 939 & 338 & 1025 & 2657 \\
\hline Social Institutional Cost per Student & 808 & 1008 & 1299 & 899 & 1408 & 1544 & 1912 & 1304 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Description} & \multicolumn{7}{|l|}{Colitege} \\
\hline & 9 & 10 & 11 & 12 & 13 & 14 & 15 \\
\hline 1. Total Institutional Cost & 1983511 & 1197231 & 3285214 & 4010694 & 1316001 & 1243148 & 773644 \\
\hline \(\frac{\text { Less Taxes and Transfer Payments: }}{\text { 2.Customs on Equipment and Laboratory kquipment }}\) & 5002 & 1711 & 3168 & 3768 & 3849 & 4245 & 796 \\
\hline 3.Customs on Vehicles & & & & & 7100 & & \\
\hline 4.Tax Component of Buildiags & 197 & 691 & 281 & 2828 & 55 & 2064 & 44 \\
\hline 5.Pure Subsidy Component of Boarding and Living Expenses & 113595 & 104473 & 236188 & 282176 & 49612 & 35616 & 64483 \\
\hline Total Taxes and Transfer Payment & 118792 & 106875 & 239637 & 288772 & 60616 & 41925 & 65323 \\
\hline Social Institution Cost & 1864717 & 1090356 & 3045577 & 3721922 & 1255385 & 1201223 & 708321 \\
\hline Number of Students Enrolled & 5683 & 1182 & 8093 & 7955 & 1591 & 1820 & 1257 \\
\hline Social Institutional Cost pex Student & 328 & 922 & 376 & 468 & 789 & 660 & 564 \\
\hline
\end{tabular}
Source: (1) From table A-36; (2) From table A-83; (3) From table A-84; (4) From table A-85; (5) From table A-78.
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{College} & \multicolumn{2}{|l|}{1975} & \multicolumn{2}{|l|}{1976} & \multicolumn{2}{|l|}{1977} & \multicolumn{2}{|l|}{1978} & \multicolumn{2}{|l|}{1979} & \multicolumn{2}{|l|}{1980} \\
\hline & Actual \(\operatorname{cost}\) & Adjusted cost：\％ & Actual Cost： & Adjusted Cositㅊ & Actual Cost＊ & Adjusted Cost\％\％ & Actual Cost： & Adjusted Costi\＃： & Actual Cost & Adjusted Cost \(\%\) & Actual cost & Adjusted Cost＊＊ \\
\hline & 491 & 1103 & 574 & 997 & 771 & 1.203 & 813 & 1249 & 850 & 1306 & 1054 & 1.619 \\
\hline 2 & 369 & 829 & 374 & 649 & 563 & 878 & 588 & 897 & 760 & 1167 & 781 & 1200 \\
\hline 3 & 788 & 1771 & 835 & 1450 & 895
571 & 1396 & \({ }^{1071}\) & 1645
869
869 & 1239 & 1903 & 1400 & 2151 \\
\hline \(\frac{4}{5}\) & 343 & 771
1009 & 416
537 & \({ }_{9} 722\) & 571 & 8981 & 566 & 869
1415 & 721 & 1108 & 852 & 1309 \\
\hline \({ }_{6}\) & 449 & 1009 & 1355 & 2352 & 1235 & 1927 & 1175 & 1805 & 1541 & \({ }_{2367}\) & 1855 & 2849 \\
\hline 7 & 899 & 2020 & 1139 & 1977 & 1153 & 1799 & 1226 & 1883 & 1447 & 2223 & 1429 & 2195 \\
\hline 8 & 625 & 1403 & 736 & 1278 & 865 & 1349 & 910 & 1398 & 1079 & 1657 & 1403 & 2155 \\
\hline 9 & 293 & 658 & 233 & 405 & 252 & 393 & \({ }_{281}^{281}\) & 432 & 306 & 470 & 410 & 630 \\
\hline 10 & 336 & 755 & 321 & 557 & 246 & 384 & 276 & 424 & 278 & 427 & 371 & 570 \\
\hline 11 & 312 & 701 & 404 & 701 & 490
302 & \begin{tabular}{l}
764 \\
\hline 171
\end{tabular} & 488
336 & 750 & 477
430 & 733 & 640
551 & 983 \\
\hline 13 & 246
559 & 553
1256 & 266
568 & 462
986 & 302
596 & 471
930 & \begin{tabular}{l}
336 \\
489 \\
\hline 8
\end{tabular} & 516
751 & 430
573 & \({ }_{880}\) & \({ }_{688}\) & 846
1057 \\
\hline 14 & 662 & 1488 & 426 & 740 & 462 & 721 & 842 & 1293 & 646 & 992 & 917 & 1409 \\
\hline 15 & & & & & 333 & 520 & 370 & 568 & 410 & 630 & 500 & 768 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|}
\hline & \[
\begin{aligned}
& 6 \\
& 0
\end{aligned}
\] &  & \begin{tabular}{l}
 \\
 \\

\end{tabular} \\
\hline & &  & \begin{tabular}{l}
 \\
 \\

\end{tabular} \\
\hline & \multirow[t]{2}{*}{\[
\begin{aligned}
& \stackrel{\infty}{\infty} \\
& \stackrel{\infty}{\sim}
\end{aligned}
\]} &  & \begin{tabular}{l}
 \\
 \({ }_{-1} \quad \mathrm{mNHN}\)
\end{tabular} \\
\hline & &  & \begin{tabular}{l}
 \\
 \(\mathrm{H}_{\mathrm{mo}}^{\mathrm{mHN}} \mathrm{m}\)
\end{tabular} \\
\hline & \multirow[t]{2}{*}{\[
\begin{aligned}
& \stackrel{1}{\infty} \\
& \stackrel{0}{\circ} \\
& -
\end{aligned}
\]} &  & \begin{tabular}{l}
 \\
 HWN
\end{tabular} \\
\hline & &  & \begin{tabular}{l}
 \\
 \({ }_{-1}{ }^{-1-1}{ }^{-1}\)
\end{tabular} \\
\hline & \multirow[t]{2}{*}{\[
\begin{aligned}
& \stackrel{\infty}{\infty} \\
& \stackrel{\rightharpoonup}{-1}
\end{aligned}
\]} &  & \begin{tabular}{l}
6mにOn「下NNMmのngir \\
 ल－1
\end{tabular} \\
\hline & &  & \begin{tabular}{l}
 \\
 －नHन
\end{tabular} \\
\hline & \multirow[t]{2}{*}{\[
\begin{aligned}
& \stackrel{m}{\infty} \\
& \stackrel{\sim}{\oplus}
\end{aligned}
\]} &  & \begin{tabular}{l}
 \\
 \({ }_{\mathrm{H}}^{\mathrm{H}} \mathrm{m}\)
\end{tabular} \\
\hline & &  & \begin{tabular}{l}
 \\
 \\

\end{tabular} \\
\hline & \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { N } \\
& \infty \\
& \underset{\sim}{\infty}
\end{aligned}
\]} &  & \begin{tabular}{l}
 \\
 \({ }_{-1} \mathrm{H}_{-1+1}\)
\end{tabular} \\
\hline & & \[
\begin{aligned}
& \text { rig } \\
& 0 \\
& 0 \\
& 0 \\
& 0 \\
& 0
\end{aligned}
\] & \begin{tabular}{l}
 \\

\end{tabular} \\
\hline & \multirow[t]{2}{*}{\[
\begin{aligned}
& \stackrel{-1}{\infty} \\
& \stackrel{y}{\infty}
\end{aligned}
\]} &  & \begin{tabular}{l}
 － \\

\end{tabular} \\
\hline & & \[
\begin{aligned}
& \text { 苟: } \\
& \text { 论 } \\
& \text { 荷 }
\end{aligned}
\] & \begin{tabular}{l}
 \\
 \({ }^{-1} \mathrm{HCH} \mathrm{H}\)
\end{tabular} \\
\hline & & 0
8
0
-1
0
0 &  \\
\hline
\end{tabular}
Source：Institutional cost for years \(1974 / 75\) to 1980／81 are from the unpublished study of institutional cost of
\(\quad\) Graduate in Iraq by committee was consist to that purpose according to the Iaw No．532，1983，Baghdad
Notes：（＊）Aniversity，Repubic of Iraq；Institutional cost for years 1981／82 to 1986／87 are from Tables A－31 to A－36． 1987 composie price inder；see table A－37．
A． 71
Table A-93 Social Institutional Cost per Graduate, College of science, University of Baghdad,

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1984 & 4/85 Grad & ates* & 1985 & 186 Gradu & ates* & 1986 & 187 Grad & ates* \\
\hline Year & Social Institutional cost per student (1987ID) & Number Admitted & Number Enrolled & \begin{tabular}{l}
Cost \\
1987 ID
\end{tabular} & Number Acmitted & Number & \begin{tabular}{l}
Cost \\
1987 ID
\end{tabular} & Number Admitted & Wumber Enrolled & |los \\
\hline \(1977 / 78\) & 1249 (a) & 2 & 23 & 2498 & & & & & & \\
\hline \begin{tabular}{l}
\(1978 / 79\) \\
197988 \\
\hline
\end{tabular} & 1306 (a) & \({ }_{74}^{21}\) & 23
97 & \(\begin{array}{r}30038 \\ \hline 157043 \\ \hline\end{array}\) & \({ }_{23}^{88}\) & \({ }_{31}^{8}\) & 10448
50189 & & & \\
\hline 1980/81 & 1103 (a) & 151 & 248 & 273544 & 69 & 100 & 110300 & 25 & 25 & 27575 \\
\hline 1981/82 & 664 (b) & 285 & 533
533 & 353912
342719 & \({ }_{222}^{118}\) & 218
440 & \begin{tabular}{l}
1445752 \\
\hline 28290 \\
\hline
\end{tabular} & \(\begin{array}{r}47 \\ \hline 133 \\ \hline\end{array}\) & & \\
\hline 边 \(1982 / 83\) & 643 (b) & & 533
533 & 342719
322998 & & \begin{tabular}{l} 
A40 \\
\hline 140
\end{tabular} & 282920
266540 & 133
263 & 205
468 & \(\begin{array}{r}131815 \\ 283608 \\ \hline\end{array}\) \\
\hline \(1984 / 85\) & 649 (b) & & 533 & 345917 & & 440 & 285560 & & 168 & \begin{tabular}{l}
283608 \\
303732 \\
\hline
\end{tabular} \\
\hline 1985/86 & 695 (b) & & & & & 410 & 305800 & & 468 & 325260 \\
\hline 1986/87 & 808 (b) & & & & & & & & 468 & 378144 \\
\hline \multicolumn{2}{|l|}{Total} & 533 & \multicolumn{2}{|l|}{1828669} & 440 & \multicolumn{2}{|l|}{1456609} & \multicolumn{3}{|l|}{468 1497942} \\
\hline Social & nstitutional Cost/Graduate & \multicolumn{3}{|l|}{ID 1828669 533 = ID 3431} & \multicolumn{3}{|l|}{ID 1456609 440 = ID 3310} & \multicolumn{3}{|l|}{ID 1497942\%468 = ID 3201} \\
\hline
\end{tabular}
Source: (a) Social Institutional Cost per stadent-year for years \(1974 / 75\) to \(1980 / 81\) are derived from the

Table A-94 Social Institutional Cost per Graduate, College of Engineering, Jniversity of Baghdad, 1981/82-1986/87,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 1/82 Gradu & ates \({ }^{\text {² }}\) & 1982 & /83 Gradua & ates \({ }^{\text {* }}\) & 1983 & 184 Gradu & ates* \\
\hline Year & Social Institutional cost per student (1987ID) & \begin{tabular}{l}
Mumber \\
Admitted
\end{tabular} & Mumber Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] & Number Admitited & Number Enyolled & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] & Number Admitted & number Enrolled & \[
\begin{aligned}
& \text { cost } \\
& \text { I987 ID }
\end{aligned}
\] \\
\hline 1975/76 & 649 (a) & 7 & 7 & 1543 & 2 & 2 & 1298 & & & \\
\hline 1976/77 & 878 (a) & 13 & 20 & 17560 & 6 & 8 & 7024 & & & \\
\hline 1977/78 & 897 (a) & 77 & 97 & 87009 & 29 & 37 & 33189 & 8 & 8 & 7176 \\
\hline 1978/79 & 1167 (a) & 491 & 588 & 686196 & 109 & 146 & 170382 & 27 & 35 & 40845 \\
\hline 1979/80 & 1200 (a) & & 588 & 705600 & 523 & 669 & 802800 & 246 & 281 & 337200 \\
\hline 1980/81 & 884 (a) & & 588 & 519792 & & 669 & 591396 & 423 & 704 & 622336 \\
\hline 1981/82 & 726 (b) & & 588 & 426888 & & 669 & 485694 & & 704 & 511104 \\
\hline 1982/83 & 1166 (b) & & & & & 669 & 780054 & & 704 & 820864 \\
\hline 1983/8 \({ }^{\text {S }}\) & 683 (b) & & & & & & & & 704 & 480832 \\
\hline \multicolumn{2}{|l|}{Total} & \multicolumn{3}{|l|}{588 2447588} & 669 & \multicolumn{2}{|l|}{2871837} & 704 & & 701 2820357 \\
\hline \multicolumn{2}{|l|}{Social Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID \(2 \triangle 47588 \div 588=\) ID 4163} & \multicolumn{3}{|l|}{ID 2871837-669 = ID 4293} & \multicolumn{3}{|l|}{ID \(2820357 \div 70 \mathrm{~A}=\) ID 10006} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Year} & \multirow[t]{2}{*}{Social Institutional cost per Student (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates*} & \multicolumn{3}{|l|}{1986/87 Graduates \({ }^{*}\)} \\
\hline & & \[
\left|\begin{array}{l}
\text { Number } \\
\text { Admitted }
\end{array}\right|
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{array}{|ll|}
\hline \text { Cost } & \\
1987 & \text { ID }
\end{array}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \[
\begin{aligned}
& \text { Number } \\
& \text { Enrolled }
\end{aligned}
\] &  & \[
\left|\begin{array}{l}
\text { Number } \\
\text { Admitited }
\end{array}\right|
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}\right.
\] \\
\hline 1978/79 & 1167 (a) & 9 & 9 & 10503 & & & & & & \\
\hline 1979/80 & 1200 (a) & 62 & 71 & 85200 & & & & & & 8400
29172 \\
\hline 1980/81 & 884 (a) & 318 & 38.9 & 343876 & 116 & 133 & 117572 & 26 & 33
1 & \\
\hline 1981/82 & 726 (b) & 443 & 832 & 604032 & 279 & 412 & 299112 & -90 & 123 & \(\begin{array}{r}89298 \\ 43286 \\ \hline\end{array}\) \\
\hline 1982/83 & 1166 (b) & & 832 & 970112 & 376 & 788 & 918808 & 248 & 371 & 432586 \\
\hline 1983/84 & 683 (b) & & 832 & 568256 & & 788 & 538204 & 279 & 650 & 443950 \\
\hline 1984/85 & 690 (b) & & 832 & 574080 & & 788 & 543720 & & 650 & 448500 \\
\hline 1985/86 & 772 (b) & & & & & 788 & 608336 & & 650 & 501800 \\
\hline 1986/87 & 1008 (b) & & & & & & & & 650 & 655200 \\
\hline \multicolumn{2}{|l|}{Total} & 832 & & 3156059 & 788 & & 3046152 & 650 & & 2608906 \\
\hline Social & Institutional Cost/Graduate & \multicolumn{3}{|l|}{ID 3156059\%832 = ID 3793} & \multicolumn{3}{|l|}{ID 3046152 \(788=\) ID 3866} & \multicolumn{3}{|l|}{ID 2608906:650 = ID 4013} \\
\hline
\end{tabular} Source: (a) Social Institutional Cost per student-year for years 1974/75 to 1980/81 are derived from the (b) according to law No. 532 (1983), Baghdad University, Baghdad-Iraq.

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Yeax} & \multirow[t]{2}{*}{Social Institutional cost per Student (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates*} & \multicolumn{3}{|l|}{1986/87 Graduates*} \\
\hline & & Number
Admitted & Number Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& \text { I987 ID }
\end{aligned}
\] & Number Admitted & Number Enrolled & \[
\left|\begin{array}{ll}
\operatorname{cost} \\
1987 & \text { ID }
\end{array}\right|
\] & Number. Admittec & Number
Enrolled & \({ }_{1987}^{\text {cost }}\) \\
\hline \(1977 / 78\) & 1545 (a) & & & \({ }_{41895}^{4935}\) & & 16 & 9870 & & & \\
\hline \(1978 / 79\)
\(1979 / 80\) & 1903
2151

(a) & 331 & 22
353 & \({ }_{711981}^{41866}\) & \({ }_{25}^{10}\) & \({ }_{41}^{16}\) & 30448
88191 & & & \\
\hline 1980/81 & 1570 (a) & & 353 & 554210 & 323 & 364 & 571480 & 29 & 39 & 61230 \\
\hline 1981/82 & 1080 (b) & & 353 & 381240 & & 364 & 393120 & 285 & 324 & 349920 \\
\hline \(1982 / 83\) & 862 (b) & & 353 & 304286 & & 364 & 313768 & & 324 & 279288 \\
\hline \(1983 / 84\) & 8878 & & 353
353 & 313111 & & 364 & 322868 & & 324 & 287388 \\
\hline 1984/85 & 879
1035
108 & & & 310287 & & 364
364 & 319956
376710 & & 324
324 & 284796
335340 \\
\hline 1986/87 & 1299 (b) & & & & & & & & 324 & 420876 \\
\hline \multicolumn{2}{|l|}{Total} & 353 & \multicolumn{2}{|l|}{2669238} & \multicolumn{3}{|l|}{364 2426441} & 324 & & 2040348 \\
\hline Social & Institutional cost/graduate & \multicolumn{3}{|l|}{ID 2669238;353 = ID 7562} & \multicolumn{3}{|l|}{\[
\text { ID } 2426441 \div 364=\text { ID } 6666
\]} & \multicolumn{3}{|l|}{xD 2040348*324 = ID 6297} \\
\hline
\end{tabular}
Source: (a) Social Institutional cost per student-yeax for years 1974/75 to 1980/81 are derived from the
(b) Social Institutionai cost pex student-year for year 1981/82 to \(1986 / 87\) are derived from Table A-92.
Table A-96 Social Institutional cost per Graduate, College of Pharmacy, University of Bagholad, 1981/82-1986/87,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 1/82 Grad & uates* & 1982 & /83 Gradua & tes \({ }^{\text {* }}\) & 1983 & 184 Gradua & ates* \\
\hline Year & Social Institutional cost per Student (I987ID) & Number Admitted & \begin{tabular}{l}
Mumber \\
Enrolled
\end{tabular} & \[
\begin{array}{|l|}
\text { Cost } \\
1987 \text { ID }
\end{array}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{array}{ll}
\text { Cost } \\
1987
\end{array}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Eniolled
\end{tabular} & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] \\
\hline 1976/77 & 891 (a) & 8 & 8 & 7128 & & & & & & \\
\hline 1977/78 & 869 (a) & 117 & 125 & 108625 & 21 & 21 & 18249 & & & \\
\hline 1978/79 & 1108 (a) & & 125 & 138500 & 1.56 & 177 & 196116 & 12 & 12 & 13269 \\
\hline 1979/80 & 1309 (a) & & 125 & 163625 & & 177 & 231693 & 139 & 151 & 197659 \\
\hline 1980/81 & 636 (a) & & 125 & 79500 & & 177 & 112572 & & 151 & 96036 \\
\hline 1981/82 & 664 (b) & & 125 & 83000 & & 177 & 117528 & & 151 & 100264 \\
\hline 1982/83 & 619 (b) & & & & & 177 & 109563 & & 151 & 93469 \\
\hline 1983/84 & 610 (b) & & & & & & & & 151 & 92110 \\
\hline \multicolumn{2}{|l|}{Total} & 125 & & 125 580378 & 177 & & 785721 & 151 & & 592807 \\
\hline \multicolumn{2}{|l|}{Social Institutional Cost/Gxaduate} & \multicolumn{3}{|l|}{ID \(580378 \div 125=\) ID 4643} & \multicolumn{3}{|l|}{ID \(785721 \div 177=\) ID 4439} & \multicolumn{3}{|l|}{ID 592807-151 = ID 3926} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multirow[t]{2}{*}{Social Institutional cost per Student (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates*} & \multicolumn{3}{|l|}{1986/87 Graduates*} \\
\hline Year & & Mumber Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] & Number Admitted & Wumber Enrolled & \[
\begin{aligned}
& \text { cost } \\
& 1987 \text { ID }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & Number Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Cost } \\
& 1987 \mathrm{ID}
\end{aligned}\right.
\] \\
\hline 1979/80 & 1309 (a) & 12 & 1.2 & 15708 & 12 & 12 & 15708 & 2 & 2 & 2618 \\
\hline 1980/81 & 636 (a) & & 134 & 85224 & 33 & 45 & 28620 & 10 & 12 & 7632 \\
\hline 1981/82 & 619 (b) & & 134 & 82946 & 112 & 157 & 97183 & 25 & 37 & 22903 \\
\hline 1982/83 & 614 (b) & & 134 & 82276 & & 157 & 96398 & 143 & 180 & 110520 \\
\hline 1983/84 & 610 (b) & & 134 & 81740 & & 157 & 95770 & & 180 & 109800 \\
\hline 1984/85 & 645 (b) & & 134 & 86430 & & 157 & 101265 & & 180 & 116100 \\
\hline 1985/86 & 724 (b) & & & & & 157 & 113668 & & 180 & 130320 \\
\hline 1986/87 & 899 (b) & & & & & & & & 180 & 161820 \\
\hline Total & & 131 & & 434324 & 157 & & 548612 & 180 & & 661713 \\
\hline Social & Institutional Cost/Graduate & ID 4343 & 324*134 & ID 3241 & ID 548 & 612*157 = & ID 3494 & ID 6617 & \(713 \div 180=\) & ID 3676 \\
\hline
\end{tabular}
Source: (a) Social Institutional Cost per student-year for years \(1974 / 75\) to \(1980 / 81\) are derived from the (b) Social Institutionai Cost per student-year for year \(1981 / 82\) to \(1986 / 87\) are derived from Table A-92.
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 1/82 Gradu & duates* & 1982/ & 183 Gradua & ates* & 1983/ & /84 Gradu & ates* \\
\hline Year & Social Institutional cost per Student (1987ID) & \[
\begin{array}{|l|}
\hline \text { Number } \\
\text { Admitted }
\end{array}
\] & \[
\left|\begin{array}{l}
\text { Numbex } \\
\text { Eaxolledi }
\end{array}\right|
\] & \[
\left.\right|_{1987 \mathrm{ID}} ^{\text {Cost }}
\] & \[
\begin{array}{l|}
\text { Number } \\
\text { Admitted }
\end{array}
\] & \[
\left|\begin{array}{l}
\text { Number } \\
\text { Enrolled }
\end{array}\right|
\] & \[
{ }_{1987 \mathrm{ID}}^{\text {Cost }}
\] & Number
Admitted & \[
\begin{aligned}
& \text { Number } \\
& \text { Enrolled }
\end{aligned}
\] & \[
\begin{array}{ll}
\text { Cost } \\
1987 & \mathrm{rD}
\end{array}
\] \\
\hline \(1974 / 75\) & 1009 (a) & \(\stackrel{4}{4}\) & \(\stackrel{4}{8}\) & \({ }_{1036}\) & & & & & & \\
\hline 1975/76 & 932 (a) & 4 & 8 & & 1 & 1 & 932 & & & \\
\hline 1976/77 & 1089 (a) & \(8{ }^{4}\) & \({ }_{96}^{12}\) & 13068
135840 & 8 & \({ }_{12}^{12}\) & \(\begin{array}{r}4356 \\ 16980 \\ \hline\end{array}\) & 2 & \(\frac{2}{6}\) & 2178
8490 \\
\hline \(1978 / 79\) & 1734 (a) & & \({ }_{96}\) & 166464 & 115 & 127 & 220218 & 15 & 21 & 36414 \\
\hline 1979/80 & 2235 (a) & & 96 & 214560 & & 127 & 283845 & 112 & 133 & 297255 \\
\hline 1980/81 & 1560 (a) & & \({ }_{96} 96\) & 149760 & & 127 & 198120 & & 133 & 207480 \\
\hline 1981/82 & 1086

966
(b) & & & 104256 & & 127 & 137922
122682 & & 133
133 & 144438
128478 \\
\hline 1983/84 & 1055 (b) & & & & & & & & 133 & 140315 \\
\hline Total & & 96 & & 795440 & 127 & & 985055 & 133 & & 965048 \\
\hline Social I & Institutional cost/graduate & Id 795 & 544096 = & ID 8286 & ID 9850 & \(5 \div 127\) & ID 7756 & Id 9650 & 18:133 & ID 7256 \\
\hline Table A-9 & 97 Continued & & & & & & & & & \\
\hline & & 1984 & 4/85 Gradu & uates* & 1985/ & /86 Gradua & ates* & 1985/ & /87 Gradua & ates* \\
\hline ax & Social Institutional cost per Student (1987ID) & Number Admitted & Number gnrolled & Cost & \[
\begin{aligned}
& \text { Nsumber } \\
& \text { Admitited }
\end{aligned}
\] & Number Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] & Number
Admitted & Number Enrolled & \[
\left|\begin{array}{ll}
\text { Cost } \\
1987 & \text { ID }
\end{array}\right|
\] \\
\hline 1978/79 & & & & 5202 & & & & & & \\
\hline 1979/80 & & 11 & 14 & & & & & & & \\
\hline 1980/81 & 1560 (a) & 126 & 140
140 & 218400
152040 & 129 & 111 & \(\begin{array}{r}17160 \\ 152040 \\ \hline\end{array}\) & \(\frac{1}{6}\) & \(\frac{1}{7}\) & 1560 \\
\hline 1982/83 & 1086 (b) & & 140 & 135240 & & 140 & 135240 & 146 & 153 & 147798 \\
\hline 1983/84 & 1055 (b) & & 140 & 147700 & & 140 & 147700 & & 153 & 161415 \\
\hline 1984/85 & 1143 (b) & & 180 & 160020 & & 140 & 160020 & & 153 & 174879 \\
\hline | \(1985 / 856\) & 1354
1408
\(130)\) & & & & & 110 & 189560 & & 153
153 & 207162
215124 \\
\hline \multicolumn{2}{|l|}{Total} & 140 & \multicolumn{2}{|l|}{\(140 \quad 849892\)} & 140 & \multicolumn{2}{|l|}{\(140 \quad 816130\)} & 153 & \multicolumn{2}{|l|}{915840} \\
\hline Social I & Institutional Cost/Graduate & \multicolumn{3}{|l|}{849892;140 = ID 6071} & \multicolumn{3}{|l|}{ID \(816130 \div 140=\) ID 5830} & \multicolumn{3}{|l|}{\(915840 \div 153\) = ID} \\
\hline
\end{tabular} Source: (a) Social Institutional Cost per student-year for years 1974/75 to 1980/81 are derived from the

Talole A-98 Social Institutional Cost per Graduate, College of Nursing, University of Baghdad, 1981/82-1986/87,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & 1/82 Grad & ates* & 1982 & 183 Gradua & tes* & 1983 & 184 Gradua & ̇es* \\
\hline Year & Social Institutional cost per Stucent (1987ID) & Number Admitted & \begin{tabular}{l}
Mumber \\
Eniolled
\end{tabular} & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] & \[
\left|\begin{array}{l}
\text { Number } \\
\text { Admitted }
\end{array}\right|
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] \\
\hline 77/1978 & 1805 (a) & \({ }^{6}\) & 5 & 10830 & 1 & 1 & 1805 & & & \\
\hline \(78 / 1979\) & 2367 (a) & 69 & 75 & 177525 & 9 & 10 & 23670 & & & \\
\hline 1979/80 & 2849 (a) & & 75 & 213675 & 70 & 80 & 227920 & 3 & 3 & 8547 \\
\hline 1980/81 & 1660 (a) & & 75 & 121500 & & 80 & 132800 & 52 & 55 & 91300 \\
\hline 1981/82 & 953 (b) & & 75 & 71475 & & 80 & 76240 & & 55 & 52 A15 \\
\hline 1982/83 & 1212 (b) & & & & & 80 & 96960 & & 55 & 65660 \\
\hline 1983/84 & 1407 (b) & & & & & & & & 55 & 77385 \\
\hline \multicolumn{2}{|l|}{Total} & 75 & & 598005 & 80 & & 559395 & 55 & & 296307 \\
\hline \multicolumn{2}{|l|}{Social Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID \(598005 \div 75=\) ID 7973} & \multicolumn{3}{|l|}{ID 559395-80 = ID 6992} & \multicolumn{3}{|l|}{ID 296307\%55 = ID 5387} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & A/85 Gxad & nates* & 1985 & 186 Gradu & ates* & 1986 & 87 Gradua & tes* \\
\hline Year & Social Institutional cost per Student (1987ID) & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & Number Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] & Number Admitted & Number Enrolled & \[
\left.\right|_{\text {Dost }} ^{\text {Cos }}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & Number Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] \\
\hline 1978/79 & 2367 (a) & 1 & 1 & 2367 & & & & & & \\
\hline 1979/80 & 2849 (a) & 2 & 3 & 8547 & & & & & & \\
\hline 1980/81 & 1660 (a) & 6 & 9 & 14940 & 2 & 2 & 3320 & & & \\
\hline 1981/82 & 953 (b) & 57 & 66 & 62898 & 14 & 16 & 15248 & 3 & 3 & 2859 \\
\hline 1982/83 & 1212 (b) & & 66 & 79992 & 45 & 61 & 73932 & 6 & 9 & 10908 \\
\hline 1983/84 & 1107 (b) & & 66 & 92862 & & 61 & 85827 & 32 & 41 & 57687 \\
\hline 1984/85 & 1406 (b) & & 66 & 92796 & & 61 & 85766 & & 41 & 57646 \\
\hline 1985/86 & 2423 (b) & & & & & 61. & 147803 & & 41 & 99343 \\
\hline 1986/87 & 1544 (b) & & & & & & & & 41 & 63304 \\
\hline \multicolumn{2}{|l|}{Total} & 66 & & 354402 & 61 & & 411896 & 41 & & 291747 \\
\hline \multicolumn{2}{|l|}{Social Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID 354402\%66 = ID 5370} & \multicolumn{3}{|l|}{ID \(411896 \div 61=\) ID 6752} & \multicolumn{3}{|l|}{ID 291747-41 = ID 7116} \\
\hline
\end{tabular}
Source: (a) Social Institutional cost per student-year for years 1974/75 to 1980/81 are derived from the
(b) Social Institutionai cost per student-year for year 1981/82 to 1986/87 are derived from Table A-92.
(*) Number of Graduates by year of admission from Table A-44.

 Source: (a) Social Institutional Cost per student-year for years \(1974 / 75\) to \(1980 / 81\) are derived from the (b) Social Institutionai coost per student-year for year \(1981 / 82\) to 19 1986/87 are derived from Table A-92.
A. 78
Table A-100 Social Institutional Cost per Graduate, College of Agriculture, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 1/82 Grad & ates* & 1982 & 183 Grad & ates* & 1983 & 184 Grad & ates* \\
\hline Year & Social Institutional cost per Student (1987ID) & Number Admitted & Number Enrolled & \[
\left|\begin{array}{ll}
\text { cost } \\
1987 & \text { rD }
\end{array}\right|
\] & Number Admitted & Wumber Enrolled & \[
\left|\begin{array}{ll}
\text { cost } & \\
1987 & \text { ID }
\end{array}\right|
\] & Number Admitted & Wumber Eniolled & \[
\left\lvert\, \begin{array}{ll}
\text { Cost } & \\
1987 & \text { ID }
\end{array}\right.
\] \\
\hline 1977/78 & 1398 (a) & 110 & 110 & 153780 & 16 & 16 & 22368 & 3 & 5 & 6990 \\
\hline 1978/79 & 1657 (a) & 441 & 551 & 913007 & \({ }^{66}\) & & 135874 & 13 & 18 & 29826 \\
\hline 1979/80 & 2155 (a) & & 551 & 7187405 & 528 & 610 & \begin{tabular}{l}
1314550 \\
1103940 \\
\hline
\end{tabular} & 110 & 128
55
5 & - 2755840 \\
\hline 1981/82 & 1102 (b) & & 551 & \({ }_{6}^{107202}\) & & 610
610 & 1103940
672220 & & 553
553 & +1025262 \\
\hline \(1982 / 83\) & 841 (b) & & & & & 610 & 513010 & & 553 & \({ }^{4} 65073\) \\
\hline 1983/84 & 952 (b) & & & & & & & & 553 & 526456 \\
\hline \multicolumn{2}{|l|}{Total} & 551 & \multicolumn{2}{|l|}{3882948} & 610 & \multicolumn{2}{|l|}{3788962} & 553 & & 2938853 \\
\hline \multicolumn{2}{|l|}{Social Institutional cost/Graduate} & \multicolumn{3}{|l|}{882948551 = ID 7047} & \multicolumn{3}{|l|}{ID 3788962 \(610=\) ID 6211} & \multicolumn{3}{|l|}{ID \(2938853 \div 553\) = ID 5314} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 4/85 Grad & ates* & 1985 & 186 Gradu & tes* & 1986 & 187 Gradu & ates* \\
\hline Yeax & Social Instítutional cost per Student (1987ID) & Number
Admitited & Number Enrolled & \[
\left|\begin{array}{ll}
\text { cost } & \\
1987 & \text { ID }
\end{array}\right|
\] & Number
Admitied & Number Enrolled & \[
\left|\begin{array}{l}
\text { Cost } \\
1987
\end{array}\right|
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { number } \\
& \text { Enxolled }
\end{aligned}\right.
\] & \({ }_{1987}^{\text {cost } \mathrm{ID}}\) \\
\hline 1978/79 & & & \({ }^{3}\) & 4971 & 5 & 5 & 8285 & & & \\
\hline \(1979 / 80\)
\(1980 / 81\) & \({ }^{21855}\) (a) & 24
133 & 27
160 & 58185
296640 & & 5 & 10775 & & & \\
\hline \(1981 / 82\) & 1102 (b) & 138
388 & 1648 & 296640 & 136 & - 215 & \(\begin{array}{r}38934 \\ 173014 \\ \hline\end{array}\) & & & \\
\hline 1982/83 & 841 (b) & & 548 & \({ }_{460868}\) & 252 & 409 & 343969 & 97 & 108 & \({ }_{90828}\) \\
\hline 1983/84 & 952 (b) & & & 521696 & & 409 & 389368 & 200 & 308 & 293216 \\
\hline \(1984 / 85\)
\(1985 / 86\) & 1388 (b)
1009 & & \(5 \stackrel{1}{8}\) & 760624 & & 189
409
409 & 567692
412681 & & 308
308
308 & (427500 \\
\hline \[
\left|\begin{array}{l}
1985 / 86 \\
1986 / 87
\end{array}\right|
\] & 1004 (b) & & & & & 409 & 412681 & & 308
308 & 310772
101632 \\
\hline \multicolumn{2}{|l|}{Total} & 548 & \multicolumn{2}{|l|}{2706880} & 409 & & 1944718 & 308 & & 1545074 \\
\hline \multicolumn{2}{|l|}{Social Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID \(2706880 \div 548=\) ID 4940} & \multicolumn{3}{|l|}{ID 1944718*409 = ID 4755} & \multicolumn{3}{|l|}{ID 1545074 \(308=\) ID 5016} \\
\hline
\end{tabular}
Source: (a) Social Institutional cost per student-year for years \(1974 / 75\) to \(1980 / 81\) axe derived from the

Table A-101 Social Institutional Cost per Graduate, College of Administration and Economics, University of
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 1/82 Grad & uates* & 1982 & 183 Gradua & ates** & 1983 & 184 Gradua & ates* \\
\hline Yea & Social Institutional cost per Student (1987ID) & Number Admitted & Number Entolled & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \mathrm{ID}
\end{aligned}
\] & Number Acmitted & Number Enzolled & \[
\left|\begin{array}{l|}
\text { Cost } \\
1987 \text { ID }
\end{array}\right|
\] & Number Admitted & Nuamber
Enrolled & \[
\left|\begin{array}{ll}
\text { cost } \\
1987 & \text { ID }
\end{array}\right|
\] \\
\hline \(1975 / 76\) & 405 (a) & 5 & 50 & 2025 & & & & \(\frac{1}{2}\) & 1 & 405 \\
\hline \({ }^{1977 / 78}\) & - 393 (a) & + \(\begin{array}{r}25 \\ 128\end{array}\) & \(\begin{array}{r}30 \\ 158 \\ \hline\end{array}\) & 11790
68256 & & \(5 \frac{4}{4}\) & & 2 & 3 & \\
\hline 1978/79 & 470 (a) & & 838 & 393860 & 109 & 161 & 75670 & 21 & 29 & 13630 \\
\hline 1979/80 & 630 (a) & & 838 & 527940 & 721 & 882 & 555660 & 90 & 119 & \\
\hline 1980/81 & 580 (a) & & 838 & 486040 & & 882 & 511560 & 746 & 865 & 501700 \\
\hline 1981/82 & 297 (b) & & & 248886 & & \({ }_{8}^{882}\) & 261954 & & 865 & 256905 \\
\hline \[
\left|\begin{array}{l|l|l|}
198283 \\
1983 / 84
\end{array}\right|
\] & \({ }_{232}^{232}\) (b) & & & & & & 204624 & & 865 & 200680
200680 \\
\hline Total & & 838 & & 1738797 & 882 & & 1633504 & 865 & & 1253605 \\
\hline Social & Institutional Cost/graduate & ID 1738 & 797-838 = & ID 2095 & ID 1633 & 001 \(2882=\) & ID 1852 & ID 1253 & 605*865 = & ID 1449 \\
\hline rable A-1 & 101 continued & & & & & & & & & \\
\hline & & 198 & /85 Gradu & ates* & 1985 & 86 exadua & ates* & 1986 & 87 Gradua & ates* \\
\hline Yeax & Social Institutional cost per Student (1987ID) & Number Admitted & Number Enrolled & \[
\left|\begin{array}{ll}
\text { cost } \\
1987 & \text { ID }
\end{array}\right|
\] & Number Admitted & Number Enxolled & \[
\left|\begin{array}{ll}
\operatorname{cost} & \\
1987 & \text { ID }
\end{array}\right|
\] & Number Admitted & Number Enrolled & \[
\left|\begin{array}{ll}
\operatorname{Cost} & \\
1987 & \text { ID }
\end{array}\right|
\] \\
\hline 1977/78 & 432 (a) & & & & & & & & & \\
\hline \(1978 / 79\)
\(1979 / 80\) & 470
630
630
(a) & \({ }_{43}^{6}\) & \(5{ }^{9}\) & 4230
32760 & & & & & & \\
\hline 1980/81 & 580 (a) & 139 & 191 & 110780 & 54 & 63 & 36540 & & 5 & 00 \\
\hline 1981/82 & 297 (b) & 709 & 900 & 267300 & 219 & 282 & 83754 & 65 & 70 & 20790 \\
\hline 1982/83 & & & 900 & 208800 & 608 & 890 & 206480 & 127 & 97 & 45708 \\
\hline \(1983 / 8 \frac{1}{5}\) & 232 (b) & & 900 & 208800 & & 890 & 206480 & 552 & 749 & 173758 \\
\hline 1984/85 & 264 (b) & & 900 & 237600 & & 890 & 234960 & & 749 & 197736 \\
\hline 1985/86 & 280 (b) & & & & & 890 & 249200 & & 719 & 209720 \\
\hline 1986/87 & & & & & & & & & 749 & 245672 \\
\hline \multicolumn{2}{|l|}{Total} & 900 & \multicolumn{2}{|l|}{1071566} & 890 & & \(890 \quad 1023084\) & 749 & & 896290 \\
\hline \multicolumn{2}{|l|}{Social Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID 1071566900 = ID 1191} & \multicolumn{3}{|l|}{ID 1023084\%890 = ID 1150} & \multicolumn{3}{|l|}{ID 896290749 = ID 1197} \\
\hline
\end{tabular}
Source: (a) Social Institutional cost per student-year for years \(1974 / 75\) to \(1980 / 81\) are derived from the
(b) Social Institutionai cost per student-year for year ligilif2 io 1986/87 are derived from Table A-92.
Table A-1.02 Social Institutional Cost per Graduate, College of Lat and politics, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 1/82 Grad & ates* & 1982 & 183 Gradu & ates* & 1983 & 184 Gradua & ates* \\
\hline Year & Social Institutional cost per student (1987ID) & Wumber Admitted & Number Enrolled & \[
\begin{array}{ll}
\text { Cost } \\
1987 \text { ID }
\end{array}
\] & ivumber Admitted & Number
Enrolled & \[
\begin{array}{ll}
\text { cost } & \\
1987 & \text { ID }
\end{array}
\] & Number Admitted & Number Enrolled & \({ }_{\text {cost }}^{\text {cosi ID }}\) \\
\hline 1977778 & & +153 & & & & & & & & 848
5551 \\
\hline \(1978 / 79\)
\(1979 / 80\) & 427
570

(a) & 152 & 195
195 & 83265
111150 & 51
210 & 65
275 & 27755
156750 & \({ }_{32}\) & 13
45 & 5551
25650 \\
\hline 1980/81 & 747 (a) & & 195 & 145665 & & 275 & 205425 & 216 & 261 & 194967 \\
\hline 1981/82 & & & 195 & 139425 & & 275 & 196625 & & 261 & 186615 \\
\hline [1982/83 & \begin{tabular}{l}
596 \\
633 \\
\hline (b)
\end{tabular} & & & & & 275 & 163900 & & \({ }_{261}^{261}\) & 155556
165213 \\
\hline \multicolumn{2}{|l|}{Total} & 195 & & 497737 & 275 & & 756391 & 261 & & 734400 \\
\hline \multicolumn{2}{|l|}{Social Institutional cost/graduate} & \multicolumn{3}{|l|}{ID 497737:195 = ID 2552} & \multicolumn{3}{|l|}{ID 756391*275 = ID 2751} & \multicolumn{3}{|l|}{ID \(7341400 \div 261\) = ID 2813} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multirow[t]{2}{*}{Social Institutional
per Student (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates \({ }^{*}\)} & \multicolumn{3}{|l|}{1985/86 Gxaduates*} & \multicolumn{3}{|l|}{1986/87 Gxaduates*} \\
\hline Yeax & & \[
\begin{array}{|l|}
\hline \text { Number } \\
\text { Admitted }
\end{array}
\] & Number Enrolled & \[
\left\lvert\, \begin{array}{ll}
\text { cost } \\
1987 & \text { ID }
\end{array}\right.
\] & \[
\begin{array}{|l|}
\hline \text { aivumber } \\
\text { Admitted }
\end{array}
\] & Number Enrolled & \[
\cos t
\]
\[
1987 \text { II }
\] & Number Admitted & Number Enrollec & \begin{tabular}{l}
Cost \\
1987 ID
\end{tabular} \\
\hline 1978/79 & 427 (a) & 1 & 1 & 427 & 2 & 2 & 854 & & & \\
\hline 1979/80 & 5717 (a) & \({ }_{27}^{10}\) & 11
38 & 6270
28386 & \({ }_{14}^{2}\) & \(1{ }^{\frac{4}{8}}\) & 2280
13446 & 1 & 1 & 770 \\
\hline 1981/82 & 715 (b) & 172 & 210 & 150150 & 64 & 64 & 45760 & 3 & \({ }^{4}\) & 2860 \\
\hline 1982/83 & 596 (b) & & 210 & 125160 & 71 & 235 & 140060 & 34 & 38 & 22648 \\
\hline 1983/84 & \({ }_{680}^{633}\) (b) & & \({ }_{210}^{210}\) & 132930
142800 & & 235
235 & 148755 & 42 & 180
180 & \begin{tabular}{l}
113940 \\
122400 \\
\hline
\end{tabular} \\
\hline 1985/86 & \({ }^{709}\) (b) & & & & & 235 & 166615 & & 180 & 127620 \\
\hline \(1986 / 87\) & 922 (b) & & & & & & & & 180 & 165960 \\
\hline \multicolumn{2}{|l|}{Total} & 210 & & 586123 & 235 & & 677570 & 180 & & 556745 \\
\hline Social & itutional cost/gr & \multicolumn{3}{|l|}{Id \(586123 \div 210\) = Id 2791} & \multicolumn{3}{|l|}{ID \(677570 \div 235\) = ID 2883} & \multicolumn{3}{|l|}{ID 5567a5* 180 = ID 3093} \\
\hline
\end{tabular}
Source: (a) Social Institutional Cost per student-year for years \(1974 / 75\) to \(1980 / 81\) are derived from the

 Source: (a) Social Institutional Cost per student-year for years 1974/75 to 1980/81 are derived from the (b) Social Institutionai Cost per stadent-year for year 1981/82 to 1986/87 are derived from Table A-92.
Table A-10』 Social Institutional cost per Graduate, college of Education, University of Baghdad, 1981/82-1986/87,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multirow[t]{2}{*}{Social Institutional cost per Student (1987ID)} & \multicolumn{3}{|l|}{1981/82 Graduates*} & \multicolumn{3}{|l|}{1982/83 Graduates*} & \multicolumn{3}{|l|}{1983/84 Graduates*} \\
\hline Year & & Number Admitted & Number Encolled & Cost & Number Admittec & Number
Enrolled & \({ }^{\text {Cost }}\) 1987 ID & Number Admitted & Number Earolled & D \\
\hline \(1974 / 75\) & 553 (a) & 12 & 18 & \({ }^{3318}\) & & & & & & \\
\hline 1975/76 & \({ }_{4}^{4} 72\) (a) & 12 & 18 & -8316 & & & & 1 & 1 & 462 \\
\hline \(1976 / 78\) & \({ }^{471} 516\) (a) & \({ }_{6}^{8}\) & \({ }_{95}^{26}\) & \({ }_{49020}^{12246}\) & \({ }_{32}^{12}\) & 12 & 22705 & 23 & 28 & 11448 \\
\hline 1978/79 & 661 (a) & 915 & 1010 & 667610 & 72 & 116 & 76676 & 38 & \({ }_{66}\) & 43626 \\
\hline 1979/80 & 846 (a) & & 1010 & 854460 & 1043 & 1159 & & & 257 & 217422 \\
\hline 1980181 & 658 & & 1010 & 664580 & & 1159 & 762622 & 1055 & 1312 & \({ }_{8}^{2173296}\) \\
\hline 1981/82 & \({ }_{3}^{405}\) (b) & & 1010 & 409050 & & 1159
1159 & 169395
369721 & & 1312
1312
1 & \begin{tabular}{l}
531360 \\
418528 \\
\hline
\end{tabular} \\
\hline \(1983 / 84\) & 349 (b) & & & & & & & & 1312 & \({ }_{4}^{4187888}\) \\
\hline \multicolumn{2}{|l|}{Total} & 1010 & & 2668600 & 1159 & & 2687284 & 1312 & & 2549385 \\
\hline Social & Institutional cost/Graduate & \multicolumn{3}{|l|}{ID 2668600 \(1010=\) ID 2642} & \multicolumn{3}{|l|}{ID \(2687284 \div 1159\) = ID 2319} & \multicolumn{3}{|l|}{ID 2549385*1312 = ID 1943} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 4/85 Gxadu & uates \({ }^{\text {* }}\) & 1985 & /86 Gradua & ates* & 1986 & 187 Gradua & ates* \\
\hline Year & Social Institutional cost per Student (1987ID) & \[
\left|\begin{array}{|l|l}
\text { Nuraber } \\
\text { Admited }
\end{array}\right|
\] & \[
\left|\begin{array}{|l|}
\text { Number } \\
\text { Enirolled }
\end{array}\right|
\] & \[
\left\lvert\, \begin{aligned}
& \text { cost } \\
& 1987 \text { ID }
\end{aligned}\right.
\] & Number
Admitited & Number
EnIoIled & \[
\left|\begin{array}{ll}
\text { cost } \\
1987 & \text { ID }
\end{array}\right|
\] & Number
Admitted & Mumber
EnIolled & \[
\left|\begin{array}{ll}
\text { cost } \\
1987 \mathrm{mD}
\end{array}\right|
\] \\
\hline 1977778 & 516 (a) & \({ }^{5}\) & 5 & \({ }^{2580}\) & \({ }^{3}\) & 3 & 1548 & & & \\
\hline \(1979 / 80\) & 846 (a) & 154 & 175 & 148050 & 42 & 51 & 43146 & & & \\
\hline 1980/81 & 658 (a) & 345 & 520 & 342160 & 99 & 150 & 98700 & 25 & & \\
\hline 1981/82 & & 1029 & & & 306 & 456 & 181680 & & 122 & \({ }^{29410}\) \\
\hline 1982/83 & 319 (b) & & 1549 & 494131 & 758 & 1214 & 387266 & 300 & \({ }_{422}\) & 134618 \\
\hline \({ }^{1983 / 84} 1\) & \begin{tabular}{l}
349 \\
374 \\
\hline (b)
\end{tabular} & & 1549
1549 & 540601
579326 & & 1214 & \({ }_{4543686}^{42368}\) & 801 & \({ }_{1223}^{1223}\) & \begin{tabular}{l}
126827 \\
\hline 57402 \\
\hline
\end{tabular} \\
\hline \begin{tabular}{|l|}
\(19884 / 85\) \\
1985
\end{tabular} & \begin{tabular}{l}
374 \\
427 \\
\hline 18\()\)
\end{tabular} & & & & & 121214 & ( 454036 & & 1223
1223 & \(\begin{array}{r}457402 \\ 522221 \\ \hline\end{array}\) \\
\hline 1986/87 & 468 (b) & & & & & & & & 1223 & 572364 \\
\hline \multicolumn{2}{|l|}{Total} & 1549 & \multicolumn{2}{|l|}{2748074} & 1214 & \multicolumn{2}{|l|}{2116389} & \multicolumn{3}{|l|}{223 2192828} \\
\hline Social & Institutional Cost/Graduate & ID 27480 & 4-1549 = & ID 1774 & \multicolumn{3}{|l|}{ID \(2116389 \div 1214\) = ID 1743} & \multicolumn{3}{|l|}{ID 21928281223 = ID 1793} \\
\hline
\end{tabular}
Source: (a) Social Institutional Cost per student-year for years \(1974 / 75\) to \(1980 / 81\) are derived from the (b) Social Institutionai cost per student-year for year \(1981 / 82\) to \(1986 / 87\) are derived from Table A-92.
Table A-105 Social Institutional Cost per Graduate, College of Physical Education, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981 & /82 Grad & ates* & 1982 & 83 Grade & tes* & 1983 & 184 Gradu & tes* \\
\hline Year & Social Institutional cosit per Ṧudení (1987ID) & \begin{tabular}{l}
Mumber \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Cost } \\
& \text { I987 ID }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & Number Enrolled & \[
\begin{aligned}
& \text { cost } \\
& 1987 \text { ID }
\end{aligned}
\] & Number Admitted & Number Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] \\
\hline 1977/78 & 751 (a) & \(\stackrel{4}{4}\) & 4 & 3004 & & & & & & \\
\hline 1978/79 & 880 (a) & 209 & 213 & 187440 & 18 & 18 & 15840 & 2 & 2 & 1760 \\
\hline 1979/80 & 1057 (a) & & 213 & 225141 & 265 & 283 & 299131 & 44 & 46 & 48622 \\
\hline 1980/81 & 733 (a) & & 213 & 156129 & & 283 & 207439 & 203 & 249 & 182517 \\
\hline 1981/82 & 605 (b) & & 213 & 128865 & & 283 & 171215 & & 249 & 150645 \\
\hline 1982/83 & 487 (b) & & & & & 283 & 137821 & & 249 & 121263 \\
\hline 1983/8年 & 505 (b) & & & & & & & & 249 & 125745 \\
\hline \multicolumn{2}{|l|}{Total} & 213 & & 700579 & 283 & & 831446 & 249 & & 630552 \\
\hline \multicolumn{2}{|l|}{Social Institutional Cost/Graduaìe} & \multicolumn{3}{|l|}{ID \(700579 \div 213=\) ID 3289} & \multicolumn{3}{|l|}{ID \(831 \pm \pm 6 \div 283=\) ID 2938} & \multicolumn{3}{|l|}{ID \(530552 \div 2\) E9 = ID 2532} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Social Institutional cost pex Student (1987ID)}} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates*} & \multicolumn{3}{|l|}{1986/87 Graduates**} \\
\hline Year & & & Mumber Admitted & Number Enrolled & \[
\left|\begin{array}{l}
\text { Cost } \\
1987 \text { ID }
\end{array}\right|
\] & \begin{tabular}{l}
Mumber \\
Admit亡ed
\end{tabular} & \[
\begin{aligned}
& \text { Number } \\
& \text { Enrolled }
\end{aligned}
\] & \[
\begin{aligned}
& \operatorname{Cost} \\
& 1987 \text { ID }
\end{aligned}
\] & \[
\left\lvert\, \begin{aligned}
& \text { Number } \\
& \text { Acmitited }
\end{aligned}\right.
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}
\] \\
\hline 1978/79 & 880 & (A) & 2 & 2 & 1760 & & & & & & \\
\hline 1979/80 & 1057 & & 17 & 19 & 20083 & & & & & & \\
\hline 1980/81 & 733 & & 87 & 106 & 77698 & 14 & 14 & 10262 & & & \\
\hline 1981/82 & & (B) & 109 & 215 & 130075 & 50 & 64 & 38720 & 6 & 6 & 3630 \\
\hline 1982/83 & & (B) & & 215 & 104705 & 66 & 130 & 63310 & 96 & 102 & 49674 \\
\hline 1983/84 & & (B) & & 215 & 108575 & & 130 & 65650 & 69 & 171 & 86355 \\
\hline 1984/85 & & & & 215 & 124915 & & 130 & 75530 & & 171 & 99351 \\
\hline 1985/86 & 605 & (B) & & & & & 130 & 78650 & & 171 & 103455 \\
\hline 1986/87 & 789 & & & & & & & & & 171 & 134919 \\
\hline \multicolumn{3}{|l|}{Total} & 215 & & 567811 & 130 & & 332122 & 171 & & 477384 \\
\hline \multicolumn{3}{|l|}{Social Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID \(567811 \div 215=\) ID 2641} & \multicolumn{3}{|l|}{ID \(332122 \div 130=\) ID 2555} & \multicolumn{3}{|l|}{\[
\text { ID } 477384 \div 171=\text { ID } 2792
\]} \\
\hline
\end{tabular}
Source: (a) Social Institutional Cost per student-year for years 1974/75 to 1980/81 are derived from the
(b) Social Institutionai cost per student-year for year 1981/82 to 1986/87 are derived from Table A-92.
Table A-106 Social Institutional Cost per Graduate, College of Academy of Fine Arts, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 1/82 Grad & ates* & 1982 & 83 Grad & tes* & 1983 & 84 Grad & tes* \\
\hline Year & Social Institutional cost per Student (1987ID) & Number Admitted & Number Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \mathrm{ID}
\end{aligned}
\] & Number Admitted & Namber Enrolled & \[
\begin{aligned}
& \text { Cost } \\
& 1987 \mathrm{ID}
\end{aligned}
\] & Mumber Admitted & Number Enrolled & \({ }_{1987}^{\text {cost }}\) \\
\hline 1976777 & 721 (a) & 1 & 1 & 721 & 1 & 8 & 721 & & & \\
\hline 1977/78 & 1293 (a) & 105 & 114 & 111637 & \({ }_{35}^{7}\) & \(\begin{array}{r}8 \\ 48 \\ \hline\end{array}\) & \({ }_{42656}^{1034}\) & \(1{ }^{3}\) & \(\begin{array}{r}3 \\ 13 \\ \hline\end{array}\) & 3879
12896 \\
\hline 1979/80 & 1409 (a) & & 114 & 160626 & 126 & 169 & 238121 & 28 & 11 & 57769 \\
\hline 1980/81 & 943 (a) & & 114 & 107502 & & 169 & 159367 & 121 & 162 & 152766 \\
\hline 198I/822 & 675 (b) & & 114 & 76950 & & 169 & 114075 & & 162 & 109350 \\
\hline 1982/83 & \({ }_{484}^{561}\) (b) & & & & & & 94809 & & \({ }_{162}^{162}\) & 90882
78408 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{Total}} & & & & & & & & & \\
\hline & & 114 & & 470524 & 169 & & 690093 & 162 & & 505950 \\
\hline \multicolumn{2}{|l|}{Social Institutional cost/Graduate} & \multicolumn{3}{|l|}{ID \(470524 \div 114=\) ID 4127} & \multicolumn{3}{|l|}{ID \(690093 \div 169\) = ID 3906} & \multicolumn{3}{|l|}{ID \(505950 \div 162=\) ID 3123} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & \(4 / 85\) Grad & uates* & 1985 & 186 Gradu & àes* & 1986 & 187 Gradu & tes* \\
\hline Year & Social Institutional cost per student (1987ID) & Number Admitted & Number Enrolled \(\qquad\) & \[
\left\lvert\, \begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}\right.
\] & Number Admitted & Mumber Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Cost } \\
& 1987 \text { ID }
\end{aligned}\right.
\] & Number Admitted & Number Enrolled & \({ }_{\text {cost }}\) \\
\hline 1978/79 & 992 (a) & & 88 & 2976 & & 3 & 2976 & & & \\
\hline 1979/80 & 1409 (a) & 25 & 28 & 33942 & 5 & \({ }^{8}\) & 11272 & & & \\
\hline 1981/82 & 973 (b) & 110 & 204 & - 1377008 & 29
65 & 102 & 38851
6885 & \({ }_{8}^{4}\) & 12 & 8100 \\
\hline 1982/83 & 561 (b) & & 204 & 114444 & 136 & 238 & 133518 & 31 & 43 & 24123 \\
\hline 1983/84 & 484 (b) & & 204 & 98736 & & 238 & 115192 & 134 & 177 & 85668 \\
\hline \(1984 / 85\) & 494 (b) & & 204 & 100776 & & 238 & 117572 & & 177 & 87738 \\
\hline 1985/86 & \(2488(b)\)
660 & & & & & 238 & \(10662{ }^{\text {a }}\) & & 177
177 & \\
\hline \multicolumn{2}{|l|}{Total} & 204 & \multicolumn{2}{|l|}{582726} & 238 & \multicolumn{2}{|l|}{590895} & 177 & \multicolumn{2}{|l|}{177 ( 105217} \\
\hline \multicolumn{2}{|l|}{Social Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID 582726*204 = ID 2857} & \multicolumn{3}{|l|}{ID 590895\% 238 = 102483} & \multicolumn{3}{|l|}{ID \(405217 \div 177\) = ID 22} \\
\hline
\end{tabular}
Source: (a) Social Institutional Cost per student-year for years \(1974 / 75\) to \(1980 / 81\) are derived from the
(b) Social Institutionai coot per studunt-year for year \(1981 / 192\) to \(1986 / 87\) are derived from Table A-92.

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 198 & 2/85 Grad & uates** & 1985 & 186 Gradu & ates* & 1986 & 187 Gradua & tes* \\
\hline Yeax & Social Institutional cost per Student (1987ID) & \begin{tabular}{l}
Number \\
Acmitted
\end{tabular} & \begin{tabular}{l}
Number \\
Eniolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { cost } \\
& 1987 \text { ID }
\end{aligned}\right.
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left|\begin{array}{ll}
\text { cost } \\
1987 & \text { ID }
\end{array}\right|
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { cost } \\
& 1987 \text { ID }
\end{aligned}\right.
\] \\
\hline 1979/80 & 768 (a) & 20 & 20 & 15360 & 15 & 15 & 11520 & & & \\
\hline 1980/81 & 611 (a) & 53 & 73 & 44603 & 35 & 50 & 30550 & & & \\
\hline 1981/82 & 419 (b) & 122 & 195 & 81705 & 43 & 93 & 38967 & 34 & 34 & 14246 \\
\hline 1982/83 & 344 (b) & & 195 & 67080 & 155 & 248 & 85312 & 56 & 90 & 30960 \\
\hline 1983/84 & 371 (b) & & 195 & 72345 & & 248 & 92008 & 115 & 205 & 76055 \\
\hline 1984/85 & 409 (b) & & 195 & 79755 & & 248 & 101432 & & 205 & 83845 \\
\hline 1985/86 & 381 (b) & & & & & 248 & 94488 & & 205 & 78105 \\
\hline 1986/87 & 564 (b) & & & & & & & & 205 & 115620 \\
\hline \multicolumn{2}{|l|}{Total} & \multicolumn{3}{|l|}{195 360848} & 248 & \multicolumn{2}{|l|}{454277} & 205 & \multicolumn{2}{|l|}{398831} \\
\hline \multicolumn{2}{|l|}{Social Institutional Cost/Graduate} & \multicolumn{3}{|l|}{ID 360848-195 = ID 1851} & \multicolumn{3}{|l|}{ID \(454277 \div 248=\) ID 1832} & \multicolumn{3}{|l|}{ID 398831*205 = ID 1946} \\
\hline
\end{tabular}
Source: (a) Social Institutional cost per student-year for years \(1974 / 75\) to 1980/81 are derived from the
unpublished study of institutional cost for graduate in lraq by group was consist to that purpose
(b) Sociall Institutionai cost per student-year for year 19811/82 to 1986/87 are derived from Table A-92.
Summary of of Social Institutional cost per Graduate by College and Year of Graduation, University of Baghdad
\(1981 / 82-1986 / 87\) (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline College & \begin{tabular}{l}
\[
1981 / 82
\] \\
Graduates
\end{tabular} & \[
\begin{gathered}
\text { 1982/83 } \\
\text { Graduates }
\end{gathered}
\] & \[
\begin{gathered}
\text { 1983/84 } \\
\text { Graduates }
\end{gathered}
\] & \[
\begin{gathered}
\text { 1984/85 } \\
\text { Graduates }
\end{gathered}
\] & \begin{tabular}{l}
1985/86 \\
Graduates
\end{tabular} & \[
\begin{gathered}
\text { 1986/87 } \\
\text { Graduates }
\end{gathered}
\] & \begin{tabular}{l}
1981/82-1986/87 \\
Deighted Average
\end{tabular} & Length of Program & cost per year \\
\hline 1 & 5137 & 4492 & 3724 & 3431 & 3310 & 3201 & 3780 & 4 & 945 \\
\hline 2 & 4163 & \(\underline{493}\) & 4006 & 3793 & 3866 & 4013 & 4006 & 4 & 1002 \\
\hline 3 & 9763 & 9361 & 8580 & 7562 & 6666 & 6297 & 7867 & 6 & 1311 \\
\hline 4 & 4643 & 4439 & 3926 & 3241 & 3494 & 3676 & 3900 & 5 & 780 \\
\hline 5 & 8286 & 7756 & 7256 & 6071 & 5830 & 5986 & 6752 & 5 & 1350 \\
\hline 6 & 7973 & 6992 & 5387 & 5370 & 6752 & 7116 & 6645 & 4 & 1661 \\
\hline 7 & 9149 & 8491 & 7414 & 6966 & 7074 & 7641 & 7820 & 5 & 1564 \\
\hline 8 & 7047 & 6211 & 5314 & 4940 & 4755 & 5016 & 5642 & 4 & 1411 \\
\hline 9 & 2095 & 1852 & 1449 & 1191 & 1150 & 1197 & 1486 & 4 & 372 \\
\hline 10 & 2552 & 2751 & 2814 & 2791 & 2883 & 3093 & 2809 & 4 & 702 \\
\hline 11 & 3070 & 2812 & 2292 & 1994 & 1841 & 1736 & 2223 & 4 & 556 \\
\hline 12 & 2642 & 2319 & 1943 & 1774 & \(17 \pm 3\) & 1793 & 2004 & 4 & 501 \\
\hline 13 & 3289 & 2938 & 2532 & 2641 & 2555 & 2792 & 2807 & 4 & 702 \\
\hline 14 & 4127 & 3906 & 3123 & 2857 & 2483 & 2289 & 3022 & 4 & 756 \\
\hline 15 & 2533 & 2192 & 1879 & 1851 & 1832 & 1946 & 2032 & 4 & 508 \\
\hline
\end{tabular}

\footnotetext{
Source: From tables A-93 to A-107.
}

APPENDIX B
SUPPLEMENT TO CHAPTER 6

Table B-1
Annual Gross Salaries of High School Graduates Employed in Public Sector in Iraq, by Number of Years since High School Graduation, 1986/1987。
\begin{tabular}{|c|c|c|c|c|}
\hline Years Since High School Graduation & Size of Sample & Total Gross Salaries(ID) & Average Gross Salary (ID) & Average Gross Salary1987(ID) \\
\hline 1 & 1708 & 686,844 & 402 & 972 \\
\hline 2 & 802 & 366, 156 & 457 & 1,027 \\
\hline 3 & 1807 & 858,792 & 475 & 1,045 \\
\hline 4 & 2561 & 1,319,004 & 515 & 1,085 \\
\hline 5 & 3213 & 1,708,704 & 532 & 1,102 \\
\hline 6 & 1152 & 622,416 & 540 & 1,110 \\
\hline 7 & 6274 & 3,841,224 & 612 & 1,182 \\
\hline 8 & 6343 & 4,140,816 & 653 & 1,223 \\
\hline 9 & 4164 & 2,704,680 & 650 & 1,220 \\
\hline 10 & 3966 & 2,655,924 & 670 & 1,240 \\
\hline 11 & 5086 & 3,481,908 & 685 & 1,255 \\
\hline 12 & 6025 & 4,458,372 & 740 & 1,310 \\
\hline 13 & 6388 & 5,125,212 & 802 & 1,372 \\
\hline 14 & 2114 & 1,716,636 & 812 & 1,382 \\
\hline 15 & 1843 & 1,539,109 & 835 & 1,405 \\
\hline 16 & 1416 & 1,245,396 & 880 & 1,450 \\
\hline 17 & 1485 & 1,471,164 & 991 & 1,561 \\
\hline 18 & 1183 & 1,224,108 & 1,035 & 1,605 \\
\hline 19 & 1110 & 1,231,650 & 1,110 & 1,680 \\
\hline 20 & 1295 & 1,484,148 & 1,147 & 1,717 \\
\hline 21 & 992 & 1,144,284 & 1,154 & 1,724 \\
\hline 22 & 838 & 995,340 & 1,188 & 1,758 \\
\hline 23 & 543 & 664,740 & 1,224 & 1,794 \\
\hline 24 & 492 & 617,604 & 1,255 & 1,825 \\
\hline 25 & 654 & 898,440 & 1,374 & 1,944 \\
\hline 26 & 397 & 515,364 & 1,298 & 1,868 \\
\hline 27 & 433 & 569,208 & 1,315 & 1,885 \\
\hline 28 & 378 & 502,260 & 1,329 & 1,899 \\
\hline 29 & 321 & 435,024 & 1,355 & 1,925 \\
\hline 30 & 241 & 321,720 & 1,335 & 1,905 \\
\hline 31 & 153 & 200,388 & 1,310 & 1,880 \\
\hline 32 & 90 & 113,772 & 1,264 & 1,834 \\
\hline 33 & 53 & 75,288 & 1,421 & 1,991 \\
\hline 34 & 32 & 45,408 & 1.419 & 1,989 \\
\hline 35 & 44 & 59,940 & 1,362 & 1,932 \\
\hline 36 & 37 & 54,780 & 1,481 & 2,051 \\
\hline 37 & 15 & 24,852 & 1,657 & 2,227 \\
\hline 38 & 11 & 15,948 & 1,450 & 2,020 \\
\hline 39 & 6 & 10,812 & 1,802 & 2,372 \\
\hline 40 & 10 & 16,800 & 1,680 & 2,250 \\
\hline
\end{tabular}

Source:
Prepared by the Computer Center of Central Statistical Organization, Ministry of Planning, Baghdad. The data are derived from the national survey of public employees in
Iraq conducted by the Ministry of Planning 1972.
Notes:
Total size of sample for all years \(=2985\)

Table B-2
Annual Gross Salaries of College of Arts Graduates Employed in Public Sector in Traq, by Number of Years Since High School Graduation, 1986/1987.
\begin{tabular}{|c|c|c|c|c|}
\hline Years Since High School Graduation & Size of Sample & Total Gross Salaries(TD) & Average Gross
Salary (ID) Salary (ID) & Average Gross Salary1987(ID) \\
\hline 1 & 188 & 100,680 & 536 & 1,106 \\
\hline 2 & 448 & 237,612 & 530 & 1,100 \\
\hline 3 & 730 & 435,936 & 597 & 1,167 \\
\hline 4 & 367 & 233,472 & 636 & 1,206 \\
\hline 5 & 658 & 419,496 & 638 & 1,208 \\
\hline 6 & 381 & 244,104 & 641 & 1,211 \\
\hline 7 & 695 & 458,148 & 659 & 1.229 \\
\hline 8 & 670 & 489,600 & 731 & 1,301 \\
\hline 9 & 573 & 469,824 & 820 & 1,390 \\
\hline 10 & 467 & 367,944 & 788 & 1,358 \\
\hline 11 & 493 & 398,256 & 808 & 1,378 \\
\hline 12 & 589 & 498,816 & 847 & 1,417 \\
\hline 13 & 764 & 709,332 & 928 & 1,498 \\
\hline 14 & 419 & 415,488 & 992 & 1,562 \\
\hline 15 & 419 & 437,916 & 1,045 & 1,615 \\
\hline 16 & 270 & 288,240 & 1,068 & 1,638 \\
\hline 17 & 346 & 390,480 & 1,129 & 1,699 \\
\hline 18 & 250 & 322,140 & 1,289 & 1,859 \\
\hline 19 & 247 & 336,276 & 1,361 & 1,931 \\
\hline 20 & 236 & 330,600 & 1,401 & 1,971 \\
\hline 21 & 201 & 271,764 & 1,352 & 1,922 \\
\hline 22 & 125 & 181,380 & 1,451 & 2,021 \\
\hline 23 & 94 & 137,772 & 1.466 & 2,036 \\
\hline 24 & 85 & 129,504 & 1,524 & 2,094 \\
\hline 25 & 76 & 132,648 & 1,745 & 2,315 \\
\hline 26 & 60 & 99,456 & 1,658 & 2,228 \\
\hline 27 & 73 & 115,848 & 1,587 & 2,157 \\
\hline 28 & 50 & 82,680 & 1,654 & 2,224 \\
\hline 29 & 34 & 54,804 & 1,612 & 2,182 \\
\hline 30 & 19 & 35,292 & 1,858 & 2,428 \\
\hline 31 & 12 & 21.228 & 1,769 & 2,439 \\
\hline 32 & 12 & 16,620 & 1,385 & 1,955 \\
\hline 33 & 6 & 9,636 & 1.606 & 2,176 \\
\hline 34 & 5 & 12.228 & 2,446 & 3,016 \\
\hline 35 & 5 & 7.297 & 1,459 & 2,029 \\
\hline 36 & 9 & 17.796 & 1,977 & 2,547 \\
\hline 37 & 1 & 1,860 & 1,860 & 2,430 \\
\hline 38 & 1 & 1,656 & 1,656 & 2,326 \\
\hline 39 & 1 & 3,264 & 3,264 & 3,834 \\
\hline 40 & 2 & 2,736 & 1,368 & 1,488 \\
\hline
\end{tabular}

Source:
Prepared by the Computer Center of Central Statistical Organization, Ministry of Planning, Baghdad. The data are derived from the national survey of public employees in Iraq conducted by the Ministry of Planning 1972.
Notes:
\% Total size of sample for all years \(=10089\).
** Average salary in this Table is also used for Colleges
Physical Education, Academy of Fine Arts, and Alsharia.

Table B-3
Annual Gross Salaries of College of Science Graduates Employed in Public Sector in Traq, by Number of Years Since High School Graduation, 1986/1987.
\begin{tabular}{|c|c|c|c|c|}
\hline Years Since High School Graduation & Size of Sample & Total Gross Salaries(ID) & Average Gross Salary (ID) & Average Gross Salary1987(ID) \\
\hline 1 & 63 & 34,212 & 543 & 1,113 \\
\hline 2 & 157 & 87,612 & 558 & 1,128 \\
\hline 3 & 168 & 109,020 & 649 & 1,219 \\
\hline 4 & 111 & 78,708 & 709 & 1,279 \\
\hline 5 & 141 & 96,924 & 687 & 1,257 \\
\hline 6 & 160 & 104,088 & 651 & 1,221 \\
\hline 7 & 152 & 104,100 & 685 & 1,255 \\
\hline 8 & 238 & 185,148 & 778 & 1,348 \\
\hline 9 & 200 & 166,586 & 834 & 1,330 \\
\hline 10 & 194 & 162,912 & 840 & 1,410 \\
\hline 11 & 141 & 120,168 & 852 & 1,422 \\
\hline 12 & 130 & 111,792 & 860 & 1,430 \\
\hline 13 & 134 & 132,288 & 987 & 1,557 \\
\hline 14 & 113 & 118,116 & 1,045 & 1,605 \\
\hline 15 & 113 & 129,984 & 1,150 & 1,720 \\
\hline 16 & 66 & 77,424 & 1,173 & 1,743 \\
\hline 17 & 123 & 148,200 & 1,205 & 1,775 \\
\hline 18 & 86 & 119,340 & 1,388 & 1,958 \\
\hline 19 & 97 & 143,556 & 1,480 & 2,050 \\
\hline 20 & 89 & 126,636 & 1,423 & 1,993 \\
\hline 21 & 86 & 128,628 & 1,496 & 2,066 \\
\hline 22 & 47 & 68,952 & 1,467 & 2,037 \\
\hline 23 & 38 & 59,016 & 1.553 & 2,123 \\
\hline 24 & 33 & 52,092 & 1,579 & 2,149 \\
\hline 25 & 25 & 42,276 & 1,691 & 2,261 \\
\hline 26 & 20 & 33,972 & 1,699 & 2,269 \\
\hline 27 & 20 & 34.704 & 1,735 & 2,305 \\
\hline 28 & 18 & 30,168 & 1,676 & 2,246 \\
\hline 29 & 9 & 23,712 & 2,635 & 3,125 \\
\hline 30 & 4 & 7.824 & 1,956 & 2,526 \\
\hline 31 & 4 & 8.088 & 2,022 & 2,592 \\
\hline 32 & 1 & 1,584 & 1,584 & 2,154 \\
\hline 33 & & & n.a. & n.a. \\
\hline 34 & 2 & 2,172 & 1,086 & 1,656 \\
\hline 35 & 1 & 1,980 & 1,980 & 2,550 \\
\hline 36 & & & n.a. & nobo \\
\hline 37 & 1 & 2,064 & 2,064 & 2,634 \\
\hline 38 & & & n.a. & noa. \\
\hline 39 & & & \(\mathrm{n} . \mathrm{a}_{\text {。 }}\) & n.a. \\
\hline 40 & & & n.a. & n.a. \\
\hline
\end{tabular}

Source:
Prepared by the Computer Center of Central Statistical Organization, Ministry of Planning, Baghdad. The data are derived from the national survey of public employees in Iraq conducted by the Ministry of planning 1972.
Notes:
* Total size of sample for all years \(=2985\)
** Average salary in this Table is also used for Colleges Education and Nursing.

Table B-4
Annual Gross Salaries of College of Medicine Graduates Employed in Public Sector in Iraq, by Number of Years Since High School Graduation, 1986/1987.
\begin{tabular}{|c|c|c|c|c|}
\hline Years Since High School Graduation & Size of Sample & Total Gross Salaries(ID) & Average Gross Salary (TD) & Average Gross Salary1987(ID) \\
\hline 1 & 54 & 36,636 & 678 & 1,350 \\
\hline 2 & 46 & 34,428 & 748 & 1,427 \\
\hline 3 & 74 & 59,088 & 799 & 1,481 \\
\hline 4 & 128 & 103,548 & 809 & 1,493 \\
\hline 5 & 114 & 99,684 & 874 & 1,564 \\
\hline 6 & 73 & 65,688 & 900 & 1,592 \\
\hline 7 & 68 & 69,288 & 1,019 & 1,722 \\
\hline 8 & 56 & 59,832 & 1,068 & 1,776 \\
\hline 9 & 50 & 54,696 & 1,094 & 1,804 \\
\hline 10 & 54 & 63,888 & 1,183 & 1,911 \\
\hline 11 & 66 & 75,636 & 1,146 & 1,871 \\
\hline 12 & 45 & 54,240 & 1,205 & 1,936 \\
\hline 13 & 62 & 81.420 & 1,313 & 2,054 \\
\hline 14 & 44 & 57,924 & 1,317 & 2,047 \\
\hline 15 & 29 & 43,368 & 1,495 & 2,254 \\
\hline 16 & 24 & 40,332 & 1,687 & 2,457 \\
\hline 17 & 27 & 44,052 & 1,632 & 2,403 \\
\hline 18 & 21 & 33,708 & 1,605 & 2,374 \\
\hline 19 & 30 & 47,772 & 1,592 & 2,360 \\
\hline 20 & 18 & 30,240 & 1,680 & 2,456 \\
\hline 21 & 15 & 28,704 & 1,914 & 2,712 \\
\hline 22 & 10 & 19,308 & 1,931 & 2,731 \\
\hline 23 & 12 & 25,236 & 2,103 & 2,920 \\
\hline 24 & 10 & 22,620 & 2,262 & 3,094 \\
\hline 25 & 10 & 18,864 & 1,886 & 2,683 \\
\hline 26 & 6 & 14,676 & 2,446 & 3,296 \\
\hline 27 & 6 & 10,860 & 1,810 & 2,599 \\
\hline 28 & 10 & 16,056 & 1,606 & 2,375 \\
\hline 29 & 4 & 8,400 & 2,100 & 2,917 \\
\hline 30 & 3 & 7,380 & 2,460 & 3,312 \\
\hline 31 & 6 & 13,248 & 2,208 & 3,035 \\
\hline 32 & 2 & 4,524 & 2,262 & 3,095 \\
\hline 33 & 2 & 4,032 & 2,016 & 2,825 \\
\hline 34 & & & n.a. & n.a. \\
\hline 35 & 1 & 2,064 & 2,064 & 2,877 \\
\hline 36 & 3 & 7,344 & 2,448 & 3,298 \\
\hline 37 & 1 & 2,436 & 2,436 & 3,285 \\
\hline 38 & 2 & 4,800 & 2,400 & 3,246 \\
\hline 39
40 & & & n.a.
n.a. & n.a.
n.a. \\
\hline
\end{tabular}

Source:
Prepared by the Computer Center of Central Statistical Organization, Ministry of planning, Baghdad. The data are derived from the national survey of public employees in Iraq conducted by the Ministry of Planning 1972.
Notes:
* Total size of sample for all years \(=1186\)

Table B-5
Annual Gross Salaries of College of Engineering Graduates Employed in Public Sector in Traq, by Number of Years Since High School Graduation, 1986/1987.
\begin{tabular}{|c|c|c|c|c|}
\hline Years Since High School Graduation & Size of Sample & Total Gross Salaries(ID) & Average Gross Salary (ID) & Average Gross Salary1987(ID) \\
\hline 1 & 78 & 57,024 & 731 & 1,301 \\
\hline 2 & 82 & 70,116 & 855 & 1,425 \\
\hline 3 & 125 & 117,840 & 943 & 1,513 \\
\hline 4 & 219 & 203,004 & 927 & 1.497 \\
\hline 5 & 151 & 146,232 & 968 & 1,538 \\
\hline 6 & 133 & 136,416 & 1,026 & 1,596 \\
\hline 7 & 98 & 98,496 & 1,005 & 1,575 \\
\hline 8 & 145 & 186,072 & 1,283 & 1,853 \\
\hline 9 & 78 & 90,048 & 1,155 & 1,725 \\
\hline 10 & 50 & 63,312 & 1,266 & 1,836 \\
\hline 11 & 59 & 72,072 & 1,222 & 1,792 \\
\hline 12 & 66 & 95,196 & 1,442 & 2,012 \\
\hline 13 & 103 & 153,324 & 1,489 & 2,059 \\
\hline 14 & 56 & 85,728 & 1,531 & 2,101 \\
\hline 15 & 46 & 81,960 & 1,782 & 2,352 \\
\hline 16 & 35 & 53,688 & 1,534 & 2,104 \\
\hline 17 & 32 & 58,800 & 1,838 & 2,408 \\
\hline 18 & 44 & 78,456 & 1,783 & 2,353 \\
\hline 19 & 49 & 80,628 & 1.646 & 2,216 \\
\hline 20 & 45 & 80,796 & 1,796 & 2,366 \\
\hline 21 & 33 & 60,924 & 1,846 & 2,416 \\
\hline 22 & 21 & 42,612 & 2,029 & 2,599 \\
\hline 23 & 24 & 48,564 & 2,024 & 2,594 \\
\hline 24 & 18 & 32,292 & 1,794 & 2,364 \\
\hline 25 & 22 & 41,268 & 1,876 & 2,446 \\
\hline 26 & 13 & 26,400 & 2,031 & 2,601 \\
\hline 27 & 15 & 24,600 & 1,640 & 2.210 \\
\hline 28 & 8 & 14,616 & 1,827 & 2.397 \\
\hline 29 & 9 & 17,748 & 1,972 & 2.542 \\
\hline 30 & 10 & 18.024 & 1,802 & 2,372 \\
\hline 31 & 5 & 9,168 & 1,834 & 2,404 \\
\hline 32 & 3 & 3,864 & 1,288 & 1,858 \\
\hline 33
34 & & n.a. & n.a. & n.a. \\
\hline 34 & 2 & 4.380 & 2,190 & 2,760 \\
\hline 35
36 & 2 & 4,332 & 2.166 & 2,736 \\
\hline 36
37 & & n.a. & n.a. & n.a. \\
\hline 37 & & n.a. & n.a. & n.a. \\
\hline 38
39 & & n.a. & n.a. & n.a. \\
\hline 39
40 & 1 & n.a.
2,736 & n.a.
2.736 & n.a.
3,306 \\
\hline
\end{tabular}

Source:
Prepared by the Computer Center of Central Statistical Organization, Ministry of planning, Baghdad. The data are derived from the national survey of public employees in traq conducted by the Ministry of Planning 1972.
Notes:
* Total size of sample for all years \(=1880\)

Table B-6
Annual Gross Salaries of College of Agriculture Graduates Enployed in Public Sector in Iraq, by Number of Year Since High School Graduation, 1986/1987.
\begin{tabular}{|c|c|c|c|c|}
\hline Years Since High School Graduation & Size of Sample & Total Gross Salaries(ID) & Average Gross Salary (ID) & Average Gross Salary1987(ID) \\
\hline 1 & 68 & 35,100 & 516 & 1,089 \\
\hline 2 & 24 & 12,696 & 529 & 1,099 \\
\hline 3 & 28 & 16,668 & 595 & 1,165 \\
\hline 4 & 93 & 60,300 & 648 & 1,218 \\
\hline 5 & 57 & 37,572 & 659 & 1,229 \\
\hline 6 & 56 & 40,548 & 724 & 1,294 \\
\hline 7 & 29 & 21,120 & 728 & 1,298 \\
\hline 8 & 44 & 34,044 & 774 & 1,344 \\
\hline 9 & 76 & 64,188 & 845 & 1,415 \\
\hline 10 & 31 & 25,476 & 822 & 1,392 \\
\hline 11 & 43 & 40,452 & 941 & 1,511 \\
\hline 12 & 42 & 39,300 & 936 & 1,506 \\
\hline 13 & 53 & 54,840 & 1,035 & 1,605 \\
\hline 14 & 33 & 40,212 & 1,218 & 1,789 \\
\hline 15 & 23 & 25,056 & 1,089 & 1,659 \\
\hline 16 & 21 & 24,948 & 1,188 & 1,758 \\
\hline 17 & 20 & 23,232 & 1,162 & 1.732 \\
\hline 18 & 18 & 21,696 & 1,205 & 1,775 \\
\hline 19 & 10 & 12,408 & 1,241 & 1,811 \\
\hline 20 & 13 & 18,048 & 1,388 & 1,958 \\
\hline 21 & 4 & 4,500 & 1,125 & 1,695 \\
\hline 22 & 2 & 2,928 & 1,464 & 2,034 \\
\hline 23 & 10 & 13,224 & 1,322 & 1,892 \\
\hline 24 & 7 & 11,832 & 1,690 & 2,260 \\
\hline 25 & 7 & 12,948 & 1,850 & 2,420 \\
\hline 26 & 5 & 7,260 & 1,452 & 2,022 \\
\hline 27 & 3 & 4,836 & 1,612 & 2,182 \\
\hline 28 & 1 & 1,548 & 1,548 & 2,118 \\
\hline 29 & & & n.a. & n.a. \\
\hline 30 & & & n.a. & n.a. \\
\hline 31 & 1 & 1,584 & 1,584 & 2.154 \\
\hline 32 & 1 & 1,512 & 1,512 & 2,082 \\
\hline 33 & & & n.a. & n.a. \\
\hline 34 & & & n.a. & n.a. \\
\hline 35 & & & noa. & n.a. \\
\hline 36 & & & noa. & n.a. \\
\hline 37 & & & n.a. & n.a. \\
\hline 38 & & & n.a. & n.a. \\
\hline 39 & & & n.a. & n.a. \\
\hline 40 & & & n.a. & n.a. \\
\hline
\end{tabular}

Source:
Prepared by the Computer Center of Central Statistical Organization, Ministry of Planning, Baghdad. The data are derived from the national survey of public employees in Iraq conducted by the Ministry of Planning 1972.
Notes:
* Total size of sample for all years \(=823\)

Table B-7 Annual Gross Salaries of College of Dentistry Graduates mployed in Public Sector in Irag, by Number of Years Since High School Graduation, 1986/1987.
\begin{tabular}{|c|c|c|c|c|}
\hline Years Since High School Graduation & Size of Sample & Total Gross Salaries(ID) & Average Gross Salary (ID) & Average Gross Salary1987(ID) \\
\hline 1 & 56 & 65,689 & 1,173 & 1,743 \\
\hline 2 & 42 & 50,618 & 1,205 & 1,775 \\
\hline 3 & 48 & 67,246 & 1,401 & 1,971 \\
\hline 4 & 39 & 59,713 & 1,531 & 2,101 \\
\hline 5 & 35 & 51,948 & 1,484 & 2,054 \\
\hline 6 & 30 & 42,130 & 1,404 & 1,974 \\
\hline 7 & 11 & 16,263 & 1,479 & 2,048 \\
\hline 8 & 36 & 60,456 & 1,679 & 2,249 \\
\hline 9 & 18 & 32,635 & 1,813 & 2,483 \\
\hline 10 & 23 & 42,318 & 1,840 & 2,410 \\
\hline 11 & 28 & 51,510 & 1,840 & 2,410 \\
\hline 12 & 16 & 29,700 & 1,856 & 2,426 \\
\hline 13 & 10 & 21,300 & 2,130 & 2,700 \\
\hline 14 & 17 & 38,374 & 2,257 & 2,827 \\
\hline 15 & 12 & 29,801 & 2,483 & 3,053 \\
\hline 16 & 15 & 37,998 & 2,533 & 3,103 \\
\hline 17 & 11 & 28,620 & 2,602 & 3,172 \\
\hline 18 & 21 & 62,921 & 2,996 & 3,566 \\
\hline 19 & 16 & 51,135 & 3,196 & 3,766 \\
\hline 20 & 10 & 30,727 & 3,073 & 3,643 \\
\hline 21 & 8 & 25,830 & 3,229 & 3,798 \\
\hline 22 & 9 & 28,509 & 3,168 & 3,737 \\
\hline 23 & 6 & 20,110 & 3,352 & 3,921 \\
\hline 24 & 14. & 47,714 & 3,408 & 4,078 \\
\hline 25 & 8 & 29,212 & 3,651 & 4,221 \\
\hline 26 & 5 & 18,336 & 3,667 & 4,237 \\
\hline 27 & 3 & 11,239 & 3,746 & 4,316 \\
\hline 28 & 10 & 36,179 & 3,618 & 4,187 \\
\hline 29 & 4 & 16,760 & 4,190 & 4,860 \\
\hline 30 & 3 & 12,670 & 4,223 & 4,793 \\
\hline 31 & 1 & 4,366 & 4.366 & 4.936 \\
\hline 32
33 & 1 & & n.a. & n.a. \\
\hline 34 & 1 & \(4 \cdot 275\) & 4, \({ }_{\text {noa. }}\) & 4,395
n.a. \\
\hline 35 & & & no.a. & n.a. \\
\hline 36 & & & n.a. & n.a. \\
\hline 37 & & & n.a. & n.a. \\
\hline 38 & & & n.a. & n.a. \\
\hline 39
40 & & & n.a. & n.a. \\
\hline 40 & & & n.a. & n.a. \\
\hline
\end{tabular}

Source:
Prepared by the Computer Center of Central Statistical Organization, Ministry of Planning, Baghdad. The data are derived from the national survey of public employees in Traq conducted by the Ministry of Plamning 1972.
Notes:
Total size of sample for all years \(=566\).
** Average salary in this Table is used for Colleges Phamacy and Veterinary as well.

Table B-8
Schedule of cost of living allowances corresponding to annual nominal salary scales in the public sector in Iraq.


Source:
Annual Nominal Salary Range and Cost of Living Allowance From Civil Service No. 24 (See Republic Iraq Government Gazette No. 300, February 6th, 1960): Annual Gross Salary range \(=\) Colum (1) + Colum (2).

Notes:
Cost of living data quoted in this table are applicable to a single person with no dependent.

Table B-9
Allocation Indirect Revenue of Administration office to Various Colleges, University of Baghdad, 1981/82-1986/87, (In ID).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Indirect Revenue & 81820 & 37475 & 45901 & 48947 & 56669 & 151301 \\
\hline \multicolumn{7}{|l|}{College} \\
\hline Science & 6439 & 2889 & 3745 & 3769 & 4250 & 11151 \\
\hline Engineering & 10014 & 3733 & 5632 & 6647 & 6047 & 14464 \\
\hline Medicine & 4688 & 2361 & 2915 & 3128 & 2884 & 7278 \\
\hline Pharmacy & 2046 & 1004 & 1175 & 1238 & 1241 & 3344 \\
\hline Dentistry & 1759 & 881 & 1088 & 1209 & 1207 & 3314 \\
\hline Nursing & 859 & 281 & 271 & 318 & 300 & 1195 \\
\hline Veterinary Medicine & 3469 & 1431 & 1551 & 1522 & 1377 & 3631 \\
\hline Agriculture & 6006 & 3032 & 3066 & 2834 & 3661 & 9396 \\
\hline Economics fi Admin. & 10571 & 4876 & 5522 & 5883 & 7163 & 20093 \\
\hline Law and Politics & 2954
10571 & 1390 & 1579 & 1669 & 1666 & 4176
28626 \\
\hline Education & 15628 & 7731 & 8863 & 9261 & 10540 & 28127 \\
\hline Physical Education & 2643 & 1177 & 1281 & 1361 & 1847 & 5628 \\
\hline Academy of Fine Arts & 2111 & 1061 & 1726 & 2105 & 2596 & 6430 \\
\hline Alsharia & 2062 & 1034 & 1423 & 1762 & 2171 & 4448 \\
\hline Total & 81820 & 37475 & 45901 & 48947 & 56669 & 151301 \\
\hline
\end{tabular}

Source: * Compiled from audited financial statement, Accounting Office ot Coneges, University of Baghdad, 1981/82 - 1986/87; ** Allocation criteria are according to percent of student by college (see Table A-7).
Table B-10
Allocation Indirect Revenue of Dormitory office to Various Colleges, University of Baghdad, 1981/82 - 1986/87, (ID).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Indirect Revenue & 24722 & 60819 & 181088 & 86983 & 113345 & 153637 \\
\hline \multicolumn{7}{|l|}{College} \\
\hline Science & 1525 & 3059 & 8928 & 3967 & 6574 & 8588 \\
\hline Engineering & 1834 & 4944 & 17004 & 8437 & 8546 & 13366 \\
\hline Medicine & 920 & 2202 & 7388 & 3218 & 3400 & 5316 \\
\hline Pharmacy & 512 & 1101 & 3767 & 1627 & 1530 & 2289 \\
\hline Dentistry & 195 & 353 & 1376 & 652 & 714 & 1045 \\
\hline Nursing & 235 & 645 & 2119 & 678 & 930 & 937 \\
\hline Veterinary Medicine & 1231 & 2122 & 7153 & 3418 & 3004 & 4456 \\
\hline Agriculure & 996 & 4136 & 13328 & 5289 & 7662 & 8696 \\
\hline Economics \& Admin. & 2032 & 5285 & 14070 & 6150 & 9850 & 13966 \\
\hline Law and Politics & 1921 & 4379 & 13763 & 6672 & 8535 & 12844 \\
\hline Arts & 3120 & 7621
16469 & 24447
42882 & 13221 & 21966
24675 & 29037 \\
\hline Physical Education & 1385 & 2871 & 7117 & 2723 & 4160 & 6099 \\
\hline Academy of Fine Arts & 660 & 2086 & 7497 & 3331 & 4160 & 4379 \\
\hline Alsharia & 1157 & 3546 & 10249 & 5680 & 7639 & 7928 \\
\hline Total & 24722 & 60819 & 181088 & 86983 & 113345 & 153637 \\
\hline
\end{tabular}

\section*{Source:}
\(\frac{\text { Sompiled from a }}{\boldsymbol{t}}\) audited financial statement, Accounting office of Colleges, University of Baghdad, 1981/82 - 1986/87. \%\% Allocation criteria are According to percent of dormitory students by college, (see Table A-8)。

Table B-11
Allocation Indirect Revenue of Central Library to Various Colleges, University of Baghdad, 1981/82-1986/87, (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Indirect Revenue & \multirow[t]{2}{*}{493} & \multirow[t]{2}{*}{542} & \multirow[t]{2}{*}{820} & \multirow[t]{2}{*}{1936} & \multirow[t]{2}{*}{2258} & \multirow[t]{2}{*}{6342} \\
\hline College & & & & & & \\
\hline Science & 39 & 42 & 67 & 149 & 169 & 468 \\
\hline Engineering & 60 & 54 & 101 & 263 & 241 & 606 \\
\hline Medicine & 28 & 34 & 52 & 124 & 115 & 305 \\
\hline Pharmacy & 12 & 15 & 21 & 49 & 50 & 140 \\
\hline Dentistry & 11 & 13 & 19 & 48 & 48 & 139 \\
\hline Nursing & 5 & 4 & 5 & 12 & 12 & 50 \\
\hline Veterinary Medicine & 21 & 21 & 28 & 60 & 55 & 152 \\
\hline \begin{tabular}{l}
Agriculure \\
Administration And
\end{tabular} & 36 & 44 & 55 & 112 & 146 & 394 \\
\hline Economics & 64 & 70 & 99 & 233 & 286 & 842 \\
\hline Law and Politics & 18 & 20 & 28 & 66 & 66 & 175 \\
\hline Arts & 64 & 66 & 108 & 247 & 387 & 200 \\
\hline Education & 94 & 112 & 158 & 366 & 420 & 179 \\
\hline Physical Education & 16 & 17 & 23 & 54 & 74 & 236 \\
\hline Academy of Fine Arts & 13 & 15 & 31 & 83 & 103 & 270 \\
\hline Alsharia & 12 & 15 & 25 & 70 & 86 & 186 \\
\hline Total & 493 & 542 & 820 & 1936 & 2258 & 6342 \\
\hline
\end{tabular}

Source:
* Compiled from audited financial statement, Accounting office of

Colleges, University of Baghdad, 1981/82 - 1986/87. ** Allocation criteria are according to percent of student by college (see Table A-7).

Table B-12
Total Revenue and Institutional Revenue per Student, College of Science, University of Baghdad, 1981/82-1986/87,(Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 9768 & 8451 & 29938 & 16033 & 50810 & 96218 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Office
Central library & 6439
39 & 2889
42 & 3745
67 & 3769
149 & 4250
169 & 11151
468 \\
\hline Dormitory Office (d) & 1526 & 3059 & 8928 & 3967 & 6574 & 8588 \\
\hline Total revenue & 17771 & 14441 & 42678 & 23918 & 61803 & 116425 \\
\hline Number of student enrolled & 2632 & 2577 & 2722 & 2535 & 3009 & 3152 \\
\hline Institutional revenue per student (to nearest ID) & 7 & 6 & 16 & 9 & 21 & 37 \\
\hline
\end{tabular}

\section*{Source:}
(a) Compiled from audited financial records, Accounting office, College Science, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9): (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-13
Total Kevenue and Institutional Revenue per Student, College Engineering, University of Baghdad, 1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 53860 & 143317 & 20876 & 40972 & 89462 & 101912 \\
\hline \(\frac{\text { Allocation }}{\text { Administrat }}\) Indirect revenue & & & & & & \\
\hline Administration Oxtice (b) & 10014 & 3733 & 5632 & 6647 & 6047 & 14464 \\
\hline Central library (c) & 60 & 54 & 101 & 263 & 241 & 606 \\
\hline Dormitory Office (d) & 1834 & 4944 & 17007 & 8437 & 8546 & 13366 \\
\hline Total revenue & 65768 & 152048 & 43613 & 56319 & 104296 & 130348 \\
\hline Number of student enrolled & \[
4092
\] & 3328 & 4092 & 4474 & 4282 & 4092 \\
\hline Institutional revenue per & 4092 & 3328 & 4092 & 44.74 & 4282 & 4092 \\
\hline student (to nearest ID) & 16 & 46 & 11 & 13 & 24 & 32 \\
\hline
\end{tabular}

Source:
(a) Compiled from audited financial records, Accounting office, College of Engineering, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-14
Lrotal Revenue and Institutional Revenue per Student, College Medicine, University of Baghdad, 1981/82-1986/87 (Traqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 4348 & 8580 & 12799 & 17704 & 25993 & 124523 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Office (b) & 4688 & \[
2361
\] & 2915 & 3128 & 2884 & 7278 \\
\hline \begin{tabular}{l}
Central library \\
Dormitory Office
\end{tabular} & \[
\begin{array}{r}
28 \\
920
\end{array}
\] & \[
\begin{array}{r}
34 \\
2202
\end{array}
\] & \[
\begin{array}{r}
52 \\
7388
\end{array}
\] & 124
3128 & 15
3400 & 305
5316 \\
\hline & & & & & & \\
\hline Total revenue & 9985 & 13177 & 23154 & 24084 & 32392 & 137422 \\
\hline Number of student enrolled & 1917 & 2106 & 2118 & 2106 & 2044 & 2056 \\
\hline Institutional revenue per student (to nearest ID) & 5 & 6 & 11 & 11 & 16 & 67 \\
\hline
\end{tabular}

Source:
(a) Compiled from audited financial records, Accounting office, College of Medicine, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-15
Total Revenue and Institutional Revenue per Student, College of Pharmacy, University of Baghdad, 1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 5333 & 2881 & 7541 & 8441 & 7067 & 50314 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline \begin{tabular}{ll} 
Administration Office & (b) \\
Central library & (c)
\end{tabular} & \[
\begin{array}{r}
2046 \\
12
\end{array}
\] & \[
\begin{array}{r}
1004 \\
15
\end{array}
\] & \[
\begin{array}{r}
1175 \\
21
\end{array}
\] & 1238 & 1241 & \(\begin{array}{r}3344 \\ 140 \\ \hline\end{array}\) \\
\hline Dormitory Office (d) & 512 & 1101 & 3767 & 1627 & 1530 & 2289 \\
\hline Total revenue & 7903 & 5001 & 12504 & 11355 & 9981 & 56087 \\
\hline \begin{tabular}{l}
Number of student enrolled \\
Institutional revenue per student (to nearest ID)
\end{tabular} & 836
9 & 894
6 & 854
15 & 834
14 & 877
11 & 944
59 \\
\hline
\end{tabular}

\section*{Source:}
(a) Compiled from audited financial records, Accounting office, College of Pharmacy, University of Baghdad; (b) Allocation of indirect revenue, (see Table A-9) ; (c) Allocation of Tndirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-16
Total Revenue and Institutional Revenue per Student, College of Dentistry, University of Baghdad,1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 29517 & 3588 & 29723 & 35851 & 39956 & 58395 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Ottice (b) & 1759 & 881 & 1088 & 1209 & 1207 & 3314 \\
\hline Central library (c) & 11 & 13 & 19 & 48 & 48 & 139 \\
\hline Dormitory Office (d) & 195 & 353 & 1376 & 652 & 714 & 1045 \\
\hline Total revenue (d) & 31482 & 37128 & 32206 & 37760 & 41925 & 62893 \\
\hline Number of student enrolled & 719 & 785 & 791 & 813 & 854 & 939 \\
\hline Institutional revenue per student (to nearest ID) & 44 & 47 & 41 & 46 & 49 & 67 \\
\hline
\end{tabular}

\section*{Source:}
(a) Compiled from audited financial records, Accounting office, College of Dentistry, University of Baghdad; (b) Allocation of indirect revenue, (see Table A-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-17
Total Revenue and Tnstitutional Revenue per Student, College of Nursing, University of Baghdad, 1981/8-1986/87, (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue & 737 & 3134 & 2032 & 16400 & 1911 & 16868 \\
\hline Allocation Indirect revenue & 859 & \[
281
\] & & & 300 & \[
1195
\] \\
\hline \[
\begin{aligned}
& \text { Administration Office } \\
& \text { Central library }
\end{aligned}
\] & 859
5 & 281 & 271
5 & 318 & 300
12
9 & 1195 \\
\hline Dormitory Office (d) & 235 & 645 & 2119 & 678 & 930 & 937 \\
\hline Total revenue & 1836 & 4064 & 4427 & 17408 & 3153 & 19050 \\
\hline \begin{tabular}{l}
Number of student enrolled \\
Institutional revenue per student (to nearest ID)
\end{tabular} & 350
5 & 250
16 & 198
22 & 212
82 & 214
15 & 338
56 \\
\hline
\end{tabular}

\section*{Source:}
(a) Compiled from audited financial records, Accounting office, College of Nursing, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-18
Total Kevenue and Institutional Revenue per Student, College of Veterinary Medicine, University of Baghdad, 1981/8-1986/87, (In Iraqi Dinars)
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 75627 & 63471 & 28232 & 38551 & 29926 & 78009 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Office
Central library & 3469
21 & 1431 & 1551 & 1522 & \(\begin{array}{r}1377 \\ 55 \\ \hline\end{array}\) & 3631 \\
\hline Dormitory Office (d) & 1231 & 2122 & 7153 & 3418 & 3004 & 4456 \\
\hline Total revenue & 80348 & 67045 & 36964 & 43551 & 34362 & 86248 \\
\hline Number of student enrolled student (to nearest ID) & 1417
57 & 1276
53 & 1126
33 & 1023
43 & 977
34 & 1025
84 \\
\hline
\end{tabular}

Source:
(a) Compiled from audited financial records, Accounting office, College of Veterinary Medicine, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table 10); (e) Number of students enrolled, (see Table A-7).

Table B-19
Total Revenue and Institutional Revenue per Student, College of Agriculture, University of Baghdad, 1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 83860 & 92875 & 111803 & 106342 & 71032 & 249926 \\
\hline Allocation Tndirect revenue & & & & & & \\
\hline \begin{tabular}{ll} 
Administration Office \\
Central library & (b) \\
D
\end{tabular} & 6006
36 & 3032
44 & 3066 & 2834
112 & 3661
146 & 9396
394 \\
\hline Dormitory Office (d) & 996 & 4136 & 13328 & 5289 & 7662 & 8696 \\
\hline Total revenue & 90898 & 100087 & 128252 & 114577 & 82501 & 268412 \\
\hline \begin{tabular}{l}
Number of student \\
enrolled (e) \\
Institutional revenue per \\
student (to nearest ID)
\end{tabular} & 2455
37 & 2702
18 & 2227
58 & 1907
60 & 2594
32 & 2657
101 \\
\hline
\end{tabular}

\section*{Source:}
(a) Compiled from audited financial records, Accounting office, College of Agriculture, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-20
I'otal Revenue and Institutional Revenue per Student, College of Administration and Economics, University of Baghdad, 1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 3895 & 25740 & 13199 & 45633 & 79226 & \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Office (b) & 10571 & 4876 & 5522 & 5883 & 7163 & 20093 \\
\hline Central library & 64 & 70 & 99 & 233 & 286 & 842 \\
\hline Dormitory Office (d) & 2032 & 5286 & 14070 & 6150 & 9850 & 13966 \\
\hline Total revenue & 16562 & 13569 & 45431 & 25465 & 62932 & 114127 \\
\hline Number of student enrolled & 4318 & 4345 & 4013 & 3960 & 5076 & 5683 \\
\hline Institutional revenue per student (to nearest ID) & 4 & 3 & 11 & 6 & 12 & 20 \\
\hline
\end{tabular}

\section*{Source:}
(a) Compiled from audited financial records, Accounting Office, College of Administration and Economics, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-21
Total Revenue and Institutional Revenue per Student, College of Law and Politics, University of Baghdad,1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 1796 & 13535 & 12069 & 8793 & 90861 & 65199 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Office
Central library & 2954
18 & 1390
20 & 1579
28 & 1669 & 1666 & 4176 \\
\hline Dormitory Office (d) & 1921 & 4379 & 13763 & 6672 & 8535 & 12844 \\
\hline Total revenue & 6689 & 19324 & 27439 & 17200 & 101428 & 82394 \\
\hline \begin{tabular}{l}
Number of student enrolled \\
Institutional revenue per student (to nearest ID)
\end{tabular} & 1206 & \[
\begin{array}{r}
1238 \\
16
\end{array}
\] & 1148
24 & 1124
15 & 1182
86 & 1182
70 \\
\hline
\end{tabular}

Source:
(a) Compiled from audited financial records, Accounting office, College of Law and Politics, University of Baghdad; (b) Allocation of indirect revenue, (see Table A-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table 10); (e) Number of students enrolled, (see Table A-7).

Table B-22
lotal Revenue and Institutional Revenue per Student, College of Arts University of Baghdad,1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 3993 & 5536 & 21192 & 29192 & 29755 & 14053 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration 0ffice
Central library & 10571
64 & 4594
66 & 6064 & 6241 & 9719 & \(\begin{array}{r}28626 \\ 1200 \\ \hline\end{array}\) \\
\hline Dormitory Office (d) & 3120 & 7621 & 24447 & 13221 & 21966 & 29037 \\
\hline Total revenue & 17748 & 17817 & 51811 & 49464 & 46125 & 145685 \\
\hline Number of student enrolled & 4317
4 & 4095 & 4404
12 & 4200
12 & 6886
7 & 8093
18 \\
\hline
\end{tabular}

Source:
(a) Compiled from audited financial records, Accounting office, College of Arts, University of Baghdad; (b) Allocation of indirect revenue, (see Table A-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table 10); (e) Number of students enrolled, (see Table A-7).

Table B-23
Total Revenue and Institutional Revenue per Student, College of Education, University of Baghdad,1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 7688 & 29479 & 23940 & 32471 & 170982 & 152305 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Office (b) & 15628 & 7731 & 8863 & 9261 & 10540 & 28127 \\
\hline Central library
Dormitory Office & 94
6999 & 16469 & 158
42882 & \(\begin{array}{r}366 \\ 21920 \\ \hline\end{array}\) & 420
24675 & 1179
63997 \\
\hline Total revenue & 30409 & 53791 & 75843 & 64018 & 206617 & 216302 \\
\hline \begin{tabular}{l}
Number of student enrolled \\
Institutional revenue per student (to nearest ID)
\end{tabular} & 6383
5 & 6889
8 & 6441
12 & 6233
10 & 7468
28 & 7955
27 \\
\hline
\end{tabular}

Source:
(a) Compiled from audited financial records, Accounting office, College of Education, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-24
Total Revenue and Institutional Revenue per Student, College of Physical Education, University of Baghdad, 1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 3536 & 10995 & 2558 & 4474 & 6885 & 38404 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Office (b) & 2643 & 1177 & 1281 & 1361 & 1847 & 5628 \\
\hline Central library (c) & 2111 & 1061 & 1726 & 2105 & 2596 & 6430 \\
\hline Dormitory Office (d) & 1385 & 2871 & 7117 & 2723 & 4160 & 6099 \\
\hline Total revenue & 9675 & 16104 & 12682 & 10663 & 15488 & 56561 \\
\hline Number of student enrolled & 1080 & 1049 & 931 & 915 & 1308 & 1591 \\
\hline Institutional revenue per student (to nearest ID) & 9 & 15 & 14 & 14 & 12 & 35 \\
\hline
\end{tabular}

\section*{Source:}
(a) Compiled from audited financial records, Accounting 0ffice, College of Physical Education, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-25
Total Revenue and Institutional Revenue per Student, College of Academy of Fine Arts, University of Baghdad, 1981/82-1986/87 (In Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 580 & 2586 & 3597 & 12918 & 20067 & 32187 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Office (b) & 2111 & 1061 & 1726 & 2105 & 2596 & 6430 \\
\hline Central library
Dormitory Office & 13
660 & 15
2086 & 31
7497 & 83
3331 & 103
4160 & 270
4379 \\
\hline Total revenue & 3364 & 5748 & 12851 & 18437 & 7120 & 43266 \\
\hline \begin{tabular}{l}
Number of student enrolled \\
Institutional revenue per student (to nearest ID)
\end{tabular} & 863 & 944
4 & 1255
10 & 1416
13 & 1839
15 & 1820
24 \\
\hline
\end{tabular}

Source:
(a) Compiled from audited financial records, Accounting office, College of Academy of Fine Arts, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see Table \(\mathrm{B}-11\) ); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).

Table B-26
Tlotal Revenue and Institutional Revenue per Student, College of Alsharia, University of Baghdad, 1981/82-1986/87 (ID).
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Description} & \multicolumn{6}{|c|}{Year} \\
\hline & 1981/82 & 1982/83 & 1983/84 & 1984/85 & 1985/86 & 1986/87 \\
\hline Annual revenue (a) & 585 & 1592 & 2846 & 6877 & 10509 & 24858 \\
\hline Allocation Indirect revenue & & & & & & \\
\hline Administration Office (b) & 2069 & 1034 & 1423 & 1762 & 2171 & 4448 \\
\hline Central library & 112 & 15
3546 & 25
10249 & 70 & 86 & 186 \\
\hline Dormitory Office (d) & 1157 & 3546 & 10249 & 5680 & 7639 & 28628 \\
\hline Total revenue & 3823 & 6187 & 14544 & 14389 & 20405 & 37420 \\
\hline Number of student enrolled & 843 & 921 & 1033 & 1186 & 1536 & 12.57 \\
\hline Institutional revenue per student (to nearest ID) & 5 & 7 & 14 & 12 & 13 & 30 \\
\hline
\end{tabular}

\section*{Source:}
(a) Compiled from audited financial records, Accounting Office, College of Alsharia, University of Baghdad; (b) Allocation of indirect revenue, (see Table B-9); (c) Allocation of Indirect revenue, (see Table B-11); (d) Allocation of indirect revenue, (see Table B-10); (e) Number of students enrolled, (see Table A-7).
Table B-27 Instizututional Revenue Per Síudent According to College, Jniversity of Baghdad, 1974/75-1986/87,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{College} & \multicolumn{2}{|l|}{1981/82} & \multicolumn{2}{|l|}{1982/83} & \multicolumn{2}{|l|}{1983/84} & \multicolumn{2}{|l|}{1984/85} & \multicolumn{2}{|l|}{1984/86} & \multicolumn{2}{|l|}{1986/87} \\
\hline & Actual Revenue & Adjusted Revenue & Actual Revenue & Adjusṫed Revenue & Actual Revenue & Adjusted Revenue & Actual Revenue & Adjusted Revenue & Actual Revenue & Adjustied Revenue & Actual Revenue & Adjusted Revenue \\
\hline 1 & 7 & 6 & 6 & 5 & 16 & 12 & 9 & 7 & 21 & 16 & 37 & 37 \\
\hline 2 & 16 & 14 & 46 & 35 & 11 & 8 & 13 & 10 & 24 & 19 & 32 & 32 \\
\hline 3 & 5 & 4 & 6 & 5 & 11 & 8 & 11 & 8 & 16 & 12 & 67 & 67 \\
\hline \(\stackrel{1}{4}\) & 9 & 8 & 6 & 5 & 15 & 11 & 14 & 10 & 11 & 9 & 59 & 59 \\
\hline 5 & 44 & 38 & 47 & 36 & 41 & 31 & \(\pm 6\) & 34 & 49 & 38 & 67 & 67 \\
\hline 6 & 5 & 4 & 16 & 12 & 22 & 17 & 82 & 61 & 15 & 12 & 56 & 56 \\
\hline 7 & 57 & 49 & 53 & 41 & 33 & 25 & 43 & 32 & 34 & 26 & 84 & 84 \\
\hline 8 & 37 & 32 & 18 & 14 & 58 & 44 & 60 & 45 & 32 & 25 & 101 & 101 \\
\hline 9 & 4 & 3 & 3 & 2 & 11 & 8 & 6 & 4 & 12 & 9 & 20 & 20 \\
\hline 10 & 6 & 5 & 16 & 12 & 24 & 18 & 15 & 11 & 86 & 67 & 70 & 70 \\
\hline 11 & 4 & 3 & \(\underline{1}\) & 3 & 12 & 9 & 12 & 9 & 7 & 5 & 18 & 18 \\
\hline 12 & 5 & 4 & 8 & 6 & 12 & 9 & 10 & 7 & 28 & 22 & 27 & 27 \\
\hline 13 & 9 & 8 & 15 & 12 & 14 & 11 & 12 & 9 & 12 & 9 & 35 & 35 \\
\hline 12 & \(\stackrel{4}{5}\) & 3 & 4 & 3 & 10 & 8 & 13 & 10 & 15 & 12 & 24
30 & 24
30 \\
\hline 15 & 5 & 4 & 7 & 5 & 14 & 11 & 12 & 9 & 13 & 10 & 30 & 30 \\
\hline
\end{tabular}

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Year} & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1981/82 Graduates*} & \multicolumn{3}{|l|}{1982/83 Graduates*} & \multicolumn{3}{|l|}{1983/84 Graduates**} \\
\hline & & \[
\left|\begin{array}{l}
\text { Number } \\
\text { Admitted }
\end{array}\right|
\] & \begin{tabular}{l}
Wumber \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& 1987 I D
\end{aligned}\right.
\] & Mumber
Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& 1987 \mathrm{ID}
\end{aligned}\right.
\] & Number Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left|\begin{array}{c}
\text { Income } \\
\text { 1987ID }
\end{array}\right|
\] \\
\hline 1976/77 & 7 & 20 & 20 & 140 & & & & & & \\
\hline 1977/78 & 7 & 67 & 87 & 609 & 17 & 17 & 119 & 5 & 5 & 35 \\
\hline 1978/79 & 7 & 211 & 298 & 2086 & 110 & 127 & 889 & 53 & 58 & 406 \\
\hline 1979/80 & 7 & & 298 & 2086 & 277 & 104 & 2828 & 104 & 162 & 1134 \\
\hline 1980/81 & 7 & & 298 & 2086 & & & & 324 & & \\
\hline 1981/82 & 7 & & 298 & 2086 & & 404 & 2828 & & 486 & 3402 \\
\hline 1982/83 & \({ }^{6}\) & & & & & 404 & 2424 & & 486 & 2916 \\
\hline 1983/84 & 16 & & & & & & & & 486 & 7776 \\
\hline Total & & 298 & & 9093 & 404 & & 11916 & 486 & & 19071 \\
\hline Social. & nstitutional Income/Graduate & ID 9093 & \(\div 298=\) & ID 14 & ID 11916 & \(\div 404=\) & Id 29 & ID 19071 & \(\div 486=\) & ID 39 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Year} & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates*} & \multicolumn{3}{|l|}{1986/87 Graduaies***} \\
\hline & & \[
\left|\begin{array}{l}
\text { Number } \\
\text { Admitted }
\end{array}\right|
\] & \[
\begin{array}{|l|}
\text { Number } \\
\text { Enrolled }
\end{array}
\] & \[
\begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Enzolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { I987ID }
\end{aligned}\right.
\] & Number Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Incorne } \\
& \text { 1987ID }
\end{aligned}
\] \\
\hline 1977/78 & 7 & 2 & 2 & 14 & & & & & & \\
\hline 1978/79 & 7 & 21 & 23 & 161 & 8 & 8 & 56 & & & \\
\hline 1979/80 & 7 & 7A & 97 & 679 & 23 & 31 & 217 & & & \\
\hline 1980/81 & 7 & 151 & 248 & 1736 & 69 & 100 & 700 & 25 & 25 & 175 \\
\hline 1981/82 & 7 & 285 & 533 & 3731 & 118 & 218 & 1526 & 47 & 72 & 504 \\
\hline 1982/83 & 6 & & 533 & 3198 & 222 & \(\underline{A L O}\) & 2640 & 133 & 205 & 1230 \\
\hline 1983/84 & 16 & & 533 & 8528 & & & 7040 & 263 & 468 & 7488 \\
\hline 1984/85 & 9 & & 533 & 4797 & & 440 & 3960 & & 468 & 4212 \\
\hline 1985/86 & 21 & & & & & 440 & 9240 & & 468 & 9828 \\
\hline 1986/87 & 37 & & & & & & & & 468 & 17316 \\
\hline \multicolumn{2}{|l|}{Total} & 533 & & 22844 & 440 & & 25379 & 468 & & 40753 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{ID \(22844 \div 533=\) ID 43} & \multicolumn{3}{|l|}{ID \(25379 \div 440=\) ID 58} & \multicolumn{3}{|l|}{ID \(40753 \div 468=\) ID 87} \\
\hline
\end{tabular}
Source:
Institutional revenue per student - year from Table B-27.
prior to \(1981 / 82\) the institutional revenue per student-year data are not available, and axe
estimated at the \(1981 / 82\) figure.
Table B-29 Institutional Revenue per Graduate, College of Engineering, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981/82 & Graduate & & 1982/8 & Graduates & & 1983/8 & 4 Graduate & \\
\hline Year & Social Institutional Income per Student (1987ID) & Number Admitted & Number Enrolled & \[
\left|\begin{array}{l}
\text { Income } \\
1987 I D
\end{array}\right|
\] & Number Acmitted & Number Enrolled & \[
\left|\begin{array}{|cc|}
\text { Income } \\
1987 I D
\end{array}\right|
\] & Number Admitted & Number Enrolled & \[
\begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}
\] \\
\hline 1875/76 & 1.4 & 7 & 7 & 98 & 2 & 2 & 28 & & & \\
\hline \({ }^{1} 1976 / 778\) & 14 & 13
77 & 20
97 & 280
1358 & \({ }^{29}\) & \({ }^{8} 7\) & \({ }_{512}^{112}\) & & & 112 \\
\hline 1978/79 & 14 & 491 & 588 & 8232 & 109 & 146 & 2014 & 27 & 35 & 490 \\
\hline 1979/80 & 14 & & 588 & 8232 & 523 & 669 & 9366 & 246 & 281 & 3934 \\
\hline 1980/81 & 14 & & 558 & \({ }_{8}^{8232}\) & & \({ }_{6}^{669}\) & 9366 & \({ }^{2} 23\) & 704 & 9856 \\
\hline 1981/82 & \({ }^{14}\) & & 588 & 8232 & & \({ }_{669}\) & 9366 & & 704 & 9856 \\
\hline 1982/83 & 35 & & & & & 669 & 23415 & & 704 & 24640
5632 \\
\hline 1983/84 & & & & & & & & & 104 & \\
\hline \multicolumn{2}{|l|}{Total} & 588 & & 34664 & 669 & & 54215 & 704 & & 54520 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/graduate} & \multicolumn{3}{|l|}{ID \(34664 \div 588=\) ID 59} & \multicolumn{3}{|l|}{ID \(54215 \div 669=\) ID 81} & \multicolumn{3}{|l|}{ID \(54520 \div 704=\)} \\
\hline
\end{tabular}


\footnotetext{
Source: Number of graduate by year of admission from Table A-40.
* Prior to \(1981 / 82\) the institutionai revenue per student-year data are not available, and are
estimated at the \(1981 / 82\) figure.
}
Table B-30 \(\begin{aligned} & \text { Institutional Revenue per Graduate, } \\ & \text { 1981/82-1986/87, (In Iraqi Dinars) }\end{aligned}\) College of Medicine, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multirow[t]{2}{*}{Social Institutional Income per student (1987ID)} & \multicolumn{3}{|l|}{1981/82 Graduates**} & \multicolumn{3}{|l|}{1982/83 Graduates*} & \multicolumn{3}{|l|}{1983/84 Graduates**} \\
\hline Year & & Number Admitted & Number Enrolled & \[
\left\lvert\, \begin{array}{l|}
\text { Income } \\
1987 \text { ID }
\end{array}\right.
\] & Number Admitted & Number Enrolled &  & Number Admitted & Mumber Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}\right.
\] \\
\hline \(1974 / 75\) & 4 & \(3^{3}\) & 38 & 12 & 5 & 1 & 寿 & 1 & 1 & \\
\hline \({ }^{197576}\) & \({ }_{4}^{4}\) & & \({ }_{246}^{246}\) & 9884 & 13 & \({ }_{19}^{6}\) & \(2{ }^{24}\) & 3 & 4 & 16
28 \\
\hline 1977/78 & 4 & & 24.6 & 984 & 228 & 247 & 988 & & 13 & 52 \\
\hline \(1978 / 79\) & 4 & & 215 & 984 & & 247 & 988 & 293 & 306 & \\
\hline 1979780 & 4 & & & 984 & & 247 & 988 & & 306 & 1224 \\
\hline 1980/81 & \({ }_{4}^{4}\) & & & 984 & & 247
247 & \({ }_{988}^{988}\) & & 306
306 & \({ }_{1224}^{1224}\) \\
\hline 1982/83 & 5 & & & & & 247 & 1235 & & 306
306 & 1530 \\
\hline 1983/84 & 8 & & & & & & & & 306 & 2448 \\
\hline Total & & 246 & & 5916 & 247 & & 6279 & 306 & & 8974 \\
\hline Social & nstitutional Income/Graduate & ID 5916 & \(\div 246=\) & ID 24 & ID 6279 & \(\div 247\) = ID & 25 & ID 8974 & \(\div 306=\) & ID 29 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates**} & \multicolumn{3}{|l|}{1986/87 Graduates*} \\
\hline Year & Social Institutional Income per Student (1987ID) & \begin{tabular}{l}
nymber \\
Admitted
\end{tabular} & Number Enrolled & \[
\left\lvert\, \begin{gathered}
\text { Income } \\
1987 \mathrm{ID}
\end{gathered}\right.
\] & Number Admitted & Number Enrolled & \[
\begin{array}{|l|l|}
\hline \text { Income } \\
1987 \text { ID }
\end{array}
\] & Number Admitted & Number Enrolled & Income \\
\hline 1977778 & 4 & & 2 & 12 & & \({ }^{6}\) & 21 & & & \\
\hline \begin{tabular}{l}
197878 \\
197988 \\
\hline
\end{tabular} & 4 & 331 & 353 & 1812 & \({ }_{25}^{10}\) & 41 & 164 & 10 & 10 & 40 \\
\hline 1980/81 & 4 & & 353 & 1412 & 323 & 364 & 1456 & 29 & 39 & 156 \\
\hline 1981/82 & 4 & & 353 & 1.412 & & 364 & 1456 & 285 & 324 & 1296 \\
\hline 1982/83 & 5 & & 353 & 1765 & & 364 & 1820 & & 324 & 1620 \\
\hline 1983/8A & 8 & & 353
353 & 2824
2824 & & 364
364
364 & \({ }_{2912}^{2912}\) & & 324
324 & 2592
2592 \\
\hline 1985/86 & 12 & & & & & 364
364 & \({ }_{4368}\) & & 324 & 2592
3888 \\
\hline 1986/87 & 67 & & & & & & & & 324 & 21708 \\
\hline Total & & 353 & & 11749 & 364 & & 15176 & 324 & & 33892 \\
\hline social & nstitutional Income/Graduate & ID 11749 & - 353= & Id 33 & ID 15176 & \(\div 364=\) & ID 42 & ID 33892 & - 324 & ID 105 \\
\hline
\end{tabular}

\footnotetext{
Source: Number of graduate by year of admission from Table A-4I.
student-year data are not available, and axe
B. 22
}
Table B-31 Institutional Revenue per Gxacuate, College of Pharmacy, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981/82 & Graduate & & 1982/83 & Graduates & & 1983/84 & Gxaduat & \\
\hline Yeax & Social Institutional Income per Student (1987ID) & Number Admit亡ed & Number Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { I987ID }
\end{aligned}\right.
\] & \[
\left|\begin{array}{l}
\text { Number } \\
\text { Admitied }
\end{array}\right|
\] & \begin{tabular}{l}
Number \\
znrolled
\end{tabular} & \[
\begin{aligned}
& \text { Income } \\
& 1987 \text { ID }
\end{aligned}
\] & Mumber
Admitted & \begin{tabular}{l}
\#umber \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}
\] \\
\hline 1976/77 & 8 & 8 & 8 & 68 & & & & & & \\
\hline 1977/78 & 8 & 217 & 225 & 1800 & 21 & 21 & 168 & & & \\
\hline 1978/79 & 8 & & 225 & 1800 & 156 & 177 & 1416 & 12 & 12 & 96 \\
\hline 1979/80 & 8 & & 225 & 1800 & & 177 & 1216 & 139 & 151 & 1208 \\
\hline 1980/81 & 8 & & 225 & 1800 & & 177 & 1416 & & 151 & 1208 \\
\hline 1981/82 & 8 & & 225 & 1800 & & 177 & 1416 & & 151 & \\
\hline 1982/83 & 11 & & & & & & & & 151
151 & 755
1661 \\
\hline \multicolumn{2}{|l|}{Total} & \multicolumn{3}{|l|}{225 905A} & 177 & & 6717 & 151 & & 6136 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{ID \(9064 \div 225=\) ID 40} & \multicolumn{3}{|l|}{ID \(6717 \div 177=\) ID 38} & \multicolumn{3}{|l|}{ID \(6136 \div 151=\) ID 41} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1984/85 & Graduȧe & & 1985/8 & Graduates & & 1986/87 & 7 Graduate & s* \\
\hline Yeax & Social Insti亡utional Income per Student (1987ID) & \[
\begin{array}{|l}
\text { Number } \\
\text { Admitied }
\end{array}
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{gathered}
\text { Income } \\
\text { 1987ID }
\end{gathered}\right.
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Admitited }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}\right.
\] & Wumber
Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left|\begin{array}{l}
\text { Income } \\
\text { Incold }
\end{array}\right|
\] \\
\hline 1979/80 & 8 & 12 & 12 & 96 & 12 & 12 & 96 & 2 & 2 & 16 \\
\hline 1980/81 & 8 & 122 & 134 & 1072 & 33 & 45 & 360 & 10 & 12 & 96 \\
\hline 1981/82 & 8 & & 134 & 1072 & 112 & 157 & 1256 & 25 & 37 & 296 \\
\hline 1982/83 & 5 & & 134 & 670 & & 157 & 785 & 143 & 180 & 900 \\
\hline 1983/84 & 11 & & 134 & 1474 & & 157 & 1727 & & 180 & 1980 \\
\hline 1984/85 & 10 & & 134 & 1340 & & 157 & 1570 & & 180 & 1800 \\
\hline 1985/86 & 9 & & & & & 157 & 1413 & & 180 & 1620 \\
\hline 1986/87 & 59 & & & & & & & & 180 & 10620 \\
\hline \multicolumn{2}{|l|}{Total} & 134 & & 5724 & 157 & & 7207 & 180 & & 17328 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{ID \(5724 \div 134=\) ID 43} & \multicolumn{3}{|l|}{ID \(7207 \div 157=\) ID 46} & \multicolumn{3}{|l|}{ID \(17328 \div 180=\) ID 96} \\
\hline
\end{tabular}
Source: bission from Table A-42.
student-yeax data are not available, and are
B. 23



Source: Number of graduate by year or admission from Table A-A3.
\[
\begin{aligned}
& \text { able B-27.-year data are not available, and are } \\
& \text { student-y } \\
& \text { B. } 24
\end{aligned}
\]
Table B-33 \(\begin{gathered}\text { Institutional } \\ 1981 / 82-1986 / 87 \text {, }\end{gathered}\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981/82 & Graduates & & 1982/83 & Graduate & & 1983/84 & Graduat & \\
\hline Year & Social Institutional Income per Student (1987ID) & Number Admitted & Number Enrolled & \[
\begin{array}{|l|l|}
\hline \text { Income } \\
1.987 \text { I }
\end{array}
\] & \begin{tabular}{l}
Number \\
Admitited
\end{tabular} & Number Enrolled & \[
\left\lvert\, \begin{array}{|l|}
\hline \text { nncome } \\
1987 I D
\end{array}\right.
\] & Number Admitted & Number Enrolled & Income \\
\hline \(1977 / 78\) & \(\stackrel{4}{4}\) & \({ }^{6}\) & \({ }^{6}\) & 24 & & 1 & \(\stackrel{4}{4}\) & & & \\
\hline \(1978 / 79\)
\(1979 / 80\) & \(\frac{4}{4}\) & 69 & 75
75 & 300
300 & \(7{ }^{9}\) & 10
80 & 40
320 & & & \\
\hline 1980/81 & \({ }_{4}^{4}\) & & 75 & 300 & & 80 & 320 & 52 & & \\
\hline 1981/82 & 4 & & 75 & 300 & & 80 & 320 & & 55 & 220 \\
\hline 1982/83 & 12 & & & & & & 960 & & 55 & 660 \\
\hline 1983/84 & 17 & & & & & & & & 55 & 935 \\
\hline \multicolumn{2}{|l|}{Total} & 75 & & 1224 & 80 & & 1964 & 55 & & 2047 \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(1224 \div 75=\) ID 16} & \multicolumn{3}{|l|}{ID \(1964 \div 80=\) ID 25} & \multicolumn{3}{|l|}{ID \(2047 \div 55=\) ID 37} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multirow[t]{2}{*}{Social Institutional Income per Stadent (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates*} & \multicolumn{3}{|l|}{1986/87 Graduates*} \\
\hline Year & & \[
\begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}
\] & \[
\begin{array}{|l|}
\text { Number } \\
\text { Enrolled }
\end{array}
\] & \[
\left\lvert\, \begin{gathered}
\text { Income } \\
\text { I. }
\end{gathered}\right.
\] & Number Admitted & Number Enicolled & \[
\left|\begin{array}{l}
\text { Income } \\
\text { I } 987 \text { ID }
\end{array}\right|
\] & Number Admitted & number Enrolled & \[
\begin{array}{|l}
\text { Income } \\
\text { I987ID } \\
\hline
\end{array}
\] \\
\hline 1978/79 & 4 & 1 & 1 & \(\stackrel{4}{4}\) & & & & & & \\
\hline 1979/80 & 4 & 2 & 3 & 12 & & & & & & \\
\hline 1980/81 & \(\underline{1}\) & 6 & 9 & 36 & 2 & 2 & 8 & & & \\
\hline 1981/82 & 4 & & 66 & 264 & 14 & 16 & 64 & 3 & & 12 \\
\hline 1982/83 & 12 & & 66 & 792 & 45 & 61 & 732 & 6 & 9 & 108 \\
\hline 1983/84 & 17 & & 66 & 1122 & & 61 & 1037 & 36 & 45 & 765 \\
\hline 1984/85 & 61 & & 66 & 4026 & & 61 & 3721 & & 45 & 2745 \\
\hline 1985/86 & 12 & & & & & 61. & 732 & & 45 & 540 \\
\hline 1986/87 & 56 & & & & & & & & 45 & 2520 \\
\hline Total & & 66 & & 6256 & 61 & & 6298 & 45 & & 6690 \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(6256 \div 66=\) ID 95} & \multicolumn{3}{|l|}{ID \(6294 \div 61=\) ID 103} & \multicolumn{3}{|l|}{ID \(6690 \div 45=\) ID 149} \\
\hline
\end{tabular}
\[
\stackrel{\mathbb{1 n}}{\stackrel{1}{N}}
\]
Institutional Ievenue per student-year from Table B-27.
* prior to \(1981 / 82\) the institutional Ievenue per student-year data are not available, and are
estimated at the \(1981 / 82\) figure.
Table b-34 Institutional Revenue per Graduate, College of Veterinary Medicine, University of bagindad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981/82 & Graduate & & 1982/83 & Graduates & & 1983/84 & Graduat & \\
\hline Year & Social Institutional Income per student (1987ID) & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{array}{|l|}
\hline \text { Income } \\
1987 I D
\end{array}
\] & Number Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Tncome } \\
& 1987)^{2}
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & Number Enrolled & \[
\begin{aligned}
& \text { Income } \\
& 1987 \text { D }
\end{aligned}
\] \\
\hline 1974/75 & 49 & & 5 & 107 & 2 & 2 & 98 & & & \\
\hline 1975/76 & 49 & \({ }_{18}^{2}\) & 23 & \({ }_{1127}^{245}\) & \(\frac{4}{3}\) & \({ }_{6}\) & 294 & & & \\
\hline \(1977 / 78\) & 49 & & 248 & 12152 & 36 & 45 & 2205 & & & \\
\hline 1978/79 & 49 & & 248 & 12152 & 245 & 290 & 4210 & 28 & 35 & \\
\hline 1979/80 & 49 & & \(2 \triangleq 8\) & 12152 & & 290 & 14210 & 216 & 251 & 12299 \\
\hline 1980/81 & 49 & & 248 & 12152 & & 290 & 14210 & & 251 & 12299 \\
\hline 1981/82 & 49 & & 248 & 12152 & & 290 & 114210 & & 251 & 12299 \\
\hline 1982/83 & 41
25 & & & & & 290 & 11890 & & 251 & 10291 \\
\hline 1983/81 & & & & & & & & & & \\
\hline Total & & 248 & & 62279 & 290 & & 71768 & 251 & & 55521 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{25} & \multicolumn{3}{|l|}{ID \(71768 \div 290=\) ID 247} & \multicolumn{3}{|l|}{ID \(55521 \div 251=\) ID 221} \\
\hline
\end{tabular}


Table B-35 Institutional Revenue per Graduate, College of Agriculiture, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Year} & \multirow[t]{2}{*}{Social Institutional Income per Student (19871D)} & \multicolumn{3}{|l|}{1981/82 Graduates*} & \multicolumn{3}{|l|}{1982/83 Graduates*} & \multicolumn{3}{|l|}{1983/84 Graduates*} \\
\hline & & Number Admitted & Number Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { In87ID }
\end{aligned}\right.
\] & Number Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& 1987 I D
\end{aligned}\right.
\] & Number
Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left|\begin{array}{l}
\text { Income } \\
\text { 1987ID }
\end{array}\right|
\] \\
\hline 1977/78 & 32 & 110 & 110 & 3520 & 16 & 16 & 512 & 5 & 5 & 160 \\
\hline 1978/79 & 32 & 401 & 551 & 17632 & 66 & 82 & 2624 & 13 & 18 & 576 \\
\hline 1979/80 & 32 & & 551 & 17632 & 528 & 610 & 19520 & 110 & 128 & 4096 \\
\hline 1980/81 & 32 & . & 551 & 17632 & & 610 & 19520 & 425 & 553 & 17696 \\
\hline 1981/82 & 32 & & 551 & 17632 & & 610 & 19520 & & 553 & 17696 \\
\hline 1982/83 & 14 & & & & & 610 & 85§0 & & 553 & 7742 \\
\hline 1.983/84 & 44 & & & & & & & & 553 & 24332 \\
\hline \multicolumn{2}{|l|}{Total} & 551 & & 74018 & 610 & & 70236 & 553 & & 72298 \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(74048 \div 551=\) ID 134} & \multicolumn{3}{|l|}{ID \(70236 \div 610=\) ID 115} & \multicolumn{3}{|l|}{ID \(72298 \div 553=\) ID 131} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1984/85 & Graduates & & 1985/86 & Graduate & & 1986/87 & 7 Graduat & * \\
\hline Yeax & Social Instiťutional Income pex student (1987ID) & \[
\begin{array}{|l|}
\hline \text { Number } \\
\text { Admitted }
\end{array}
\] & Number Enrollea & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}\right.
\] & \[
\begin{aligned}
& \text { Mumber } \\
& \text { Aclmitied }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}\right.
\] & Number Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{array}{|l}
\text { Income } \\
\text { 1987ID }
\end{array}
\] \\
\hline 1978/79 & 32 & 3 & 3 & 96 & 5 & 5 & 160 & & & \\
\hline 1979/80 & 32 & 24 & 27 & 864 & & 5 & 160 & & & \\
\hline 1980/81 & 32 & 133 & 160 & 5120 & 16 & 21 & 672 & & & \\
\hline 1981/82 & 32 & 388 & 548 & 17536 & 136 & 157 & 5024 & 11 & 11 & 352 \\
\hline 1982/83 & 12 & & 548 & 7672 & 252 & 409 & 5726 & 97 & 108 & 1512 \\
\hline 1983/84 & 41 & & 548 & 24112 & & 109 & 17996 & 200 & 308 & 13552 \\
\hline 1984/85 & 45 & & 548 & 24660 & & 409 & 18405 & & 308 & 13860 \\
\hline 1985/86 & 25 & & & & & 409 & 10225 & & 308 & 7700 \\
\hline 1986/87 & 101 & & & & & & & & 308 & 31108 \\
\hline \multicolumn{2}{|l|}{Total} & 548 & \multicolumn{2}{|l|}{80060} & 409 & \multicolumn{2}{|l|}{58368} & 308 & \multicolumn{2}{|l|}{68084} \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{ID \(80060 \div 548=\) ID 146} & \multicolumn{3}{|l|}{ID \(58368 \div 409=\) ID 143} & \multicolumn{3}{|l|}{ID \(68084 \div 308=\) ID 221} \\
\hline
\end{tabular}

\footnotetext{
Source: Number of graduate by year of admission frrom Table A-46.
* prior to \(1981 / 82\) the institutional revenue per student-year data are not available, and axe estimated at
}
B. 27
Table B-36 Institutional Revenue per Graduate, College of Administration and Economics, University of
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Yeax} & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1981/82 Graduates*} & \multicolumn{3}{|l|}{1982/83 Graduates*} & \multicolumn{3}{|l|}{1983/84 Graduates*} \\
\hline & & \[
\begin{array}{|l|}
\text { Number } \\
\text { Admitted }
\end{array}
\] & Number Tincolled & \[
\left|\begin{array}{l}
\text { Income } \\
1987 \text { ID }
\end{array}\right|
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{array}{|l|l}
\text { Income } \\
\text { I } 987 \text { Id }
\end{array}
\] & \[
\left\lvert\, \begin{aligned}
& \text { Mumber } \\
& \text { Admitted }
\end{aligned}\right.
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Enrolled }
\end{aligned}
\] & \[
\begin{aligned}
& \text { Tncome } \\
& 1987 \text { ID }
\end{aligned}
\] \\
\hline 1975/76 & 3 & 5 & 5 & 15 & & & & 1 & 1 & 3 \\
\hline 1976/77 & 3 & 25 & 30 & 90 & 4 & 4 & 12 & 2 & 3 & 9 \\
\hline 1977/78 & 3 & 128 & 158 & 474 & 48 & 52 & 156 & 5 & 8 & 24 \\
\hline 1978/79 & 3 & 680 & 838 & 2514 & 109 & 161 & 183 & 21 & 29 & 87 \\
\hline 1979/80 & 3 & & 838 & 2514 & 721 & 882 & 2616 & 90 & 119 & 357 \\
\hline 1980/81 & 3 & & 838 & 2514 & & 882 & 2646 & 746 & 865 & 2595 \\
\hline 1981/82 & 3 & & 838 & 2514 & & 882 & 2646 & & 865 & 2595 \\
\hline 1982/83 & 2 & & & & & 882 & 1764 & & 865 & 1730 \\
\hline 1983/84 & 8 & & & & & & & & 865 & 6920 \\
\hline Total & & 838 & & 10635 & 882 & & 10353 & 865 & & 14320 \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(10635 \div 838=\) ID 13} & \multicolumn{3}{|l|}{ID \(10353 \div 882=\) ID 12} & \multicolumn{3}{|l|}{ID \(14320 \div 865=\) ID 17} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Yeax} & \multirow[t]{2}{*}{Social Institutional Income pex Student (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Gxaduates*} & \multicolumn{3}{|l|}{1986/87 Graduates*} \\
\hline & & \[
\begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}
\] & Number Enrolled & \[
\left.\begin{array}{|c|}
\text { Income } \\
1987 I D
\end{array} \right\rvert\,
\] & \[
\begin{array}{|l|}
\text { Number } \\
\text { Admitted }
\end{array}
\] & Number Enrolled & \[
\begin{array}{|l|}
\hline \text { Income } \\
\hline 1987 I D \\
\hline
\end{array}
\] & \[
\left\lvert\, \begin{array}{l|}
\text { Number } \\
\text { Admitted }
\end{array}\right.
\] & Number Enrolled & \[
\left|\begin{array}{l}
\text { Income } \\
\text { 1987ID }
\end{array}\right|
\] \\
\hline 1977/78 & 3 & 3 & 3 & 9 & & & & & & \\
\hline 1978/79 & 3 & 6 & 9 & 27 & & & & & & \\
\hline 1979/80 & 3 & 43 & 52 & 156 & 9 & 9 & 27 & & & \\
\hline 1980/81 & 3 & 139 & 191 & 573 & 54 & 63 & 189 & 5 & 5 & 15 \\
\hline 1981/82 & 3 & 709 & 900 & 2700 & 219 & 282 & \(8 \pm 6\) & 65 & 70 & 210 \\
\hline 1982/83 & 2 & & 900 & 1800 & 608 & 890 & 1780 & 127 & 197 & 394 \\
\hline 1983/84 & 8 & & 900 & 7200 & & 890 & 7120 & 552 & 749 & 5992 \\
\hline 1984/85 & 4 & & 900 & 3600 & & 890 & 3560 & & 719 & 2996 \\
\hline 1985/86 & 9 & & & & & 890 & 8010 & & 749 & 6741 \\
\hline 1986/87 & 20 & & & & & & & & 749 & 14980 \\
\hline \multicolumn{2}{|l|}{Total} & 900 & & 16065 & 890 & & 21532 & 749 & & 31328 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{ID \(16065 \div 900=\) ID 18} & \multicolumn{3}{|l|}{\[
\text { ID } 21532 \div 890=\text { ID } 24
\]} & \multicolumn{3}{|l|}{\[
\text { ID } 31328 \div 7 A 9=\text { ID } A 2
\]} \\
\hline
\end{tabular}

\footnotetext{
Source: Number of graduate by year of admission from Table A-47.
institutional revenue per student-year rrom Table \(\operatorname{c-27}\) -
}
Table B-37 Institutional Revenue per Graduate, College of Law and Politics, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1981/82 Graduates*} & \multicolumn{3}{|l|}{1982/83 Graduates*} & \multicolumn{3}{|l|}{1983/84 Graduates*} \\
\hline Year & & Number Admit亡ed & Number Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& 1987 \text { ID }
\end{aligned}\right.
\] & \[
\begin{array}{|l|}
\hline \text { Number } \\
\text { Admitted }
\end{array}
\] & Number Enrolled & \[
\begin{array}{|l|}
\hline \text { Incorne } \\
1987 I D
\end{array}
\] & Number Admitted & Ifumber Enrolled & \[
\left|\begin{array}{l}
\text { Income } \\
1987 \mathrm{ID}
\end{array}\right|
\] \\
\hline 1977/78 & 5 & 43 & 43 & 215 & 14 & 14 & 70 & 2 & 2 & 10 \\
\hline 1978/79 & 5 & 152 & 195 & 975 & 51 & 65 & 325 & 11 & 13 & 65 \\
\hline 1979/80 & 5 & & 195 & 975 & 210 & 275 & 1375 & 32 & 45 & 225 \\
\hline 1980/81 & 5 & & 195 & 975 & & 275 & 1375 & 216 & 261 & 1305 \\
\hline 1981/82 & 5 & & 195 & 975 & & 275 & 1375 & & 261 & 1305 \\
\hline 1982/83 & 12 & & & & & 275 & 3300 & & 261 & 3132 \\
\hline 1983/84 & 18 & & & & & & & & 261 & 4698 \\
\hline \multicolumn{2}{|l|}{Total} & 195 & & 4115 & 275 & & 7820 & 261 & & 261 10740 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{ID \(4115 \div 195=\) ID 21} & \multicolumn{3}{|l|}{ID \(7820 \div 275=\) ID 28} & \multicolumn{3}{|l|}{ID \(10740 \div 261=\) ID 41} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates*} & \multicolumn{3}{|l|}{1986/87 Graduates*} \\
\hline Yeax & & \[
\begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Enrolled }
\end{aligned}
\] & \[
\begin{array}{|l|}
\text { Income } \\
\text { I987ID } \\
\hline
\end{array}
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Admittec }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{array}{l|}
\text { Income } \\
\text { 1987ID }
\end{array}
\] & \[
\left\lvert\, \begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}\right.
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { I987ID }
\end{aligned}\right.
\] \\
\hline 1978/79 & 5 & 1 & 3 & 5 & 2 & 2 & 10 & & & \\
\hline 1979/80 & 5 & 10 & 11 & 55 & 2 & 4 & 20 & 1 & 1 & 5 \\
\hline 1980/81 & 5 & 27 & 38 & 190 & 14 & 18 & 90 & & 1 & 5 \\
\hline 1981/82 & 5 & 172 & 210 & 1050 & 46 & 64 & 320 & 3 & 4 & 20 \\
\hline 1982/83 & 12 & & 210 & 2520 & 171 & 235 & 2820 & 34 & 38 & 456 \\
\hline 1983/84 & 18 & & 210 & 3780 & & 235 & 4230 & 142 & 180 & 3240 \\
\hline 1984/85 & 11 & & 210 & 2310 & & 235 & 2585 & & 180 & 1980 \\
\hline 1985/86 & 67 & & & & & 235 & 15745 & & 180 & 12060 \\
\hline 1986/87 & 70 & & & & & & & & 180 & 12600 \\
\hline \multicolumn{2}{|l|}{Total} & 210 & & 9910 & 235 & & 25820 & 180 & & 30366 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{ID \(9910 \div 210=\) ID 47} & \multicolumn{3}{|l|}{ID \(25820 \div 235=\) ID 110} & \multicolumn{3}{|l|}{ID \(30366 \div 180=\) ID 169} \\
\hline
\end{tabular}
Source: Number of graduate by year of admission from Table A-48.

> x student-year data are not available, and are B. 29

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1981/82 Graduates*} & \multicolumn{3}{|l|}{1982/83 Gxaduates*} & \multicolumn{3}{|l|}{1983/84 Graduates*} \\
\hline Yeax & & \[
\begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{array}{|l|}
\text { Income } \\
\text { 1987ID }
\end{array}
\] & \[
\left|\begin{array}{l}
\text { Number } \\
\text { Admitted }
\end{array}\right|
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}
\] & Number Admitted & Number Enrolled & \[
\left|\begin{array}{|c}
\text { Income } \\
1987 I D
\end{array}\right|
\] \\
\hline 1977/78 & 3 & 110 & 110 & 330 & 25 & 25 & 75 & & 3 & 9 \\
\hline 1978/79 & 3 & 549 & 659 & 1977 & 111 & 136 & 408 & 38 & 41 & 123 \\
\hline 1979/80 & 3 & & 659 & 1977 & 553 & 689 & 2067 & 135 & 176 & 528 \\
\hline 1980/81 & 3 & & 659 & 1977 & & 689 & 2067 & 708 & 884 & 2652 \\
\hline 1981/82 & 3 & & 659 & 1977 & & 689 & 2067 & & 884 & 2652 \\
\hline \(1982 / 83\) & 3 & & & & & 689 & 2067 & & 884 & 2652 \\
\hline 1983/84 & 9 & & & & & & & & 884 & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{\begin{tabular}{l}
Total \\
Social Institutional Income/Graduate
\end{tabular}}} & 659 & & 8238 & 689 & & 8751 & 884 & & 16572 \\
\hline & & \multicolumn{3}{|l|}{ID \(8238 \div 659=\) ID 13} & \multicolumn{3}{|l|}{ID \(8751 \div 689=\) ID 13} & \multicolumn{3}{|l|}{ID \(1.6572 \div 884=\) ID 19} \\
\hline
\end{tabular} Table B-38 Continued
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1984/85 & Graduate & & 1985/86 & Graduate & & 1986/87 & 7 Graduat & \(s^{*}\) \\
\hline Year & Social Institutional Income per Student (1987ID) & \[
\left|\begin{array}{l}
\text { Number } \\
\text { Admitted }
\end{array}\right|
\] & Number Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { I987Id }
\end{aligned}\right.
\] & \begin{tabular}{l}
Number \\
Admitied
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Income } \\
& \text { Incomid }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & Number Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { I987ID }
\end{aligned}\right.
\] \\
\hline 1977/78 & 3 & 2 & 2 & 6 & & & & & & \\
\hline 1978/79 & 3 & 10 & 12 & 36 & 4 & 4 & 12 & & & \\
\hline 1979/80 & 3 & 39 & 51 & 153 & 16 & 20 & 60 & 2 & 2 & 6 \\
\hline 1980/81 & 3 & 171 & 222 & 666 & 46 & 66 & 198 & 5 & 7 & 21 \\
\hline 1981/82 & 3 & 753 & 975 & 2925 & 172 & 238 & 714 & 35 & 42 & 126 \\
\hline 1982/83 & 3 & & 975 & 2925 & 704 & 942 & 2826 & 208 & 250 & 750 \\
\hline 1983/84 & 9 & & 975 & 8775 & & 942 & 8478 & 661 & 911 & 8199 \\
\hline 1984/85 & 9 & & 975 & 8775 & & 942 & 8478 & & 911 & 8199 \\
\hline 1985/86 & & & & & & 942 & 1710 & & 911 & 4555 \\
\hline 1986/87 & 18 & & & & & & & & 911 & 16398 \\
\hline \multicolumn{2}{|l|}{Total} & 9751 & & 24261 & 942 & & 25476 & 911 & & 38254 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{ID \(24261 \div 975=\) ID 25} & \multicolumn{3}{|l|}{ID \(25476 \div 942=\) ID 27} & \multicolumn{3}{|l|}{ID \(38254 \div 91=\) ID 42} \\
\hline
\end{tabular}
Institutional revenue per student-year from Table B-27.
prior to \(1981 / 82\) the institutional revenue per stadent-year data are not available, and are
at the \(1981 / 82\) figure.
Table B-39 Instizitutional Revenue per Eracuate, College of Education, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Year} & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1981/82 Eracuàes*} & \multicolumn{3}{|l|}{1982/83 Eraduates*} & \multicolumn{3}{|l|}{1983/84 Gxaduates**} \\
\hline & & \[
\begin{aligned}
& \text { Wumber } \\
& \text { Admitted }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Encolled
\end{tabular} & \[
\left\lvert\, \begin{array}{|l|}
\text { Income } \\
1987 I D
\end{array}\right.
\] & \[
\begin{array}{|l|}
\text { Number } \\
\text { Admitted }
\end{array}
\] & \[
\begin{aligned}
& \text { Mumber } \\
& \text { Enrolled }
\end{aligned}
\] & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& 1987 \text { Id }
\end{aligned}\right.
\] & Number Admitted & Number Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { 1987Id }
\end{aligned}\right.
\] \\
\hline 1974/75 & 4 & 6 & 6 & 24 & & & & & & \\
\hline 1975/76 & 4 & 12 & 18 & 72 & & & & 4 & 1 & \\
\hline 1976/77 & \(\underline{1}\) & 8 & 26 & 103 & 12 & 12 & 48 & 4 & 5 & 20 \\
\hline 1977/78 & 4 & 69 & 95 & 380 & 32 & 44 & 176 & 23 & 28 & 112 \\
\hline 1978/79 & \(\underline{4}\) & 915 & 1010 & 4040 & 72 & 116 & 164 & 38 & 66 & 264 \\
\hline 1979/80 & 4 & & 1010 & & \(10 \stackrel{3}{ }\) & 1159 & 4636 & 191 & 257 & 1028 \\
\hline 1980/81 & 4 & & 1010 & \(40 \leq 0\) & & 1159 & 4636 & 1055 & 1312 & 5248 \\
\hline 1981/82 & 4 & & 1010 & \(\triangle 1020\) & & 1159 & \(\triangle 636\) & & 1312 & 5248 \\
\hline 1982/83 & 6 & & & & & 1159 & 6954 & & 1312 & 7872 \\
\hline 1983/84 & 9 & & & & & & & & 1312 & 11808 \\
\hline Total & & 1010 & & 16740 & 1159 & & 21550 & 1312 & & 31604 \\
\hline Social & astitu̇ional Income/Graduate & \multicolumn{3}{|l|}{ID \(16740 \div 1010=\) ID 17} & \multicolumn{3}{|l|}{ID \(21550 \div 1159=\) ID 19} & \multicolumn{3}{|l|}{ID \(31604 \div 1312=\) ID 24} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Year} & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates*} & \multicolumn{3}{|l|}{1986/87 Graduȧes*} \\
\hline & & \[
\left\lvert\, \begin{aligned}
& \text { Mumber } \\
& \text { Admitited }
\end{aligned}\right.
\] & \[
\begin{aligned}
& \text { Mumber } \\
& \text { Enzolied }
\end{aligned}
\] & \[
\begin{array}{|l|}
\text { Income } \\
\text { I987ID }
\end{array}
\] & Mumber
Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{array}{|l|}
\text { Income } \\
1987 \text { Id } \\
\hline
\end{array}
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}
\] & \begin{tabular}{l}
Mumber \\
Enrolled
\end{tabular} & \[
\begin{array}{|l|l}
\text { Income } \\
\text { 1987ID }
\end{array}
\] \\
\hline 1977/78 & 4 & 5 & 5 & 20 & 3 & 3 & 12 & & & \\
\hline 1978/79 & 4 & 16 & 21 & 84 & 6 & 9 & 36 & & & \\
\hline 1979/80 & 4 & 154 & 175 & 700 & 42 & 51 & 204 & 9 & 9 & 36 \\
\hline 1980/81 & \(\underline{4}\) & 345 & 520 & 2080 & 99 & 150 & 600 & 25 & 34 & 136 \\
\hline 1981/82 & 4 & 1029 & 1549 & 6196 & 306 & 456 & 182 A & 88 & 122 & 488 \\
\hline 1982/83 & 6 & & 1549 & 9294 & 758 & 1214 & 7281 & 300 & \({ }^{\text {a }} 22\) & 2532 \\
\hline 1983/83 & 9 & & 1549 & 13941 & & 1214 & 10926 & 801 & 1223 & 11007 \\
\hline 1984/85 & 7 & & 1549 & 10843 & & 1214 & 8498 & & 1223 & 8561 \\
\hline 1985/86 & 22 & & & & & 1214 & 26708 & & 1223 & 26905 \\
\hline 1986/87 & 27 & & & & & & & & 1223 & 33021 \\
\hline \multicolumn{2}{|l|}{Total} & 15ı9 & & 43158 & 1214 & & 56092 & 1223 & & 82687 \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(43158 \div 1549=\) ID 28} & \multicolumn{3}{|l|}{ID \(56092 \div 1214=\) ID 46} & \multicolumn{3}{|l|}{ID \(82687 \div 1223=\) ID 68} \\
\hline
\end{tabular}
Source: Number of graduate by year of admission from Table A-50.
\[
\begin{aligned}
& \text { sindent-year data are not available, and are } \\
& \text { B. } 31
\end{aligned}
\]
Table B-40 Institutional Revenue pex Eraduate, College of Physical Education University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Year} & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1981/82 Graduates*} & \multicolumn{3}{|l|}{1982/83 Graduates*} & \multicolumn{3}{|l|}{1983/84 Graduates*} \\
\hline & & Number Admitted & Number Enrolled & \[
\left|\begin{array}{l}
\text { Income } \\
\text { I987ID }
\end{array}\right|
\] & \[
\left\lvert\, \begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}\right.
\] & Number Enrolled & \[
\begin{array}{|l|}
\hline \text { Income } \\
\text { 1987ID }
\end{array}
\] & Mumber
Admitted & Mumber Enrolled & \[
\begin{array}{|l|}
\text { Income } \\
\text { 1987ID }
\end{array}
\] \\
\hline 1977/78 & 8 & 4 & 4 & 32 & & & & & & \\
\hline 1978/79 & 8 & 209 & 213 & 1704 & 18 & 18 & 144 & 2 & 2 & 16 \\
\hline 1979/80 & 8 & & 213 & 1704 & 265 & 283 & 2264 & 44 & 46 & 368 \\
\hline 1980/81 & 8 & & 213 & 1704 & & 283 & 2264 & 203 & 229 & 1992 \\
\hline 1981/82 & 8 & & 213 & 1704 & & 283 & 2264 & & 249 & 1992 \\
\hline 1982/83 & 12 & & & & & 283 & 3396 & & 249 & 2988 \\
\hline 1983/84 & 11 & & & & & & & & 249 & 2739 \\
\hline Total & & 213 & & 6848 & 283 & & 10332 & 249 & & 10095 \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(6848 \div 213=\) ID 32} & \multicolumn{3}{|l|}{ID \(10332 \div 283=\) ID 37} & \multicolumn{3}{|l|}{ID \(10095 \div 249=\) ID 41} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1984/85 Graduates*} & \multicolumn{3}{|l|}{1985/86 Graduates*} & \multicolumn{3}{|l|}{1986/87 Graduates*} \\
\hline Year & & Number Admitted & \[
\begin{array}{|l|}
\text { Number } \\
\text { Enrolled }
\end{array}
\] & \[
\left|\begin{array}{|l|}
\text { Income } \\
\text { I } 987 \text { ID }
\end{array}\right|
\] & Number Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Income } \\
& \text { I987ID }
\end{aligned}
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Admitted }
\end{aligned}
\] & \begin{tabular}{l}
Wumber \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}\right.
\] \\
\hline 1978/79 & 8 & 2 & 2 & 16 & & & & & & \\
\hline 1979/80 & 8 & 17 & 19 & 152 & & & & & & \\
\hline 1980/81 & 8 & 87 & 106 & 848 & 14 & 14 & 112 & & & \\
\hline 1981/82 & 8 & 109 & 215 & 1720 & 50 & 68 & 512 & 6 & 6 & 48 \\
\hline 1982/83 & 12 & & 215 & 2580 & 66 & 130 & 1560 & 96 & 102 & 1224 \\
\hline 1983/8 1 & 11 & & 215 & 2365 & & 130 & 1230 & 69 & 171 & 1881 \\
\hline 1984/85 & 11 & & 215 & 2365 & & 130 & 1430 & & 171 & 1881 \\
\hline 1985/86 & 9 & & & & & 130 & 1170 & & 171 & 1539 \\
\hline 1986/87 & 35 & & & & & & & & 171 & 5985 \\
\hline \multicolumn{2}{|l|}{Total} & 215 & & 10046 & 130 & & 6214 & 171 & & 12558 \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(10046 \div 215=\) ID 47} & \multicolumn{3}{|l|}{ID \(6214 \div 130=\) ID 48} & \multicolumn{3}{|l|}{ID \(12558 \div 171=\) ID 73} \\
\hline
\end{tabular}
Institutional revenue per student-year from Table B-27.
prior to \(1981 / 82\) the institutional revenue per student-year data are not available, and are
estimated at the \(1981 / 82\) figure.
Table B-41 Institutional Revenue per Graduate, College of Academy of Fine Arts, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1981/82 & Graduate & & 1982/83 & Graduates & & 1983/8 & 4 Graduate & \\
\hline Year & Social Institutional Income per Student (1987ID) & Number
Admitted & Number Enrolled & \[
\begin{array}{|l|}
\hline \text { Income } \\
\text { 1987ID }
\end{array}
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & Number Enrolled & \[
\left|\begin{array}{l}
\text { Income } \\
\text { I987ID }
\end{array}\right|
\] & Number Admitted & Number Enrolled & \[
\left|\begin{array}{l}
\text { Income } \\
1987 I D
\end{array}\right|
\] \\
\hline 1976/77 & 3 & 1 & 1 & 27 & 7 & & 3 & & & \\
\hline 1977/78 & 3 & 8 & 9 & 27 & 7 & 8 & 24. & 3 & 3 & 9 \\
\hline 1978/79 & 3 & 105 & 114 & 342 & 35 & 43 & 129 & 10 & 13 & 39 \\
\hline 1979/80 & 3 & & 112 & 342 & 126 & 169 & 507 & 28 & 11 & 123 \\
\hline 1980/81 & 3 & & 114 & 342 & & 169 & 507 & 121 & 162 & 486 \\
\hline 1981/82 & 3 & & 114 & 342 & & 169 & 507 & & 162 & 186 \\
\hline 1982/83 & 3 & & & & & 169 & 507 & & 162 & 486 \\
\hline 1.983/84 & 8 & & & & & & & & 162 & 1296 \\
\hline \multicolumn{2}{|l|}{Total} & 114 & & 1398 & 169 & & 2184 & 162 & & 2925 \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(1398 \div 114=\) ID 12} & \multicolumn{3}{|l|}{ID \(2184 \div 169=\) ID 13} & \multicolumn{3}{|l|}{ID \(2925 \div 162=\) ID 18} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1984/85 & Graduates & & 1985/86 & Graduates & & 1986/8 & 7 Graduat & ** \\
\hline Yeax & Social Institutional Income per Student (1987ID) & Number Admitted & \[
\begin{aligned}
& \text { Number } \\
& \text { Enrolled }
\end{aligned}
\] & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { I987ID }
\end{aligned}\right.
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{array}{|l|}
\text { Income } \\
1987 I D
\end{array}
\] & Number Admitted & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Income } \\
& \text { 1987ID }
\end{aligned}
\] \\
\hline 1978/79 & 3 & 3 & 3 & 9 & 3 & 3 & 9 & & & \\
\hline 1979/80 & 3 & 25 & 28 & 84 & 5 & 8 & 24 & & & \\
\hline 1980/81 & 3 & 66 & 94 & 282 & 29 & 37 & 111 & 4 & 4 & 12 \\
\hline 1981/82 & 3 & 110 & 204 & 612 & 65 & 102 & 306 & 8 & 12 & 36 \\
\hline 1982/83 & 3 & & 204 & 612 & 136 & 238 & 714 & 31 & 43 & 129 \\
\hline 1983/84 & 8 & & 204 & 1632 & & 238 & 1904 & 134 & 177 & 1416 \\
\hline 1984/85 & 10 & & 204 & 2040 & & 238 & 2380 & & 177 & 1770 \\
\hline 1985/86 & 12 & & & & & 238 & 2856 & & 177 & 2124 \\
\hline 1986/87 & 24 & & & & & & & & 177 & 4248 \\
\hline \multicolumn{2}{|l|}{Total} & 204 & & 5271 & 238 & & 8304 & 177 & & 9735 \\
\hline \multicolumn{2}{|l|}{Social Institutional Income/Graduate} & \multicolumn{3}{|l|}{ID \(5271 \div 201=\) ID 26} & \multicolumn{3}{|l|}{ID \(8304 \div 238=\) ID 35} & \multicolumn{3}{|l|}{ID \(9735 \div 177=\) ID 55} \\
\hline
\end{tabular}

\footnotetext{
ource: Uumber of graduate by yeax of admission from Table A-52.
}

> student-year data are not available, and are B. 33
Table B-\&2 Institutional Revenue per Graduate, College of Alsharia, University of Baghdad,
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Year} & \multirow[t]{2}{*}{Social Institutional Income per Student (1987ID)} & \multicolumn{3}{|l|}{1981/82 Graduates*} & \multicolumn{3}{|l|}{1982/83 Graduates**} & \multicolumn{3}{|l|}{1983/8」 Graduates*} \\
\hline & & Number Admitted & \begin{tabular}{l}
ivumber \\
Enrolled
\end{tabular} & \[
\left\lvert\, \begin{array}{|l|}
\hline \text { Income } \\
1987 \text { ID }
\end{array}\right.
\] & \[
\begin{aligned}
& \text { Number } \\
& \text { Admitited }
\end{aligned}
\] & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Income } \\
& 1987 \mathrm{ID}
\end{aligned}
\] & Number Admitted & Number Enrolled & \[
\left\lvert\, \begin{gathered}
\text { Income } \\
\text { 1987ID }
\end{gathered}\right.
\] \\
\hline 1976/77 & A & 5 & 5 & 20 & & & & & & \\
\hline 1977/78 & 4 & 24 & 29 & 116 & 4 & 4 & 16 & & & \\
\hline 1978/79 & 4 & 153 & 182 & 728 & 12 & 16 & 64 & 4 & 4 & 16 \\
\hline 1979/80 & \(\underline{1}\) & & 182 & 728 & 232 & 248 & 992 & 25 & 29 & 116 \\
\hline 1980/81 & 4 & & 182 & 728 & & 288 & 992 & 156 & 185 & 740 \\
\hline 1981/82 & \(\frac{4}{5}\) & & 182 & 728 & & 248 & 992 & & 185 & 740 \\
\hline 1982/83 & 5 & & & & & 248 & 1240 & & 185 & 925 \\
\hline 1983/84 & 11 & & & & & & & & 185 & 2035 \\
\hline Total & & 182 & & 3048 & 248 & & 4296 & 185 & & 4572 \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(3048 \div 182=\) ID 17} & \multicolumn{3}{|l|}{ID \(4296 \div 248=\) ID 17} & \multicolumn{3}{|l|}{\[
\text { ID } 4572 \div 185=\text { ID } 2
\]} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & 1984/85 & Graduates & & 1985/86 & Graduates & & 1986/87 & 7 Graduate & \({ }^{*}\) \\
\hline Year & Social Instiṫu̇̇ional Income per Student (1987ID) & Number
Admitted & Number Enrolled & \[
\begin{aligned}
& \text { Income } \\
& \text { I987ID }
\end{aligned}
\] & Number Admi̇ted & Humber Enrolled & \[
\left\lvert\, \begin{aligned}
& \text { Income } \\
& \text { I987ID }
\end{aligned}\right.
\] & \begin{tabular}{l}
Number \\
Admitted
\end{tabular} & \begin{tabular}{l}
Number \\
Enrolled
\end{tabular} & \[
\begin{aligned}
& \text { Income } \\
& 1987 \text { ID }
\end{aligned}
\] \\
\hline 1979/80 & 4 & 20 & 20 & 80 & 15 & 15 & 60 & & & \\
\hline 1980/81 & & 53 & 73 & 292 & 35 & 50 & 200 & & & \\
\hline 1981/82 & A & 122 & 195 & 780 & 43 & 93 & 372 & 34 & 34 & 136 \\
\hline 1982/83 & 5 & & 195 & 975 & 155 & 248 & 1240 & 56 & 90 & 450 \\
\hline 1983/84 & 11 & & 195 & 2145 & & 248 & 2728 & 115 & 205 & 2255 \\
\hline 1984/85 & 9 & & 195 & 1755 & & 248 & 2232 & & 205 & 3845 \\
\hline 1985/86 & 10 & & & & & 248 & 2480 & & 205 & 2050 \\
\hline 1986/87 & 30 & & & & & & & & 205 & 6150 \\
\hline \multicolumn{2}{|l|}{Total} & 195 & & 6027 & 248 & & 9312 & 205 & \multicolumn{2}{|l|}{12886} \\
\hline Social & nstitutional Income/Graduate & \multicolumn{3}{|l|}{ID \(6027 \div 195=\) ID 31} & \multicolumn{3}{|l|}{\(9312 \div 248=\) ID 38} & \multicolumn{3}{|l|}{ID \(12886 \div 205=\) ID 63} \\
\hline
\end{tabular}
Source: Number of graduate by year of admission from Table A-53.
Table A-53.
able B.27.
student-year data are not available, and are
B. 3 II
Table B-43 Sumary of Institutional Revenue Per Graduate by College and Year of Graduation,
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline Coillege & \[
\left\lvert\, \begin{gathered}
1981 / 82 \\
\text { Graduates }
\end{gathered}\right.
\] & \[
\begin{gathered}
1982 / 83 \\
\text { GIaduates }
\end{gathered}
\] & 1983/84 Graduates & \[
\begin{gathered}
1984 / 85 \\
\text { Graduates }
\end{gathered}
\] & 1985/86 Graduates & \[
\begin{gathered}
1986 / 87 \\
\text { Graduates }
\end{gathered}
\] & 1981/82-1986/87 Weighted Average \\
\hline Science & 31 & 30 & 39 & 43 & 58 & 87 & 49 \\
\hline Engineering & 59 & 60 & 77 & 75 & 82 & 92 & 75 \\
\hline Medicine & 24 & 25 & 29 & 33 & 42 & 105 & 45 \\
\hline Pharmacy & \(\underline{10}\) & 38 & 41 & 41 & 46 & 96 & 51 \\
\hline Dentistiry & 200 & 193 & 189 & 186 & 182 & 207 & 193 \\
\hline Nursing & 16 & 25 & 35 & 95 & 103 & 149 & 63 \\
\hline Veterinary Medicine & 251 & 248 & 221 & 211 & 19A & 227 & 226 \\
\hline Agriculture & 134 & 115 & 131 & 146 & 13 A & 221 & 142 \\
\hline Administration and Economics & 13 & 12 & 20 & 19 & 25 & 43 & 21 \\
\hline Law and Politics & 21 & 28 & 41 & 47 & 110 & 169 & 65 \\
\hline Arts & 13 & 13 & 19 & 25 & 27 & \(\stackrel{4}{4}\) & 24 \\
\hline Education & 17 & 19 & 30 & 28 & 46 & 68 & 35 \\
\hline Physical Education & 32 & 37 & 41 & 47 & 48 & 73 & 44 \\
\hline Academy of Fine Arts & 12 & 13 & 18 & 26 & 35
38 & 35 & 28 \\
\hline Alsharia & 17 & 17 & 25 & 31 & 38 & 63 & 32 \\
\hline
\end{tabular}

APPENDIX C
SUPPLEMENT TO CHAPTER 7

Table C-1

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1** \({ }^{\text {冎 }}\) & 2 & 3 & 4 & 5 6 \% \({ }^{\text {a }}\) & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1026 & 1026* & -1037 & 1037* \\
\hline 19 & & & & & & 1027 & -1027 & -1064 & 1064* & -1077 & 1077* \\
\hline 20 & & & & & & 1045 & -1045 & -1101 & 1101* & -1126 & 1118* \\
\hline 21 & & & & & & 1085 & -1085 & -1139 & 1139* & -1159 & 1159** \\
\hline 22 & 1113 & 726 & 387 & 240 & 1353 & 1102 & 251 & 167 & 1186 & 126 & 1228 \\
\hline 23 & 1128 & 726 & 402 & 240 & 1368 & 1110 & 258 & 172 & 1196 & 129 & 1239 \\
\hline 24 & 1219 & 732 & 487 & 240 & 1459 & 1182 & 277 & 185 & 1274 & 139 & 1321 \\
\hline 25 & 1279 & 738 & 541 & 240 & 1519 & 1223 & 296 & 197 & 1322 & 148 & 1371 \\
\hline 26 & 1257 & 738 & 519 & 240 & 1497 & 1220 & 277 & 185 & 1312 & 139 & 1359 \\
\hline 27 & 1221 & 732 & 489 & 240 & 1461 & 1240 & 221 & 147 & 1314 & 111 & 1351 \\
\hline 28 & 1255 & 732 & 523 & 240 & 1495 & 1255 & 240 & 160 & 1335 & 120 & 1375 \\
\hline 29 & 1348 & 738 & 610 & 240 & 1588 & 1310 & 278 & 185 & 1403 & 139 & 1449 \\
\hline 30 & 1330 & 738 & 592 & 240 & 1570 & 1372 & 198 & 132 & 1438 & 99 & 1471 \\
\hline 31 & 1410 & 738 & 672 & 240 & 1650 & 1382 & 268 & 179 & 1471 & 134 & 1516 \\
\hline 32 & 1422 & 738 & 684 & 240 & 1662 & 1405 & 257 & 171 & 1491 & 129 & 1534 \\
\hline 33 & 1430 & 738 & 692 & 240 & 1670 & 1450 & 220 & 147 & 1523 & 110 & 1560 \\
\hline 34 & 1557 & 738 & 819 & 240 & 1797 & 1561 & 236 & 157 & 1640 & 118 & 1679 \\
\hline 35 & 1605 & 738 & 867 & 240 & 1845 & 1605 & 240 & 160 & 1685 & 120 & 1725 \\
\hline 36 & 1720 & 738 & 982 & 240 & 1960 & 1680 & 280 & 187 & 1773 & 140 & 1820 \\
\hline 37 & 1743 & 738 & 1005 & 240 & 1983 & 1717 & 266 & 177 & 1806 & 133 & 1850 \\
\hline 38 & 1775 & 738 & 1037 & 240 & 2015 & 1724 & 291 & 194 & 1821 & 146 & 1870 \\
\hline 39 & 1958 & 738 & 1220 & 240 & 2198 & 1758 & 440 & 293 & 1905 & 220 & 1978 \\
\hline 40 & 2050 & 762 & 1288 & 240 & 2290 & 1794 & 496 & 331 & 1959 & 248 & 2042 \\
\hline 41 & 1993 & 762 & 1231 & 240 & 2233 & 1825 & 408 & 272 & 1961 & 204 & 2029 \\
\hline 42 & 2066 & 762 & 1304 & 240 & 2306 & 1944 & 362 & 241 & 2065 & 181 & 2125 \\
\hline 43 & 2037 & 762 & 1275 & 240 & 2277 & 1868 & 409 & 273 & 2004 & 205 & 2073 \\
\hline 44 & 2123 & 762 & 1361 & 240 & 2363 & 1885 & 478 & 319 & 2044 & 239 & 2124 \\
\hline 45 & 2149 & 762 & 1387 & 240 & 2389 & 1899 & 490 & 327 & 2062 & 245 & 2144 \\
\hline 46 & 2261 & 786 & 1475 & 240 & 2501 & 1925 & 576 & 384 & 2117 & 288 & 2213 \\
\hline 47 & 2269 & 786 & 1483 & 240 & 2509 & 1905 & 604 & 403 & 2106 & 302 & 2207 \\
\hline 48 & 2312\% & 786 & 1526 & 240 & 2552 & 1880 & 672 & 448 & 2104 & 336 & 2216 \\
\hline 49 & 2361** & 786 & 1526 & 240 & 2552 & 1834 & 718 & 478 & 2073 & 359 & 2193 \\
\hline 50 & 2411** & 834 & 1577 & 240 & 2651 & 1991 & 660 & 440 & 2211 & 330 & 2321 \\
\hline 51 & 2460\% & 834 & 1626 & 240 & 2700 & 1989 & 711 & 474 & 2226 & 356 & 2345 \\
\hline 52 & 2510** & 834 & 1676 & 240 & 2750 & 1932 & 818 & 545 & 2205 & 409 & 2341 \\
\hline 53 & 2559** & 834 & 1725 & 240 & 2799 & 2051 & 748 & 499 & 2300 & 374 & 2425 \\
\hline 54 & 2609** & 834 & 1775 & 240 & 2849 & 2227 & 622 & 414 & 2434 & 311 & 2538 \\
\hline 55 & 2658** & 834 & 1824 & 240 & 2898 & 2020 & 878 & 585 & 2313 & 439 & 2459 \\
\hline 56 & 2708** & 834 & 1874 & 240 & 2948 & 2372 & 576 & 384 & 2564 & 288 & 2660 \\
\hline 57 & 2757** & 834 & 1923 & 240 & 2997 & 2250 & 747 & 498 & 2499 & 374 & 2624 \\
\hline 58 & 2807* & 834 & 1973 & 240 & 3047 & 2286 & 761 & 507 & 2540 & 380 & 2666 \\
\hline 59 & 2856** & 834 & 2022 & 240 & 3096 & 2318 & 778 & 519 & 2577 & 389 & 2707 \\
\hline 60 & 2906** & 834 & 2072 & 240 & 3146 & 2351 & 795 & 530 & 2616 & 397 & 2748 \\
\hline 60A & 1453 & 000 & & & 1453 & 1176 & 278 & 185 & 0000 & 139 & 0000 \\
\hline
\end{tabular}

Private Internal Rates of Return
\(6.92 \% \quad 4.44 \%\)
\(2.88 \%\)

\section*{Source}

Col. (2) from Table B-3; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) +Col . (5); Col. (7) from Table \(\mathrm{B}-1\); \(\mathrm{Col}(8)=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\) Col. (8) \(\times 2 / 3\), Col. (9) for age 18 to \(21=\mathrm{Col}\). (6) -Col . (10); Col. (10), for age 22 to \(60=\mathrm{Col}\). ( 6 ) - Column ( 9 ); Col. 10, for age 18 to 21 , estimated by linear regression of clata for age 22 to \(60 ;\) Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2 ;\) Col. (11), for age 18 to \(21,=\mathrm{Col}\). (6)- Col . (12); Col . (12) for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col.
(12), for age 22 to \(60=\mathrm{Col}(6)-\mathrm{Column}\) (11). (12), for age 22 to \(60=\mathrm{Col}\) (6) - Column (11).

Note
* Linear regression estimate.
**: Graduates of the College of Science are estimated to complete their college education four years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation".
*ant The auxiliary income (ID 240) is derived from the allowance system of employees in the public sector, Republic of Iraq.
60 A is a retirement bonuse
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone ( \(\mathrm{a}=1\) ), differential earnings, clifferential earnings ( \(a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C-2
Private Cost-Earning profiles and Private Internal Rate of return of College of Engineering Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline  & 2 & 3 & 4 & \(5^{* 3 \% 1}\) & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1205 & 1205* & -1305 & 1305* \\
\hline 19 & & & & & & 1027 & -1027 & -1260 & 1260** & -1371 & 1371* \\
\hline 20 & & & & & & 1045 & -1045 & -1315 & 1315\% & -1438 & 1438* \\
\hline 21 & & & & & & 1085 & -1085 & -1370 & 1370** & -1505 & 1505* \\
\hline 22 & 1301 & 738 & 563 & 563 & 1864 & 1102 & 762 & 508 & 1356 & 381 & 1483 \\
\hline 23 & 1425 & 738 & 687 & 687 & 2112 & 1110 & 1002 & 668 & 1444 & 501 & 1611 \\
\hline 24 & 1513 & 738 & 775 & 775 & 2288 & 1182 & 1106 & 737 & 1551 & 553 & 1735 \\
\hline 25 & 1497 & 738 & 759 & 759 & 2256 & 1223 & 1033 & 689 & 1567 & 517 & 1740 \\
\hline 26 & 1438 & 738 & 700 & 700 & 2138 & 1220 & 918 & 612 & 1526 & 459 & 1679 \\
\hline 27 & 1596 & 738 & 858 & 858 & 2454 & 1240 & 1214 & 809 & 1645 & 607 & 1847 \\
\hline 28 & 1575 & 738 & 837 & 837 & 2412 & 1255 & 1157 & 771 & 1641 & 579 & 1834 \\
\hline 29 & 1953 & 738 & 1215 & 1215 & 3168 & 1310 & 1858 & 1239 & 1929 & 929 & 2239 \\
\hline 30 & 1725 & 738 & 987 & 987 & 2712 & 1372 & 1340 & 893 & 1819 & 670 & 2042 \\
\hline 31 & 1836 & 738 & 1098 & 1098 & 2934 & 1382 & 1552 & 1035 & 1899 & 776 & 2158 \\
\hline 32 & 1792 & 738 & 1054 & 1054 & 2846 & 1405 & 1441 & 961 & 1885 & 721 & 2126 \\
\hline 33 & 2012 & 762 & 1250 & 1250 & 3262 & 1450 & 1812 & 1208 & 2054 & 906 & 2356 \\
\hline 34 & 2059 & 762 & 1297 & 1297 & 3356 & 1561 & 1795 & 1197 & 2159 & 898 & 2459 \\
\hline 35 & 2101 & 762 & 1339 & 1339 & 3440 & 1605 & 1835 & 1223 & 2217 & 918 & 2523 \\
\hline 36 & 2352 & 786 & 1566 & 1566 & 3918 & 1680 & 2238 & 1492 & 2426 & 1119 & 2799 \\
\hline 37 & 2104 & 762 & 1342 & 1342 & 3446 & 1717 & 1729 & 1153 & 2293 & 865 & 2582 \\
\hline 38 & 2408 & 834 & 1574 & 1574 & 3982 & 1724 & 2258 & 1505 & 2477 & 1129 & 2853 \\
\hline 39 & 2353 & 786 & 1567 & 1567 & 3920 & 1758 & 2162 & 1441 & 2479 & 1081 & 2839 \\
\hline 40 & 2216 & 786 & 1430 & 1430 & 3646 & 1794 & 1852 & 1235 & 2411 & 926 & 2720 \\
\hline 41 & 2366 & 786 & 1580 & 1580 & 3946 & 1825 & 2121 & 1414 & 2532 & 1061 & 2886 \\
\hline 42 & 2416 & 834 & 1582 & 1582 & 3998 & 1944 & 2054 & 1369 & 2629 & 1027 & 2971 \\
\hline 43 & 2599 & 834 & 1765 & 1765 & 4364 & 1868 & 2496 & 1664 & 2700 & 1248 & 3116 \\
\hline 44 & 2594 & 834 & 1760 & 1760 & 4354 & 1885 & 2469 & 1646 & 2708 & 1235 & 3120 \\
\hline 45 & 2364 & 786 & 1578 & 1578 & 3942 & 1899 & 2043 & 1362 & 2580 & 1022 & 2921 \\
\hline 46 & 2446 & 834 & 1612 & 1612 & 4058 & 1925 & 2133 & 1422 & 2636 & 1067 & 2992 \\
\hline 47 & 2601 & 834 & 1767 & 1767 & 4368 & 1905 & 2463 & 1642 & 2726 & 1232 & 3137 \\
\hline 48 & 2737* & 834 & 1903 & 1903 & 4640 & 1880 & 2760 & 1840 & 2800 & 1380 & 3260 \\
\hline 49 & 2789** & 834 & 1955 & 1955 & 4744 & 1834 & 2910 & 1940 & 2804 & 1455 & 3289 \\
\hline 50 & 2842** & 834 & 2008 & 2008 & 4849 & 1991 & 2858 & 1905 & 2944 & 1429 & 3420 \\
\hline 51 & 2894** & 834 & 2060 & 2060 & 4954 & 1989 & 2965 & 1977 & 2977 & 1483 & 3472 \\
\hline 52 & 2947\% & 834 & 2113 & 2113 & 5059 & 1932 & 3127 & 2085 & 2974 & 1564 & 3496 \\
\hline 53 & 2999** & 834 & 2165 & 2165 & 5164 & 2051 & 3113 & 2075 & 3089 & 1557 & 3608 \\
\hline 54 & 3052\% & 834 & 2218 & 2218 & 5269 & 2227 & 3042 & 2028 & 3241 & 1521 & 3748 \\
\hline 55 & 3104* & 834 & 2270 & 2270 & 5374 & 2020 & 3354 & 2236 & 3138 & 1677 & 3697 \\
\hline 56 & 3157\% & 834 & 2323 & 2323 & 5479 & 2372 & 3107 & 2071 & 3408 & 1554 & 3926 \\
\hline 57 & 3209** & 834 & 2375 & 2375 & 5584 & 2250 & 3334 & 2223 & 3361 & 1667 & 3917 \\
\hline 58 & 3262** & 834
834 & 2428 & 2428 & 5689 & 2286 & 3403
3476 & 2269 & 3420 & 1702 & 3988 \\
\hline 59
60 & 3314** & 834
834 & 2480
2533 & 2480
2533 & 5794
5899 & 2318
2351 & 3476
3548 & 2317
2365 & 3477
3534 & 1738
1774 & 4056
4125 \\
\hline 60A & 1684 & & & & 1684 & 1176 & 508 & 339 & & 254 & \\
\hline
\end{tabular}

Private Internal Rates of Return
\(21.30 \% \quad 14.18 \%\)
\(10.95 \%\)
Source: Col (2) from Table B-5; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) +Col . (5); Col. (7) front Table \(\mathrm{B}-1 ; \mathrm{Col}(8)=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\) Col . (8) \(\times 2 / 3\), Col. (9) for age 18 to \(21=\mathrm{Col}\). (6) - Col. (10); Col. ( 10 ), for age 22 to \(60=\mathrm{Col}\). ( 6 ) - Column ( 9 ); Col. 10, for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col. (11), for age 22 to \(60 \mathrm{~A}=\mathrm{Column} 8 \times 1 / 2\); Col. (11), for age 18 to \(21,=\mathrm{Col}\). (6)- Col. (12); Col. (12) for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col. (12), for age 22 to \(60=\mathrm{Col}(6)-\) Column (11).

Note
Linear regression estimate.
*) Graduates of the College of Engineering are estimated to complete their college education four years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation".
athat The auxiliary income ( \(100 \%\) ) is derived from the allowance system of employees in the public sector, Republic of Iraq

\section*{60 A is a retirement bonuse.}
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living arnings ( \(a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(\mathrm{a}=1 / 2\) ) respectively.

Table C-3
rivate Cost-Earning profiles and Private Internal Rate of return of College of Medicine Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1 娄 & 2 & 3 & 4 & \(5^{\text {matak }}\) & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1022 & 1022* & -1024. & 1024\% \\
\hline 19 & & & & & & 1027 & -1027 & -1046 & 1093* & -1115 & 1115* \\
\hline 20 & & & & & & 1045 & -1045 & -1141 & 1163******** & -1205 & 1205** \\
\hline 21 & & & & & & 1085 & -1085 & -1234 & 1234** & -1296 & 1296 \({ }^{\text {m }}\) \\
\hline 22 & & & & & & 1102 & -1102 & -1305 & 1305* & -1386 & 1386** \\
\hline 23 & & & & & & 1110 & -1110 & -1376 & 1376** & -1476 & 1476** \\
\hline 24 & 1350 & 738 & 612 & 734 & 2084 & 1182 & 902 & 602 & 1483 & 451 & 1633 \\
\hline 25 & 1427 & 738 & 689 & 827 & 2254 & 1223 & 1031 & 687 & 1567 & 515 & 1738 \\
\hline 26 & 1481 & 738 & 743 & 892 & 2373 & 1220 & 1153 & 768 & 1604 & 576 & 1796 \\
\hline 27 & 1493 & 738 & 755 & 906 & 2399 & 1240 & 1159 & 773 & 1626 & 580 & 1820 \\
\hline 28 & 1564 & 738 & 826 & 991 & 2555 & 1255 & 1300 & 867 & 1688 & 650 & 1905 \\
\hline 29 & 1592 & 738 & 854 & 1025 & 2617 & 1310 & 1307 & 871 & 1746 & 653 & 1963 \\
\hline 30 & 1722 & 738 & 984 & 1181 & 2903 & 1372 & 1531 & 1021 & 1882 & 765 & 2137 \\
\hline 31 & 1776 & 738 & 1038 & 1246 & 3022 & 1382 & 1640 & 1093 & 1929 & 820 & 2202 \\
\hline 32 & 1804 & 738 & 1066 & 1279 & 3083 & 1405 & 1678 & 1119 & 1964 & 839 & 2244 \\
\hline 33 & 1911 & 738 & 1173 & 1408 & 3319 & 1450 & 1869 & 1246 & 2073 & 934 & 2384 \\
\hline 34 & 1871 & 738 & 1133 & 1360 & 3231 & 1561 & 1670 & 1113 & 2118 & 835 & 2396 \\
\hline 35 & 1936 & 738 & 1198 & 1438 & 3374 & 1605 & 1769 & 1179 & 2195 & 884 & 2489 \\
\hline 36 & 2054 & 732 & 1322 & 1586 & 3640 & 1680 & 1960 & 1307 & 2333 & 980 & 2660 \\
\hline 37 & 2047 & 726 & 1321 & 1585 & 3632 & 1717 & 1915 & 1277 & 2355 & 958 & 2675 \\
\hline 38 & 2254 & 786 & 1468 & 1762 & 4016 & 1724 & 2292 & 1528 & 2488 & 1146 & 2870 \\
\hline 39 & 2457 & 834 & 1623 & 1948 & 4405 & 1758 & 2647 & 1764 & 2640 & 1323 & 3081 \\
\hline 40 & 2403 & 786 & 1617 & 1940 & 4343 & 1794 & 2549 & 1700 & 2644 & 1275 & 3069 \\
\hline 41 & 2374 & 786 & 1588 & 1906 & 4280 & 1825 & 2455 & 1636 & 2643 & 1227 & 3052 \\
\hline 42 & 2360 & 786 & 1574 & 1889 & 4249 & 1944 & 2305 & 1537 & 2712 & 1152 & 3096 \\
\hline 43 & 2456 & 834 & 1622 & 1946 & 4402 & 1868 & 2534 & 1690 & 2713 & 1267 & 3135 \\
\hline 44 & 2712 & 834 & 1878 & 2254 & 4966 & 1885 & 3081 & 2054 & 2912 & 1540 & 3425 \\
\hline 45 & 2731 & 834 & 1897 & 2276 & 5007 & 1899 & 3108 & 2072 & 2935 & 1554 & 3453 \\
\hline 46 & 2920 & 834 & 2086 & 2503 & 5423 & 1925 & 3498 & 2332 & 3091 & 1749 & 3674 \\
\hline 47 & 3094 & 834 & 2260 & 2712 & 5806 & 1905 & 3901 & 2601 & 3205 & 1951 & 3856 \\
\hline 48 & 2683* & 834 & 1849 & 2219 & 4902 & 1880 & 3022 & 2015 & 2887 & 1511 & 3391 \\
\hline 49 & 3296** & 834 & 2462 & 2954 & 6250 & 1834 & 4416 & 2944 & 3306 & 2208 & 4042 \\
\hline 50 & 3092* & 834 & 2258 & 2710 & 5802 & 1991 & 3811 & 2540 & 3261 & 1905 & 3896 \\
\hline 51 & 3162* & 834 & 2328 & 2794 & 5956 & 1989 & 3967 & 2644 & 3311 & 1983 & 3972 \\
\hline 52 & 3232** & 834 & 2398 & 2878 & 6110 & 1932 & 4178 & 2785 & 3325 & 2089 & 4021 \\
\hline 53 & 3302* & 834 & 2468 & 2962 & 6264 & 2051 & 4213 & 2808 & 3455 & 2106 & 4157 \\
\hline 54 & 3372\% & 834 & 2538 & 3046 & 6418 & 2227 & 4191 & 2794 & 3624 & 2095 & 4322 \\
\hline 55 & 3442** & 834 & 2608 & 3130 & 6572 & 2020 & 4552 & 3034 & 3537 & 2276 & 4296 \\
\hline 56 & 3512** & 834 & 2678 & 3214 & 6726 & 2372 & 4354 & 2902 & 3823 & 2177 & 4549 \\
\hline 57 & 3582** & 834 & 2748 & 3298 & 6880 & 2250 & 4630 & 3086 & 3793 & 2315 & 4565 \\
\hline 58 & 3652** & 834 & 2818 & 3382 & 7034 & 2286 & 4748 & 3165 & 3869 & 2374 & 4660 \\
\hline 59 & 3722** & 834 & 2888 & 3466 & 7188 & 2318 & 4870 & 3246 & 3941 & 2435 & 4753 \\
\hline 60 & 3792* & 834 & 2958 & 3550 & 7342 & 2351 & 4991 & 3327 & 4015 & 2495 & 4846 \\
\hline 60A & 1896 & & & & 1896 & 1176 & 720 & 480 & & 360 & \\
\hline
\end{tabular}
\begin{tabular}{|llll|}
\hline Private Internal Rates of Return & \(15.99 \%\) & 11.81 & \(9.49 \%\) \\
\hline
\end{tabular}

Cource: (2) from Table B-4; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) \(+\mathrm{Col}. \mathrm{(5);} \mathrm{Col}. \mathrm{(7)} \mathrm{from} \mathrm{Table} \mathrm{B}-1\); \(\mathrm{Col}(8)=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 24 to \(60 \mathrm{~A}=\)
Col . (8) \(\times 2 / 3, \mathrm{Col}\). (9) for age 18 to \(23=\mathrm{Col}\) ( 6 ) -Col (10); Col . (10), for age 24 to \(60=\mathrm{Col}\). (6) \(-\mathrm{Column}(9) ; \mathrm{Col}\). 10 , for age 18 to 23 , Col. (9) for age 18 to \(23=\mathrm{Col}\). (6) - Col. (10); Col . ( 10 ), for age 24 to \(60=\mathrm{Col}\). ( 6 ) - Column (9); Col. 10, for for age 18 to \(23=\mathrm{Col}\) (6)- Col. (12); Col. (12) for age 18 to 23 , estimated by linear regression of data for age 24 to 60 ; Col (12), for age 24 to \(60=\mathrm{Col}(6)-\mathrm{Column}(11)\).

Note
Linear regression estimate.
Graduates of the College of Medicine are estimated to complete their college education four years after high school graduation. Column (1) therefore is simply six years plus "number of years since college graduation".
that The auxiliary income ( \(120 \%\) ) is derived from the allowance system of employees in the public sector, Republic of Iraq.
60 A is a retirement bonuse.
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone ( \(a=1\) ), differential earnings, differential earnings ( \(a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C-4
Pivate Cost-Earning profiles and Private Internal Rate of return of College of Pharmacy Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (Iraqi Dinars)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1^{* *}\) & 2 & 3 & 4 &  & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1033 & 1033\% & -1046 & 1046* \\
\hline 19 & & & & & & 1027 & -1027 & -1087 & 1087\% & -1110 & 1110** \\
\hline 20 & & & & & & 1045 & -1045 & -1140 & 1140* & -1174 & 1174** \\
\hline 21 & & & & & & 1085 & -1085 & -1194 & 1194* & -1238 & 1238* \\
\hline 22 & & & & & & 1102 & -1102 & -1247 & 1247\% & -1303 & 1303* \\
\hline 23 & 1290 & 738 & 552 & 331 & 1621 & 1110 & 511 & 341 & 1280 & 256 & 1366 \\
\hline 24 & 1362 & 738 & 624 & 374 & 1736 & 1182 & 554 & 370 & 1367 & 277 & 1459 \\
\hline 25 & 1415 & 738 & 677 & 406 & 1821 & 1223 & 598 & 399 & 1422 & 299 & 1522 \\
\hline 26 & 1426 & 738 & 688 & 413 & 1839 & 1220 & 619 & 413 & 1426 & 309 & 1529 \\
\hline 27 & 1494 & 738 & 756 & 454 & 1948 & 1240 & 708 & 472 & 1476 & 354 & 1594 \\
\hline 28 & 1520 & 738 & 782 & 469 & 1989 & 1255 & 734 & 489 & 1500 & 367 & 1622 \\
\hline 29 & 1644 & 738 & 906 & 544 & 2188 & 1310 & 878 & 585 & 1603 & 439 & 1749 \\
\hline 30 & 1695 & 738 & 957 & 574 & 2269 & 1372 & 897 & 598 & 1671 & 449 & 1821 \\
\hline 31 & 1712 & 738 & 974 & 584 & 2296 & 1382 & 914 & 610 & 1687 & 457 & 1839 \\
\hline 32 & 1814 & 738 & 1076 & 646 & 2460 & 1405 & 1055 & 703 & 1757 & 527 & 1932 \\
\hline 33 & 1775 & 738 & 1037 & 622 & 2397 & 1450 & 947 & 631 & 1766 & 474 & 1924 \\
\hline 34 & 1837 & 738 & 1099 & 659 & 2496 & 1561 & 935 & 624 & 1873 & 468 & 2029 \\
\hline 35 & 1949 & 738 & 1211 & 727 & 2676 & 1605 & 1071 & 714 & 1962 & 535 & 2140 \\
\hline 36 & 1942 & 738 & 1204 & 722 & 2664 & 1680 & 984 & 656 & 2008 & 492 & 2172 \\
\hline 37 & 2137 & 762 & 1375 & 825 & 2962 & 1717 & 1245 & 830 & 2132 & 623 & 2340 \\
\hline 38 & 2329 & 786 & 1543 & 926 & 3255 & 1724 & 1531 & 1021 & 2234 & 765 & 2489 \\
\hline 39 & 2278 & 786 & 1492 & 895 & 3173 & 1758 & 1415 & 943 & 2230 & 708 & 2466 \\
\hline 40 & 2251 & 786 & 1465 & 879 & 3130 & 1794 & 1336 & 891 & 2239 & 668 & 2462 \\
\hline 41 & 2238 & 786 & 1452 & 871 & 3109 & 1825 & 1284 & 856 & 2253 & 642 & 2467 \\
\hline 42 & 2328 & 786 & 1542 & 925 & 3253 & 1944 & 1309 & 873 & 2380 & 655 & 2599 \\
\hline 43 & 2571 & 834 & 1737 & 1042 & 3613 & 1868 & 1745 & 1163 & 2450 & 873 & 2741 \\
\hline 44 & 2588 & 834 & 1754 & 1052 & 3640 & 1885 & 1755 & 1170 & 2470 & 878 & 2763 \\
\hline 45 & 2766 & 834 & 1932 & 1159 & 3925 & 1899 & 2026 & 1351 & 2574 & 1013 & 2912 \\
\hline 46 & 2931 & 834 & 2097 & 1258 & 4189 & 1925 & 2264 & 1509 & 2680 & 1132 & 3057 \\
\hline 47 & 2542 & 834 & 1708 & 1025 & 3567 & 1905 & 1662 & 1108 & 2459 & 831 & 2736 \\
\hline 48 & 2663* & 834 & 1829 & 1097 & 3760 & 1880 & 1880 & 1254 & 2507 & 940 & 2820 \\
\hline 49 & 2853** & 834 & 2019 & 1211 & 4064 & 1834 & 2230 & 1487 & 2577 & 1115 & 2949 \\
\hline 50 & 2915** & 834 & 2081 & 1248 & 4163 & 1991 & 2172 & 1448 & 2715 & 1086 & 3077 \\
\hline 51 & 2976* & 834 & 2142 & 1285 & 4262 & 1989 & 2273 & 1515 & 2747 & 1136 & 3125 \\
\hline 52 & 3038\% & 834 & 2204 & 1322 & 4360 & 1932 & 2428 & 1619 & 2741 & 1214 & 3146 \\
\hline 53 & 3100\% & 834 & 2266 & 1359 & 4459 & 2051 & 2408 & 1605 & 2854 & 1204 & 3255 \\
\hline 54 & 3161** & 834 & 2327 & 1396 & 4558 & 2227 & 2331 & 1554 & 3004 & 1165 & 3392 \\
\hline 55 & 3223* & 834 & 2389 & 1433 & 4657 & 2020 & 2637 & 1758 & 2899 & 1318 & 3338 \\
\hline 56 & 3285** & 834 & 2451 & 1470 & 4755 & 2372 & 2383 & 1589 & 3166 & 1192 & 3564 \\
\hline 57 & 3347* & 834 & 2513 & 1508 & 4854 & 2250 & 2604 & 1736 & 3118 & 1302 & 3552 \\
\hline 58 & 3408** & 834 & 2574 & 1545 & 4953 & 2286 & 2667 & 1778 & 3175 & 1333 & 3619 \\
\hline 59 & \(3470 *\) & 834 & 2636 & 1582 & 5051 & 2318 & 2733 & 1822 & 3229 & 1367 & 3685 \\
\hline 60
604 & 3532** & 834 & 2698 & 1619 & 5150
1766 & 2351
1176 & 2799
590 & 1866
393 & 3284 & 1400
295 & 3751 \\
\hline
\end{tabular}
\begin{tabular}{lllll} 
Private Internal Rates of Return & & \(13.12 \%\) & \(9.54 \%\) & \(7.59 \%\) \\
\hline
\end{tabular}
Col. (2) from Table B-7; Col. (3) derived from Table B-8, Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) +Col . (5); Col. (7) from Table B-1; Col (8) \(=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 23 to 60A \(=\)
 age 18 to 22 , estimated by linear regression of data for age 23 to 60 ; Col., (11), for age 23 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\); Col. (11), for age 18 to \(22,=\mathrm{Col}\). (6)- Col. (12); Col. (12), for age 23 to \(60=\mathrm{Col}(6)-\mathrm{Column}\) (11).

Note
Ninear regression estimate.
il: Graduates of the College of Pharmacy are estimated to complete their college education five years after high schoo graduation. Column (1) therefore is simply four years plus "number of years since college graduation".
the The auxiliary income ( \(60 \%\) ) is derived from the allowance system of employees in the public sector, Republic of Iraq.
60 A is a retirement bonuse.
\# Columns 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 are the age since High School Graduation, wage or salary, Cost of living
Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone ( \(a=1\) ), differential earnings, differentia
earnings \((a=2 / 3)\), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for earnings ( \(a=2 / 3\) ), ea

Table C-5
Gate Cost-Earning profiles and Pisvate Internal Rate of return of College of Dentistry Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1** & 2 & 3 & 4 & \(5{ }^{20 m}\) & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1049 & 1049\% & -1069 & 1069** \\
\hline 19 & & & & & & 1027 & -1027 & -1106 & 1106* & -1139 & 1139** \\
\hline 20 & & & & & & 1045 & -1045 & -1164 & 1164* & -1209 & 1209* \\
\hline 21 & & & & & & 1085 & -1085 & -1221 & 1221** & -1279 & 1279\% \\
\hline 22 & & & & & & 1102 & -1102 & -1278 & 1278** & -1349 & 1349** \\
\hline 23 & 1290 & 738 & 552 & 442 & 1732 & 1110 & 622 & 414 & 1317 & 311 & 1421 \\
\hline 24 & 1362 & 738 & 624 & 499 & 1861 & 1182 & 679 & 453 & 1408 & 340 & 1522 \\
\hline 25 & 1415 & 738 & 677 & 542 & 1957 & 1223 & 734 & 489 & 1468 & 367 & 1590 \\
\hline 26 & 1426 & 738 & 688 & 550 & 1976 & 1220 & 756 & 504 & 1472 & 378 & 1598 \\
\hline 27 & 1494 & 738 & 756 & 605 & 2099 & 1240 & 859 & 573 & 1526 & 429 & 1669 \\
\hline 28 & 1520 & 738 & 782 & 626 & 2146 & 1255 & 891 & 594 & 1552 & 445 & 1700 \\
\hline 29 & 1644 & 738 & 906 & 725 & 2369 & 1310 & 1059 & 706 & 1663 & 529 & 1839 \\
\hline 30 & 1695 & 738 & 957 & 766 & 2461 & 1372 & 1089 & 726 & 1735 & 544 & 1916 \\
\hline 31 & 1712 & 738 & 974 & 779 & 2491 & 1382 & 1109 & 739 & 1752 & 555 & 1937 \\
\hline 32 & 1814 & 738 & 1076 & 861 & 2675 & 1405 & 1270 & 847 & 1828 & 635 & 2040 \\
\hline 33 & 1775 & 738 & 1037 & 830 & 2605 & 1450 & 1155 & 770 & 1835 & 577 & 2027 \\
\hline 34 & 1837 & 738 & 1099 & 879 & 2716 & 1561 & 1155 & 770 & 1946 & 578 & 2139 \\
\hline 35 & 1949 & 738 & 1211 & 969 & 2918 & 1605 & 1313 & 875 & 2043 & 656 & 2261 \\
\hline 36 & 1942 & 738 & 1204 & 963 & 2905 & 1680 & 1225 & 817 & 2088 & 613 & 2293 \\
\hline 37 & 2137 & 762 & 1375 & 1100 & 3237 & 1717 & 1520 & 1013 & 2224 & 760 & 2477 \\
\hline 38 & 2329 & 786 & 1543 & 1234 & 3563 & 1724 & 1839 & 1226 & 2337 & 920 & 2644 \\
\hline 39 & 2278 & 786 & 1492 & 1194 & 3472 & 1758 & 1714 & 1142 & 2329 & 857 & 2615 \\
\hline 40 & 2251 & 786 & 1465 & 1172 & 3423 & 1794 & 1629 & 1086 & 2337 & 815 & 2609 \\
\hline 41 & 2238 & 786 & 1452 & 1162 & 3400 & 1825 & 1575 & 1050 & 2350 & 787 & 2612 \\
\hline 42 & 2328 & 786 & 1542 & 1234 & 3562 & 1944 & 1618 & 1078 & 2483 & 809 & 2753 \\
\hline 43 & 2571 & 834 & 1737 & 1390 & 3961 & 1868 & 2093 & 1395 & 2566 & 1046 & 2914 \\
\hline 44 & 2588 & 834 & 1754 & 1403 & 3991 & 1885 & 2106 & 1404 & 2587 & 1053 & 2938 \\
\hline 45 & 2766 & 834 & 1932 & 1546 & 4312 & 1899 & 2413 & 1608 & 2703 & 1206 & 3105 \\
\hline 46 & 2931 & 834 & 2097 & 1678 & 4609 & 1925 & 2684 & 1789 & 2820 & 1342 & 3267 \\
\hline 47 & 2542 & 834 & 1708 & 1366 & 3908 & 1905 & 2003 & 1336 & 2573 & 1002 & 2907 \\
\hline 48 & 2663** & 834 & 1829 & 1463 & 4126 & 1880 & 2246 & 1497 & 2629 & 1123 & 3003 \\
\hline 49 & 2853 \% & 834 & 2019 & 1615 & 4468 & 1834 & 2634 & 1756 & 2712 & 1317 & 3151 \\
\hline 50 & 2915* & 834 & 2081 & 1665 & 4580 & 1991 & 2589 & 1726 & 2854 & 1294 & 3285 \\
\hline 51 & 2976* & 834 & 2142 & 1714 & 4690 & 1989 & 2701 & 1800 & 2889 & 1350 & 3339 \\
\hline 52 & 3038* & 834 & 2204 & 1763 & 4801 & 1932 & 2869 & 1913 & 2888 & 1435 & 3367 \\
\hline 53 & \(3100^{*}\) & 834 & 2266 & 1813 & 4913 & 2051 & 2862 & 1908 & 3005 & 1431 & 3482 \\
\hline 54 & 3161** & 834 & 2327 & 1862 & 5023 & 2227 & 2796 & 1864 & 3159 & 1398 & 3625 \\
\hline 55 & 3223* & 834 & 2389 & 1911 & 5134 & 2020 & 3114 & 2076 & 3058 & 1557 & 3577 \\
\hline 56 & 3285** & 834 & 2451 & 1961 & 5246 & 2372 & 2874 & 1916 & 3330 & 1437 & 3809 \\
\hline 57 & 3347* & 834 & 2513 & 2010 & 5357 & 2250 & 3107 & 2072 & 3286 & 1554 & 3804 \\
\hline 58 & 3408* & 834 & 2574 & 2059 & 5467 & 2286 & 3181 & 2121 & 3346 & 1591 & 3877 \\
\hline 59 & 3470* & 834 & 2636 & 2109 & 5579 & 2318 & 3261 & 2174 & 3405 & 1630 & 3948 \\
\hline 60 & 3532\% & 834 & 2698 & 2158 & 5690 & 2351 & 3339 & 2226 & 3464 & 1670 & 4021 \\
\hline 60A & 1766 & & & & 1766 & 1176 & 590 & 393 & & 295 & \\
\hline
\end{tabular}

Col. (2) from Table B-7; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance

 for age 18 to \(22,=\mathrm{Col}\). (6)- Col . (12); Col . (12) for age 18 to 22 , estimated by linear regression of data for age 23 to \(60 ; \mathrm{Col}\) (12), for age 23 to \(60=\mathrm{Col}(6)-\) Column (11).
\(\frac{\text { Note }}{\text { NLinear regression estimate. }}\)
How Graduates of the College of Dentistry are estimated to complete their college education five years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation"

陮: The auxiliary income (ID 240) is derived from the allowance system of employees in the public sector, Republic of Iraq.

\section*{60 A is a retirement bonuse.}
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living earnings \((a=2 / 3)\), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(\mathrm{a}=1 / 2\) ) respectively.

Table C-6
Table C-6 Private Cost-Earning profiles and Private Internal Rate of return of College of Nursing Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1 \geqslant \%\) & 2 & 3 & 4 & \(5 \%\) \% & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & 1113 & 726 & 387 & 194 & 0000 & 972 & -972 & -968 & 968\% & -949 & 949: \\
\hline 19 & 1128 & 726 & 4.02 & 201 & 0000 & 1027 & -1027 & -1013 & 1013* & -1001 & 1001\% \\
\hline 20 & 1219 & 732 & 487 & 244 & 0000 & 1045 & -1045 & -1059 & 1059** & -1054 & 1054* \\
\hline 21 & 1279 & 738 & 541 & 271 & 0000 & 1085 & -1085 & -1104 & 1104:* & -1106 & 1106\% \\
\hline 22 & 1257 & 738 & 519 & 260 & 1307 & 1102 & 205 & 136 & 1170 & 102 & 1204 \\
\hline 23 & 1221 & 732 & 489 & 245 & 1329 & 1110 & 219 & 146 & 1183 & 110 & 1220 \\
\hline 24 & 1255 & 732 & 523 & 262 & 1463 & 1182 & 281 & 187 & 1276 & 140 & 1322 \\
\hline 25 & 1348 & 738 & 610 & 305 & 1550 & 1223 & 327 & 218 & 1332 & 163 & 1386 \\
\hline 26 & 1330 & 738 & 592 & 296 & 1517 & 1220 & 297 & 198 & 1319 & 148 & 1368 \\
\hline 27 & 1410 & 738 & 672 & 336 & 1465 & 1240 & 226 & 150 & 1315 & 113 & 1353 \\
\hline 28 & 1422 & 738 & 684 & 342 & 1517 & 1255 & 262 & 174. & 1342 & 131 & 1386 \\
\hline 29 & 1430 & 738 & 692 & 346 & 1653 & 1310 & 343 & 229 & 1424 & 172 & 1482 \\
\hline 30 & 1557 & 738 & 819 & 410 & 1626 & 1372 & 254 & 169 & 1457 & 127 & 1499 \\
\hline 31 & 1605 & 738 & 867 & 434 & 1746 & 1382 & 364 & 243 & 1503 & 182 & 1564 \\
\hline 32 & 1720 & 738 & 982 & 491 & 1764 & 1405 & 359 & 239 & 1525 & 180 & 1585 \\
\hline 33 & 1743 & 738 & 1005 & 503 & 1776 & 14.50 & 326 & 217 & 1559 & 163 & 1613 \\
\hline 34 & 1775 & 738 & 1037 & 519 & 1967 & 1561 & 406 & 270 & 1696 & 203 & 1764 \\
\hline 35 & 1958 & 738 & 1220 & 610 & 2039 & 1605 & 434 & 289 & 1750 & 217 & 1822 \\
\hline 36 & 2050 & 762 & 1288 & 694 & 2211 & 1680 & 531 & 354 & 1857 & 266 & 1946 \\
\hline 37 & 1993 & 762 & 1231 & 616 & 2246 & 1717 & 529 & 352 & 1893 & 264 & 1981 \\
\hline 38 & 2056 & 762 & 1304 & 652 & 2294 & 1724 & 570 & 380 & 1914 & 285 & 2009 \\
\hline 39 & 2037 & 762 & 1275 & 638 & 2568 & 1753 & 810 & 540 & 2028 & 405 & 2163 \\
\hline 40 & 2123 & 762 & 1361 & 681 & 2694 & 1794 & 900 & 600 & 2094. & 4.50 & 2244 \\
\hline 41 & 2149 & 762 & 1387 & 694 & 2609 & 1825 & 784 & 522 & 2086 & 392 & 2217 \\
\hline 42 & 2261 & 786 & 1475 & 738 & 2718 & 1944 & 774 & 516 & 2202 & 387 & 2331 \\
\hline 43 & 2269 & 786 & 1483 & 742 & 2675 & 1868 & 807 & 538 & 2137 & 403 & 2271 \\
\hline 44 & 2312* & 786 & 1526 & 763 & 2804 & 1885 & 919 & 612 & 2191 & 459 & 2344 \\
\hline 45 & 2361* & 786 & 1526 & 788 & 2843 & 1899 & 944 & 629 & 2214 & 472 & 2371 \\
\hline 46 & 2411* & 834 & 1577 & 789 & 2999 & 1925 & 1074 & 716 & 2283 & 537 & 2462 \\
\hline 47 & 2460* & 834 & 1626 & 813 & 3011 & 1905 & 1106 & 737 & 2274 & 553 & 2458 \\
\hline 48 & 2510* & 834 & 1676 & 838 & 3075 & 1880 & 1195 & 797 & 2278 & 598 & 2478 \\
\hline 49 & 2559\% & 834 & 1725 & 863 & 3149 & 1834 & 1315 & 876 & 2272 & 657 & 2491 \\
\hline 50 & 2609: & 834 & 1775 & 888 & 3200 & 1991 & 1209 & 806 & 2394 & 604 & 2595 \\
\hline 51 & 2658\% & 834 & 1824 & 912 & 3273 & 1989 & 1284 & 856 & 2417 & 642 & 2631 \\
\hline 52 & 2708* & 834 & 1874 & 937 & 3348 & 1932 & 1416 & 944 & 2404 & 708 & 2640 \\
\hline 53 & 2757* & 834 & 1923 & 962 & 3422 & 2051 & 1371 & 914 & 2508 & 685 & 2736 \\
\hline 54 & 2807** & 834 & 1973 & 987 & 3497 & 2227 & 1270 & 846 & 2650 & 635 & 2862 \\
\hline 55 & 2856\% & 834 & 2022 & 1011 & 3570 & 2020 & 1550 & 1033 & 2537 & 775 & 2795 \\
\hline 56 & 2905* & 834 & 2072 & 1036 & 3645 & 2372 & 1273 & 849 & 2796 & 637 & 3009 \\
\hline 57 & 1453 & & & & 3719 & 2250 & 1469 & 979 & 2740 & 734 & 2984 \\
\hline 58 & & & & & 3794 & 2286 & 1508 & 1005 & 2789 & 754 & 3040 \\
\hline 59 & & & & & 3867 & 2318 & 1549 & 1033 & 2834 & 775 & 3093 \\
\hline 60 & & & & & 3942 & 2351 & 1.591 & 1061 & 2881 & 796 & 3147 \\
\hline 60 A & & & & & 1453 & 1176 & 278 & 185 & & 139 & \\
\hline
\end{tabular}

Private Internal Rates of Return
\(9.32 \% \quad 7.01 \% \quad 5.58 \%\)

Source: Col. (2) from Table B-3; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance
per year; Col. (6) from col. (2) + Col. (5); Col. (7) from Table B-1; Col (8) \(=\mathrm{Col}\) (6) -Col . (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\)
 age 18 to 21, estimated by linear regression of data for age 22 to \(60 ; \mathrm{Col}\). (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\); Col. ( 11 ),
for age 18 to 21 , \(=\) Col. ( 6 )- Col. (12); Col. (12) for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col. for age 18 to \(21,=\mathrm{Col}\). (6)-Col. (12); Col. (12
(12), for age 22 to \(60=\mathrm{Col}(6)-\) Column (11).

Note
* Linear regression estimate.
*) Graduates of the College of Nursing are estimated to complete their college education four years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation".
*2 The auxiliary income ( \(50 \%\) ) is derived from the allowance system of employees in the public sector, Republic of Iraq.
60 A is a retirement bonuse.
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross earning, carnings foregone ( \(a=1\) ), differential carnings, differential earnings ( \(a=2 / 3\) ), carnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and carnings foregone (adjusted for \(\mathbf{a}=1 / 2\) ) respectively.

Table C-7
Private Cost-Earning profiles and Private Internal Rate of return of College of Veterinary Medicine Graduates (Relative to High
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1{ }^{\text {\% }}\) \% & 2 & 3 & 4 &  & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1045 & 1045* & -1064 & 1064* \\
\hline 19 & & & & & & 1027 & -1027 & -1102 & 1102* & -1132 & 1132* \\
\hline 20 & & & & & & 1045 & -1045 & -1158 & 1158** & -1201 & 1201** \\
\hline 21 & & & & & & 1085 & -1085 & -1214 & 1214** & -1269 & 1269\% \\
\hline 22 & & & & & & 1102 & -1102 & -1271 & 1271** & -1338 & 1338* \\
\hline 23 & 1290 & 738 & 552 & 414 & 1704 & 1110 & 594 & 396 & 1308 & 297 & 1407 \\
\hline 24 & 1362 & 738 & 624 & 468 & 1830 & 1182 & 648 & 432 & 1398 & 324 & 1506 \\
\hline 25 & 1415 & 738 & 677 & 508 & 1923 & 1223 & 700 & 467 & 1456 & 350 & 1573 \\
\hline 26 & 1426 & 738 & 688 & 516 & 1942 & 1220 & 722 & 481 & 1461 & 361 & 1581 \\
\hline 27 & 1494 & 738 & 756 & 567 & 2061 & 1240 & 821 & 547 & 1514 & 411 & 1651 \\
\hline 28 & 1520 & 738 & 782 & 587 & 2107 & 1255 & 852 & 568 & 1539 & 426 & 1681 \\
\hline 29 & 1644 & 738 & 906 & 680 & 2324 & 1310 & 1014 & 676 & 1648 & 507 & 1817 \\
\hline 30 & 1695 & 738 & 957 & 718 & 2413 & 1372 & 1041 & 694 & 1719 & 520 & 1892 \\
\hline 31 & 1712 & 738 & 974 & 731 & 2443 & 1382 & 1061 & 707 & 1736 & 530 & 1912 \\
\hline 32 & 1814 & 738 & 1076 & 807 & 2621 & 1405 & 1216 & 811 & 1810 & 608 & 2013 \\
\hline 33 & 1775 & 738 & 1037 & 778 & 2553 & 1450 & 1103 & 735 & 1818 & 551 & 2001 \\
\hline 34 & 1837 & 738 & 1099 & 824 & 2661 & 1561 & 1100 & 734 & 1928 & 550 & 2111 \\
\hline 35 & 1949 & 738 & 1211 & 908 & 2857 & 1605 & 1252 & 835 & 2022 & 626 & 2231 \\
\hline 36 & 1942 & 738 & 1204 & 903 & 2845 & 1680 & 1165 & 777 & 2068 & 583 & 2263 \\
\hline 37 & 2137 & 762 & 1375 & 1031 & 3168 & 1717 & 1451 & 968 & 2201 & 726 & 2443 \\
\hline 38 & 2329 & 786 & 1543 & 1157 & 3486 & 1724 & 1762 & 1175 & 2311 & 881 & 2605 \\
\hline 39 & 2278 & 786 & 1492 & 1119 & 3397 & 1758 & 1639 & 1093 & 2304 & 820 & 2578 \\
\hline 40 & 2251 & 786 & 1465 & 1099 & 3350 & 1794 & 1556 & 1037 & 2313 & 778 & 2572 \\
\hline 41 & 2238 & 786 & 1452 & 1089 & 3327 & 1825 & 1502 & 1001 & 2326 & 751 & 2576 \\
\hline 42 & 2328 & 786 & 1542 & 1157 & 3485 & 1944 & 1541 & 1027 & 2458 & 770 & 2714 \\
\hline 43 & 2571 & 834 & 1737 & 1303 & 3874 & 1868 & 2006 & 1337 & 2537 & 1003 & 2871 \\
\hline 44 & 2588 & 834 & 1754 & 1316 & 3904 & 1885 & 2019 & 1346 & 2558 & 1009 & 2894 \\
\hline 45 & 2766 & 834 & 1932 & 1449 & 4215 & 1899 & 2316 & 1544 & 2671 & 1158 & 3057 \\
\hline 46 & 2931 & 834 & 2097 & 1573 & 4504 & 1925 & 2579 & 1719 & 2785 & 1289 & 3214 \\
\hline 47 & 2542 & 834 & 1708 & 1281 & 3823 & 1905 & 1918 & 1279 & 2544 & 959 & 2864 \\
\hline 48 & 2663: & 834 & 1829 & 1372 & 4035 & 1880 & 2155 & 1437 & 2598 & 1077 & 2957 \\
\hline 49 & 2853* & 834 & 2019 & 1514 & 4367 & 1834 & 2533 & 1689 & 2678 & 1267 & 3101 \\
\hline 50 & 2915\% & 834 & 2081 & 1561 & 4476 & 1991 & 2485 & 1657 & 2819 & 1242 & 3233 \\
\hline 51 & 2976* & 834 & 2142 & 1607 & 4583 & 1989 & 2594 & 1729 & 2854 & 1297 & 3286 \\
\hline 52 & 3038** & 834 & 2204 & 1653 & 4691 & 1932 & 2759 & 1839 & 2852 & 1380 & 3312 \\
\hline 53 & \(3100{ }^{*}\) & 834 & 2266 & 1700 & 4800 & 2051 & 2749 & 1832 & 2967 & 1374 & 3425 \\
\hline 54 & 3161*** & 834 & 2327 & 1745 & 4906 & 2227 & 2679 & 1786 & 3120 & 1340 & 3567 \\
\hline 55 & 3223** & 834 & 2389 & 1792 & 5015 & 2020 & 2995 & 1997 & 3018 & 1497 & 3517 \\
\hline 56 & 3285** & 834 & 2451 & 1838 & 5123 & 2372 & 2751 & 1834 & 3289 & 1376 & 3748 \\
\hline 57 & 3347* & 834 & 2513 & 1885 & 5232 & 2250 & 2982 & 1988 & 3244 & 1491 & 3741 \\
\hline 58 & 3408* & 834 & 2574 & 1931 & 5339 & 2286 & 3053 & 2035 & 3304 & 1526 & 3812 \\
\hline 59 & 3470** & 834 & 2636 & 1977 & 5447 & 2318 & 3129 & 2086 & 3361 & 1565 & 3883 \\
\hline 60 & 3532** & 834 & 2698 & 2024 & 5556 & 2351 & 3205 & 2136 & 3419 & 1602 & 3953 \\
\hline 60A & 1766 & & & & 1766 & 1176 & 590 & 393 & & 295 & \\
\hline
\end{tabular}

Private Internal Rates of Return
Source: from Table B-7; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) +Col . (5); Col. (7) from Table B-1; Col (8) \(=\mathrm{Col}\). (6) - Col. (7); Col. (9), for age 23 to \(60=\)
 age 18 to 22, estimated by linear regression of clata for age 23 to \(60 ; \mathrm{Col}\). (11), for age 23 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2 ; \mathrm{Col}\). (11),
for age 18 to \(22,=\mathrm{Col}\). (6)- Col. (12); Col. (12) for age 18 to 22 , estimated by linear regression of clata for age 23 to 60 ; Col. (12), for age 23 to \(60=\mathrm{Col}(6)-\) Column (11).

Note
\({ }^{\mathrm{F}}\) Linear regression estimate.
*:3: Graduates of the College of Veterinary Medicine are estimated to complete their college education five years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation".
*) The auxiliary income ( \(75 \%\) ) is derived from the allowance system of employees in the public sector, Republic of Iraq.

\section*{60 A is a retirement bonuse.}
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Gracluation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone ( \(a=1\) ), differential earnings, differential earnings ( \(a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(\mathrm{a}=1 / 2\) ) respectively.

Table C-8 Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (Iraqi Dinars)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1^{\text {\% }}\) \% & 2 & 3 & 4 & \(5^{* * * * s}\) & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -990 & 990* & -984 & 984* \\
\hline 19 & & & & & & 1027 & -1027 & -1034 & 1034: & -1033 & 1033** \\
\hline 20 & & & & & & 1045 & -1045 & -1077 & 1077* & -1082 & 1082:* \\
\hline 21 & & & & & & 1085 & -1085 & -1120 & 1120\% & -1131 & 1131** \\
\hline 22 & 1086 & 726 & 360 & 180 & 1266 & 1102 & 164 & 109 & 1157 & 82 & 1184 \\
\hline 23 & 1099 & 726 & 373 & 187 & 1286 & 1110 & 176 & 117 & 1169 & 88 & 1198 \\
\hline 24 & 1165 & 732 & 433 & 217 & 1382 & 1182 & 200 & 133 & 1249 & 100 & 1282 \\
\hline 25 & 1218 & 732 & 486 & 243 & 1461 & 1223 & 238 & 159 & 1302 & 119 & 1342 \\
\hline 26 & 1229 & 732 & 497 & 249 & 1478 & 1220 & 258 & 172 & 1306 & 129 & 1349 \\
\hline 27 & 1294 & 738 & 556 & 278 & 1572 & 1240 & 332 & 221 & 1351 & 166 & 1406 \\
\hline 28 & 1298 & 738 & 560 & 280 & 1578 & 1255 & 323 & 215 & 1363 & 162 & 1417 \\
\hline 29 & 1344 & 738 & 606 & 303 & 1647 & 1310 & 337 & 225 & 1422 & 169 & 1479 \\
\hline 30 & 1415 & 738 & 677 & 339 & 1754 & 1372 & 382 & 254 & 1499 & 191 & 1563 \\
\hline 31 & 1392 & 738 & 654 & 327 & 1719 & 1382 & 337 & 225 & 1494 & 169 & 1551 \\
\hline 32 & 1511 & 738 & 773 & 387 & 1898 & 1405 & 493 & 328 & 1569 & 246 & 1651 \\
\hline 33 & 1506 & 738 & 768 & 384 & 1890 & 1450 & 440 & 293 & 1597 & 220 & 1670 \\
\hline 34 & 1605 & 738 & 867 & 434 & 2039 & 1561 & 478 & 318 & 1720 & 239 & 1800 \\
\hline 35 & 1789 & 738 & 1051 & 526 & 2315 & 1605 & 710 & 473 & 1842 & 355 & 1960 \\
\hline 36 & 1659 & 738 & 921 & 461 & 2120 & 1680 & 440 & 293 & 1827 & 220 & 1900 \\
\hline 37 & 1758 & 738 & 1020 & 510 & 2268 & 1717 & 551 & 367 & 1901 & 276 & 1993 \\
\hline 38 & 1732 & 738 & 994 & 497 & 2229 & 1724 & 505 & 337 & 1892 & 253 & 1977 \\
\hline 39 & 1775 & 738 & 1037 & 519 & 2294 & 1758 & 536 & 357 & 1937 & 268 & 2026 \\
\hline 40 & 1811 & 738 & 1073 & 537 & 2348 & 1794 & 554 & 369 & 1979 & 277 & 2071 \\
\hline 41 & 1958 & 738 & 1220 & 610 & 2568 & 1825 & 743 & 495 & 2073 & 372 & 2197 \\
\hline 42 & 1695 & 738 & 957 & 479 & 2174 & 1944 & 230 & 153 & 2021 & 115 & 2059 \\
\hline 43 & 2034 & 762 & 1272 & 636 & 2670 & 1868 & 802 & 535 & 2135 & 401 & 2269 \\
\hline 44 & 1892 & 738 & 1154 & 577 & 2469 & 1885 & 584 & 389 & 2080 & 292 & 2177 \\
\hline 45 & 2260 & 786 & 1474 & 737 & 2997 & 1899 & 1098 & 732 & 2265 & 549 & 2448 \\
\hline 46 & 2420 & 834 & 1586 & 793 & 3213 & 1925 & 1288 & 859 & 2354 & 644 & 2569 \\
\hline 47 & 2022 & 762 & 1260 & 630 & 2652 & 1905 & 747 & 498 & 2154 & 374 & 2279 \\
\hline 48 & 2226 \({ }^{\text {\% }}\) & 786 & 1440 & 720 & 2946 & 1880 & 1066 & 711 & 2235 & 533 & 2413 \\
\hline 49 & 2271 \({ }^{\text {² }}\) & 786 & 1485 & 742 & 3013 & 1834 & 1179 & 786 & 2227 & 590 & 2424 \\
\hline 50 & 2316* & 786 & 1530 & 765 & 3081 & 1991 & 1090 & 727 & 2354 & 545 & 2536 \\
\hline 51 & 2361\% & 834 & 1527 & 764 & 3125 & 1989 & 1136 & 757 & 2368 & 568 & 2557 \\
\hline 52 & 2406* & 834 & 1572 & 786 & 3192 & 1932 & 1260 & 840 & 2352 & 630 & 2562 \\
\hline 53 & 2451** & 834 & 1617 & 809 & 3260 & 2051 & 1209 & 806 & 2454 & 604 & 2655 \\
\hline 54 & 2496 \({ }^{\text {\% }}\) & 834 & 1662 & 831 & 3327 & 2227 & 1100 & 734 & 2594 & 550 & 2777 \\
\hline 55 & 2541 \({ }^{\text {\% }}\) & 834 & 1707 & 854 & 3395 & 2020 & 1375 & 917 & 2478 & 688 & 2708 \\
\hline 56 & 2587\% & 834 & 1753 & 876 & 3463 & 2372 & 1091 & 727 & 2736 & 545 & 2917 \\
\hline 57 & 2632** & 834 & 1798 & 899 & 3530 & 2250 & 1280 & 854 & 2677 & 640 & 2890 \\
\hline 58 & 2677* & 834 & 1843 & 921 & 3598 & 2286 & 1312 & 875 & 2723 & 656 & 2942 \\
\hline 59 & 2722\% & 834 & 1888 & 944 & 3666 & 2318 & 1348 & 898 & 2767 & 674 & 2992 \\
\hline 60 & 2767\% & 834 & 1933 & 966 & 3733 & 2351 & 1382 & 922 & 2812 & 691 & 3042 \\
\hline 60A & 1384 & & & & 1384 & 1176 & 208 & 139 & & 104 & \\
\hline
\end{tabular}
\(\begin{array}{llll}\text { Private Internal Rates of Return } & 8.93 \% & 6.53 \% & 5.08 \%\end{array}\)
Source: from Table B-6; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) + Col. (5); Col. (7) from Table B-1; Col (8) \(=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\) Col . (8) \(\times 2 / 3\), Col. (9) for age 18 to \(21=\mathrm{Col}\). (6) -Col . (10); Col. (10), for age 22 to \(60=\mathrm{Col}\). (6)-Column (9); Col. 10 , for age 18 to 21 , estimated by linear regression of clata for age 22 to 60 ; Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\); Col. ( 11 ), for age 18 to \(21,=\mathrm{Col}\). (6)- Col . (12); Col . (12) for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col. (12), for age 22 to \(60=\mathrm{Col}(6)-\) Column (11).
\(\frac{\text { Note }}{\text { WLin }}\)
wh Graduates of the College of Agriculture are estimated to complete their college education four years after high school
graduation. Column (1) therefor is simply four years plus "number of years since college graduation".
\%m The auxiliary income ( \(50 \%\) ) is derived from the allowance system of employees in the public sector, Republic of Iraq.

\section*{60 A is a retirement bonuse.}
\# Columns 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone ( \(a=1\) ), differential earnings, clifferential \(\mathrm{a}=1 / 2\) ) respectively.

Table C-9 Private Cost-Earning profiles and Private Internal Rate of return of College of Administration and Economics Gra
(Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline  & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -945 & 945* & -915 & 915** \\
\hline 19 & & & & & & 1027 & -1027 & -986 & 986\% & -960 & 960** \\
\hline 20 & & & & & & 1045 & -1045 & -1027 & 1027* & -1006 & 1006* \\
\hline 21 & & & & & & 1085 & -1085 & -1068 & 1068* & -1052 & 1052** \\
\hline 22 & 1106 & 726 & 380 & 95 & 1201 & 1102 & 99 & 66 & 1135 & 50 & 1152 \\
\hline 23 & 1100 & 726 & 374 & 94 & 1194 & 1110 & 84 & 56 & 1138 & 42 & 1152 \\
\hline 24 & 1167 & 732 & 435 & 109 & 1276 & 1182 & 94 & 63 & 1213 & 47 & 1229 \\
\hline 25 & 1206 & 732 & 474 & 119 & 1325 & 1223 & 102 & 68 & 1257 & 51 & 1274 \\
\hline 26 & 1208 & 732 & 476 & 119 & 1327 & 1220 & 107 & 71 & 1256 & 54 & 1274 \\
\hline 27 & 1211 & 732 & 479 & 120 & 1331 & 1240 & 91 & 61 & 1270 & 45 & 1285 \\
\hline 28 & 1229 & 732 & 497 & 124 & 1353 & 1255 & 98 & 66 & 1288 & 49 & 1304 \\
\hline 29 & 1301 & 738 & 563 & 141 & 1442 & 1310 & 132 & 88 & 1354 & 66 & 1376 \\
\hline 30 & 1390 & 738 & 652 & 163 & 1553 & 1372 & 181 & 121 & 1432 & 91 & 1463 \\
\hline 31 & 1358 & 738 & 620 & 155 & 1513 & 1382 & 131 & 87 & 1426 & 66 & 1448 \\
\hline 32 & 1378 & 738 & 640 & 160 & 1538 & 1405 & 133 & 89 & 1449 & 67 & 1472 \\
\hline 33 & 1417 & 738 & 679 & 170 & 1587 & 1450 & 137 & 91 & 1496 & 68 & 1518 \\
\hline 34 & 1498 & 738 & 760 & 190 & 1688 & 1561 & 127 & 85 & 1603 & 64 & 1625 \\
\hline 35 & 1562 & 738 & 824 & 206 & 1768 & 1605 & 163 & 109 & 1659 & 82 & 1687 \\
\hline 36 & 1615 & 738 & 877 & 219 & 1834 & 1680 & 154 & 103 & 1731 & 77 & 1757 \\
\hline 37 & 1638 & 738 & 900 & 225 & 1863 & 1717 & 146 & 97 & 1766 & 73 & 1790 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 144 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 280 & 2139 & 1758 & 381 & 254 & 1885 & 191 & 1949 \\
\hline 40 & 1931 & 738 & 1193 & 298 & 2229 & 1794 & 435 & 290 & 1939 & 218 & 2012 \\
\hline 41 & 1971 & 762 & 1209 & 302 & 2273 & 1825 & 448 & 299 & 1974 & 224 & 2049 \\
\hline 42 & 1922 & 738 & 1184 & 296 & 2218 & 1944 & 274 & 183 & 2035 & 137 & 2081 \\
\hline 43 & 2021 & 762 & 1259 & 315 & 2336 & 1868 & 468 & 312 & 2024 & 234 & 2102 \\
\hline 44 & 2036 & 762 & 1274 & 319 & 2355 & 1885 & 470 & 313 & 2042 & 235 & 2120 \\
\hline 45 & 2094 & 762 & 1332 & 333 & 2427 & 1899 & 528 & 352 & 2075 & 264 & 2163 \\
\hline 46 & 2315 & 786 & 1529 & 382 & 2697 & 1925 & 772 & 515 & 2182 & 386 & 2311 \\
\hline 47 & 2228 & 786 & 1442 & 361 & 2589 & 1905 & 684 & 456 & 2133 & 342 & 2247 \\
\hline 48 & 2247** & 786 & 1461 & 365 & 2612 & 1880 & 732 & 488 & 2124 & 366 & 2246 \\
\hline 49 & 2295** & 786 & 1509 & 377 & 2672 & 1834 & 838 & 559 & 2113 & 419 & 2253 \\
\hline 50 & 2344** & 786 & 1558 & 390 & 2734 & 1991 & 743 & 495 & 2239 & 371 & 2362 \\
\hline 51 & 2392** & 786 & 1606 & 402 & 2794 & 1989 & 805 & 536 & 2257 & 402 & 2391 \\
\hline 52 & 2440* & 834 & 1606 & 402 & 2842 & 1932 & 910 & 606 & 2235 & 455 & 2387 \\
\hline 53 & 2489** & 834 & 1655 & 414 & 2903 & 2051 & 852 & 568 & 2335 & 426 & 2477 \\
\hline 54 & 2537\% & 834 & 1703 & 426 & 2963 & 2227 & 736 & 491 & 2472 & 368 & 2595 \\
\hline 55 & 2585** & 834 & 1751 & 438 & 3023 & 2020 & 1003 & 669 & 2354 & 501 & 2521 \\
\hline 56 & 2634** & 834 & 1800 & 450 & 3084 & 2372 & 712 & 475 & 2609 & 356 & 2728 \\
\hline 57 & 2682* & 834 & 1848 & 462 & 3144 & 2250 & 894 & 596 & 2548 & 447 & 2697 \\
\hline 58 & 2730** & 834 & 1896 & 474 & 3204 & 2286 & 918 & 612 & 2592 & 459 & 2745 \\
\hline 59 & 2778** & 834 & 1944 & 486 & 3264 & 2318 & 946 & 631 & 2633 & 473 & 2791 \\
\hline 60 & 2827* & 834 & 1993 & 498 & 3325 & 2351 & 974 & 650 & 2676 & 487 & 2838 \\
\hline 60A & 1414 & & & & 1414 & 1176 & 238 & 159 & & 119 & \\
\hline
\end{tabular}
\begin{tabular}{llll} 
Private Internal Rates of Return & \(5.60 \%\) & \(3.99 \%\) & \(2.95 \%\)
\end{tabular}

Col. (2) from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) \(+\mathrm{Col},(5)\); Col . (7) from Table \(\mathrm{B}-1\); \(\mathrm{Col}(8)=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 22 to 60A \(=\) age 18 to 21, estimated by linear regression of data for (10); Col. (10), for age 22 to 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\); Col. (11) or age 18 to \(21,=\mathrm{Col}\). (6)- Col. (12); Col. (12) for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col. (12), for age 22 to \(60=\mathrm{Col}(6)-\) Column (11).

Note

Graduates of the College of Administration and Economics are estimated to complete their college education four years after high school graduation, Column (1) therefor is simply four years plus "number of years since college graduation".
whr The auxiliary income ( \(25 \%\) ) is derived from the allowance system of employees in the public sector, Republic of Iraq.
60 A is a retirement bonuse.
\# Columns 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross earning, earnings foregone \((a=1)\), differential earnings, differentia \(a=1 / 2\) ) respectively.

Table C-10
arning profiles and Private Internal Rate of return of College of Law and Politics Graduates (Relative to High
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1** & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -949 & 949* & -920 & 920** \\
\hline 19 & & & & & & 1027 & -1027 & -991 & 991* & -968 & 968\% \\
\hline 20 & & & & & & 1045 & -1045 & -1034 & 1034* & -1016 & 1016 \\
\hline 21 & & & & & & 1085 & -1085 & -1076 & 1076 \({ }^{\text { }}\) & -1064 & 1064* \\
\hline 22 & 1106 & 726 & 380 & 133 & 1239 & 1102 & 137 & 91 & 1148 & 69 & 1171 \\
\hline 23 & 1100 & 726 & 374 & 131 & 1231 & 1110 & 121 & 81 & 1150 & 60 & 1170 \\
\hline 24 & 1167 & 732 & 435 & 152 & 1319 & 1182 & 137 & 92 & 1228 & 69 & 1251 \\
\hline 25 & 1206 & 732 & 474 & 166 & 1372 & 1223 & 149 & 99 & 1273 & 74 & 1297 \\
\hline 26 & 1208 & 732 & 476 & 167 & 1375 & 1220 & 155 & 103 & 1272 & 77 & 1297 \\
\hline 27 & 1211 & 732 & 479 & 168 & 1379 & 1240 & 139 & 92 & 1286 & 69 & 1309 \\
\hline 28 & 1229 & 732 & 497 & 174 & 1403 & 1255 & 148 & 99 & 1304 & 74 & 1329 \\
\hline 29 & 1301 & 738 & 563 & 197 & 1498 & 1310 & 188 & 125 & 1373 & 94 & 1404 \\
\hline 30 & 1390 & 738 & 652 & 228 & 1618 & 1372 & 246 & 164 & 1454 & 123 & 1495 \\
\hline 31 & 1358 & 738 & 620 & 217 & 1575 & 1382 & 193 & 129 & 1446 & 97 & 1479 \\
\hline 32 & 1378 & 738 & 640 & 224 & 1602 & 1405 & 197 & 131 & 1471 & 99 & 1504 \\
\hline 33 & 1417 & 738 & 679 & 238 & 1655 & 1450 & 205 & 136 & 1518 & 102 & 1552 \\
\hline 34 & 1498 & 738 & 760 & 266 & 1764 & 1561 & 203 & 135 & 1629 & 102 & 1663 \\
\hline 35 & 1562 & 738 & 824 & 288 & 1850 & 1605 & 245 & 164 & 1687 & 123 & 1728 \\
\hline 36 & 1615 & 738 & 877 & 307 & 1922 & 1680 & 242 & 161 & 1761 & 121 & 1801 \\
\hline 37 & 1638 & 738 & 900 & 315 & 1953 & 1717 & 236 & 157 & 1796 & 118 & 1835 \\
\hline 38 & 1699 & 738 & 961 & 336 & 2035 & 1724 & 311 & 208 & 1828 & 156 & 1880 \\
\hline 39 & 1859 & 738 & 1121 & 392 & 2251 & 1758 & 493 & 329 & 1922 & 247 & 2005 \\
\hline 40 & 1931 & 738 & 1193 & 418 & 2349 & 1794 & 555 & 370 & 1979 & 277 & 2071 \\
\hline 41 & 1971 & 762 & 1209 & 423 & 2394 & 1825 & 569 & 379 & 2015 & 285 & 2110 \\
\hline 42 & 1922 & 738 & 1184 & 414 & 2336 & 1944 & 392 & 262 & 2075 & 196 & 2140 \\
\hline 43 & 2021 & 762 & 1259 & 441 & 2462 & 1868 & 594 & 396 & 2066 & 297 & 2165 \\
\hline 44 & 2036 & 762 & 1274 & 446 & 2482 & 1885 & 597 & 398 & 2084 & 298 & 2183 \\
\hline 45 & 2094 & 762 & 1332 & 466 & 2560 & 1899 & 661 & 441 & 2119 & 331 & 2230 \\
\hline 46 & 2315 & 786 & 1529 & 535 & 2850 & 1925 & 925 & 617 & 2233 & 463 & 2388 \\
\hline 47 & 2228 & 786 & 1442 & 505 & 2733 & 1905 & 828 & 552 & 2181 & 414 & 2319 \\
\hline 48 & 2247* & 786 & 1461 & 511 & 2758 & 1880 & 878 & 586 & 2173 & 439 & 2319 \\
\hline 49 & 2295** & 786 & 1509 & 528 & 2823 & 1834 & 989 & 659 & 2164 & 495 & 2329 \\
\hline 50 & 2344** & 786 & 1558 & 545 & 2889 & 1991 & 898 & 599 & 2290 & 449 & 2440 \\
\hline 51 & 2392** & 786 & 1606 & 562 & 2954 & 1989 & 965 & 643 & 2311 & 483 & 2472 \\
\hline 52 & 2440** & 834 & 1606 & 562 & 3002 & 1932 & 1070 & 713 & 2289 & 535 & 2467 \\
\hline 53 & 2489** & 834 & 1655 & 579 & 3068 & 2051 & 1017 & 678 & 2390 & 509 & 2560 \\
\hline 54 & 2537* & 834 & 1703 & 596 & 3133 & 2227 & 906 & 604 & 2529 & 453 & 2680 \\
\hline 55 & 2585** & 834 & 1751 & 613 & 3198 & 2020 & 1178 & 785 & 2413 & 589 & 2609 \\
\hline 56 & 2634* & 834 & 1800 & 630 & 3264 & 2372 & 892 & 595 & 2669 & 446 & 2818 \\
\hline 57 & 2682** & 834 & 1848 & 647 & 3329 & 2250 & 1079 & 719 & 2610 & 539 & 2789 \\
\hline 58 & 2730** & 834 & 1896 & 664 & 3394 & 2286 & 1108 & 738 & 2655 & 554 & 2840 \\
\hline 59 & 2778* & 834 & 1944 & 680 & 3458 & 2318 & 1140 & 760 & 2698 & 570 & 2888 \\
\hline 60 & 2827** & 834 & 1993 & 698 & 3525 & 2351 & 1174 & 782 & 2742 & 587 & 2938 \\
\hline 60A & 1414 & & & & 1414 & 1176 & 238 & 159 & & 118 & \\
\hline
\end{tabular}
\begin{tabular}{|llll|}
\hline Private Internal Rates of Return & \(6.83 \%\) & \(5.04 \%\) & \(3.90 \%\) \\
\hline
\end{tabular}

Source: from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) + Col. (5); Col. (7) from Table \(\mathrm{B}-1 ; \mathrm{Col}(8)=\mathrm{Col}\) (6) -Col . (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\) Col . (8) \(\times 2 / 3\), Col. (9) for age 18 to \(21=\mathrm{Col}\). ( 6 ) -Col . (10); Col. ( 10 ), for age 22 to \(60=\mathrm{Col}\). ( 6 ) - Column ( 9 ); Col. 10, for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\); Col. (11),
for age 18 to \(21,=\mathrm{Col}\). (6)-Col. (12); Col. (12) for age 18 to 21 , estimated by linear regression of data for age 22 to \(60 ; \mathrm{Col}\). r age 18 to \(21,=\mathrm{Col}\). (6)- Col. (12); Col. (12) for age 18 to 21, estimated by linear regression of data for age 22 to \(60 ; \mathrm{Col}\). (12), for age 22 to \(60=\mathrm{Col}(6)-\) Column (11).

Note Linear regression estimate.
Graduates of the College of Law and Politics are estimated to complete their college education four years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation".
mber The auxiliary income ( \(35 \%\) ) is derived from the allowance system of employees in the public sector, Republic of Iraq.
60 A is the reward of the end service.
\# Columns 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone ( \(a=1\) ), differential earnings, differential earnings ( \(a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C-11
Private Cost-Earning profiles and Private Internal Rate of return of College of Arts Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1{ }^{* *}\) & 2 & 3 & 4 & \(5^{\text {\%ata }}\) & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1016 & 1016* & -1022 & 1022\% \\
\hline 19 & & & & & & 1027 & -1027 & -1054 & 1054** & -1062 & 1062* \\
\hline 20 & & & & & & 1045 & -1045 & -1091 & 1091* & -1102 & 1102* \\
\hline 21 & & & & & & 1085 & -1085 & -1129 & 1129** & -1142 & 1142\% \\
\hline 22 & 1106 & 726 & 380 & 240 & 1346 & 1102 & 244 & 163 & 1183 & 122 & 1224 \\
\hline 23 & 1100 & 726 & 374 & 240 & 1340 & 1110 & 230 & 153 & 1187 & 115 & 1225 \\
\hline 24 & 1167 & 732 & 435 & 240 & 1407 & 1182 & 225 & 150 & 1257 & 113 & 1295 \\
\hline 25 & 1206 & 732 & 474 & 240 & 1446 & 1223 & 223 & 149 & 1297 & 112 & 1335 \\
\hline 26 & 1208 & 732 & 476 & 240 & 1448 & 1220 & 228 & 152 & 1296 & 114 & 1334 \\
\hline 27 & 1211 & 732 & 479 & 240 & 1451 & 1240 & 211 & 141 & 1310 & 106 & 1346 \\
\hline 28 & 1229 & 732 & 497 & 240 & 1469 & 1255 & 214 & 143 & 1326 & 107 & 1362 \\
\hline 29 & 1301 & 738 & 563 & 240 & 1541 & 1310 & 231 & 154 & 1387 & 116 & 1426 \\
\hline 30 & 1390 & 738 & 652 & 240 & 1630 & 1372 & 258 & 172 & 1458 & 129 & 1501 \\
\hline 31 & 1358 & 738 & 620 & 240 & 1598 & 1382 & 216 & 144 & 1454 & 108 & 1490 \\
\hline 32 & 1378 & 738 & 640 & 240 & 1618 & 1405 & 213 & 142 & 1476 & 107 & 1512 \\
\hline 33 & 1417 & 738 & 679 & 240 & 1657 & 1450 & 207 & 138 & 1519 & 104 & 1554 \\
\hline 34 & 1498 & 738 & 760 & 240 & 1738 & 1561 & 177 & 118 & 1620 & 89 & 1650 \\
\hline 35 & 1562 & 738 & 824 & 240 & 1802 & 1605 & 197 & 131 & 1671 & 99 & 1704 \\
\hline 36 & 1615 & 738 & 877 & 240 & 1855 & 1680 & 175 & 117 & 1738 & 88 & 1768 \\
\hline 37 & 1638 & 738 & 900 & 240 & 1878 & 1717 & 161 & 107 & 1771 & 81 & 1798 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 143 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 240 & 2099 & 1758 & 341 & 227 & 1872 & 171 & 1929 \\
\hline 40 & 1931 & 738 & 1193 & 240 & 2171 & 1794 & 377 & 251 & 1920 & 189 & 1983 \\
\hline 41 & 1971 & 762 & 1209 & 240 & 2211 & 1825 & 386 & 257 & 1954 & 193 & 2018 \\
\hline 42 & 1922 & 738 & 1184 & 240 & 2162 & 1944 & 218 & 145 & 2017 & 109 & 2053 \\
\hline 43 & 2021 & 762 & 1259 & 240 & 2261 & 1868 & 393 & 262 & 1999 & 197 & 2065 \\
\hline 44 & 2036 & 762 & 1274 & 240 & 2276 & 1885 & 391 & 261 & 2015 & 196 & 2081 \\
\hline 45 & 2094 & 762 & 1332 & 240 & 2334 & 1899 & 435 & 290 & 2044 & 218 & 2117 \\
\hline 46 & 2315 & 786 & 1529 & 240 & 2555 & 1925 & 630 & 420 & 2135 & 315 & 2240 \\
\hline 47 & 2228 & 786 & 1442 & 240 & 2468 & 1905 & 563 & 375 & 2093 & 282 & 2187 \\
\hline 48 & 2247* & 786 & 1461 & 240 & 2487 & 1880 & 607 & 405 & 2082 & 304 & 2184 \\
\hline 49 & 2295** & 786 & 1509 & 240 & 2535 & 1834 & 701 & 468 & 2068 & 351 & 2185 \\
\hline 50 & 2344* & 786 & 1558 & 240 & 2584 & 1991 & 593 & 395 & 2189 & 296 & 2287 \\
\hline 51 & 2392\% & 786 & 1606 & 240 & 2632 & 1989 & 643 & 429 & 2203 & 322 & 2311 \\
\hline 52 & 2440* & 834 & 1606 & 240 & 2680 & 1932 & 748 & 499 & 2181 & 374 & 2306 \\
\hline 53 & 2489** & 834 & 1655 & 240 & 2729 & 2051 & 678 & 452 & 2277 & 339 & 2390 \\
\hline 54 & 2537* & 834 & 1703 & 240 & 2777 & 2227 & 550 & 367 & 2410 & 275 & 2502 \\
\hline 55 & 2585* & 834 & 1751 & 240 & 2825 & 2020 & 805 & 537 & 2288 & 403 & 2423 \\
\hline 56 & 2634** & 834 & 1800 & 240 & 2874 & 2372 & 502 & 334 & 2539 & 251 & 2623 \\
\hline 57 & 2682** & 834 & 1848 & 240 & 2922 & 2250 & 672 & 448 & 2474 & 336 & 2586 \\
\hline 58 & 2730** & 834 & 1896 & 240 & 2970 & 2286 & 684 & 456 & 2514 & 342 & 2628 \\
\hline 59 & 2778* & 834 & 1944 & 240 & 3018 & 2318 & 700 & 467 & 2551 & 350 & 2668 \\
\hline 60 & 2827* & 834 & 1993 & 240 & 3067 & 2351 & 716 & 476 & 2590 & 358 & 2709 \\
\hline 60A & 1414 & & & & 1414 & 1176 & 238 & 159 & & 119 & \\
\hline
\end{tabular}

Private Internal Rates of Return
\(6.09 \% \quad 3.81 \%\)

Coll. (2) from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) + Col. (5); Col. (7) from Table B-1; Col ( 8 ) \(=\) Col. ( 6 ) -Col . (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\) Col. (8) \(\times 2 / 3\), Col. (9) for age 18 to \(21=\mathrm{Col}\). (6) -Col . (10); Col. (10), for age 22 to \(60=\mathrm{Col}\). (6) \(-\mathrm{Column}(9) ;\) Col. 10 , for for age 18 to \(21,=\mathrm{Col}\). (6)-Col. (12); Col. (12) for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col (12), for age 22 to \(60=\mathrm{Col}(6)-\) Column (11).

Note
Linear regression estimate.
Wr: Graduates of the College of Arts are estimated to complete their college education four years after high school graduation Column (1) therefore is simply four years plus "number of years since college graduation"

The auxiliary income (ID 240) is derived from the allowance system of employees in the public sector, Republic of trag.
60 A is a retirement bonuse
\# Columns 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 are the age since High School Graduation, wage or salary, Cost of living
Allowance, Nominal Salary, Auxikiny earnings \((a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted fo \(a=1 / 2\) ) respectively.

Table C-12
Private Cost-Earning profiles and Private Internal Rate of return of College of Education Graduates (Relative to High schoo: Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1** & 2 & 3 & 4 & 5*** & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1026 & 1026\% & -1037 & 1037\% \\
\hline 19 & & & & & & 1027 & -1027 & -1064 & 1064* & -1077 & 1077* \\
\hline 20 & & & & & & 1045 & -1045 & -1101 & 1101** & -1126 & 1118* \\
\hline 21 & & & & & & 1035 & -1085 & -1139 & 1139 \({ }^{\text {\% }}\) & -1159 & 1159* \\
\hline 22 & 1113 & 726 & 387 & 240 & 1353 & 1102 & 251 & 167 & 1186 & 126 & 1228 \\
\hline 23 & 1128 & 726 & 402 & 240 & 1368 & 1110 & 258 & 172 & 1196 & 129 & 1239 \\
\hline 24 & 1219 & 732 & 487 & 240 & 1459 & 1182 & 277 & 185 & 1274 & 139 & 1321 \\
\hline 25 & 1279 & 738 & 54.1 & 240 & 1519 & 1223 & 296 & 197 & 1322 & 148 & 1371 \\
\hline 26 & 1257 & 738 & 519 & 240 & 1497 & 1220 & 277 & 185 & 1312 & 139 & 1359 \\
\hline 27 & 1.221 & 732 & 489 & 240 & 1461 & 1240 & 221 & 147 & 1314 & 111 & 1351 \\
\hline 28 & 1255 & 732 & 523 & 240 & 1495 & 1255 & 240 & 160 & 1335 & 120 & 1375 \\
\hline 29 & 1348 & 738 & 610 & 240 & 1588 & 1310 & 278 & 185 & 1403 & 139 & 1449 \\
\hline 30 & 1330 & 738 & 592 & 24. & 1570 & 1372 & 198 & 132 & 1438 & 99 & 1471 \\
\hline 31 & 1410 & 738 & 672 & 240 & 1650 & 1382 & 268 & 179 & 1471 & 134 & 1516 \\
\hline 32 & 1422 & 738 & 684 & 240 & 1662 & 1405 & 257 & 171 & 1491 & 129 & 1534 \\
\hline 33 & 1430 & 738 & 692 & 240 & 1670 & 1450 & 220 & 147 & 1523 & 110 & 1560 \\
\hline 34 & 1557 & 738 & 819 & 240 & 1797 & 1561 & 236 & 157 & 1640 & 118 & 1679 \\
\hline 35 & 1605 & 738 & 867 & 240 & 1345 & 1605 & 240 & 160 & 1685 & 120 & 1725 \\
\hline 36 & 1720 & 738 & 982 & 240 & 1960 & 1680 & 280 & 187 & 1773 & 140 & 1820 \\
\hline 37 & 1743 & 738 & 1005 & 240 & 1983 & 1717 & 266 & 177 & 1806 & 133 & 1850 \\
\hline 38 & 1775 & 738 & 1037 & 240 & 2015 & 1724. & 291 & 194 & 1821 & 146 & 1870 \\
\hline 39 & 1958 & 738 & 1220 & 240 & 2198 & 1758 & 440 & 293 & 1905 & 220 & 1978 \\
\hline 40 & 2050 & 762 & 1288 & 240 & 2290 & 1794 & 496 & 331 & 1959 & 248 & 2042 \\
\hline 41 & 1993 & 762 & 1231 & 240 & 2233 & 1825 & 408 & 272 & 1961 & 204 & 2029 \\
\hline 42 & 2066 & 762 & 1304 & 240 & 2306 & 1944 & 362 & 241 & 2065 & 181 & 2125 \\
\hline 43 & 2037 & 762 & 1275 & 240 & 2277 & 1868 & 409 & 273 & 2004 & 205 & 2073 \\
\hline 44 & 2123 & 762 & 1361 & 240 & 2363 & 1885 & 478 & 319 & 2044 & 239 & 2124 \\
\hline 45 & 2149 & 762 & 1387 & 240 & 2389 & 1899 & 490 & 327 & 2062 & 245 & 2144 \\
\hline 46 & 2261 & 786 & 1475 & 240 & 2501 & 1925 & 576 & 384 & 2117 & 288 & 2213 \\
\hline 47 & 2269 & 786 & 1483 & 240 & 2509 & 1905 & 604. & 403 & 2106 & 302 & 2207 \\
\hline 48 & 2312* & 786 & 1526 & 240 & 2552 & 1880 & 672 & 448 & 2104 & 336 & 2216 \\
\hline 49 & 2361\% & 786 & 1526 & 240 & 2552 & 1834 & 718 & 478 & 2073 & 359 & 2193 \\
\hline 50 & 24.11\% & 834 & 1577 & 240 & 2651 & 1991 & 660 & 440 & 2211 & 330 & 2321 \\
\hline 51 & 2460* & 834 & 1626 & 240 & 2700 & 1989 & 711 & 474 & 2226 & 356 & 2345 \\
\hline 52 & 2510* & 834 & 1676 & 240 & 2750 & 1932 & 818 & 545 & 2205 & 409 & 2341 \\
\hline 53 & 2559** & 834 & 1725 & 240 & 2799 & 2051 & 748 & 499 & 2300 & 374 & 2425 \\
\hline 54 & 2609** & 834 & 1775 & 240 & 2849 & 2227 & 622 & 414 & 2434 & 311 & 2538 \\
\hline 55 & 2658* & 834 & 1824 & 240 & 2898 & 2020 & 878 & 585 & 2313 & 439 & 2459 \\
\hline 56 & 2708* & 834 & 1874 & 240 & 2948 & 2372 & 576 & 384 & 2564 & 288 & 2660 \\
\hline 57 & 2757* & 834 & 1923 & 240 & 2997 & 2250 & 747 & 498 & 2499 & 374 & 2624 \\
\hline 58 & 2807* & 834 & 1973 & 240 & 3047 & 2286 & 761 & 507 & 2540 & 380 & 2666 \\
\hline 59 & 2856* & 834 & 2022 & 240 & 3096 & 2318 & 778 & 519 & 2577 & 389 & 2707 \\
\hline 60 & \({ }_{1453}{ }^{29} 5\) & 834 & 2072 & 2405 & 3146 & 2351 & 795 & 530 & 2616 & \(\begin{array}{r}397 \\ \hline\end{array}\) & 2748 \\
\hline
\end{tabular}

Private Internal Rates of Return
\(6.92 \% \quad 4.44 \%\)
\(2.83 \%\)
Source:
Col. (2) from Table B-3; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. ( 6 ) from col. (2) +Col . (5); Col. (7) from Table B-1; Col (8) \(=\mathrm{Col}\). (6) - Col. (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\) Col. (8) \(\times 2 / 3\), Col. (9) for age 18 to \(21=\mathrm{Col}\). ( (6) -Col . (10); Col. (10), for age 22 to \(60=\mathrm{Col}\). (6) - Column ( 9 ); Col. 10, for
age 18 to 21 , estimated by linear regressign or data or age 22 to 60 ; Col. (11), for age 22 to \(60 \mathrm{~A}=\) Columa \(8 \times 1 / 2\); Col. (11), ago age 18 to \(21,=\mathrm{Col}\). (6)-Col. (12); Col. (12) for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col. (12), for age 22 to \(60=\mathrm{Col}\) (6) - Column (11).

Note
* Lincar regression estimate.
** Graduates of the College of Science are estimated to complete their college education four years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation".
**~ The auxiliary income ( ID 240 ) is derived from the allowance system of employees in the public sector, Republic of Iraq.
60 A is a retirement bonuse.
If Columons \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Groess Earing, earniags foregone ( \(a=1\) ), differential earnings, differential earnings ( \(a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential eariags ( \(a=1 / 2\) ), and earnings foregone (adjusted for
\(a=1 / 2\) ) respectively. \(a=1 / 2\) ) respectively.

Table C-13
Tivate Cost-Earning profiles and Private Internal Rate of return of College of Physical Education Graduates (Relative to High
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1^{\text {mata }}\) & 2 & 3 & 4 & \(5^{\text {matam }}\) & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1016 & 1016 \({ }^{\text {\% }}\) & -1022 & 1022* \\
\hline 19 & & & & & & 1027 & -1027 & -1054 & 1054* & -1062 & 1062* \\
\hline 20 & & & & & & 1045 & -1045 & -1091 & 1091** & -1102 & 1102* \\
\hline 21 & & & & & & 1085 & -1085 & -1129 & 1129\%* & -1142 & 1142** \\
\hline 22 & 1106 & 726 & 380 & 240 & 1346 & 1102 & 244 & 163 & 1183 & 122 & 1224 \\
\hline 23 & 1100 & 726 & 374 & 240 & 1340 & 1110 & 230 & 153 & 1187 & 115 & 1225 \\
\hline 24 & 1167 & 732 & 435 & 240 & 1407 & 1182 & 225 & 150 & 1257 & 113 & 1295 \\
\hline 25 & 1206 & 732 & 474 & 240 & 1446 & 1223 & 223 & 149 & 1297 & 112 & 1335 \\
\hline 26 & 1208 & 732 & 476 & 240 & 1448 & 1220 & 228 & 152 & 1296 & 114 & 1334 \\
\hline 27 & 1211 & 732 & 479 & 240 & 1451 & 1240 & 211 & 141 & 1310 & 106 & 1346 \\
\hline 28 & 1229 & 732 & 497 & 240 & 1469 & 1255 & 214 & 143 & 1326 & 107 & 1362 \\
\hline 29 & 1301 & 738 & 563 & 240 & 1541 & 1310 & 231 & 154 & 1387 & 116 & 1426 \\
\hline 30 & 1390 & 738 & 652 & 240 & 1630 & 1372 & 258 & 172 & 1458 & 129 & 1501 \\
\hline 31 & 1358 & 738 & 620 & 240 & 1598 & 1382 & 216 & 144 & 1454 & 108 & 1490 \\
\hline 32 & 1378 & 738 & 640 & 240 & 1618 & 1405 & 213 & 142 & 1476 & 107 & 1512 \\
\hline 33 & 1417 & 738 & 679 & 240 & 1657 & 1450 & 207 & 138 & 1519 & 104 & 1554 \\
\hline 34 & 1498 & 738 & 760 & 240 & 1738 & 1561 & 177 & 118 & 1620 & 89 & 1650 \\
\hline 35 & 1562 & 738 & 824 & 240 & 1802 & 1605 & 197 & 131 & 1671 & 99 & 1704 \\
\hline 36 & 1615 & 738 & 877 & 240 & 1855 & 1680 & 175 & 117 & 1738 & 88 & 1768 \\
\hline 37 & 1638 & 738 & 900 & 240 & 1878 & 1717 & 161 & 107 & 1771 & 81 & 1798 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 143 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 240 & 2099 & 1758 & 341 & 227 & 1872 & 171 & 1929 \\
\hline 40 & 1931 & 738 & 1193 & 240 & 2171 & 1794 & 377 & 251 & 1920 & 189 & 1983 \\
\hline 41 & 1971 & 762 & 1209 & 240 & 2211 & 1825 & 386 & 257 & 1954 & 193 & 2018 \\
\hline 42 & 1922 & 738 & 1184 & 240 & 2162 & 1944 & 218 & 145 & 2017 & 109 & 2053 \\
\hline 43 & 2021 & 762 & 1259 & 240 & 2261 & 1868 & 393 & 262 & 1999 & 197 & 2065 \\
\hline 44 & 2036 & 762 & 1274 & 240 & 2276 & 1885 & 391 & 261 & 2015 & 196 & 2081 \\
\hline 45 & 2094 & 762 & 1332 & 240 & 2334 & 1899 & 435 & 290 & 2044 & 218 & 2117 \\
\hline 46 & 2315 & 786 & 1529 & 240 & 2555 & 1925 & 630 & 420 & 2135 & 315 & 2240 \\
\hline 47 & 2228 & 786 & 1442 & 240 & 2468 & 1905 & 563 & 375 & 2093 & 282 & 2187 \\
\hline 48 & 2247** & 786 & 1461 & 240 & 2487 & 1880 & 607 & 405 & 2082 & 304 & 2184 \\
\hline 49 & 2295\% & 786 & 1509 & 240 & 2535 & 1834 & 701 & 468 & 2068 & 351 & 2185 \\
\hline 50 & 2344* & 786 & 1558 & 240 & 2584 & 1991 & 593 & 395 & 2189 & 296 & 2287 \\
\hline 51 & 2392 \({ }^{\text {\% }}\) & 786 & 1606 & 240 & 2632 & 1989 & 643 & 429 & 2203 & 322 & 2311 \\
\hline 52 & 2440** & 834 & 1606 & 240 & 2680 & 1932 & 748 & 499 & 2181 & 374 & 2306 \\
\hline 53 & 2489** & 834 & 1655 & 240 & 2729 & 2051 & 678 & 452 & 2277 & 339 & 2390 \\
\hline 54 & 2537** & 834 & 1703 & 240 & 2777 & 2227 & 550 & 367 & 2410 & 275 & 2502 \\
\hline 55 & 2585 \({ }^{\text {\% }}\) & 834 & 1751 & 240 & 2825 & 2020 & 805 & 537 & 2288 & 403 & 2423 \\
\hline 56 & 2634** & 834 & 1800 & 240 & 2874 & 2372 & 502 & 334 & 2539 & 251 & 2623 \\
\hline 57 & 2682** & 834 & 1848 & 240 & 2922 & 2250 & 672 & 448 & 2474 & 336 & 2586 \\
\hline 58 & 2730** & 834 & 1896 & 240 & 2970 & 2286 & 684 & 456 & 2514 & 342 & 2628 \\
\hline 59 & 2778* & 834 & 1944 & 240 & 3018 & 2318 & 700 & 467 & 2551 & 350 & 2668 \\
\hline 60 & 2827** & 834 & 1993 & 240 & 3067 & 2351 & 716 & 476 & 2590 & 358 & 2709 \\
\hline 60A & 1414 & & & & 1414 & 1176 & 238 & 159 & & 119 & \\
\hline
\end{tabular}
\begin{tabular}{|llll|}
\hline Private Internal Rates of Return & \(6.09 \%\) & \(3.81 \%\) & \(2.47 \%\) \\
\hline
\end{tabular}
\(\frac{\text { Source: }}{\text { Col. (2) from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID } 240 \text { ) constant allowance }}\)

 (12), for age 22 to \(60=\mathrm{Col}(6)-\mathrm{Colum}\); Col . (12) for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col .
\(\frac{\text { Note }}{\text { Linear regression estimate. }}\)
tes Graduates of the College of Physical Education are estimated to complete their college education four years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation".
*) The auxiliary income (ID 240) is derived from the allowance system of employees in the public sector, Republic of Iraq.

\section*{60 A is a retirement bonuse.}
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary lncome, Total Gross Earning, earnings foregone ( \(a=1\) ), differential earnings, differential
earnings ( \(a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C-14
Private Cost-Earning profiles and Private Internal Rate of return of College of Academy of Fine Arts Graduates (Relative to High
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1^{\text {tapla }}\) & 2 & 3 & 4 & \(5^{\text {manata }}\) & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1016 & 1016** & -1022 & 1022* \\
\hline 19 & & & & & & 1027 & -1027 & -1054 & 1054** & -1062 & 1062\% \\
\hline 20 & & & & & & 1045 & -1045 & -1091 & 1091** & -1102 & 1102* \\
\hline 21 & & & & & & 1085 & -1085 & -1129 & 1129** & -1142 & 1142* \\
\hline 22 & 1106 & 726 & 380 & 240 & 1346 & 1102 & 244 & 163 & 1183 & 122 & 1224 \\
\hline 23 & 1100 & 726 & 374 & 240 & 1340 & 1110 & 230 & 153 & 1187 & 115 & 1225 \\
\hline 24 & 1167 & 732 & 435 & 240 & 1407 & 1182 & 225 & 150 & 1257 & 113 & 1295 \\
\hline 25 & 1206 & 732 & 474 & 240 & 1446 & 1223 & 223 & 149 & 1297 & 112 & 1335 \\
\hline 26 & 1208 & 732 & 476 & 240 & 1448 & 1220 & 228 & 152 & 1296 & 114 & 1334 \\
\hline 27 & 1211 & 732 & 479 & 240 & 1451 & 1240 & 211 & 141 & 1310 & 106 & 1346 \\
\hline 28 & 1229 & 732 & 497 & 240 & 1469 & 1255 & 214 & 143 & 1326 & 107 & 1362 \\
\hline 29 & 1301 & 738 & 563 & 240 & 1541 & 1310 & 231 & 154 & 1387 & 116 & 1426 \\
\hline 30 & 1390 & 738 & 652 & 240 & 1630 & 1372 & 258 & 172 & 1458 & 129 & 1501 \\
\hline 31 & 1358 & 738 & 620 & 240 & 1598 & 1382 & 216 & 144 & 1454 & 108 & 1490 \\
\hline 32 & 1378 & 738 & 640 & 240 & 1618 & 1405 & 213 & 142 & 1476 & 107 & 1512 \\
\hline 33 & 1417 & 738 & 679 & 240 & 1657 & 1450 & 207 & 138 & 1519 & 104 & 1554 \\
\hline 34 & 1498 & 738 & 760 & 240 & 1738 & 1561 & 177 & 118 & 1620 & 89 & 1650 \\
\hline 35 & 1562 & 738 & 824 & 240 & 1802 & 1605 & 197 & 131 & 1671 & 99 & 1704 \\
\hline 36 & 1615 & 738 & 877 & 240 & 1855 & 1680 & 175 & 117 & 1738 & 88 & 1768 \\
\hline 37 & 1638 & 738 & 900 & 240 & 1878 & 1717 & 161 & 107 & 1771 & 81 & 1798 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 143 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 240 & 2099 & 1758 & 341 & 227 & 1872 & 171 & 1929 \\
\hline 40 & 1931 & 738 & 1193 & 240 & 2171 & 1794 & 377 & 251 & 1920 & 189 & 1983 \\
\hline 41 & 1971 & 762 & 1209 & 240 & 2211 & 1825 & 386 & 257 & 1954 & 193 & 2018 \\
\hline 42 & 1922 & 738 & 1184 & 240 & 2162 & 1944 & 218 & 145 & 2017 & 109 & 2053 \\
\hline 43 & 2021 & 762 & 1259 & 240 & 2261 & 1868 & 393 & 262 & 1999 & 197 & 2065 \\
\hline 44 & 2036 & 762 & 1274 & 240 & 2276 & 1885 & 391 & 261 & 2015 & 196 & 2081 \\
\hline 45 & 2094 & 762 & 1332 & 240 & 2334 & 1899 & 435 & 290 & 2044 & 218 & 2117 \\
\hline 46 & 2315 & 786 & 1529 & 240 & 2555 & 1925 & 630 & 420 & 2135 & 315 & 2240 \\
\hline 47 & 2228 & 786 & 1442 & 240 & 2468 & 1905 & 563 & 375 & 2093 & 282 & 2187 \\
\hline 48 & 2247* & 786 & 1461 & 240 & 2487 & 1880 & 607 & 405 & 2082 & 304 & 2184 \\
\hline 49 & 2295** & 786 & 1509 & 240 & 2535 & 1834 & 701 & 468 & 2068 & 351 & 2185 \\
\hline 50 & 2344** & 786 & 1558 & 240 & 2584 & 1991 & 593 & 395 & 2189 & 296 & 2287 \\
\hline 51 & 2392** & 786 & 1606 & 240 & 2632 & 1989 & 643 & 429 & 2203 & 322 & 2311 \\
\hline 52 & 2440** & 834 & 1606 & 240 & 2680 & 1932 & 748 & 499 & 2181 & 374 & 2306 \\
\hline 53 & 2489** & 834 & 1655 & 240 & 2729 & 2051 & 678 & 452 & 2277 & 339 & 2390 \\
\hline 54 & 2537** & 834 & 1703 & 240 & 2777 & 2227 & 550 & 367 & 2410 & 275 & 2502 \\
\hline 55 & 2585** & 834 & 1751 & 240 & 2825 & 2020 & 805 & 537 & 2288 & 403 & 2423 \\
\hline 56 & 2634** & 834 & 1800 & 240 & 2874 & 2372 & 502 & 334 & 2539 & 251 & 2623 \\
\hline 57 & 2682** & 834 & 1848 & 240 & 2922 & 2250 & 672 & 448 & 2474 & 336 & 2586 \\
\hline 58 & 2730** & 834 & 1896 & 240 & 2970 & 2286 & 684 & 456 & 2514 & 342 & 2628 \\
\hline 59 & 2778** & 834 & 1944 & 240 & 3018 & 2318 & 700 & 467 & 2551 & 350 & 2668 \\
\hline 60 & 2827*** & 834 & 1993 & 240 & 3067 & 2351 & 716 & 476 & 2590 & 358 & 2709 \\
\hline 60A & 1414 & & & & 1414 & 1176 & 238 & 159 & & 119 & \\
\hline
\end{tabular}
\begin{tabular}{|llll|}
\hline Private Internal Rates of Return & \(6.09 \%\) & \(3.81 \%\) & \(2.47 \%\) \\
\hline
\end{tabular}

Source: from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance
 ge 18 to 21, estimated by linear regression of data for age 22 to 60 . Col . (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 12\), Cos , 11) or age 18 to \(21=\mathrm{Col}\). (6)- Col. (12); Col. (12) for age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col. (12), for age 22 to \(60=\mathrm{Col}\) (6) - Column (11).

Note
Linear regression estimate.
\({ }_{p}\) ark Graduates of the College of Academic of Fine Arts are estimated to complete their college education four years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation".

60 A is a retirement bonuse.
\# Columns 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone ( \(a=1\) ), differential earnings, differential \(\underset{a=1 / 2)}{\text { earnings }(a=2 / 3) \text { respectively. }}\)

Table C-15
Private Cost-Earning profiles and Private Internal Rate of return of College of Alsharia Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (Iraqi Dinars)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline  & 2 & 3 & 4 & 5 \% \(k\) \% & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & & 972 & -972 & -1016 & 1016* & -1022 & 1022\% \\
\hline 19 & & & & & & 1027 & -1027 & -1054 & 1054* & -1062 & 1062\% \\
\hline 20 & & & & & & 1045 & -1045 & -1091 & 1091* & -1102 & 1102* \\
\hline 21 & & & & & & 1085 & -1085 & -1129 & 1129** & -1142 & 1142 \({ }^{\text {\% }}\) \\
\hline 22 & 1106 & 726 & 380 & 240 & 1346 & 1102 & 244 & 163 & 1183 & 122 & 1224 \\
\hline 23 & 1100 & 726 & 374 & 240 & 1340 & 1110 & 230 & 153 & 1187 & 115 & 1225 \\
\hline 24 & 1167 & 732 & 435 & 240 & 1407 & 1182 & 225 & 150 & 1257 & 113 & 1295 \\
\hline 25 & 1206 & 732 & 474 & 240 & 1446 & 1223 & 223 & 149 & 1297 & 112 & 1335 \\
\hline 26 & 1208 & 732 & 476 & 240 & 1448 & 1220 & 228 & 152 & 1296 & 114 & 1334 \\
\hline 27 & 1211 & 732 & 479 & 240 & 1451 & 1240 & 211 & 141 & 1310 & 106 & 1346 \\
\hline 28 & 1229 & 732 & 497 & 240 & 1469 & 1255 & 214 & 143 & 1326 & 107 & 1362 \\
\hline 29 & 1301 & 738 & 563 & 240 & 1541 & 1310 & 231 & 154 & 1387 & 116 & 1426 \\
\hline 30 & 1390 & 738 & 652 & 240 & 1630 & 1372 & 258 & 172 & 1458 & 129 & 1501 \\
\hline 31 & 1358 & 738 & 620 & 240 & 1598 & 1382 & 216 & 144 & 1454 & 108 & 1490 \\
\hline 32 & 1378 & 738 & 640 & 240 & 1618 & 1405 & 213 & 142 & 1476 & 107 & 1512 \\
\hline 33 & 1417 & 738 & 679 & 240 & 1657 & 1450 & 207 & 138 & 1519 & 104 & 1554 \\
\hline 34 & 1498 & 738 & 760 & 240 & 1738 & 1561 & 177 & 118 & 1620 & 89 & 1650 \\
\hline 35 & 1562 & 738 & 824 & 240 & 1802 & 1605 & 197 & 131 & 1671 & 99 & 1704 \\
\hline 36 & 1615 & 738 & 877 & 240 & 1855 & 1680 & 175 & 117 & 1738 & 88 & 1768 \\
\hline 37 & 1638 & 738 & 900 & 240 & 1878 & 1717 & 161 & 107 & 1771 & 81 & 1798 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 143 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 240 & 2099 & 1758 & 341 & 227 & 1872 & 171 & 1929 \\
\hline 40 & 1931 & 738 & 1193 & 240 & 2171 & 1794 & 377 & 251 & 1920 & 189 & 1983 \\
\hline 41 & 1971 & 762 & 1209 & 240 & 2211 & 1825 & 386 & 257 & 1954 & 193 & 2018 \\
\hline 42 & 1922 & 738 & 1184 & 240 & 2162 & 1944 & 218 & 145 & 2017 & 109 & 2053 \\
\hline 43 & 2021 & 762 & 1259 & 240 & 2261 & 1868 & 393 & 262 & 1999 & 197 & 2065 \\
\hline 44 & 2036 & 762 & 1274 & 240 & 2276 & 1885 & 391 & 261 & 2015 & 196 & 2081 \\
\hline 45 & 2094 & 762 & 1332 & 240 & 2334 & 1899 & 435 & 290 & 2044 & 218 & 2117 \\
\hline 46 & 2315 & 786 & 1529 & 240 & 2555 & 1925 & 630 & 420 & 2135 & 315 & 2240 \\
\hline 47 & 2228 & 786 & 1442 & 240 & 2468 & 1905 & 563 & 375 & 2093 & 282 & 2187 \\
\hline 48 & 2247* & 786 & 1461 & 240 & 2487 & 1880 & 607 & 405 & 2082 & 304 & 2184 \\
\hline 49 & 2295* & 786 & 1509 & 240 & 2535 & 1834 & 701 & 468 & 2068 & 351 & 2185 \\
\hline 50 & 2344; & 786 & 1558 & 240 & 2584 & 1991 & 593 & 395 & 2189 & 296 & 2287 \\
\hline 51 & 2392** & 786 & 1606 & 240 & 2632 & 1989 & 643 & 429 & 2203 & 322 & 2311 \\
\hline 52 & 2440* & 834 & 1606 & 240 & 2680 & 1932 & 748 & 499 & 2181 & 374 & 2306 \\
\hline 53 & 2489** & 834 & 1655 & 240 & 2729 & 2051 & 678 & 452 & 2277 & 339 & 2390 \\
\hline 54 & 2537* & 834 & 1703 & 240 & 2777 & 2227 & 550 & 367 & 2410 & 275 & 2502 \\
\hline 55 & 2585* & 834 & 1751 & 240 & 2825 & 2020 & 805 & 537 & 2288 & 403 & 2423 \\
\hline 56 & 2634* & 834 & 1800 & 240 & 2874 & 2372 & 502 & 334 & 2539 & 251 & 2623 \\
\hline 57 & 2682** & 834 & 1848 & 240 & 2922 & 2250 & 672 & 448 & 2474 & 336 & 2586 \\
\hline 58 & 2730* & 834 & 1896 & 240 & 2970 & 2286 & 684 & 456 & 2514 & 342 & 2628 \\
\hline 59 & 2778** & 834 & 1944 & 240 & 3018 & 2318 & 700 & 467 & 2551 & 350 & 2668 \\
\hline 60 & 2827** & 834 & 1993 & 240 & 3067 & 2351 & 716 & 476 & 2590 & 358 & 2709 \\
\hline 60A & 1414 & & & & 1414 & 1176 & 238 & 159 & & 119 & \\
\hline
\end{tabular}

Private Internal Rates of Return
\(6.09 \%\)
\(3.81 \%\)
\(2.47 \%\)
Source
Col. (2) from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) from col. (2) +Col . (5); Col. (7) from Table \(\mathrm{B}-1 ; \mathrm{Col}(8)=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\) Col. (8) \(\times 2 / 3\), Col. (9) for age 18 to \(21=\mathrm{Col}\). ( 6 ) -Col . (10); Col. (10), for age 22 to \(60=\mathrm{Col}\). ( 6 ) - Column ( 9 ); Col. 10, for
age 18 to 21 , estimated by linear regression of data for age 22 to 60 ; Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2 ;\) Col. (11), for age 18 to \(21,=\) Col. (6)-Col. (12); Col. (12) for age 18 to 21 estimated by linear regression of data for age 22 to 60 ; Col. (12), for age 22 to \(60=\mathrm{Col}(6)-\) Column (11)

Note Linear regression estimate.
\(\cdots\) Graduates of the College of Alsharia are estimated to complete their college education four years after high school graduation. Column (1) therefore is simply four years plus "number of years since college graduation".
*20 The auxiliary income (ID 240) is derived from the allowance system of employees in the public sector, Republic of Iraq.
60 A is a retirement bonuse.
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone ( \(a=1\) ), differential earnings, differential earnings \((a=2 / 3)\), earnings foregone ( \(a d j u s t e d\) for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for
\(a=1 / 2\) respectively.

Table C-16
Social Cost-Earning profiles and Social Internal Rate of return of College of Science Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1^{\text {tatam }}\) & 2 & 3 & 4 &  & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1026 & 1026 \({ }^{\text {\% }}\) & -1037 & 1037* \\
\hline 18B & & & & & 0000 & 945 & -945 & -945 & 945 & -945 & 945 \\
\hline 19 & & & & & \(49^{\text {matm }}\) & 1027 & -978 & -1015 & 1064 \({ }^{\text {P }}\) & -1028 & 1077 \({ }^{\text {* }}\) \\
\hline 19B & & & & & 0000 & 945 & -945 & -945 & 945 & -945 & 945 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1101 & 1101** & -1118 & 1118** \\
\hline 20B & & & & & 0000 & 945 & -945 & -945 & 945 & -945 & 945 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1139 & 1139:* & -1159 & 1159** \\
\hline 21B & & & & & 0000 & 945 & -945 & -945 & 945 & -945 & 945 \\
\hline 22 & 1113 & 726 & 387 & 240 & 1353 & 1102 & 251 & 167 & 1186 & 126 & 1228 \\
\hline 23 & 1128 & 726 & 402 & 240 & 1368 & 1110 & 258 & 172 & 1196 & 129 & 1239 \\
\hline 24 & 1219 & 732 & 487 & 240 & 1459 & 1182 & 277 & 185 & 1274 & 139 & 1321 \\
\hline 25 & 1279 & 738 & 541 & 240 & 1519 & 1223 & 296 & 197 & 1322 & 148 & 1371 \\
\hline 26 & 1257 & 738 & 519 & 240 & 1.497 & 1220 & 277 & 185 & 1312 & 139 & 1359 \\
\hline 27 & 1221 & 732 & 489 & 240 & 1461 & 1240 & 221 & 147 & 1314 & 111 & 1351 \\
\hline 28 & 1255 & 732 & 523 & 240 & 1495 & 1255 & 240 & 160 & 1335 & 120 & 1375 \\
\hline 29 & 1348 & 738 & 610 & 240 & 1588 & 1310 & 278 & 185 & 1403 & 139 & 1449 \\
\hline 30 & 1330 & 738 & 592 & 240 & 1.570 & 1372 & 198 & 132 & 1438 & 99 & 1471 \\
\hline 31 & 1410 & 738 & 672 & 240 & 1650 & 1382 & 268 & 179 & 1471 & 134 & 1516 \\
\hline 32 & 1422 & 738 & 684 & 240 & 1662 & 1405 & 257 & 171 & 1491 & 129 & 1534 \\
\hline 33 & 1430 & 738 & 692 & 240 & 1670 & 1450 & 220 & 147 & 1523 & 110 & 1560 \\
\hline 34 & 1557 & 738 & 819 & 240 & 1797 & 1561 & 236 & 157 & 1640 & 118 & 1679 \\
\hline 35 & 1605 & 738 & 867 & 240 & 1845 & 1605 & 240 & 160 & 1685 & 120 & 1725 \\
\hline 36 & 1720 & 738 & 982 & 240 & 1960 & 1680 & 280 & 187 & 1773 & 140 & 1820 \\
\hline 37 & 1743 & 738 & 1005 & 240 & 1983 & 1717 & 266 & 177 & 1806 & 133 & 1850 \\
\hline 38 & 1775 & 738 & 1037 & 240 & 2015 & 1724 & 291 & 194 & 1821 & 146 & 1870 \\
\hline 39 & 1958 & 738 & 1220 & 240 & 2198 & 1758 & 440 & 293 & 1905 & 220 & 1978 \\
\hline 40 & 2050 & 762 & 1288 & 240 & 2290 & 1794 & 496 & 331 & 1959 & 248 & 2042 \\
\hline 41 & 1993 & 762 & 1231 & 240 & 2233 & 1825 & 408 & 272 & 1961 & 204 & 2029 \\
\hline 42 & 2066 & 762 & 1304 & 240 & 2306 & 1944 & 362 & 241 & 2065 & 181 & 2125 \\
\hline 43 & 2037 & 762 & 1275 & 240 & 2277 & 1868 & 409 & 273 & 2004 & 205 & 2073 \\
\hline 44 & 2123 & 762 & 1361 & 240 & 2363 & 1885 & 478 & 319 & 2044 & 239 & 2124 \\
\hline 45 & 2149 & 762 & 1387 & 240 & 2389 & 1899 & 490 & 327 & 2062 & 245 & 2144 \\
\hline 46 & 2261 & 786 & 1475 & 240 & 2501 & 1925 & 576 & 384 & 2117 & 288 & 2213 \\
\hline 47 & 2269 & 786 & 1483 & 240 & 2509 & 1905 & 604 & 403 & 2106 & 302 & 2207 \\
\hline 48 & 2312* & 786 & 1526 & 240 & 2552 & 1880 & 672 & 448 & 2104 & 336 & 2216 \\
\hline 49 & 2361 * & 786 & 1575 & 240 & 2601 & 1834 & 767 & 511 & 2090 & 384 & 2218 \\
\hline 50 & & 834 & 1577 & 240 & 2651 & 1991 & 660 & 440 & 2211 & 330 & 2321 \\
\hline 51 & \(2460^{*}\) & 834 & 1626 & 240 & 2700 & 1989 & 711 & 474 & 2226 & 356 & 2345 \\
\hline 52 & \(2510^{*}\) & 834 & 1676 & 240 & 2750 & 1932 & 818 & 545 & 2205 & 409 & 2341 \\
\hline 53 & 2559** & 834 & 1725 & 240 & 2799 & 2051 & 748 & 499 & 2300 & 374 & 2425 \\
\hline 54 & 2609 \({ }^{\text {¹4 }}\) & 834 & 1775 & 240 & 2849 & 2227 & 622 & 414 & 2434 & 311 & 2538 \\
\hline 55 & 2658 \({ }^{\text {¹ }}\) & 834 & 1824 & 240 & 2898 & 2020 & 878 & 585 & 2313 & 439 & 2459 \\
\hline 56 & \(2708{ }^{\text {\# }}\) & 834 & 1874 & 240 & 2948 & 2372 & 576 & 384 & 2564 & 288 & 2660 \\
\hline 57 & 2757* & 834 & 1923 & 240 & 2997 & 2250 & 747 & 498 & 2499 & 374 & 2624 \\
\hline 58 & 2807** & 834 & 1973 & 240 & 3047 & 2286 & 761 & 507 & 2540 & 380 & 2666 \\
\hline 59 & 2856* & 834 & 2022 & 240 & 3096 & 2318 & 778 & 519 & 2577 & 389 & 2707 \\
\hline 60
\(60 A\) & 2906" & 834 & 2072 & 240 & 3146
1453 & 2351 & 795
277 & 530
185 & 2616 & 397
139 & 2748 \\
\hline 60A & 1453 & & & & 1453 & 1176 & 277 & 185 & & 139 & \\
\hline
\end{tabular}

Social Internal Rates of Return
\(3.56 \% \quad 1.67 \%\)
0.48\%

Source: Col. (2) from Table B-3; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) for age 22 to 60 A from col. (2) + Col. (5); Col. (7) for age 18 to 60 from Table B-1; 18B, 19B, 20B, and 21B from Table A-108; Col (8) \(=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\mathrm{Col}\). ( 8 ) \(\times 2 / 3\), Col. (9) for age 18 regression of data for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\); \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B trim Table A-108; Col, (12) for age 18 to 21, estimated by linear regression of data for age 22 to

Notes
Notes Linear regression estimate.
fral Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43.
ymat Graduates of the College of Science are estimated to complete their college education four years after high school
(Batal The auxiliary income (ID 240) is derived from the allowance system of employees in the public sector, Republic of Iraq. (B) Social institutional cost from Table A-108.
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to 21 ), differential earnings ( \(a=1\) ), differential earnings ( \(a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings \((a=1 / 2)\), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

TableC - 17
ocial Cost-Earning profiles and Social Internal Rate of return of College of Engineering Graduates (Relative to High schoo Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1*** & 2 & 3 & 4 & 5**** & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1205 & 1205 \({ }^{\text {\% }}\) & -1305 & 1305\% \\
\hline 18B & & & & & 0000 & 1002 & -1002 & -1002 & 1002 & -1002 & 1002 \\
\hline 19 & & & & & \(75^{\text {win }}\) & 1027 & -952 & -1185 & 1260* & -1296 & 1371* \\
\hline 19B & & & & & 0000 & 1002 & -1002 & -1002 & 1002 & -1002 & 1002 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1315 & 1315 \({ }^{\text {* }}\) & -1438 & \(1438{ }^{\text {1/4 }}\) \\
\hline 20B & & & & & 0000 & 1002 & -1002 & -1002 & 1002 & -1002 & 1002 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1370 & \(1370^{\text {N/ }}\) & -1505 & \(1505^{\text {\% }}\) \\
\hline 21B & & & & & 0000 & 1002 & -1002 & -1002 & 1002 & -1002 & 1002 \\
\hline 22 & 1301 & 738 & 563 & 563 & 1864 & 1102 & 762 & 508 & 1356 & 381 & 1483 \\
\hline 23 & 1425 & 738 & 687 & 687 & 2112 & 1110 & 1002 & 668 & 1444 & 501 & 1611 \\
\hline 24 & 1513 & 738 & 775 & 775 & 2288 & 1182 & 1106 & 737 & 1551 & 553 & 1735 \\
\hline 25 & 1497 & 738 & 759 & 759 & 2256 & 1223 & 1033 & 689 & 1567 & 517 & 1740 \\
\hline 26 & 1438 & 738 & 700 & 700 & 2138 & 1220 & 918 & 612 & 1526 & 459 & 1679 \\
\hline 27 & 1596 & 738 & 858 & 858 & 2454 & 1240 & 1214 & 809 & 1645 & 607 & 1847 \\
\hline 28 & 1575 & 738 & 837 & 837 & 2412 & 1255 & 1157 & 771 & 1641 & 579 & 1834 \\
\hline 29 & 1953 & 738 & 1215 & 1215 & 3168 & 1310 & 1858 & 1239 & 1929 & 929 & 2239 \\
\hline 30 & 1725 & 738 & 987 & 987 & 2712 & 1372 & 1340 & 893 & 1819 & 670 & 2042 \\
\hline 31 & 1836 & 738 & 1098 & 1098 & 2934 & 1382 & 1552 & 1035 & 1899 & 776 & 2158 \\
\hline 32 & 1792 & 738 & 1054 & 1054 & 2846 & 1405 & 1441 & 961 & 1885 & 721 & 2126 \\
\hline 33 & 2012 & 762 & 1250 & 1250 & 3262 & 1450 & 1812 & 1208 & 2054 & 906 & 2356 \\
\hline 34 & 2059 & 762 & 1297 & 1297 & 3356 & 1561 & 1795 & 1197 & 2159 & 898 & 2459 \\
\hline 35 & 2101 & 762 & 1339 & 1339 & 3440 & 1605 & 1835 & 1223 & 2217 & 918 & 2523 \\
\hline 36 & 2352 & 786 & 1566 & 1566 & 3918 & 1680 & 2238 & 1492 & 2426 & 1119 & 2799 \\
\hline 37 & 2104 & 762 & 1342 & 1342 & 3446 & 1717 & 1729 & 1153 & 2293 & 865 & 2582 \\
\hline 38 & 2408 & 834 & 1574 & 1574 & 3982 & 1724 & 2258 & 1505 & 2477 & 1129 & 2853 \\
\hline 39 & 2353 & 786 & 1567 & 1567 & 3920 & 1758 & 2162 & 1441 & 2479 & 1081 & 2839 \\
\hline 40 & 2216 & 786 & 1430 & 1430 & 3646 & 1794 & 1852 & 1235 & 2411 & 926 & 2720 \\
\hline 41 & 2366 & 786 & 1580 & 1580 & 3946 & 1825 & 2121 & 1414 & 2532 & 1061 & 2886 \\
\hline 42 & 2416 & 834 & 1582 & 1582 & 3998 & 1944 & 2054 & 1369 & 2629 & 1027 & 2971 \\
\hline 43 & 2599 & 834 & 1765 & 1765 & 4364 & 1868 & 2496 & 1664 & 2700 & 1248 & 3116 \\
\hline 44 & 2594 & 834 & 1760 & 1760 & 4354 & 1885 & 2469 & 1646 & 2708 & 1235 & 3120 \\
\hline 45 & 2364 & 786 & 1578 & 1578 & 3942 & 1899 & 2043 & 1362 & 2580 & 1022 & 2921 \\
\hline 46 & 2446 & 834 & 1612 & 1612 & 4058 & 1925 & 2133 & 1422 & 2636 & 1067 & 2992 \\
\hline 47 & 2601 & 834 & 1767 & 1767 & 4368 & 1905 & 2463 & 1642 & 2726 & 1232 & 3137 \\
\hline 48 & 2737) \({ }^{\text {\% }}\) & 834 & 1903 & 1903 & 4640 & 1880 & 2760 & 1840 & 2800 & 1380 & 3260 \\
\hline 49 & 2789): & 834 & 1955 & 1955 & 4744 & 1834 & 2910 & 1940 & 2804 & 1455 & 3289 \\
\hline 50 & 2842 \({ }^{\text {\% }}\) & 834 & 2008 & 2008 & 4849 & 1991 & 2858 & 1905 & 2944 & 1429 & 3420 \\
\hline 51 & 2894** & 834 & 2060 & 2060 & 4954 & 1989 & 2965 & 1977 & 2977 & 1483 & 3472 \\
\hline 52 & 2947** & 834 & 2113 & 2113 & 5059 & 1932 & 3127 & 2085 & 2974 & 1564 & 3496 \\
\hline 53 & 2999** & 834 & 2165 & 2165 & 5164 & 2051 & 3113 & 2075 & 3089 & 1557 & 3608 \\
\hline 54 & 3052** & 834 & 2218 & 2218 & 5269 & 2227 & 3042 & 2028 & 3241 & 1521 & 3748 \\
\hline 55 & 3104** & 834 & 2270 & 2270 & 5374 & 2020 & 3354 & 2236 & 3138 & 1677 & 3697 \\
\hline 56 & 3157* & 834 & 2323 & 2323 & 5479 & 2372 & 3107 & 2071 & 3408 & 1554 & 3926 \\
\hline 57 & 3209"; & 834 & 2375 & 2375 & 5584 & 2250 & 3334 & 2223 & 3361 & 1667 & 3917 \\
\hline 58 & 3262** & 834 & 2428 & 2428 & 5689 & 2286 & 3403 & 2269 & 3420 & 1702 & 3988 \\
\hline 59 & 3314** & 834 & 2480 & 2480 & 5794 & 2318 & 3476 & 2317 & 3477 & 1738 & 4056 \\
\hline 60 & 3367** & 834 & 2533 & 2533 & 5899 & 2351 & 3548 & 2365 & 3534 & 1774 & 4125 \\
\hline 60A & 1684 & & & & 1684 & 1176 & 508 & 339 & & 254 & \\
\hline
\end{tabular}

Social Internal Rates of Return
Source: Col. (2) from Table B-5; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constan allowance per year; Col. (6) for age 22 to 60A from col. (2) + Col. (5); Col. (7) for age 18 to 60 from Table B-1; 18B, 19B 20 B , and 21B from Table \(\mathrm{A}-108\); \(\mathrm{Col}(8)=\mathrm{Col} .(6)-\mathrm{Col}\). (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\mathrm{Col}\). (8) \(\times 2 / 3\), Col. (9) for age 18 \(021=\) Col. (6) - Col. (10); Col. (10), for age 22 to \(60=\) Col. (6)-Column (9); Col. 10, for age 18 to 21 , estimated by linea egression 0 \(60+\) Social Institutional Cost per graduate-year, Col (12) for age 22 to \(60=\mathrm{Col}\) (6) -Column (11).

Notes
W: Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43.
anm Graduates of the College of Engineering are estimated to complete their college education four years after high school graduation. Column (1) therefor is simply four years plus "number of years since college graduation

(B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award.
\(\#\) Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to 21), differential earnings \((a=1)\), differential earnings \((a=2 / 3)\), earnings foregone (acljusted for \(a=2 / 3)\), differential earning \((a=1 / 2)\), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C-18
Social Cost-Earning profiles and Social Internal Rate of return of College of Medicine Graduates (Relative to High school Graduates) in Iraq, under Various Assumption for the Alpha Coefficient 1986/87, (Iraqi Dinars)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1** & 2 & 3 & 4 & 5**** & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1022 & 1022 \({ }^{\text {\% }}\) & -1024 & 1024* \\
\hline 18B & & & & & 0000 & 1379 & -1379 & -1379 & 1379 & -1379 & 1379 \\
\hline 19 & & & & & 0000 & 1027 & -1027 & -1046 & 1046* & -1115 & 1115* \\
\hline 19B & & & & & 0000 & 1379 & -1379 & -1379 & 1379 & -1379 & 1379 \\
\hline 20 & & & & & 45 \% & 1045 & -1000 & -1096 & 1096\% & -1160 & 1205* \\
\hline 20B & & & & & 0000 & 1379 & -1379 & -1379 & 1379 & -1379 & 1379 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1234 & 1234** & -1296 & 1296* \\
\hline 21B & & & & & 0000 & 1379 & -1379 & -1379 & 1379 & -1379 & 1379 \\
\hline 22 & & & & & 0000 & 1102 & -1102 & -1305 & 1305* & -1386 & 1386* \\
\hline 22B & & & & & 0000 & 1379 & -1379 & -1379 & 1379 & -1379 & 1379 \\
\hline 23 & & & & & 0000 & 1110 & -1.110 & -1376 & \(1376{ }^{\text {+ }}\) & -1476 & \(1476{ }^{\text {th }}\) \\
\hline 23B & & & & & 0000 & 1379 & -1379 & -1379 & 1379 & -1379 & 1379 \\
\hline 24 & 1350 & 738 & 612 & 734 & 2084 & 1182 & 902 & 602 & 1483 & 451 & 1633 \\
\hline 25 & 1427 & 738 & 689 & 827 & 2254 & 1223 & 1031 & 687 & 1567 & 515 & 1738 \\
\hline 26 & 1481 & 738 & 743 & 892 & 2373 & 1220 & 1153 & 768 & 1604 & 576 & 1796 \\
\hline 27 & 1493 & 738 & 755 & 906 & 2399 & 1240 & 1159 & 773 & 1626 & 580 & 1820 \\
\hline 28 & 1564 & 738 & 826 & 991 & 2555 & 1255 & 1300 & 867 & 1688 & 650 & 1905 \\
\hline 29 & 1592 & 738 & 854 & 1025 & 2617 & 1310 & 1307 & 871 & 1746 & 653 & 1963 \\
\hline 30 & 1722 & 738 & 984 & 1181 & 2903 & 1372 & 1531 & 1021 & 1882 & 765 & 2137 \\
\hline 31 & 1776 & 738 & 1038 & 1246 & 3022 & 1382 & 1640 & 1093 & 1929 & 820 & 2202 \\
\hline 32 & 1804 & 738 & 1066 & 1279 & 3083 & 1405 & 1678 & 1119 & 1964 & 839 & 2244 \\
\hline 33 & 1911 & 738 & 1173 & 1408 & 3319 & 1450 & 1869 & 1246 & 2073 & 934 & 2384 \\
\hline 34 & 1871 & 738 & 1133 & 1360 & 3231 & 1561 & 1670 & 1113 & 2118 & 835 & 2396 \\
\hline 35 & 1936 & 738 & 1198 & 1438 & 3374 & 1605 & 1769 & 1179 & 2195 & 884 & 2489 \\
\hline 36 & 2054 & 732 & 1322 & 1586 & 3640 & 1680 & 1960 & 1307 & 2333 & 980 & 2660 \\
\hline 37 & 2047 & 726 & 1321 & 1585 & 3632 & 1717 & 1915 & 1277 & 2355 & 958 & 2675 \\
\hline 38 & 2254 & 786 & 1468 & 1762 & 4016 & 1724 & 2292 & 1528 & 2488 & 1146 & 2870 \\
\hline 39 & 2457 & 834 & 1623 & 1948 & 4405 & 1758 & 2647 & 1764 & 2640 & 1323 & 3081 \\
\hline 40 & 2403 & 786 & 1617 & 1940 & 4343 & 1794 & 2549 & 1700 & 2644 & 1275 & 3069 \\
\hline 41 & 2374 & 786 & 1588 & 1906 & 4280 & 1825 & 2455 & 1636 & 2643 & 1227 & 3052 \\
\hline 42 & 2360 & 786 & 1574 & 1889 & 4249 & 1944 & 2305 & 1537 & 2712 & 1152 & 3096 \\
\hline 43 & 2456 & 834 & 1622 & 1946 & 4402 & 1868 & 2534 & 1690 & 2713 & 1267 & 3135 \\
\hline 44 & 2712 & 834 & 1878 & 2254 & 4966 & 1885 & 3081 & 2054 & 2912 & 1540 & 3425 \\
\hline 45 & 2731 & 834 & 1897 & 2276 & 5007 & 1899 & 3108 & 2072 & 2935 & 1554 & 3453 \\
\hline 46 & 2920 & 834 & 2086 & 2503 & 5423 & 1925 & 3498 & 2332 & 3091 & 1749 & 3674 \\
\hline 47 & 3094 & 834 & 2260 & 2712 & 5806 & 1905 & 3901 & 2601 & 3205 & 1951 & 3856 \\
\hline 48 & 2683** & 834 & 1849 & 2219 & 4902 & 1880 & 3022 & 2015 & 2887 & 1511 & 3391 \\
\hline 49 & 3296** & 834 & 2462 & 2954 & 6250 & 1834 & 4416 & 2944 & 3306 & 2208 & 4042 \\
\hline 50 & 3092* & 834 & 2258 & 2710 & 5802 & 1991 & 3811 & 2540 & 3261 & 1905 & 3896 \\
\hline 51 & 3162* & 834 & 2328 & 2794 & 5956 & 1989 & 3967 & 2644 & 3311 & 1983 & 3972 \\
\hline 52 & 3232* & 834 & 2398 & 2878 & 6110 & 1932 & 4178 & 2785 & 3325 & 2089 & 4021 \\
\hline 53 & 3302* & 834 & 2468 & 2962 & 6264 & 2051 & 4213 & 2808 & 3455 & 2106 & 4157 \\
\hline 54 & 3372* & 834 & 2538 & 3046 & 6418 & 2227 & 4191 & 2794 & 3624 & 2095 & 4322 \\
\hline 55 & 3442 * & 834 & 2608 & 3130 & 6572 & 2020 & 4552 & 3034 & 3537 & 2276 & 4296 \\
\hline 56 & \(3512^{\text {\#1 }}\) & 834 & 2678 & 3214 & 6726 & 2372 & 4354 & 2902 & 3823 & 2177 & 4549 \\
\hline 57 & 3582** & 834 & 2748 & 3298 & 6880 & 2250 & 4630 & 3086 & 3793 & 2315 & 4565 \\
\hline 58
59 & 3652* \(3722^{\text {* }}\) & 8334 & 2818 & 3382
3466 & 7034 & 2286 & 4748 & 3165 & 3869 & 2374 & 4660 \\
\hline 59
60 & 3722 \({ }^{\text {3/ }}\) & 834
834 & 2888
2958 & 3466
3550 & 7188
7342 & 2318 & 4870
4991 & 3246
3327 & 3941 & 2435
2495 & 4753
4846 \\
\hline 60A & 1896 & & & & 1896 & 1176 & 720 & 480 & & 360 & \\
\hline
\end{tabular}

Social Internal Rates of Return
9.76\% \(7.04 \%\)
5.39\%

Source: Col. (2) from Table B-4; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) for age 24 to 60 A from col. (2) +Col . (5); Col. (7) for age 18 to 60 from Table B-1; 18B, 19B, 20B \(21 \mathrm{~B}, 22 \mathrm{~B}\), and 23 B from Table \(\mathrm{A}-108 ; \mathrm{Col}(8)=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 24 to \(60 \mathrm{~A}=\mathrm{Col}\). (8) \(\times 2 / 3\), Col. (9) for age 18 to \(23=\) Col. (6) - Col. (10); Col. ( 10 ), for age 24 to \(60=\mathrm{Col}\). (6) - Column ( 9 ); Col. 10 , for age 18 to 23 , estimated by linear
regression of dlata for age 24 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}, \mathrm{~B} 21, \mathrm{~B} 22\), and 23 B from Table \(\mathrm{A}-108\); Col. (11), for age 24 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\); Col. (11), for age 18 to \(23,=\mathrm{Col}\), ( 6 )- Col . (12); Col. (12) for age 18 to 23 , estimated by linear regression of data for age 24 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 24 to \(60=\mathrm{Col}\) (6) - Column (11).

Notes:
*Linear regression estimate.
:tw Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school gracluation. See Table B-43.
str: Graduates of the College of Medicine are estimated to complete their college education six years after high school graduation. Column (1) therefor is simply four years plus "number of years since college graduation".

(B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award.
\(\#\) Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to 23), differential earnings ( \(a=1\) ), differential earnings ( \(a=2 / 3\) ), earnings foregone (acljusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (acljusted for \(\mathrm{a}=1 / 2\) ) respectively.

Table C-19
Social Cost-Earning profiles and Social Internal Rate of return of College of Pharmacy Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1** & 2 & 3 & 4 & 5\% \(\%\) \% & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1033 & 1033* & -1046 & 1046* \\
\hline 18B & & & & & 0000 & 780 & -780 & -780 & 780 & -780 & 780 \\
\hline 19 & & & & & 0000 & 1027 & -1027 & -1087 & 1087* & -1110 & \(1110^{\text {¹ }}\) \\
\hline 19B & & & & & 0000 & 780 & -780 & -780 & 780 & - 780 & 780 \\
\hline 20 & & & & & \(51^{\text {k/ }}\) & 1045 & -994 & -1089 & 1140*: & -780
-1123 & 780 \\
\hline 20B & & & & & 0000 & 780 & -780 & -780 & 780 & -1123
-780 & \[
\begin{gathered}
1174 * \\
780
\end{gathered}
\] \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1194 & 1194* & -780 & \[
\begin{gathered}
780 \\
1238^{\prime \prime}
\end{gathered}
\] \\
\hline \({ }_{22}^{218}\) & & & & & 0000
0000 & 780
1102 & -780 & -780 & \[
780
\] & -1238
-780 & 12380
780 \\
\hline \({ }_{22 \mathrm{~B}}^{22}\) & & & & & 0000
0000 & 1102 & -1102
-780 & -1147
-780 & \[
1147^{\prime \prime}
\] & -780
-1303 & 1303* \\
\hline & & & & & & 780 & & & & -780 & 780 \\
\hline 23 & 1290 & 738 & 552 & 331 & 1621 & 1110 & 511 & 341 & 1280 & 256 & 1366 \\
\hline 24 & 1362 & 738 & 624 & 374 & 1736 & 1182 & 554 & 370 & 1367 & 277 & 1459 \\
\hline 25 & 1415 & 738 & 677 & 406 & 1821 & 1223 & 598 & 399 & 1422 & 299 & 1522 \\
\hline 26 & 1426 & 738 & 688 & 413 & 1839 & 1220 & 619 & 413 & 1426 & 309 & 1529 \\
\hline 27 & 1494 & 738 & 756 & 454 & 1948 & 1240 & 708 & 472 & 1476 & 354 & 1594 \\
\hline 28 & 1520 & 738 & 782 & 469 & 1989 & 1255 & 734 & 489 & 1500 & 367 & 1622 \\
\hline 29 & 1644 & 738 & 906 & 544 & 2188 & 1310 & 878 & 585 & 1603 & 439 & 1749 \\
\hline 30 & 1695 & 738 & 957 & 574 & 2269 & 1372 & 897 & 598 & 1671 & 449 & 1821 \\
\hline 31 & 1712 & 738 & 974 & 584 & 2296 & 1382 & 914 & 610 & 1687 & 457 & 1839 \\
\hline 32 & 1814 & 738 & 1076 & 646 & 2460 & 1405 & 1055 & 703 & 1757 & 527 & 1932 \\
\hline 33 & 1775 & 738 & 1037 & 622 & 2397 & 1450 & 947 & 631 & 1766 & 474 & 1924 \\
\hline 34 & 1837 & 738 & 1099 & 659 & 2496 & 1561 & 935 & 624 & 1873 & 468 & 2029 \\
\hline 35 & 1949 & 738 & 1211 & 727 & 2676 & 1605 & 1071 & 714 & 1962 & 535 & 2140 \\
\hline 36 & 1942 & 738 & 1204 & 722 & 2664 & 1680 & 984 & 656 & 2008 & 492 & 2172 \\
\hline 37 & 2137 & 762 & 1375 & 825 & 2962 & 1717 & 1245 & 830 & 2132 & 623 & 2340 \\
\hline 38 & 2329 & 786 & 1543 & 926 & 3255 & 1724 & 1531 & 1021 & 2234 & 765 & 2489 \\
\hline 39 & 2278 & 786 & 1492 & 895 & 3173 & 1758 & 1415 & 943 & 2230 & 708 & 2466 \\
\hline 40 & 2251 & 786 & 1465 & 879 & 3130 & 1794 & 1336 & 891 & 2239 & 668 & 2462 \\
\hline 41 & 2238 & 786 & 1452 & 871 & 3109 & 1825 & 1284 & 856 & 2253 & 642 & 2467 \\
\hline 42 & 2328 & 786 & 1542 & 925 & 3253 & 1944 & 1309 & 873 & 2380 & 655 & 2599 \\
\hline 43 & 2571 & 834 & 1737 & 1042 & 3613 & 1868 & 1745 & 1163 & 2450 & 873 & 2741 \\
\hline 44 & 2588 & 834 & 1754 & 1052 & 3640 & 1885 & 1755 & 1170 & 2470 & 878 & 2763 \\
\hline 45 & 2766 & 834 & 1932 & 1159 & 3925 & 1899 & 2026 & 1351 & 2574 & 1013 & 2912 \\
\hline 46 & 2931 & 834 & 2097 & 1258 & 4189 & 1925 & 2264 & 1509 & 2680 & 1132 & 3057 \\
\hline 47 & 2542 & 834 & 1708 & 1025 & 3567 & 1905 & 1662 & 1108 & 2459 & 831 & 2736 \\
\hline 48 & 2663** & 834 & 1829 & 1097 & 3760 & 1880 & 1880 & 1254 & 2507 & 940 & 2820 \\
\hline 49 & 2853** & 834 & 2019 & 1211 & 4064 & 1834 & 2230 & 1487 & 2577 & 1115 & 2949 \\
\hline 50 & 2915** & 834 & 2081 & 1248 & 4163 & 1991 & 2172 & 1448 & 2715 & 1086 & 3077 \\
\hline 51 & 2976** & 834 & 2142 & 1285 & 4262 & 1989 & 2273 & 1515 & 2747 & 1136 & 3125 \\
\hline 52 & 3038** & 834 & 2204 & 1322 & 4360 & 1932 & 2428 & 1619 & 2741 & 1214 & 3146 \\
\hline 53 & 3100 * & 834 & 2266 & 1359 & 4459 & 2051 & 2408 & 1605 & 2854 & 1204 & 3255 \\
\hline 54 & 3161** & 834 & 2327 & 1396 & 4558 & 2227 & 2331 & 1554 & 3004 & 1165 & 3392 \\
\hline 55 & 3223** & 834 & 2389 & 1433 & 4657 & 2020 & 2637 & 1758 & 2899 & 1318 & 3338 \\
\hline 56 & 3285* & 834 & 2451 & 1470 & 4755 & 2372 & 2383 & 1589 & 3166 & 1192 & 3564 \\
\hline 57
58 & 3347** & 834 & 2513 & 1508 & 4854 & 2250 & 2604 & 1736 & 3118 & 1302 & 3552 \\
\hline 58 & 3408** & 834 & 2574 & 1545 & 4953 & 2286 & 2667 & 1778 & 3175 & 1333 & 3619 \\
\hline 59
60 & 3470** & 834
834 & 2636
2698 & 1582 & 5051
5150 & 2318 & 2733
2799 & 1822 & 3229
3284 & 1367 & 3685 \\
\hline 60A & 1766 & & & 1619 & 1766 & 1176 & 2799
590 & 1896 & 3284 & \[
\begin{aligned}
& 1400 \\
& 295
\end{aligned}
\] & 3751 \\
\hline
\end{tabular}
\(\begin{array}{llll}\text { Social Internal Rates of Return } & 9.16 \% & 6.47 \% & 4.90 \%\end{array}\) Source: Col. (2) from Table B-7; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant
allowance per year; Col. (6) for age 23 to 60 A from col. (2) +Col ( 5 ); Col. (7) for age 18 to 60 from Table B-1; 18B, 19B, 20B, B 22 , and 22 B from Table A-108; \(\mathrm{Col}(8)=\mathrm{Col} .(6)-\mathrm{Col}\). (7); Col. (9), for age 23 to \(60 \mathrm{~A}=\mathrm{Col}\). (8) \(\times 2 / 3, \mathrm{Col}\). (9) for age 18 to \(22=\) Col. (6) - Col. (10); Col. (10), for age 23 to \(60=\) Col. ( 6 ) - Column ( 9 ); Col. 10 , for age 18 to 22 , estimated by linear
regression of data for age 23 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108 ;\) Col. ( 11 ), for age 23 to \(60 \mathrm{~A}=\mathrm{Column} 8 \times 1 / 2\); regression of data for age 23 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 23 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\),
Col. (11), for age 18 to \(22,=\mathrm{Col}\). (6) - Col. (12); Col. (12) for age 18 to 22 , estimated by linear regression of data for age 23 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 23 to \(60=\mathrm{Col}\) (6) - Column (11).
Notes:
Tinear regression estimate.
thla Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43
Nombraduates of the College of Pharmacy are estimated to complete their college education four years after high school graduation. Column (1) therefor is simply five years plus "number of years since college graduation"
Republic of Iraq
(B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award.
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to 22) difrerential earnings, disterential earnings \((a=2 / 3)\), earnings foregone (adjusted for \(a=2 / 3\) ), (lifferential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(\mathrm{a}=1 / 2\) ) respectively

Table C-20
Sacial Cost-Earning profiles and Social Internal Rate of return of College of Dentistry Graduates (Relative to High school
Graduates) in Iraq, under Various Assumption for the Alpha Coefficient Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (Iraqi Dinars)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 10\% & 2 & 3 & 4 & 5***** & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1049 & 1049** & -1069 & 1069* \\
\hline 18B & & & & & 0000 & 1350 & -1350 & -1350 & 1350 & -1350 & 1350 \\
\hline 19 & & & & & 0000 & 1027 & -1027 & -1106 & \(1106^{*}\) & -1139 & 1139** \\
\hline 198 & & & & & 0000 & 1350 & -1350 & -1350 & 1350 & -1350 & 1350 \\
\hline \(\stackrel{20}{208}\) & & & & & 193** & 1045 & -852 & -971 & 1164** & -1016 & 1209 \\
\hline 21 & & & & & 0000 & 1350 & -1350 & -1350 & 1321** & -1350 & \({ }_{1279 \%}\) \\
\hline 21B & & & & & 0000 & 1350 & -1350 & -1350 & 1350 & -1350 & 1350 \\
\hline 22 & & & & & 0000 & 1102 & -1102 & -1278 & \(1278{ }^{\text {\% }}\) & -1349 & 1349\% \\
\hline 22B & & & & & 0000 & 1350 & -1350 & -1350 & 1350 & -1350 & 1350 \\
\hline 23 & 1290 & 738 & 552 & 442 & 1732 & 1110 & 622 & 414 & 1317 & 311 & 1421 \\
\hline 24 & 1362 & 738 & 624 & 499 & 1861 & 1182 & 679 & 453 & 1408 & 340 & 1522 \\
\hline 25 & 1415 & 738 & 677 & 542 & 1957 & 1223 & 734 & 489 & 1468 & 367 & 1590 \\
\hline 26 & 1426 & 738 & 688 & 550 & 1976 & 1220 & 756 & 504 & 1472 & 378 & 1598 \\
\hline 27 & 1494 & 738 & 756 & 605 & 2099 & 1240 & 859 & 573 & 1526 & 429 & 1669 \\
\hline 28 & 1520 & 738 & 782 & 626 & 2146 & 1255 & 891 & 594 & 1552 & 445 & 1700 \\
\hline 29 & 1644 & 738 & 906 & 725 & 2369 & 1310 & 1059 & 706 & 1663 & 529 & 1839 \\
\hline 30 & 1695 & 738 & 957 & 766 & 2461 & 1372 & 1089 & 726 & 1735 & 544 & 1916 \\
\hline 31 & 1712 & 738 & 974 & 779 & 2491 & 1382 & 1109 & 739 & 1752 & 555 & 1937 \\
\hline 32 & 1814 & 738 & 1076 & 861 & 2675 & 1405 & 1270 & 847 & 1828 & 635 & 2040 \\
\hline 33 & 1775 & 738 & 1037 & 830 & 2605 & 1450 & 1155 & 770 & 1835 & 577 & 2027 \\
\hline 34 & 1837 & 738 & 1099 & 879 & 2716 & 1561 & 1155 & 770 & 1946 & 578 & 2139 \\
\hline 35
36 & 1949 & 738
738 & 1211 & 969
963 & 2918 & 1605 & 1313 & 875 & 2043 & 656 & 2261 \\
\hline 36
37 & 1942 & 738 & 1204 & 963 & 2905 & 1680 & 1225 & 817 & 2088 & 613 & 2293 \\
\hline 37
38 & 2137 & 762 & 1375 & 1100 & 3237 & 1717 & 1520 & 1013 & 2224 & 760 & 2477 \\
\hline 38 & & 786 & 1543 & 1234 & 3563 & 1724 & 1839 & 1226 & 2337 & 920 & 2644 \\
\hline 39 & 2278 & 786 & 1492 & 1194 & 3472 & 1758 & 1714 & 1142 & 2329 & 857 & 2615 \\
\hline 40 & 2251 & 786 & 1465 & 1172 & 3423 & 1794 & 1629 & 1086 & 2337 & 815 & 2609 \\
\hline 41 & 2238 & 786 & 1452 & 1162 & 3400 & 1825 & 1575 & 1050 & 2350 & 787 & 2612 \\
\hline 42 & 2328 & 786
834 & 1542 & 1234 & 3562 & 1944 & 1618 & 1078 & 2483 & 809 & 2753 \\
\hline 43 & 2571 & 834 & 1737 & 1390 & 3961 & 1868 & 2093 & 1395 & 2566 & 1046 & 2914 \\
\hline 44 & 2588 & & 1754 & 1403 & 3991 & 1885 & 2106 & 1404 & 2587 & 1053 & 2938 \\
\hline 45 & 2766 & 834
834 & & 1546 & 4312 & 1899 & 2413 & 1608 & 2703 & 1206 & 3105 \\
\hline 46
47 & 2931 & 834
834 & 2097 & 1678
1366 & 4609
3908 & 1925 & 2684 & 1789 & 2820 & 1342 & 3267 \\
\hline 47 & \({ }_{26643^{* *}}\) & 8334 & 1708
1829 & 1366 & 3908
4126 & 1905 & 2003 & 1336 & 2573
2629 & 1002
1123 & 2907
3003 \\
\hline 49 & 2853* & 834 & 2019 & 1615 & 4468 & 1834 & 2634 & 1756 & 2712 & 1317 & 3151 \\
\hline 50 & 2915* & 834 & 2081 & 1665 & 4580 & 1991 & 2589 & 1726 & 2854 & 1294 & 3285 \\
\hline 51 & 2976** & 834 & 2142 & 1714 & 4690 & 1989 & 2701 & 1800 & 2889 & 1350 & 3339 \\
\hline 52 & \(3038{ }^{*}\) & 834 & 2204 & 1763 & 4801 & 1932 & 2869 & 1913 & 2888 & 1435 & 3367 \\
\hline 53 & 3100** & 834 & 2266 & 1813 & 4913 & 2051 & 2862 & 1908 & 3005 & 1431 & 3482 \\
\hline 54 & & 834 & 2327 & 1862 & 5023 & 2227 & 2796 & 1864 & 3159 & 1398 & 3625 \\
\hline 55 & 3223:* & 834
834 & 2389 & 1911 & 5134 & 2020 & 3114 & 2076 & 3058 & 1557 & 3577 \\
\hline 56
57 & 3285** & 834
834 & 2451 & 1961 & 5246 & 2372 & 2874 & 1916 & 3330 & 1437 & 3809 \\
\hline 57
58 & 3347** & 834
834 & 2513 & 2010 & 5357
5467 & 2250 & 3107 & 2072 & 3286 & 1554 & 3804 \\
\hline 59 & 3470 * & 834 & 2636 & 2109 & 5579 & 2318 & 3261 & 2174 & 3405 & 1630 & 3948 \\
\hline 60 & 3532** & 834 & 2698 & 2158 & 5690 & 2351 & 3339 & 2226 & 3464 & 1670 & 4021 \\
\hline 60A & 1766 & & & & 1766 & 1176 & 590 & 393 & & 295 & \\
\hline
\end{tabular}

Social Internal Rates of Return
\(8.69 \% \quad 6.09 \%\)
\(4.54 \%\)
Source: Col. (2) from Table B-7; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constan allowance per year; Col. (6) for' age 23 to 60 A from col. (2) + Col. ( 5 ); Col. (7) for age 18 to 60 from Table B-1; 18B, 19 B , \(20 \mathrm{~B}, \mathrm{~B} 21\), and 22 B from Table \(\mathrm{A}-108\); Col ( 8 ) \(=\mathrm{Col}\). ( 6 ) - Col. ( 7 ); Col. ( 9 ), for age 23 to \(60 \mathrm{~A}=\mathrm{Col}\). (8) \(\mathrm{x} 2 / 3\), Col. ( 9 ) for
 (12); Col. (12) for age 18 to 22, estimated by linear regression of data for age 23 to \(60+\) Social Institutional Cost per graduate-year, Col . (12) for age 23 to \(60=\mathrm{Col}\) (6) - Column (11).

Notes:
FLinear regression estimate.
Wa: Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43.
wror The auxiliary income \(80 \%\) of nominal salary is clerived from the allowance system of employees in the public sector, Republic of Iraq.
Graduates of the College of Dentistry are estimated to complete their college education four years after high school graduation. Column (1) therefor is simply five years plus "number of years since college graduation"
(B) Social institutional cost from Table A-108.
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from of 18 to 22 ), differential earnings, differential earnings \((a=2 / 3)\), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings \((a=1 / 2)\), and earnings foregone (adjusted for \(\mathrm{a}=1 / 2\) ) respectively.

Table C-21 Graduates) in Iraq, under Various Assumption for the Alpha Coefficient, 1986/87, (Iraqi Dinars).
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1*** & 2 & 3 & 4 &  & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -968 & 968* & -949 & 949*: \\
\hline 18B & & & & & 0000 & 1661 & -1661 & -1661 & 1661 & -1661 & 1661 \\
\hline 19 & & & & & \(63^{\text {mpre }}\) & 1027 & -964 & -950 & 1013** & -938 & 1001* \\
\hline 19B & & & & & 0000 & 1661 & -1661 & -1661 & 1661 & -1661 & 1661 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1059 & 1059* & -1054 & 1054* \\
\hline 20B & & & & & 0000 & 1661 & -1661 & -1661 & 1661 & -1661 & 1661 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1104 & 1104** & -1106 & 1106* \\
\hline 21B & & & & & 0000 & 1661 & -1661 & -1661 & 1661 & -1661 & 1661 \\
\hline 22 & 1113 & 726 & 387 & 194 & 1307 & 1102 & 205 & 136 & 1170 & 102 & 1204 \\
\hline 23 & 1128 & 726 & 402 & 201 & 1329 & 1110 & 219 & 146 & 1183 & 110 & 1220 \\
\hline 24 & 1219 & 732 & 487 & 244 & 1463 & 1182 & 281 & 187 & 1276 & 140 & 1322 \\
\hline 25 & 1279 & 738 & 541 & 271 & 1550 & 1223 & 327 & 218 & 1332 & 163 & 1386 \\
\hline 26 & 1257 & 738 & 519 & 260 & 1517 & 1220 & 297 & 198 & 1319 & 148 & 1368 \\
\hline 27 & 1221 & 732 & 489 & 245 & 1466 & 1240 & 226 & 150 & 1315 & 113 & 1353 \\
\hline 28 & 1255 & 732 & 523 & 262 & 1517 & 1255 & 262 & 174 & 1342 & 131 & 1386 \\
\hline 29 & 1348 & 738 & 610 & 305 & 1653 & 1310 & 343 & 229 & 1424 & 172 & 1482 \\
\hline 30 & 1330 & 738 & 592 & 296 & 1626 & 1372 & 254 & 169 & 1457 & 127 & 1499 \\
\hline 31 & 1410 & 738 & 672 & 336 & 1746 & 1382 & 364 & 243 & 1503 & 182 & 1564 \\
\hline 32 & 1422 & 738 & 684 & 342 & 1764 & 1405 & 359 & 239 & 1525 & 180 & 1585 \\
\hline 33 & 1430 & 738 & 692 & 346 & 1776 & 1450 & 326 & 217 & 1559 & 163 & 1613 \\
\hline 34 & 1557 & 738 & 819 & 410 & 1967 & 1561 & 406 & 270 & 1696 & 203 & 1764 \\
\hline 35 & 1605 & 738 & 867 & 434 & 2039 & 1605 & 434 & 289 & 1750 & 217 & 1822 \\
\hline 36 & 1720 & 738 & 982 & 491 & 2211 & 1680 & 531 & 354 & 1857 & 266 & 1946 \\
\hline 37 & 1743 & 738 & 1005 & 503 & 2246 & 1717 & 529 & 352 & 1893 & 264 & 1981 \\
\hline 38 & 1775 & 738 & 1037 & 519 & 2294 & 1724 & 570 & 380 & 1914 & 285 & 2009 \\
\hline 39 & 1958 & 738 & 1220 & 610 & 2568 & 1758 & 810 & 540 & 2028 & 405 & 2163 \\
\hline 40 & 2050 & 762 & 1288 & 644 & 2694 & 1794 & 900 & 600 & 2094 & 450 & 2244 \\
\hline 41 & 1993 & 762 & 1231 & 616 & 2609 & 1825 & 784 & 522 & 2086 & 392 & 2217 \\
\hline 42 & 2066 & 762 & 1304 & 652 & 2718 & 1944 & 774 & 516 & 2202 & 387 & 2331 \\
\hline 43 & 2037 & 762 & 1275 & 638 & 2675 & 1868 & 807 & 538 & 2137 & 403 & 2271 \\
\hline 44 & 2123 & 762 & 1361 & 681 & 2804 & 1885 & 919 & 612 & 2191 & 459 & 2344 \\
\hline 45 & 2149 & 762 & 1387 & 694 & 2843 & 1899 & 944 & 629 & 2214 & 472 & 2371 \\
\hline 46 & 2261 & 786 & 1475 & 738 & 2999 & 1925 & 1074 & 716 & 2283 & 537 & 2462 \\
\hline 47 & 2269 & 786 & 1483 & 742 & 3011 & 1905 & 1106 & 737 & 2274 & 553 & 2458 \\
\hline 48 & 2312* & 786 & 1526 & 763 & 3075 & 1880 & 1195 & 797 & 2278 & 598 & 2478 \\
\hline 49 & \(2361{ }^{1 / 1}\) & 786 & 1575 & 788 & 3149 & 1834 & 1315 & 876 & 2272 & 657 & 2491 \\
\hline 50 & 2411* & 834 & 1577 & 789 & 3200 & 1991 & 1209 & 806 & 2394 & 604 & 2595 \\
\hline 51 & 2460 1/ & 834 & 1626 & 813 & 3273 & 1989 & 1284 & 856 & 2417 & 642 & 2631 \\
\hline 52 & \(2510^{\prime \prime}\) & 834 & 1676 & 838 & 3348 & 1932 & 1416 & 944 & 2404 & 708 & 2640 \\
\hline 53 & 2559* & 834 & 1725 & 863 & 3422 & 2051 & 1371 & 914 & 2508 & 685 & 2736 \\
\hline 54 & 2609\% & 834 & 1775 & 888 & 3497 & 2227 & 1270 & 846 & 2650 & 635 & 2862 \\
\hline 55 & 2658* & 834 & 1824 & 912 & 3570 & 2020 & 1550 & 1033 & 2537 & 775 & 2795 \\
\hline 56 & 2708* & 834 & 1874 & 937 & 3645 & 2372 & 1273 & 849 & 2796 & 637 & 3009 \\
\hline 57 & 2757 \({ }^{\text {\% }}\) & 834 & 1923 & 962 & 3719 & 2250 & 1469 & 979 & 2740 & 734 & 2984 \\
\hline 58 & 2807 \({ }^{\text {² }}\) & 834 & 1973 & 987 & 3794 & 2286 & 1508 & 1005 & 2789 & 754 & 3040 \\
\hline 59
60 &  & 834
834 & 2022 & 1011
1036 & 3867
3942 & 2318
2351 & 1549
1591 & 1033
1061 & 2834 & 775 & 3093 \\
\hline 60A & 1453 & 834 & 2072 & & 1453 & 1176 & \(\stackrel{1}{277}\) & 185 & 2881 & 796
139 & 3147 \\
\hline
\end{tabular}

Social Internal Rates of Return
4.39\% 2.66\%
\(1.54 \%\)
Source: Col. (2) from Table B-3; Col. (3) derived from Table B-1; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) for age 22 to 60A from col. (2) + Col. (5); Col. (7) for age 18 to 60 from Table B-1; 18B, 19B,
 regression of data for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\); Col. (11), for age 18 to \(21,=\mathrm{Col}\). (6) -Col . (12); Col. (12) for age 18 to 21 , estimated by linear regression of clata for age 22 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 22 to \(60=\mathrm{Col}\) (6) - Column (11).

Note
TLinear regression estimate.
HPR Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43.
HyGGraduates of the College of Nursing are estimated to complete their college education four years after high school graduation. Column (1) therefor is simply four years plus "number of years since college graduation"
科橭 The auxiliary income (50\%) is derived from the allowance system of employees in the public sector, Republic of Iraq.
(B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award.
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living
Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to 21 ), differential earnings \((a=1)\), differential earnings \((a=2 / 3)\), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C-22
school Graduates) in Iraq proter and Social Internal Rate of return of College of Veterinary Medicine Graduates (Relative to High
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 10\% & 2 & 3 & 4 & 5**** & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & - 972 & -1045 & 1045 \({ }^{\text {k }}\) & -1064 & 1064* \\
\hline 18B & & & & & 0000 & 1564 & -1564 & -1564 & 1564 & -1564 & 1564 \\
\hline 19 & & & & & 0000 & 1027 & -1026 & -1102 & 1102 \({ }^{\text {/ }}\) & -1132 & 1132* \\
\hline 198 & & & & & 0000 & 1564 & -1564 & -1564 & 1564 & -1564 & 1564 \\
\hline 20 & & & & & 226** & 1045 & -819 & -932 & \(1158{ }^{1 / 1}\) & -1201 & \(1201{ }^{\text {\% }}\) \\
\hline 20 B & & & & & 0000
0000 & 1564 & -1564 & -1564 & 1564
\(1214{ }^{\prime \prime}\) & -1564 & 1564 \\
\hline 21B & & & & & 0000 & 1564 & -1564 & -1564 & 1564 & -1564 & 1564 \\
\hline 22 & & & & & 0000 & 1102 & -1102 & -1271 & 1271* & -1338 & 1338* \\
\hline 22A & & & & & 0000 & 1564 & -1564 & -1564 & 1564 & -1564 & 1564 \\
\hline 23 & 1290 & 738 & 552 & 414 & 1704 & 1110 & 594 & 396 & 1308 & 297 & 1407 \\
\hline 24 & 1362 & 738 & 624 & 468 & 1830 & 1182 & 648 & 432 & 1398 & 324 & 1506 \\
\hline 25 & 1415 & 738 & 677 & 508 & 1923 & 1223 & 700 & 467 & 1456 & 350 & 1573 \\
\hline 26 & 1426 & 738 & 688 & 516 & 1942 & 1220 & 722 & 481 & 1461 & 361 & 1581 \\
\hline 27 & 1494 & 738 & 756 & 567 & 2061 & 1240 & 821 & 547 & 1514 & 411 & 1651 \\
\hline 28 & 1520 & 738 & 782 & 587 & 2107 & 1255 & 852 & 568 & 1539 & 426 & 1681 \\
\hline 29 & 1644 & 738 & 906 & 680 & 2324 & 1310 & 1014 & 676 & 1648 & 507 & 1817 \\
\hline 30 & 1695 & 738 & 957 & 718 & 2413 & 1372 & 1041 & 694 & 1719 & 520 & 1892 \\
\hline 31 & 1712 & 738 & 974 & 731 & 2443 & 1382 & 1061 & 707 & 1736 & 530 & 1912 \\
\hline 32 & 1814 & 738 & 1076 & 807 & 2621 & 1405 & 1216 & 811 & 1810 & 608 & 2013 \\
\hline 33 & 1775 & 738 & 1037 & 778 & 2553 & 1450 & 1103 & 735 & 1818 & 551 & 2001 \\
\hline 34 & 1837 & 738 & 1099 & 824 & 2661 & 1561 & 1100 & 734 & 1928 & 550 & 2111 \\
\hline 35 & 1949 & 738 & 1211 & 908 & 2857 & 1605 & 1252 & 835 & 2022 & 626 & 2231 \\
\hline 36 & 1942 & 738 & 1204 & 903 & 2845 & 1680 & 1165 & 777 & 2068 & 583 & 2263 \\
\hline 37 & 2137 & 762 & 1375 & 1031 & 3168 & 1717 & 1451 & 968 & 2201 & 726 & 2443 \\
\hline 38 & 2329 & 786 & 1543 & 1157 & 3486 & 1724 & 1762 & 1175 & 2311 & 881 & 2605 \\
\hline 39 & 2278 & 786 & 1492 & 1119 & 3397 & 1758 & 1639 & 1093 & 2304 & 820 & 2578 \\
\hline 40 & 2251 & 786 & 1465 & 1099 & 3350 & 1794 & 1556 & 1037 & 2313 & 778 & 2572 \\
\hline 41 & 2238 & 786 & 1452 & 1089 & 3327 & 1825 & 1502 & 1001 & 2326 & 751 & 2576 \\
\hline 42 & 2328 & 786 & 1542 & 1157 & 3485 & 1944 & 1541 & 1027 & 2458 & 770 & 2714 \\
\hline 43 & 2571 & 834 & 1737 & 1303 & 3874 & 1868 & 2006 & 1337 & 2537 & 1003 & 2871 \\
\hline 44 & 2588 & 834 & 1754 & 1316 & 3904 & 1885 & 2019 & 1346 & 2558 & 1009 & 2894 \\
\hline 45 & 2766 & 834 & 1932 & 1449 & 4215 & 1899 & 2316 & 1544 & 2671 & 1158 & 3057 \\
\hline 46 & 2931 & 834 & 2097 & 1573 & 4504 & 1925 & 2579 & 1719 & 2785 & 1289 & 3214 \\
\hline 47 & 2542 & 834 & 1708 & 1281 & 3823 & 1905 & 1918 & 1279 & 2544 & 959 & 2864 \\
\hline 48 & 2663* & 834 & 1829 & 1372 & 4035 & 1880 & 2155 & 1437 & 2598 & 1077 & 2957 \\
\hline 49 & 2853** & 834 & 2019 & 1514 & 4367 & 1834 & 2533 & 1689 & 2678 & 1267 & 3101 \\
\hline 50 & 2915** & 834 & 2081 & 1561 & 4476 & 1991 & 2485 & 1657 & 2819 & 1242 & 3233 \\
\hline 51 & 2976* & 834 & 2142 & 1607 & 4583 & 1989 & 2594 & 1729 & 2854 & 1297 & 3286 \\
\hline 52 & 3038* & 834 & 2204 & 1653 & 4691 & 1932 & 2759 & 1839 & 2852 & 1380 & 3312 \\
\hline 53 & 3100** & 834 & 2266 & 1700 & 4800 & 2051 & 2749 & 1832 & 2967 & 1374 & 3425 \\
\hline 54 & \(3161^{\text {\# }}\) & 834 & 2327 & 1745 & 4906 & 2227 & 2679 & 1786 & 3120 & 1340 & 3567 \\
\hline 55 & 3223** & 834 & 2389 & 1792 & 5015 & 2020 & 2995 & 1997 & 3018 & 1497 & 3517 \\
\hline 56 & 3285* & 834 & 2451 & 1838 & 5123 & 2372 & 2751 & 1834 & 3289 & 1376 & 3748 \\
\hline 57 & 3347\% & 834 & 2513 & 1885 & 5232 & 2250 & 2982 & 1988 & 3244 & 1491 & 3741 \\
\hline 58 & 3408* & 834 & 2574 & 1931 & 5339 & 2286 & 3053 & 2035 & 3304 & 1526 & 3812 \\
\hline 59 & 3470** & 834 & 2636 & 1977 & 5447 & 2318 & 3129 & 2086 & 3361 & 1565 & 3883 \\
\hline 60
\(60 A\) & 3532* \({ }^{\text {/ }}\) & 834 & 2698 & 2024 & 5556
1766 & 2351 & 3205
590 & 2136
393 & 3419 & 1602 & 3953 \\
\hline
\end{tabular}
\begin{tabular}{|llll}
\hline Social Internal Rates of Return & \(7.90 \%\) & \(5.45 \%\) & \(3.97 \%\) \\
\hline
\end{tabular}
Source: Col. (2) from Table B-7; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) for age 23 to 60A from col. (2) + Col. ( 5 ); Col. (7) for age 18 to 60 from Table \(\mathrm{B}-1 ; 18 \mathrm{~B}, 19 \mathrm{~B}\),
\(20 \mathrm{~B}, \mathrm{~B} 22\), and 22 B from Table \(\mathrm{A}-108 ; \mathrm{Col}(8)=\mathrm{Col} .(6)-\mathrm{Col}\). (7); Col. (9), for age 23 to \(60 \mathrm{~A}=\mathrm{Col}\). (8) \(\times 2 / 3\), Col. (9) for age 18 to \(22=\mathrm{Col}\). (6) - Col. (10); Col. (10), for age 23 to \(60=\mathrm{Col}\). (6) - Column ( 9 ); Col. 10 , for age 18 to 22, estimated by mear regression of clata for age 23 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 23 to \(60 \mathrm{~A}=\) Column
\(\times 1 / 2\); \(\mathrm{Col} .(11)\), for age 18 to \(22,=\mathrm{Col}\). (6) - Col. (12); Col. (12) for age 18 to 22 , estimated by linear regression of lata for age 23 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 23 to \(60=\mathrm{Col}\) (6) - Column (11).

Wwale Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43
hita The auxiliary income \(75 \%\) of nominal salary is derived from the allowance system of employees in the public sector, Republic of Iraq.
解新Graduates of the College of Veterinary Medicine are estimated to complete their college education four years after high school graduation. Column (1) therefor is simply five years plus "number of years since college graduation". (B) Social institutional cost from Table A-108. (A) is a retivent bonus/end of service oward.

A Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to 22), differential earnings, differential earnings \((a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(\mathrm{a}=1 / 2\) ) respectively.

Table C-23
Social Cost-Earning profiles and Social Internal Rate of return of College of Agriculture Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1 & 2 & 3 & 4 & 5\% & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -990 & 990** & -984 & 984* \\
\hline 19B & & & & & 0000 & 1411 & -1411 & -1411 & 1411 & -1411 & 1411 \\
\hline 19 & & & & & 1420\% & 1027 & -885 & -892 & 1034* & -891 & 1033= \\
\hline 19B & & & & & 0000 & 1411 & -1411 & -1411 & 1411 & -1411 & 1411 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1077 & 1077** & -1082 & 1082* \\
\hline 20B & & & & & 0000 & 1411 & -1411 & -1411 & 1411 & -1411 & 1411 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1120 & 1120 \({ }^{\text {a }}\) & -1131 & 1131** \\
\hline 21B & & & & & 0000 & 1411 & -1411 & -1411 & 1411 & -1411 & 1411 \\
\hline 22 & 1086 & 726 & 360 & 180 & 1266 & 1102 & 164 & 109 & 1157 & 82 & 1184 \\
\hline 23 & 1099 & 726 & 373 & 187 & 1286 & 1110 & 176 & 117 & 1169 & 88 & 1198 \\
\hline 24 & 1165 & 732 & 433 & 217 & 1382 & 1182 & 200 & 133 & 1249 & 100 & 1282 \\
\hline 25 & 1218 & 732 & 486 & 243 & 1461 & 1223 & 238 & 159 & 1302 & 119 & 1342 \\
\hline 26 & 1229 & 732 & 497 & 249 & 1478 & 1220 & 258 & 172 & 1306 & 129 & 1349 \\
\hline 27 & 1294 & 738 & 556 & 278 & 1572 & 1240 & 332 & 221 & 1351 & 166 & 1406 \\
\hline 28 & 1298 & 738 & 560 & 280 & 1578 & 1255 & 323 & 215 & 1363 & 162 & 1417 \\
\hline 29 & 1344 & 738 & 606 & 303 & 1647 & 1310 & 337 & 225 & 1422 & 169 & 1479 \\
\hline 30 & 1415 & 738 & 677 & 339 & 1754 & 1372 & 382 & 254 & 1499 & 191 & 1563 \\
\hline 31 & 1392 & 738 & 654 & 327 & 1719 & 1382 & 337 & 225 & 1494 & 169 & 1551 \\
\hline 32 & 1511 & 738 & 773 & 387 & 1898 & 1405 & 493 & 328 & 1569 & 246 & 1651 \\
\hline 33 & 1506 & 738 & 768 & 384 & 1890 & 1450 & 440 & 293 & 1597 & 220 & 1670 \\
\hline 34 & 1605 & 738 & 867 & 434 & 2039 & 1561 & 478 & 318 & 1720 & 239 & 1800 \\
\hline 35 & 1789 & 738 & 1051 & 526 & 2315 & 1605 & 710 & 473 & 1842 & 355 & 1960 \\
\hline 36 & 1659 & 738 & 921 & 461 & 2120 & 1680 & 440 & 293 & 1827 & 220 & 1900 \\
\hline 37 & 1758 & 738 & 1020 & 510 & 2268 & 1717 & 551 & 367 & 1901 & 276 & 1993 \\
\hline 38 & 1732 & 738 & 994 & 497 & 2229 & 1724 & 505 & 337 & 1892 & 253 & 1977 \\
\hline 39 & 1775 & 738 & 1037 & 519 & 2294 & 1758 & 536 & 357 & 1937 & 268 & 2026 \\
\hline 40 & 1811 & 738 & 1073 & 537 & 2348 & 1794 & 554 & 369 & 1979 & 277 & 2071 \\
\hline 41 & 1958 & 738 & 1220 & 610 & 2568 & 1825 & 743 & 495 & 2073 & 372 & 2197 \\
\hline 42 & 1695 & 738 & 957 & 479 & 2174 & 1944 & 230 & 153 & 2021 & 115 & 2059 \\
\hline 43 & 2034 & 762 & 1272 & 636 & 2670 & 1868 & 802 & 535 & 2135 & 401 & 2269 \\
\hline 44 & 1892 & 738 & 1154 & 577 & 2469 & 1885 & 584 & 389 & 2080 & 292 & 2177 \\
\hline 45 & 2260 & 786 & 1474 & 737 & 2997 & 1899 & 1098 & 732 & 2265 & 549 & 2448 \\
\hline 46 & 2420 & 834 & 1586 & 793 & 3213 & 1925 & 1288 & 859 & 2354 & 644 & 2569 \\
\hline 47 & 2022 & 762 & 1260 & 630 & 2652 & 1905 & 747 & 498 & 2154 & 374 & 2279 \\
\hline 48 & 2226 \({ }^{\text {* }}\) & 786 & 1440 & 720 & 2946 & 1880 & 1066 & 711 & 2235 & 533 & 2413 \\
\hline 49 & 2271* & 786 & 1485 & 742 & 3013 & 1834 & 1179 & 786 & 2227 & 590 & 2424 \\
\hline 50 & \(2316{ }^{*}\) & 786 & 1530 & 765 & 3081 & 1991 & 1090 & 727 & 2354 & 545 & 2536 \\
\hline 51 & \(2361{ }^{\text {¹ }}\) & 834 & 1527 & 764 & 3125 & 1989 & 1136 & 757 & 2368 & 568 & 2557 \\
\hline 52 & 2406* & 834 & 1572 & 786 & 3192 & 1932 & 1260 & 840 & 2352 & 630 & 2562 \\
\hline 53 & 2451* & 834 & 1617 & 809 & 3260 & 2051 & 1209 & 806 & 2454 & 604 & 2655 \\
\hline 54 & 2496** & 834 & 1662 & 831 & 3327 & 2227 & 1100 & 734 & 2594 & 550 & 2777 \\
\hline 55 & 2541*: & 834 & 1707 & 854 & 3395 & 2020 & 1375 & 917 & 2478 & 688 & 2708 \\
\hline 56 & 2587* & 834 & 1753 & 876 & 3463 & 2372 & 1091 & 727 & 2736 & 545 & 2917 \\
\hline 57 & 2632* & 834 & 1798 & 899 & 3530 & 2250 & 1280 & 854 & 2677 & 640 & 2890 \\
\hline 58 & 2677* & 834 & 1843 & 921 & 3598 & 2286 & 1312 & 875 & 2723 & 656 & 2942 \\
\hline 59 & 2722** & 834 & 1888 & 944 & & 2318 & 1348 & 898 & 2767 & 674 & 2992 \\
\hline 60
60 A & 27674* & 834 & 1933 & 966 & \[
\begin{aligned}
& 3733 \\
& 1384
\end{aligned}
\] & 2351
1176 & 1382
208 & 922
139 & 2812 & 691
104 & 3042 \\
\hline
\end{tabular}
\[
\begin{array}{llll}
\text { Social Internal Rates of Return } & 4.48 \% & 2.67 \% & 1.50 \%
\end{array}
\]

Source: Col. (2) from Table B-6; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) for age 22 to 60 A from col. (2) + Col. (5); Col. (7) for age 18 to 60 from Table B-1; 18B, 19B 20B, and 21B from Table A-108; \(\mathrm{Col}(8)=\mathrm{Col} .(6)-\mathrm{Col}\). (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\mathrm{Col}\). (8) \(\times 2 / 3, \mathrm{Col}\). (9) for age 18 regression of data for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\) Col. (11), for age 18 to \(21,=\) Col. (6) - Col. (12); Col. (12) for age 18 to 22 , estimated by linear regression of data for age 22 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 22 to \(60=\mathrm{Col}\) ( 6 ) - Column (11).

Notes:
Linear regression estimate.
Refor to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43. graduation. Column (1) therefor is simply four years plus "number of years since college graduation".

REPUBLIC OF IRAQ.
(B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award.
\# Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxinary Income, Total Gross Eaming, earnings forgone and institutional cost (from age 18 to and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C－24
朝 to High school Graduates）in Iraq，under Various Assumption for the Alpha Coefficient，1986／87，（Iraqi Dinars）．
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1{ }^{\text {盛圽 }}\) & 2 & 3 & 4 & \(5{ }^{\text {ataman}}\) & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & －972 & －945 & 945＊ & －915 & 915＊ \\
\hline 18B & & & & & 0000 & 413 & －413 & －413 & 413 & －413 & 413 \\
\hline 19 & & & & & \(21 \%\) & 1027 & －1026 & －965 & 986＊ & －939 & \(960 *\) \\
\hline 19B & & & & & 0000 & 413 & －413 & －413 & 413 & －413 & 413 \\
\hline 20 & & & & & 0000 & 1045 & －1045 & －1027 & 1027＊ & －1006 & 1006＊ \\
\hline 20B & & & & & 0000 & 413 & －413 & －413 & 413 & －413 & 413 \\
\hline 21 & & & & & 0000 & 1085 & －1085 & －1068 & 1068 \({ }^{\text {\％}}\) & －1052 & 1052＊ \\
\hline 21B & & & & & 0000 & 413 & －413 & －413 & 413 & －413 & 413 \\
\hline 22 & 1106 & 726 & 380 & 95 & 1201 & 1102 & 99 & 66 & 1135 & 50 & 1152 \\
\hline 23 & 1100 & 726 & 374 & 94 & 1194 & 1110 & 84 & 56 & 1138 & 42 & 1152 \\
\hline 24 & 1167 & 732 & 435 & 109 & 1276 & 1182 & 94 & 63 & 1213 & 47 & 1229 \\
\hline 25 & 1206 & 732 & 474 & 119 & 1325 & 1223 & 102 & 68 & 1257 & 51 & 1274 \\
\hline 26 & 1208 & 732 & 476 & 119 & 1327 & 1220 & 107 & 71 & 1256 & 54 & 1274 \\
\hline 27 & 1211 & 732 & 479 & 120 & 1331 & 1240 & 91 & 61 & 1270 & 45 & 1285 \\
\hline 28 & 1229 & 732 & 497 & 124 & 1353 & 1255 & 98 & 66 & 1288 & 49 & 1304 \\
\hline 29 & 1301 & 738 & 563 & 141 & 1442 & 1310 & 132 & 88 & 1354 & 66 & 1376 \\
\hline 30 & 1390 & 738 & 652 & 163 & 1553 & 1372 & 181 & 121 & 1432 & 91 & 1463 \\
\hline 31 & 1358 & 738 & 620 & 155 & 1513 & 1382 & 131 & 87 & 1426 & 66 & 1448 \\
\hline 32 & 1378 & 738 & 640 & 160 & 1538 & 1405 & 133 & 89 & 1449 & 67 & 1472 \\
\hline 33 & 1417 & 738 & 679 & 170 & 1587 & 1450 & 137 & 91 & 1496 & 68 & 1518 \\
\hline 34 & 1498 & 738 & 760 & 190 & 1688 & 1561 & 127 & 85 & 1603 & 64 & 1625 \\
\hline 35 & 1562 & 738 & 824 & 206 & 1768 & 1605 & 163 & 109 & 1659 & 82 & 1687 \\
\hline 36 & 1615 & 738 & 877 & 219 & 1834 & 1680 & 154 & 103 & 1731 & 77 & 1757 \\
\hline 37 & 1638 & 738 & 900 & 225 & 1863 & 1717 & 146 & 97 & 1766 & 73 & 1790 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 144 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 280 & 2139 & 1758 & 381 & 254 & 1885 & 191 & 1949 \\
\hline 40 & 1931 & 738 & 1193 & 298 & 2229 & 1794 & 435 & 290 & 1939 & 218 & 2012 \\
\hline 41 & 1971 & 762 & 1209 & 302 & 2273 & 1825 & 448 & 299 & 1974 & 224 & 2049 \\
\hline 42 & 1922 & 738 & 1184 & 296 & 2218 & 1944 & 274 & 183 & 2035 & 137 & 2081 \\
\hline 43 & 2021 & 762 & 1259 & 315 & 2336 & 1868 & 468 & 312 & 2024 & 234 & 2102 \\
\hline 44 & 2036 & 762 & 1274 & 319 & 2355 & 1885 & 470 & 313 & 2042 & 235 & 2120 \\
\hline 45 & 2094 & 762 & 1332 & 333 & 2427 & 1899 & 528 & 352 & 2075 & 264 & 2163 \\
\hline 46 & 2315 & 786 & 1529 & 382 & 2697 & 1925 & 772 & 515 & 2182 & 386 & 2311 \\
\hline 47 & 2228 & 786 & 1442 & 361 & 2589 & 1905 & 684 & 456 & 2133 & 342 & 2247 \\
\hline 48 & 2247＊ & 786 & 1461 & 365 & 2612 & 1880 & 754 & 488 & 2124 & 366 & 2246 \\
\hline 49 & 2295＊ & 786 & 1509 & 377 & 2672 & 1834 & 861 & 559 & 2113 & 419 & 2253 \\
\hline 50 & 2344 & 786 & 1558 & 390 & 2734 & 1991 & 766 & 495 & 2239 & 371 & 2362 \\
\hline 51 & 2392 \({ }^{\text {\＃}}\) & 786 & 1606 & 402 & 2794 & 1989 & 843 & 536 & 2257 & 402 & 2391 \\
\hline 52 & 2440＊＊ & 834 & 1606 & 402 & 2842 & 1932 & 938 & 606 & 2235 & 455 & 2387 \\
\hline 53 & 2489＊＊ & 834 & 1655 & 414 & 2903 & 2051 & 881 & 568 & 2335 & 426 & 2477 \\
\hline 54 & 2537＊ & 834 & 1703 & 426 & 2963 & 2227 & 767 & 491 & 2472 & 368 & 2595 \\
\hline 55 & 2585 \({ }^{\text {\％}}\) & 834 & 1751 & 438 & 3023 & 2020 & 1003 & 669 & 2354 & 501 & 2521 \\
\hline 56 & 2634＊＊ & 834 & 1800 & 450 & 3084 & 2372 & 747 & 475 & 2609 & 356 & 2728 \\
\hline 57 & 2682＊＊ & 834 & 1848 & 462 & 3144 & 2250 & 930 & 596 & 2548 & 447 & 2697 \\
\hline 58 & 2730＊ & 834 & 1896 & 474 & 3204 & 2286 & 658 & 612 & 2592 & 459 & 2745 \\
\hline 59 & 2778＊ & 834 & 1944 & 486 & 3264 & 2318 & 688 & 631 & 2633 & 473 & 2791 \\
\hline 60 & \(2827^{\text {m }}\) & 834 & 1993 & 498 & 3325 & 2351 & 984 & 650
159 & 2676 & 487
119 & 2838 \\
\hline 60A & 1414 & & & & 1414 & 1176 & 238 & 159 & & 119 & \\
\hline
\end{tabular}

> \begin{tabular}{|llll} \hline Social Internal Rates of Return & \(4.33 \%\) & \(2.87 \%\) & \(\mathbf{1 . 7 9 \%}\) \\ \hline \end{tabular}

Source：Col（2）from Table B－2；Col（3）derived from Table B－8：Col（4）from Col （2）－ Col （3）．Col（5）（ID 240）cons
Source：Col．（2）from Table B－2；Col．（3）derived from Table B－8；Col．（4）from Col．（2）－Col．（3）；Col．（5）（ID 240）constant allowance per year；Col．（6）for age 22 to 60 A trom col．（2）+Col ．（5）；Col．（7）for age 18 to 60 from Table \(\mathrm{B}-1 ; 18 \mathrm{~B}, 19 \mathrm{~B}\) ， to \(21=\operatorname{Col} .(6)-\operatorname{Col}\) ．（10）；Col．（10），for age 22 to \(60=\) Col．（ 6 ）－Column（ 9 ）；Col．10，for age 18 to 21 ，estimated by linear egression of data for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\) ，and 21 B fom 18 to \(21,=\mathrm{Col}\) ．（ 6 ）-Col （12）；Col．（12）for age 18 to 21 ，estimated by linear regression of data for age 22 to Col．（11），for age 18 to \(21,=\mathrm{Col}\) ．（6）-Col ．（12）；Col．（12）for age 18 to 21 ，estimated by linear regression of data for age 22 to \(60+\) Social Institutional Cost per graduate－year，Col．（12）for age 22 to \(60=\mathrm{Col}\)（6）－Column（11）．
Notes：
Lhear regrescion estimate．
arit Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation．See Table B－43
rpmal Graduates of the College of Administration and Economics are estimated to complete their college education four years after high school graduation．Column（1）therefor is simply four years plus＂number of years since college graduation＂． Republic of Iraq．
（B）Social institutional cost from Table A－108；（A）is a retirement bonus／end of service award
Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation，wage or salary，Cost of living Allowance，Nominal Salary，Auxiry income （ \(a=1 / 2\) ），and earnings foregone（acjusted for \(a=1 / 2\) ）respectively．

Social Cost-Earning profiles and Social Internal Rate of return of College of Law and Politics Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1 \rightarrow\) & 2 & 3 & 4 &  & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -949 & 949: & -920 & 920** \\
\hline 18B & & & & & 0000 & 702 & -702 & -702 & 702 & -702 & 702 \\
\hline 19 & & & & & 65\% & 1027 & -962 & -926 & 991* & -903 & 968* \\
\hline 19B & & & & & 0000 & 702 & -702 & -702 & 702 & -702 & 702 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1034 & 1034** & -1016 & 1016 \({ }^{\text {\% }}\) \\
\hline 20B & & & & & 0000 & 702 & -702 & -702 & 702 & -702 & 702 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1076 & 1076* & -1064 & 1064* \\
\hline 21B & & & & & 0000 & 702 & -702 & -702 & 702 & -702 & 702 \\
\hline 22 & 1106 & 726 & 380 & 133 & 1239 & 1102 & 137 & 91 & 1148 & 69 & 1171 \\
\hline 23 & 1100 & 726 & 374 & 131 & 1231 & 1110 & 121 & 81 & 1150 & 60 & 1170 \\
\hline 24 & 1167 & 732 & 435 & 152 & 1319 & 1182 & 137 & 92 & 1228 & 69 & 1251 \\
\hline 25 & 1206 & 732 & 474 & 166 & 1372 & 1223 & 149 & 99 & 1273 & 74 & 1297 \\
\hline 26 & 1208 & 732 & 476 & 167 & 1375 & 1220 & 155 & 103 & 1272 & 77 & 1297 \\
\hline 27 & 1211 & 732 & 479 & 168 & 1379 & 1240 & 139 & 92 & 1286 & 69 & 1309 \\
\hline 28 & 1229 & 732 & 497 & 174 & 1403 & 1255 & 148 & 99 & 1304 & 74 & 1329 \\
\hline 29 & 1301 & 738 & 563 & 197 & 1498 & 1310 & 188 & 125 & 1373 & 94 & 1404 \\
\hline 30 & 1390 & 738 & 652 & 228 & 1618 & 1372 & 246 & 164 & 1454 & 123 & 1495 \\
\hline 31 & 1358 & 738 & 620 & 217 & 1575 & 1382 & 193 & 129 & 1446 & 97 & 1479 \\
\hline 32 & 1378 & 738 & 640 & 224 & 1602 & 1405 & 197 & 131 & 1471 & 99 & 1504 \\
\hline 33 & 1417 & 738 & 679 & 238 & 1655 & 1450 & 205 & 136 & 1518 & 102 & 1552 \\
\hline 34 & 1498 & 738 & 760 & 266 & 1764 & 1561 & 203 & 135 & 1629 & 102 & 1663 \\
\hline 35 & 1562 & 738 & 824 & 288 & 1850 & 1605 & 245 & 164 & 1687 & 123 & 1728 \\
\hline 36 & 1615 & 738 & 877 & 307 & 1922 & 1680 & 242 & 161 & 1761 & 121 & 1801 \\
\hline 37 & 1638 & 738 & 900 & 315 & 1953 & 1717 & 236 & 157 & 1796 & 118 & 1835 \\
\hline 38 & 1699 & 738 & 961 & 336 & 2035 & 1724 & 311 & 208 & 1828 & 156 & 1880 \\
\hline 39 & 1859 & 738 & 1121 & 392 & 2251 & 1758 & 493 & 329 & 1922 & 247 & 2005 \\
\hline 40 & 1931 & 738 & 1193 & 418 & 2349 & 1794 & 555 & 370 & 1979 & 277 & 2071 \\
\hline 41 & 1971 & 762 & 1209 & 423 & 2394 & 1825 & 569 & 379 & 2015 & 285 & 2110 \\
\hline 42 & 1922 & 738 & 1184 & 414 & 2336 & 1944 & 392 & 262 & 2075 & 196 & 2140 \\
\hline 43 & 2021 & 762 & 1259 & 441 & 2462 & 1868 & 594 & 396 & 2066 & 297 & 2165 \\
\hline 44 & 2036 & 762 & 1274 & 446 & 2482 & 1885 & 597 & 398 & 2084 & 298 & 2183 \\
\hline 45 & 2094 & 762 & 1332 & 466 & 2560 & 1899 & 661 & 441 & 2119 & 331 & 2230 \\
\hline 46 & 2315 & 786 & 1529 & 535 & 2850 & 1925 & 925 & 617 & 2233 & 463 & 2388 \\
\hline 47 & 2228 & 786 & 1442 & 505 & 2733 & 1905 & 828 & 552 & 2181 & 414 & 2319 \\
\hline 48 & 2247* & 786 & 1461 & 511 & 2758 & 1880 & 878 & 586 & 2173 & 439 & 2319 \\
\hline 49 & 2295** & 786 & 1509 & 528 & 2823 & 1834 & 989 & 659 & 2164 & 495 & 2329 \\
\hline 50 & 2344** & 786 & 1558 & 545 & 2889 & 1991 & 898 & 599 & 2290 & 449 & 2440 \\
\hline 51 & 2392** & 786 & 1606 & 562 & 2954 & 1989 & 965 & 643 & 2311 & 483 & 2472 \\
\hline 52 & 2440** & 834 & 1606 & 562 & 3002 & 1932 & 1070 & 713 & 2289 & 535 & 2467 \\
\hline 53 & 2489** & 834 & 1655 & 579 & 3068 & 2051 & 1017 & 678 & 2390 & 509 & 2560 \\
\hline 54 & 2537* & 834 & 1703 & 596 & 3133 & 2227 & 906 & 604 & 2529 & 453 & 2680 \\
\hline 55 & 2585** & 834 & 1751 & 613 & 3198 & 2020 & 1178 & 785 & 2413 & 589 & 2609 \\
\hline 56 & 2634** & 834 & 1800 & 630 & 3264 & 2372 & 892 & 595 & 2669 & 446 & 2818 \\
\hline 57 & 2682 \({ }^{1 / 2}\) & 834 & 1848 & 647 & 3329 & 2250 & 1079 & 719 & 2610 & 539 & 2789 \\
\hline 58
59 & \(2730^{\text {/2 }}\)
\(2778{ }^{\text {a }}\)
2 & 834
834 & 1896 & 664 & 3394 & 2286 & 1108 & 738 & 2655 & 554 & 2840 \\
\hline 59
60 & 2778* & 834 & 1944 & 680 & 3458 & 2318 & 1140 & 760 & 2698 & 570 & 2888 \\
\hline 60
\(60 A\) & \({ }_{1414}{ }^{2827}\) & 834 & 1993 & 698 & 3525
1414 & 2351
1176 & 1174
238 & 782
159 & 2742 & 587
119 & 2938 \\
\hline
\end{tabular}

Social Internal Rates of Return
\[
4.50 \% \quad 2.87 \%
\]
\(1.81 \%\)
Source: Col. (2) from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) for age 22 to 60 A from col. (2) +Col . (5); Col. (7) for age 18 to 60 from Table B-1; 18B, 19B, 20B, and 21 B from Table \(\mathrm{A}-108 ; \mathrm{Col}(8)=\mathrm{Col} .(6)-\mathrm{Col}\). (7); Col. (9), for age 22 to \(60 \mathrm{~A}=\mathrm{Col}\). (8) \(\times 2 / 3\), Col. (9) for age 18 regression of data for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\); Col. (11), for age 18 to \(21,=\) Col. (6) - Col. (12); Col. (12) for age 18 to 21 , estimated by linear regression of clata lor age 22 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 22 to \(60=\mathrm{Col}\) (6) - Column (11).

Notes:
Linear regression estimate.
Fir: Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43.
antratraduates of the College of Law and Politics are estimated to complete their college education four years after high school graduation. Column (1) therefor is simply four years plus "number of years since college graduation". Republic of Iraq.
(B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award.
\(\#\) Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to 21 ), clifferential earnings ( \(a=1\) ), differential earnings ( \(a=2 / 3\) ), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.
\(\frac{\text { Table C-26 }}{\text { Social Cost-Earning profiles and Social Internal Rate of return of College of Arts Graduates (Relative to High school Graduates) }}\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1) & 2 & 3 & 4 & 5\% & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1016 & 1016* & -1022 & 1022* \\
\hline 18B & & & & & 0000 & 556 & -556 & -556 & 556 & -556 & 556 \\
\hline 19 & & & & & 24\% & 1027 & -1003 & -1030 & 1054* & -1038 & 1062* \\
\hline 19B & & & & & 0000 & 556 & -556 & -556 & 556 & -556 & 556 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1091 & 1091* & -1102 & 1102* \\
\hline 20B & & & & & 0000 & 556 & -556 & -556 & 556 & -556 & 556 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1129 & 1129** & -1142 & 1142\% \\
\hline 21B & & & & & 0000 & 556 & -556 & -556 & 556 & -556 & 556 \\
\hline 22 & 1106 & 726 & 380 & 240 & 1346 & 1102 & 244 & 163 & 1183 & 122 & 1224 \\
\hline 23 & 1100 & 726 & 374 & 240 & 1340 & 1110 & 230 & 153 & 1187 & 115 & 1225 \\
\hline 24 & 1167 & 732 & 435 & 240 & 1407 & 1182 & 225 & 150 & 1257 & 113 & 1295 \\
\hline 25 & 1206 & 732 & 474 & 240 & 1446 & 1223 & 223 & 149 & 1297 & 112 & 1335 \\
\hline 26 & 1208 & 732 & 476 & 240 & 1448 & 1220 & 228 & 152 & 1296 & 114 & 1334 \\
\hline 27 & 1211 & 732 & 479 & 240 & 1451 & 1240 & 211 & 141 & 1310 & 106 & 1346 \\
\hline 28 & 1229 & 732 & 497 & 240 & 1469 & 1255 & 214 & 143 & 1326 & 107 & 1362 \\
\hline 29 & 1301 & 738 & 563 & 240 & 1541 & 1310 & 231 & 154 & 1387 & 116 & 1426 \\
\hline 30 & 1390 & 738 & 652 & 240 & 1630 & 1372 & 258 & 172 & 1458 & 129 & 1501 \\
\hline 31 & 1358 & 738 & 620 & 240 & 1598 & 1382 & 216 & 144 & 1454 & 108 & 1490 \\
\hline 32 & 1378 & 738 & 640 & 240 & 1618 & 1405 & 213 & 142 & 1476 & 107 & 1512 \\
\hline 33 & 1417 & 738 & 679 & 240 & 1657 & 1450 & 207 & 138 & 1519 & 104 & 1554 \\
\hline 34 & 1498 & 738 & 760 & 240 & 1738 & 1561 & 177 & 118 & 1620 & 89 & 1650 \\
\hline 35 & 1562 & 738 & 824 & 240 & 1802 & 1605 & 197 & 131 & 1671 & 99 & 1704 \\
\hline 36 & 1615 & 738 & 877 & 240 & 1855 & 1680 & 175 & 117 & 1738 & 88 & 1768 \\
\hline 37 & 1638 & 738 & 900 & 240 & 1878 & 1717 & 161 & 107 & 1771 & 81 & 1798 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 143 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 240 & 2099 & 1758 & 341 & 227 & 1872 & 171 & 1929 \\
\hline 40 & 1931 & 738 & 1193 & 240 & 2171 & 1794 & 377 & 251 & 1920 & 189 & 1983 \\
\hline 41 & 1971 & 762 & 1209 & 240 & 2211 & 1825 & 386 & 257 & 1954 & 193 & 2018 \\
\hline 42 & 1922 & 738 & 1184 & 240 & 2162 & 1944 & 218 & 145 & 2017 & 109 & 2053 \\
\hline 43 & 2021 & 762 & 1259 & 240 & 2261 & 1868 & 393 & 262 & 1999 & 197 & 2065 \\
\hline 44 & 2036 & 762 & 1274 & 240 & 2276 & 1885 & 391 & 261 & 2015 & 196 & 2081 \\
\hline 45 & 2094 & 762 & 1332 & 240 & 2334 & 1899 & 435 & 290 & 2044 & 218 & 2117 \\
\hline 46 & 2315 & 786 & 1529 & 240 & 2555 & 1925 & 630 & 420 & 2135 & 315 & 2240 \\
\hline 47 & 2228 & 786 & 1442 & 240 & 2468 & 1905 & 563 & 375 & 2093 & 282 & 2187 \\
\hline 48 & 2247** & 786 & 1461 & 240 & 2487 & 1880 & 607 & 405 & 2082 & 304 & 2184 \\
\hline 49 & 2295*: & 786 & 1509 & 240 & 2535 & 1834 & 701 & 468 & 2068 & 351 & 2185 \\
\hline 50 & 2344** & 786 & 1558 & 240 & 2584 & 1991 & 593 & 395 & 2189 & 296 & 2287 \\
\hline 51 & \(2392{ }^{\text {兆 }}\) & 786 & 1606 & 240 & 2632 & 1989 & 643 & 429 & 2203 & 322 & 2311 \\
\hline 52 & 2440 ** & 834 & 1606 & 240 & 2680 & 1932 & 748 & 499 & 2181 & 374 & 2306 \\
\hline 53 & 2489** & 834 & 1655 & 240 & 2729 & 2051 & 678 & 452 & 2277 & 339 & 2390 \\
\hline 54 & 2537** & 834 & 1703 & 240 & 2777 & 2227 & 550 & 367 & 2410 & 275 & 2502 \\
\hline 55 & 2585* & 834 & 1751 & 240 & 2825 & 2020 & 805 & 537 & 2288 & 403 & 2423 \\
\hline 56 & 2634** & 834 & 1800 & 240 & 2874 & 2372 & 502 & 334 & 2539 & 251 & 2623 \\
\hline 57 & 2682 \({ }^{\text {N }}\) & 834 & 1848 & 240 & 2922 & 2250 & 672 & 448 & 2474 & 336 & 2586 \\
\hline 58 & 2730** & 834 & 1896 & 240 & 2970 & 2286 & 684 & 456 & 2514 & 342 & 2628 \\
\hline 59 & 2778* & 834 & 1944 & 240 & 3018 & 2318 & 700 & 467 & 2551 & 335 & 2668 \\
\hline 60
604 & \({ }_{1414}{ }^{2827}\) & 834 & 1993 & 240 & 3067
1414 & 2351
1176 & 716
238 & 477
159 & 2590 & 358
119 & 2709 \\
\hline
\end{tabular}

Social Internal Rates of Return
Source: from Table B-2; Col. (3) derived from Table \(\mathrm{B}-8\); Col. (4) from Col. (2) - Col. (3); Col. (5) (aD 2401 constant allowance per year; Col.' (6) for aee 23 to 60 A from col. (2) + Coi. ( 5 ); Col. Coi. (7) for age 18 to 60 trom Table \(\mathrm{B}-1 ; 18 \mathrm{~B}\), \({ }_{19 B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108 ; \mathrm{Col}(8)=\mathrm{Col}.(6)\) ) Col . (7); Coil. (9), for age 22 to \(60 \mathrm{~A}=\mathrm{Col}\). (8) \(\times 2 / 3\), Col . (9) for

 age 22 to \(60+\) Social mstitutional Cost per graduat--year, Col. (12) for age 22 to \(60=\operatorname{Col}\) ( 6 ) - Columnin (11).

\section*{Notes:}

NiLinear regression estimate.
:ral: Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43.
Graduates of the College of Arts are estimated to complete their college education four years after high school graduation Column (1) therefor is simply four years plus "number of years since college graduation"
Hothd: The auxiliary income (ID 240) is derived from the allowance system of employees in the public sector, Republic of Iraq
(B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award.

Folumns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to
21), differential earnings \((a=1)\), differential earnings \((a=2 / 3)\), earnings foregone (adjusted for \(a=2 / 3)\), differential earnings
( \(a=1 / 2\) ), and earnings foregone (acljusted for \(a=1 / 2\) ) respectively.

Table C-27
Social Cost-Earning profiles and Social Internal Rate of return of College of Education Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \(1 \%\) & 2 & 3 & 4 & 5*** & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1026 & 1026" & -1037 & 1037\% \\
\hline 18B & & & & & 0000 & 515 & -518 & -518 & 518 & -518 & 518 \\
\hline 19 & & & & & \(35^{\text {胜 }}\) & 1027 & -992 & -1029 & 1064* & -1042 & 1042 \({ }^{\text {\# }}\) \\
\hline 19B & & & & & 0000 & 515 & -518 & -518 & 518 & -518 & 518 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1101 & 1101* & -1118 & \(1118{ }^{\text {* }}\) \\
\hline 20B & & & & & 0000 & 515 & -518 & -518 & 518 & -518 & 518 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1139 & 1139** & -1159 & 1159** \\
\hline 21B & & & & & 0000 & 515 & -518 & -518 & 518 & -518 & 518 \\
\hline 22 & 1113 & 726 & 387 & 240 & 1353 & 1102 & 251 & 167 & 1186 & 126 & 1228 \\
\hline 23 & 1128 & 726 & 402 & 240 & 1368 & 1110 & 258 & 172 & 1196 & 129 & 1239 \\
\hline 24 & 1219 & 732 & 487 & 240 & 1459 & 1182 & 277 & 185 & 1274 & 139 & 1321 \\
\hline 25 & 1279 & 738 & 541 & 240 & 1519 & 1223 & 296 & 197 & 1322 & 148 & 1371 \\
\hline 26 & 1257 & 738 & 519 & 240 & 1497 & 1220 & 277 & 185 & 1312 & 139 & 1359 \\
\hline 27 & 1221 & 732 & 489 & 240 & 1461 & 1240 & 221 & 147 & 1314 & 111 & 1351 \\
\hline 28 & 1255 & 732 & 523 & 240 & 1495 & 1255 & 240 & 160 & 1335 & 120 & 1375 \\
\hline 29 & 1348 & 738 & 610 & 240 & 1588 & 1310 & 278 & 185 & 1403 & 139 & 1449 \\
\hline 30 & 1330 & 738 & 592 & 240 & 1570 & 1372 & 198 & 132 & 1438 & 99 & 1471 \\
\hline 31 & 1410 & 738 & 672 & 240 & 1650 & 1382 & 268 & 179 & 1471 & 134 & 1516 \\
\hline 32 & 1422 & 738 & 684 & 240 & 1662 & 1405 & 257 & 171 & 1491 & 129 & 1534 \\
\hline 33 & 1430 & 738 & 692 & 240 & 1670 & 1450 & 220 & 147 & 1523 & 110 & 1560 \\
\hline 34 & 1557 & 738 & 819 & 240 & 1797 & 1561 & 236 & 157 & 1640 & 118 & 1679 \\
\hline 35 & 1605 & 738 & 867 & 240 & 1845 & 1605 & 240 & 160 & 1685 & 120 & 1725 \\
\hline 36 & 1720 & 738 & 982 & 240 & 1960 & 1680 & 280 & 187 & 1773 & 140 & 1820 \\
\hline 37 & 1743 & 738 & 1005 & 240 & 1983 & 1717 & 266 & 177 & 1806 & 133 & 1850 \\
\hline 38 & 1775 & 738 & 1037 & 240 & 2015 & 1724 & 291 & 194 & 1821 & 146 & 1870 \\
\hline 39 & 1958 & 738 & 1220 & 240 & 2198 & 1758 & 440 & 293 & 1905 & 220 & 1978 \\
\hline 40 & 2050 & 762 & 1288 & 240 & 2290 & 1794 & 496 & 331 & 1959 & 248 & 2042 \\
\hline 41 & 1993 & 762 & 1231 & 240 & 2233 & 1825 & 408 & 272 & 1961 & 204 & 2029 \\
\hline 42 & 2066 & 762 & 1304 & 240 & 2306 & 1944 & 362 & 241 & 2065 & 181 & 2125 \\
\hline 43 & 2037 & 762 & 1275 & 240 & 2277 & 1868 & 409 & 273 & 2004 & 205 & 2073 \\
\hline 44 & 2123 & 762 & 1361 & 240 & 2363 & 1885 & 478 & 319 & 2044 & 239 & 2124 \\
\hline 45 & 2149 & 762 & 1387 & 240 & 2389 & 1899 & 490 & 327 & 2062 & 245 & 2144 \\
\hline 46 & 2261 & 786 & 1475 & 240 & 2501 & 1925 & 576 & 384 & 2117 & 288 & 2213 \\
\hline 47 & 2269 & 786 & 1483 & 240 & 2509 & 1905 & 604 & 403 & 2106 & 302 & 2207 \\
\hline 48 & 2312\% & 786 & 1526 & 240 & 2552 & 1880 & 672 & 448 & 2104 & 336 & 2216 \\
\hline 49 & 2361 * & 786 & 1575 & 240 & 2601 & 1834 & 718 & 478 & 2073 & 359 & 2193 \\
\hline 50 & 2411* & 834 & 1577 & 240 & 2651 & 1991 & 660 & 440 & 2211 & 330 & 2321 \\
\hline 51 & \(2460^{* *}\) & 834 & 1626 & 240 & 2700 & 1989 & 711 & 474 & 2226 & 356 & 2345 \\
\hline 52 & 2510** & 834 & 1676 & 240 & 2750 & 1932 & 818 & 545 & 2205 & 409 & 2341 \\
\hline 53 & 2559\% & 834 & 1725 & 240 & 2799 & 2051 & 748 & 499 & 2300 & 374 & 2425 \\
\hline 54 & 2609** & 834 & 1775 & 240 & 2849 & 2227 & 622 & 414 & 2434 & 311 & 2538 \\
\hline 55 & 2658* & 834 & 1824 & 240 & 2898 & 2020 & 878 & 585 & 2313 & 439 & 2459 \\
\hline 56 & 2708* & 834 & 1874 & 240 & 2948 & 2372 & 576 & 384 & 2564 & 288 & 2660 \\
\hline 57 & 2757** & 834 & 1923 & 240 & 2997 & 2250 & 747 & 498 & 2499 & 374 & 2624 \\
\hline 58 & 2807* & 834 & 1973 & 240 & 3047 & 2286 & 761 & 507 & 2540 & 380 & 2666 \\
\hline 59 & 2856 \({ }^{\text {\# }}\) & 834 & 2022 & 240 & 3096 & 2318 & 778 & 519 & 2577 & 389 & 2707 \\
\hline 60 & 2906** & 834 & 2072 & 240 & 3146 & 2351 & 795 & 530 & 2616 & 397 & 2748 \\
\hline 60A & 1453 & & & & 1453 & 1176 & 277 & 185 & & 139 & \\
\hline
\end{tabular}
\begin{tabular}{|llll}
\hline Social Internal Rates of Return & \(4.80 \%\) & \(\mathbf{2 . 7 2 \%}\) & \(\mathbf{1 . 4 6 \%}\)
\end{tabular}
Source: Col. (2) from Table B-3; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) for age 23 to 60A from col. (2) + Col. (5); Col. Col. (7) for age 18 to 60 from Table B-1; 18B, 19B, 20B, and 21 B from Table A-108; Col (8) \(=\mathrm{Col}\). (6) -Col . (7); Col. (9), for age 23 to \(60 \mathrm{~A}=\mathrm{Col}\). (8) \(\times 2 / 3\), Col. (9) for linear regression of clata for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 22 to \(60 \mathrm{~A}=\mathrm{Column} 8\) \(\times 1 / 2\); Col. (11), for age 18 to \(22,=\) Col. (6) - Col. (12); Col. (12) for age 18 to 21 , estimated by linear regre
age 22 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 22 to \(60=\operatorname{Col}(6)-\) Column (11).
Notes
\# Linear regression estimate.
:3lk Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43
nomatraduates of the College of Education are estimated to complete their college education four years after high school graduation. Column (1) therefor is simply four years plus "number of years since college graduation"
(B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award
\# Columns 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 are the age since High School Graduation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to \(21)\) differential earnings \((a=1)\), differential earnings \((a=2 / 3)\), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings
\((a=1 / 2)\), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C-28
Social Cost-Earning profiles and Social Internal Rate of return of College of Physical Education Graduates (Relative to High
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1* & 2 & 3 & 4 & \(50 \%\) \% & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1016 & 1016* & -1022 & 1022* \\
\hline 18B & & & & & 0000 & 702 & -702 & -702 & 702 & -702 & 702 \\
\hline 19 & & & & & 44** & 1027 & -983 & -1010 & 1054 \({ }^{\text {n/ }}\) & -1018 & 1062 \({ }^{\text {\% }}\) \\
\hline 19B & & & & & 0000 & 702 & -702 & -702 & 702 & -702 & 702 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1091 & 1091* & -1102 & 1102\% \\
\hline \({ }_{21}^{208}\) & & & & & 0000
0000 & 702 & -702 & -702 & 702 & -702 & 702 \\
\hline 21B & & & & & 0000 & 702 & -702 & -1129
-702 & 1129** & -1142
-702 & 1142* \\
\hline 22 & 1106 & 726 & 380 & 240 & 1346 & 1102 & 244 & 163 & 1183 & 122 & 1224 \\
\hline 23 & 1100 & 726 & 374 & 240 & 1340 & 1110 & 230 & 153 & 1187 & 115 & 1225 \\
\hline 24 & 1167 & 732 & 435 & 240 & 1407 & 1182 & 225 & 150 & 1257 & 113 & 1295 \\
\hline 25 & 1206 & 732 & 474 & 240 & 1446 & 1223 & 223 & 149 & 1297 & 112 & 1335 \\
\hline 26 & 1208 & 732 & 476 & 240 & 1448 & 1220 & 228 & 152 & 1296 & 114 & 1334 \\
\hline 27 & 1211 & 732 & 479 & 240 & 1451 & 1240 & 211 & 141 & 1310 & 106 & 1346 \\
\hline 28 & 1229 & 732 & 497 & 240 & 1469 & 1255 & 214 & 143 & 1326 & 107 & 1362 \\
\hline 29 & 1301 & 738 & 563 & 240 & 1541 & 1310 & 231 & 154 & 1387 & 116 & 1426 \\
\hline 30 & 1390 & 738 & 652 & 240 & 1630 & 1372 & 258 & 172 & 1458 & 129 & 1501 \\
\hline 31 & 1358 & 738 & 620 & 240 & 1598 & 1382 & 216 & 144 & 1454 & 108 & 1490 \\
\hline 32 & 1378 & 738 & 640 & 240 & 1618 & 1405 & 213 & 142 & 1476 & 107 & 1512 \\
\hline 33 & 1417 & 738 & 679 & 240 & 1657 & 1450 & 207 & 138 & 1519 & 104 & 1554 \\
\hline 34 & 1498 & 738 & 760 & 240 & 1738 & 1561 & 177 & 118 & 1620 & 89 & 1650 \\
\hline 35 & 1562 & 738 & 824 & 240 & 1802 & 1605 & 197 & 131 & 1671 & 99 & 1704 \\
\hline 36 & 1615 & 738 & 877 & 240 & 1855 & 1680 & 175 & 117 & 1738 & 88 & 1768 \\
\hline 37 & 1638 & 738 & 900 & 240 & 1878 & 1717 & 161 & 107 & 1771 & 81 & 1798 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 143 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 240 & 2099 & 1758 & 341 & 227 & 1872 & 171 & 1929 \\
\hline 40 & 1931 & 738 & 1193 & 240 & 2171 & 1794 & 377 & 251 & 1920 & 189 & 1983 \\
\hline 41 & 1971 & 762 & 1209 & 240 & 2211 & 1825 & 386 & 257 & 1954 & 193 & 2018 \\
\hline 42 & 1922 & 738 & 1184 & 240 & 2162 & 1944 & 218 & 145 & 2017 & 109 & 2053 \\
\hline 43 & 2021 & 762 & 1259 & 240 & 2261 & 1868 & 393 & 262 & 1999 & 197 & 2065 \\
\hline 44 & 2036 & 762 & 1274 & 240 & 2276 & 1885 & 391 & 261 & 2015 & 196 & 2081 \\
\hline 45 & 2094 & 762 & 1332 & 240 & 2334 & 1899 & 435 & 290 & 2044 & 218 & 2117 \\
\hline 46 & 2315 & 786 & 1529 & 240 & 2555 & 1925 & 630 & 420 & 2135 & 315 & 2240 \\
\hline 47 & 2228 & 786 & 1442 & 240 & 2468 & 1905 & 563 & 375 & 2093 & 282 & 2187 \\
\hline 48 & 2247 \({ }^{\text {/18 }}\) & 786 & 1461 & 240 & 2487 & 1880 & 607 & 405 & 2082 & 304 & 2184 \\
\hline 49 & 2295** & 786 & 1509 & 240 & 2535 & 1834 & 701 & 468 & 2068 & 351 & 2185 \\
\hline 50 & 2344* & 786 & 1558 & 240 & 2584 & 1991 & 593 & 395 & 2189 & 296 & 2287 \\
\hline 51 & 2392 \({ }^{\text {\% }}\) & 786 & 1606 & 240 & 2632 & 1989 & 643 & 429 & 2203 & 322 & 2311 \\
\hline 52 & 2440** & 834 & 1606 & 240 & 2680 & 1932 & 748 & 499 & 2181 & 374 & 2306 \\
\hline 53 & 2489* & 834 & 1655 & 240 & 2729 & 2051 & 678 & 452 & 2277 & 339 & 2390 \\
\hline 54 & 2537* & 834 & 1703 & 240 & 2777 & 2227 & 550 & 367 & 2410 & 275 & 2502 \\
\hline 55 & 2585* & 834 & 1751 & 240 & 2825 & 2020 & 805 & 537 & 2288 & 403 & 2423 \\
\hline 56 & \(2634^{*}\) & 834 & 1800 & 240 & 2874 & 2372 & 502 & 334 & 2539 & 251 & 2623 \\
\hline 57 & 2682 \({ }^{\text {\% }}\) & 834 & 1848 & 240 & 2922 & 2250 & 672 & 448 & 2474 & 336 & 2586 \\
\hline 58 & 2730* & 834 & 1896 & 240 & 2970 & 2286 & 684 & 456 & 2514 & 342 & 2628 \\
\hline 59 & 2778* & 834 & 1944 & 240 & 3018 & 2318 & 700 & 467 & 2551 & 350 & 2668 \\
\hline 60 & 2827** & 834 & 1993 & 240 & 3067 & 2351 & 716 & 477 & 2590 & 358 & 2709 \\
\hline 60A & 1414 & & & & 1414 & 1176 & 238 & 159 & & 119 & \\
\hline
\end{tabular}

Social Internal Rates of Return
\(3.53 \% \quad 1.67 \%\)
\(0.50 \%\)
Source: from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col, (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) for age 22 to 60 A from col. (2) + Col. (5); Col. Col. (7) for age 18 to 60 from Table B-1; 18B,
 linear regression of data for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108 ; \mathrm{Col}\). (11), for age 22 to \(60 \mathrm{~A}=\) Column 8 \(\times 1 / 2\); Col. (11), for age 18 to \(21,=\) Col. (6) -Col . (12); Col. (12) for age 18 to 21, estimated by linear regression of data for age 22 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 22 to \(60=\mathrm{Col}\) ( 6 ) - Column (11).

Notes:
"Linear regression estimate.
Her Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43
Hrat Graduates of the College of Physical Education are estimated to complete their college of Physical Education four years after high school graduation. Column (1) therefor is simply four years plus "number of years since college graduation"
that The auxiliary income (ID 240) is derived from the allowance system of employees in the public sector, Republic of Iraq
(B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award. Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning earnings foregone and institutional cost (from age 18 to 21 ), differential earnings \((a=1 a\) ), differential earnings \((a=2 / 3)\), earnings foregone (adjusted for \(a=2 / 3\) ), diifferential earnings ( \(a=1 / 2\) ), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C-29
Social Cost-Earning profiles and Social Internal Rate of return of College of Academy of Fine Arts Graduates (Relative to High
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline  & 2 & 3 & 4 & 5\%** & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1016 & \(1016{ }^{\text {13 }}\) & -1022 & 1022** \\
\hline 18B & & & & & 0000 & 756 & -756 & -756 & 756 & -756 & 756 \\
\hline 19 & & & & & \(28 \%\) & 1027 & -999 & -1026 & \(1054^{\text {¹/ }}\) & -1034 & 1034** \\
\hline 19B & & & & & 0000 & 756 & -756 & -756 & & -756 & 756 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1091 & 1091 \({ }^{\text {7\% }}\) & -1102 & 1102** \\
\hline 20B & & & & & 0000 & 756 & -756 & -756 & 1091 & -756 & 756 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1129 & 1129** & -1142 & 1142* \\
\hline 21B & & & & & 0000 & 756 & -756 & -756 & 756 & -756 & 756 \\
\hline 22 & 1106 & 726 & 380 & 240 & 1346 & 1102 & 244 & 163 & 1183 & 122 & 1224 \\
\hline 23 & 1100 & 726 & 374 & 240 & 1340 & 1110 & 230 & 153 & 1187 & 115 & 1225 \\
\hline 24 & 1167 & 732 & 435 & 240 & 1407 & 1182 & 225 & 150 & 1257 & 113 & 1295 \\
\hline 25 & 1206 & 732 & 474 & 240 & 1446 & 1223 & 223 & 149 & 1297 & 112 & 1335 \\
\hline 26 & 1208 & 732 & 476 & 240 & 1448 & 1220 & 228 & 152 & 1296 & 114 & 1334 \\
\hline 27 & 1211 & 732 & 479 & 240 & 1451 & 1240 & 211 & 141 & 1310 & 106 & 1346 \\
\hline 28 & 1229 & 732 & 497 & 240 & 1469 & 1255 & 214 & 143 & 1326 & 107 & 1362 \\
\hline 29 & 1301 & 738 & 563 & 240 & 1541 & 1310 & 231 & 154 & 1387 & 116 & 1426 \\
\hline 30 & 1390 & 738 & 652 & 240 & 1630 & 1372 & 258 & 172 & 1458 & 129 & 1501 \\
\hline 31 & 1358 & 738 & 620 & 240 & 1598 & 1382 & 216 & 144 & 1454 & 108 & 1490 \\
\hline 32 & 1378 & 738 & 640 & 240 & 1618 & 1405 & 213 & 142 & 1476 & 107 & 1512 \\
\hline 33 & 1417 & 738 & 679 & 240 & 1657 & 1450 & 207 & 138 & 1519 & 104 & 1554 \\
\hline 34 & 1498 & 738 & 760 & 240 & 1738 & 1561 & 177 & 118 & 1620 & 89 & 1650 \\
\hline 35 & 1562 & 738 & 824 & 240 & 1802 & 1605 & 197 & 131 & 1671 & 99 & 1704 \\
\hline 36 & 1615 & 738 & 877 & 240 & 1855 & 1680 & 175 & 117 & 1738 & 88 & 1768 \\
\hline 37 & 1638 & 738 & 900 & 240 & 1878 & 1717 & 161 & 107 & 1771 & 81 & 1798 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 143 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 240 & 2099 & 1758 & 341 & 227 & 1872 & 171 & 1929 \\
\hline 40 & 1931 & 738 & 1193 & 240 & 2171 & 1794 & 377 & 251 & 1920 & 189 & 1983 \\
\hline 41 & 1971 & 762 & 1209 & 240 & 2211 & 1825 & 386 & 257 & 1954 & 193 & 2018 \\
\hline 42 & 1922 & 738 & 1184 & 240 & 2162 & 1944 & 218 & 145 & 2017 & 109 & 2053 \\
\hline 43 & 2021 & 762 & 1259 & 240 & 2261 & 1868 & 393 & 262 & 1999 & 197 & 2065 \\
\hline 44 & 2036 & 762 & 1274 & 240 & 2276 & 1885 & 391 & 261 & 2015 & 196 & 2081 \\
\hline 45 & 2094 & 762 & 1332 & 240 & 2334 & 1899 & 435 & 290 & 2044 & 218 & 2117 \\
\hline 46 & 2315 & 786 & 1529 & 240 & 2555 & 1925 & 630 & 420 & 2135 & 315 & 2240 \\
\hline 47 & 2228 & 786 & 1442 & 240 & 2468 & 1905 & 563 & 375 & 2093 & 282 & 2187 \\
\hline 48 & 2247 \({ }^{\text {\% }}\) & 786 & 1461 & 240 & 2487 & 1880 & 607 & 405 & 2082 & 304 & 2184 \\
\hline 49 & 2295* & 786 & 1509 & 240 & 2535 & 1834 & 701 & 468 & 2068 & 351 & 2185 \\
\hline 50 & \(2344^{\text {* }}\) & 786 & 1558 & 240 & 2584 & 1991 & 593 & 395 & 2189 & 296 & 2287 \\
\hline 51 & 2392** & 786 & 1606 & 240 & 2632 & 1989 & 643 & 429 & 2203 & 322 & 2311 \\
\hline 52 & 2440 " & 834 & 1606 & 240 & 2680 & 1932 & 748 & 499 & 2181 & 374 & 2306 \\
\hline 53 & 2489** & 834 & 1655 & 240 & 2729 & 2051 & 678 & 452 & 2277 & 339 & 2390 \\
\hline 54 & 2537* & 834 & 1703 & 240 & 2777 & 2227 & 550 & 367 & 2410 & 275 & 2502 \\
\hline 55 & 2585* & 834 & 1751 & 240 & 2825 & 2020 & 805 & 537 & 2288 & 403 & 2423 \\
\hline 56 & \(2634{ }^{\text {t/ }}\) & 834 & 1800 & 240 & 2874 & 2372 & 502 & 334 & 2539 & 251 & 2623 \\
\hline 57 & \(2682^{\text {阴 }}\) & 834 & 1848 & 240 & 2922 & 2250 & 672 & 448 & 2474 & 336 & 2586 \\
\hline 58 & 2730 * & 834 & 1896 & 240 & 2970 & 2286 & 684 & 456 & 2514 & 342 & 2628 \\
\hline 59 & 2778 & 834 & 1944 & 240 & 3018 & 2318 & 700 & 467 & 2551 & 350 & 2668 \\
\hline 60
\(60 A\) & \({ }^{28274 *}\) & 834 & 1993 & 240 & 3067
1414 & 2351 & 716
238 & 477
159 & 2590 & 358
119 & 2709 \\
\hline 60 A & 1414 & & & & 1414 & 1176 & 238 & 159 & & 119 & \\
\hline
\end{tabular}
\begin{tabular}{llll}
\hline Social Internal Rates of Return & \(3.38 \%\) & \(\mathbf{1 . 5 3 \%}\) & \(\mathbf{0 . 3 8 \%}\)
\end{tabular}
Source: Col. (2) from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant allowance per year; Col. (6) for age 22 to 60 A from col. (2) +Col . (5); Col. Col. (7) for age 18 to 60 from Table B-1; 18B, \(19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col ( 8 ) \(=\mathrm{Col} .(6)-\mathrm{Col}\). (7); Col. ( 9 ), for age 22 to 60A \(=\mathrm{Col}\). ( 8 ) \(\times 2 / 3\), Col. ( 9 ) for age 18 to \(21=\mathrm{Col}\). (6) - Col. (10); Col. (10), for age 22 to \(60=\mathrm{Col}\). (6) - Column (9); Col. 10, for age 18 to 21 , estimated by
linear regression of clata for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column 8 linear regression of data for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 22 to \(60 \mathrm{~A}=\mathrm{Column} 8\)
\(\mathrm{x} 1 / 2 ; \mathrm{Col}\). (11), for age 18 to \(21,=\mathrm{Col} .(6)-\mathrm{Col} .(12)\); Col . (12) for age 18 to 21 , estimated by linear regression of data for
age 22 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 22 to \(60=\mathrm{Col}(6)-\mathrm{Column}(11)\). age 22 to \(60+\) Social Institutional Cost per graduate-year, Col . (12) for age 22 to \(60=\mathrm{Col}\) (6) - Column (11).

Notes:
\({ }^{7}\) Linear regression estimate
Utar Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year after high school graduation. See Table B-43
after highates of the College of Academy of Fine Arts are estimated to complete their college of Academy of Fine Arts four year atter high school graduation. Column (1) therefor is simply four years plus "number of years since college graduation" \({ }^{\text {g }}\). (B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award.
\# Columns 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 are the age since High School Gracluation, wage or salary, Cost of living Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (from age 18 to \((a=1 / 2)\), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

Table C-30
Social Cost-Earning profiles and Sociai Internal Rate of return of College of Alsharia Graduates (Relative to High school
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 1\%\% & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\hline 18 & & & & & 0000 & 972 & -972 & -1016 & 1016* & -1022 & 1022** \\
\hline 18B & & & & & 0000 & 508 & -508 & -508 & 508 & -508 & 508 \\
\hline 19 & & & & & \(32 \times\) & 1027 & -995 & -1022 & 1054** & -1030 & \(1062^{*}\) \\
\hline 19B & & & & & 0000 & 508 & -508 & -508 & 508 & -508 & 508 \\
\hline 20 & & & & & 0000 & 1045 & -1045 & -1091 & 1091* & -1102 & 1102** \\
\hline 20B & & & & & 0000 & 508 & -508 & -508 & 508 & -508 & 508 \\
\hline 21 & & & & & 0000 & 1085 & -1085 & -1129 & 1129** & -1142 & 1142* \\
\hline 21B & & & & & 0000 & 508 & -508 & -508 & 508 & -508 & 508 \\
\hline 22 & 1106 & 726 & 380 & 240 & 1346 & 1102 & 244 & 163 & 1183 & 122 & 1224 \\
\hline 23 & 1100 & 726 & 374 & 240 & 1340 & 1110 & 230 & 153 & 1187 & 115 & 1225 \\
\hline 24 & 1167 & 732 & 435 & 240 & 1407 & 1182 & 225 & 150 & 1257 & 113 & 1295 \\
\hline 25 & 1206 & 732 & 474 & 240 & 1446 & 1223 & 223 & 149 & 1297 & 112 & 1335 \\
\hline 26 & 1208 & 732 & 476 & 240 & 1448 & 1220 & 228 & 152 & 1296 & 114 & 1334 \\
\hline 27 & 1211 & 732 & 479 & 240 & 1451 & 1240 & 211 & 141 & 1310 & 106 & 1346 \\
\hline 28 & 1229 & 732 & 497 & 240 & 1469 & 1255 & 214 & 143 & 1326 & 107 & 1362 \\
\hline 29 & 1301 & 738 & 563 & 240 & 1541 & 1310 & 231 & 154 & 1387 & 116 & 1426 \\
\hline 30 & 1390 & 738 & 652 & 240 & 1630 & 1372 & 258 & 172 & 1458 & 129 & 1501 \\
\hline 31 & 1358 & 738 & 620 & 240 & 1598 & 1382 & 216 & 144 & 1454 & 108 & 1490 \\
\hline 32 & 1378 & 738 & 640 & 240 & 1618 & 1405 & 213 & 142 & 1476 & 107 & 1512 \\
\hline 33 & 1417 & 738 & 679 & 240 & 1657 & 1450 & 207 & 138 & 1519 & 104 & 1554 \\
\hline 34 & 1498 & 738 & 760 & 240 & 1738 & 1561 & 177 & 118 & 1620 & 89 & 1650 \\
\hline 35 & 1562 & 738 & 824 & 240 & 1802 & 1605 & 197 & 131 & 1671 & 99 & 1704 \\
\hline 36 & 1615 & 738 & 877 & 240 & 1855 & 1680 & 175 & 117 & 1738 & 88 & 1768 \\
\hline 37 & 1638 & 738 & 900 & 240 & 1878 & 1717 & 161 & 107 & 1771 & 81 & 1798 \\
\hline 38 & 1699 & 738 & 961 & 240 & 1939 & 1724 & 215 & 143 & 1796 & 108 & 1832 \\
\hline 39 & 1859 & 738 & 1121 & 240 & 2099 & 1758 & 341 & 227 & 1872 & 171 & 1929 \\
\hline 40 & 1931 & 738 & 1193 & 240 & 2171 & 1794 & 377 & 251 & 1920 & 189 & 1983 \\
\hline 41 & 1971 & 762 & 1209 & 240 & 2211 & 1825 & 386 & 257 & 1954 & 193 & 2018 \\
\hline 42 & 1922 & 738 & 1184 & 240 & 2162 & 1944 & 218 & 145 & 2017 & 109 & 2053 \\
\hline 43 & 2021 & 762 & 1259 & 240 & 2261 & 1868 & 393 & 262 & 1999 & 197 & 2065 \\
\hline 44 & 2036 & 762 & 1274 & 240 & 2276 & 1885 & 391 & 261 & 2015 & 196 & 2081 \\
\hline 45 & 2094 & 762 & 1332 & 240 & 2334 & 1899 & 435 & 290 & 2044 & 218 & 2117 \\
\hline 46 & 2315 & 786 & 1529 & 240 & 2555 & 1925 & 630 & 420 & 2135 & 315 & 2240 \\
\hline 47 & 2228 & 786 & 1442 & 240 & 2468 & 1905 & 563 & 375 & 2093 & 282 & 2187 \\
\hline 48 & 2247* & 786 & 1461 & 240 & 2487 & 1880 & 607 & 405 & 2082 & 304 & 2184 \\
\hline 49 & 2295* & 786 & 1509 & 240 & 2535 & 1834 & 701 & 468 & 2068 & 351 & 2185 \\
\hline 50 & \(2344^{\text {水 }}\) & 786 & 1558 & 240 & 2584 & 1991 & 593 & 395 & 2189 & 296 & 2287 \\
\hline 51 & 2392\% & 786 & 1606 & 240 & 2632 & 1989 & 643 & 429 & 2203 & 322 & 2311 \\
\hline 52 & 2440** & 834 & 1606 & 240 & 2680 & 1932 & 748 & 499 & 2181 & 374 & 2306 \\
\hline 53 & 2489** & 834 & 1655 & 240 & 2729 & 2051 & 678 & 452 & 2277 & 339 & 2390 \\
\hline 54 & 2537** & 834 & 1703 & 240 & 2777 & 2227 & 550 & 367 & 2410 & 275 & 2502 \\
\hline 55 & 2585* & 834 & 1751 & 240 & 2825 & 2020 & 805 & 537 & 2288 & 403 & 2423 \\
\hline 56 & 2634* & 834 & 1800 & 240 & 2874 & 2372 & 502 & 334 & 2539 & 251 & 2623 \\
\hline 57 & 2682** & 834 & 1848 & 240 & 2922 & 2250 & 672 & 448 & 2474 & 336 & 2586 \\
\hline 58 & 2730** & 834 & 1896 & 240 & 2970 & 2286 & 684 & 456 & 2514 & 342 & 2628 \\
\hline 59 & 2778* & 834 & 1944 & 240 & 3018 & 2318 & 700 & 467 & 2551 & 350 & 2668 \\
\hline 600 & 2827** & 834 & 1993 & 240 & \[
\begin{aligned}
& 3067 \\
& 1414
\end{aligned}
\] & 2351
1176 & 716
238 & 477
159 & 2590 & 358
119 & 2709 \\
\hline
\end{tabular}

Social Internal Rates of Return
4.08\% 2.15\%
\(0.95 \%\)
Source: Col. (2) from Table B-2; Col. (3) derived from Table B-8; Col. (4) from Col. (2) - Col. (3); Col. (5) (ID 240) constant

 regression of data for age 22 to \(60,18 \mathrm{~B}, 19 \mathrm{~B}, 20 \mathrm{~B}\), and 21 B from Table \(\mathrm{A}-108\); Col. (11), for age 22 to \(60 \mathrm{~A}=\) Column \(8 \times 1 / 2\) Col. (11), for age 18 to \(21,=\) Col. (6) - Col. (12); Col. (12) for age 18 to 21 , estimated by linear regression of data for age 22 to \(60+\) Social Institutional Cost per graduate-year, Col. (12) for age 22 to \(60=\mathrm{Col}\) (6) - Column (11).

Notes:
Liniear regression estimate.
Whir Refer to social institutional benefits per graduate which are estimated to be concentrated at the end of the second year atier high school graduation. See Table B-43.
做 ghturli The auxiliary income (ID 240) is derived from the allowance system of employeg in the public sector, Republic of Iraq (B) Social institutional cost from Table A-108; (A) is a retirement bonus/end of service award.
\#Columns \(1,2,3,4,5,6,7,8,9,10,11,12\) are the age since High School Graduation, wage or salary, Cost of living
Allowance, Nominal Salary, Auxiliary Income, Total Gross Earning, earnings foregone and institutional cost (froun age 18 io \(21)\), differential earnings ( \(a=1\) ), differential earnings \((a=2 / 3)\), earnings foregone (adjusted for \(a=2 / 3\) ), differential earnings
\((a=1 / 2)\), and earnings foregone (adjusted for \(a=1 / 2\) ) respectively.

\section*{\(\mathbb{A} \mathbb{P} \mathbb{E} \mathbb{N} \mathbb{D} \mathbb{X} \cdot \mathbb{D}\)}

\section*{SOME SPILLOVER BENEFITS OF HIGHER EDUCATION SYSTEM IN IRAQ: A CASE STUDY OF MEDICINE COLLEGE AT THE UNIVERSITY OF BAGHDAD}

Spillover benefits from the College of Medicine at the University of Baghdad will discussed in this appendix.

The College of Medicine was established in 1927. Initially only twenty students were admitted. In 1958 it became one of the University of Baghdad Colleges.

About 6000 doctors have graduated from the college since its establishment and they work now in different medical fields and participate in raising the health standard of both Iraq and other, neighbouring countries.

The Medical College at the University of Baghdad comprises the following sections:

1 - Medicine
2 - Surgery
3 - Public Health
4 - Gynaecology and Obstetrics
5 - Anatomy
6 - Pathology and Forensic Medicine
7 - Physiology
8 - Physiological Chemistry
9 - Radiology

Each of these sections is responsible for certain aspects of medical education and training. The primary function of these sections is to teach and instruct medical students, and to prepare them for a medical profession. However, by the very nature of such instruction, some of these sections provide secondary benefits to the community as a whole in the form of free medical services at the university's teaching hospitals and clinics. It is the purpose of this appendix to estimate the value of such services as they are provided by each section.

\section*{D. 1 Surgery}

The medical services provided by this section may be divided into the following headings: (1) out-patients; (2) in-patients; (3) minor surgery; (4) major surgery; and (5) anaesthesia.

Data upon the services provided by this section are derived from the Annual Report of The Statistics Department of Yarmuk Hospital which is chosen as one of the University's teaching hospitals. This report covers the period from 1st July 1986 to 30 th June 1987. It is to be noted that only part of out- patients and in-patients treatment detailed in the above report were carried out by doctors on the University of Baghdad staff, others were treated by doctors employed by the Ministry of Health. Therefore, the statistics department estimated the percentage of cases dealt with by University staff for this study. To evaluate these services, prices were determined according to the index prices of medical services in Iraqi Public Health Enterprises. Spillover benefits of this section are summarized in Table B.1.

\section*{D. 2 Gynaecology And Obstetrics}

The medical services provided by this section may be divided into the following headings: (1) in- patient; (2) minor surgery; (3) major surgery; and (4) child birth.

All data for this section were derived from the Annual Report of the Statistics Department of Yarmuk Hospital for the year 1986/87. In order to evaluate these services, prices were taken from the index prices of the medical services in Iraqi Public Health Enterprises. The results of spillover benefits of this section are as set forth in Table D.2.

\section*{D. 3 Pathology}

This section provides two medical services namely: (1)biopsy tests on surgical specimens; and (2) post-mortem dissections.

All data relating to these services were derived from the same sources which used in the previous sections. The spillover benefits of this section are reported in Table D. 3 .

\section*{D. 4 Microbiology}

This section deals with examination of various specimens requested by
teaching hospitals and out-patients' clinics related to Yarmuk Hospital.
In order to evaluate the spillover benefits of this section, all data and prices were obtained from the same sources used in the previous sections. A summary of the spillover of this section is presented in Table D. 4 .

\section*{D. 5 Radiology}

The services of the radiology section are divided into two types: (1) diagnosis by x-ray; and (2) treatment by radiotherapy.

All data upon these services which are summarized in Table D. 5 were obtained from the sources cited in the previous sections above.

\section*{D. 6 Medicine}

The services provided by this section are: (1) general medicine; (2) diabetics' services; (3) paediatric services; (4)electro-cardiography; (5) neurology and psychiatry; (6) physiotherapy; and (7)electro-encephalorphy.

All data for the services provided by this section, which are summarized in Table D.6, are taken from the Annual Report of the Statistics Department of Yarmuk Hospital for the 1986/87. This services are evaluated following an identical procedure to that used in the earlier sections.

\section*{D. 7 Other Sections}

The remaining sections of the Medical College of Baghdad University are different in nature from the six sections, which are examined above. Some of these section are almost academic, providing lectures and other teaching facilities to various schools, institutions, and hospital staff not associated with the University of Baghdad, as well as undertaking teaching responsibilities at the College itself. For example, the Public Health and Forensic Medicine section offers lectures and teaching facilities to the School of Nursing and the Institute of Medicine. The value of such services are excluded from this study because of the difficulties in estimating the value such services, and because these services are provided only sporadically. Also because of lack of data, the value of all scientific research conducted at the Medical College are excluded.

\section*{D. 8 Summary Of The Spillover Renefits}

Although the annual spillover benefits of medical services, calculated in this appendix, do not cover all services of all sections of the College of Medicine, they may be treated as a rough indicator of such benefits. The spillover benefits of the six sections of the College of Medicine at the University are summarized in Table 7.7.

The total annual spillover benefits of all sections amount to ID \(1,081,308\). In calculating the internal rate of return to investment in medical education in the present study, this figure has been entirely excluded. The magnitude of this omission becomes more striking when it is compared to the social institutional cost of the College of Medicine which amounted to ID 2,754,659 in 1986/87 (see Table 117). If the above spillover benefits were to be incorporated into the cost-benefit calculus, the net social institutional cost would have been reduced by about 40 per cent. And if it is assumed that this percentage cost reduction is more or less constant for all years considered, then the social internal rate of return upon investment in medical education would have risen from \(9 \%\) to \(11 \%\) (for an alpha coefficient equal to one).

There may be practical grounds for excluding spillover effects from the rate of return calculus, but when these effects are of a considerable magnitude, they should not be ignored in the planning process. The least one can do is to provide rough estimates of these effects so that planner become aware of their existence.

Table D. 1
Spillover Medical services provided by the Surgery section, College of Medicine, University of Baghdad, 1986/87.
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Type of Service} & \multirow[b]{2}{*}{Total Number (1)} & \multicolumn{2}{|l|}{Attended by University of Baghdad staff} & \[
\begin{aligned}
& \text { Index } \\
& \text { Price }
\end{aligned}
\] & ```
Value
    of
Service
``` \\
\hline & & \begin{tabular}{l}
Percent \\
(2)
\end{tabular} & Number (3) & \[
\text { In } \operatorname{ID}
\] & \[
\operatorname{In}_{(5)} \operatorname{ID}
\] \\
\hline Out-Patient & & & & & \\
\hline General & 56980 & 70\% & 39886 & & \\
\hline Ear, Nose \& Throat & 25100 & 70\% & 17570 & & \\
\hline Dentistry & 20150 & 50\% & 10075 & & \\
\hline Orthopaedic & 7830 & 100\% & 7830 & & \\
\hline Ophthalmology & 22190 & 60\% & 13314 & & \\
\hline Total out-patient & & & 88675 & 0.5 & 44338 \\
\hline In-patient (*) & 5550 & 100\% & 4163 & 5.0
25.0 & 20815
157500 \\
\hline Minor Surgery & 6300 & 100\% & 6300 & 25.0 & 157500 \\
\hline General \& Orthopaedic & & & & & \\
\hline Ist Degree
2nd Degree & 1450 & 100\% & 1450 & 75.0
50.0 & 108750
106500 \\
\hline 2nd Degree
Ophthalmology & 2130 & 100\% & 2130 & 50.0 & 106500 \\
\hline Ist Degree & 39 & 100\% & 39 & 75.0 & 2925 \\
\hline 2nd Degree & 380 & 100\% & 380 & 50.0 & 19000 \\
\hline Ear, Nose \& Throat & & & & & \\
\hline Ist Degree & 83
1035 & 100\% & 83
1035 & 75.0
50.0 & 6225
51750 \\
\hline Total Major Surgery & & & 103 & & 419803 \\
\hline Anaesthesiology & & & & & \\
\hline Minor & 1572 & 100\% & 1572 & 25.0 & 39300 \\
\hline Major & 3545 & 100\% & 3545 & 12.5 & 44313 \\
\hline Total spillover benef & s of & urgery & ection & & 503416 \\
\hline
\end{tabular}

Source:
Col. (i) from Annual Report of the Statistics Department of the Yarmule Hospital; Col. (2) estimated by Statistics Department of Yarmuk Hospital; Column (3) Col.(1) X Col. (2); Col.(4) from the index price of the medical services in Iraqi Public enterprises, compiled by Rasheed, K. J. and Ali, I., K. (In Arabic), Baghdad, Iraq, 1985; Col.(5) Col. (3) X Col. (4).

Note:
(*) The estimated average length of stay in hospital by in-patients is ten days. It is assumed that each patient is visited by a member of university staff once a day throughout the duration of his stay in hospital. Using a fee of ID 0.500 per visit, the average value for services provided by the university staff to in-patients is ID 5.000 per patient.

Table D. 2
Spillover Medical services provided by the Gynaecology and Obstetrics section, College of Medicine, University of Baghdad, 1986/87.
\begin{tabular}{|l|c|c|c|}
\hline \begin{tabular}{l} 
Type of \\
Type of Service \\
Service
\end{tabular} & \begin{tabular}{l} 
Number Performed \\
by University of \\
Baghdad Staff \\
\((1)\)
\end{tabular} & \begin{tabular}{l} 
Index \\
Price \\
in ID \\
\((2)\)
\end{tabular} & \begin{tabular}{l} 
Value of \\
Service \\
in ID \\
\((3)\)
\end{tabular} \\
\hline In-Patient(*) & 6140 & 5.0 & 30700 \\
Minor Surgery & 2020 & 25.0 & 50500 \\
Major Surgery & 32 & 75.0 & 2400 \\
1st Degree & 111 & 50.0 & 5550 \\
2nd Degree & 3022 & 25.0 & \(\underline{75550}\) \\
\hline Thild Birth & \multicolumn{4}{|c|}{164700} \\
\hline
\end{tabular}

Source:
Col. (1) from Annual Repot of the Statistics Department of the Yarmuk Hospital; Col. (2) from the index price of the medical services in Traqi Public enterprises, complied by Rasheed, K. J. and Ali, I. K. (In Arabic), Baghdad, Iraq, 1985; Col. (3) Col. (1) X Col. (2).
Note(*) See the note in the Table D.1.

Table D. 3
Spillover Medical services provided by the Pathology section, College of Medicine, University of Baghdad, 1986/87。
\begin{tabular}{|l|c|c|c|}
\hline \begin{tabular}{l} 
Type of Service \\
Type of Service
\end{tabular} & \begin{tabular}{l} 
Number Performed \\
by University of \\
Baghdad Staff \\
(1)
\end{tabular} & \begin{tabular}{l} 
Index \\
Price \\
in ID \\
\((2)\)
\end{tabular} & \begin{tabular}{l} 
Value of \\
Service \\
in ID \\
(3)
\end{tabular} \\
\hline \begin{tabular}{l} 
Biopsy tests on Surgical \\
Specimen \\
Postmortem dissection
\end{tabular} & \begin{tabular}{c}
5728 \\
550
\end{tabular} & \begin{tabular}{r}
5.0 \\
\hline Total
\end{tabular} & \begin{tabular}{r}
28640 \\
1100
\end{tabular} \\
\hline
\end{tabular}

Source:
CoI. (1) from Annual Repot of the Statistics Department of the Yarmuk Hospital; Col. (2) from the index price of the medical services in Iraqi Public enterprises, complied by Rasheed, K. J. and Ali, I. K. (In Arabic), Baghdad, Iraq, 1985; Col. (3) Col. (1) X Col. (2).

Table D. 4 Medical services provided by the Miloverobiology Section, College of Medicine, University of Baghdad, 1986/87.
\begin{tabular}{|l|c|c|c|}
\hline Type of Service & \begin{tabular}{l} 
Number Performed \\
by University of \\
Baghdad Staff \\
(1)
\end{tabular} & \begin{tabular}{l} 
Index \\
Price \\
in ID \\
\((2)\)
\end{tabular} & \begin{tabular}{c} 
Value of \\
Service \\
in ID \\
(3)
\end{tabular} \\
\hline Specimen analysis & & & \\
\hline Stool & 17292 & 2.0 & 34584 \\
Urine & 10084 & 2.0 & 20168 \\
Septum & 1906 & 2.0 & 3812 \\
Skin & 1521 & 6.0 & 9126 \\
Bone & 134 & 4.0 & 536 \\
Surgery of Operation & 25 & 5.0 & 125 \\
theatres & 25 & 68351 \\
\hline Total &
\end{tabular}

Source:
Colo (1) from Annual Repot of the Statistics Department of the Yarmuk Hospital; Col. (2) from the index price of the medical services in Traqi Public enterprises, complied by Rasheed, \(\mathrm{K}_{\text {. }} \mathrm{J}_{0}\) and Ali, I. K. (In Arabic), Baghdad, Iraq, 1985; Col. (3) Col. (1) X Col. (2).

Table D. 5
Spillover Medical services provided by the Radiology section, College of Medicine, University of Baghdad, 1986/87.
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Type of Service} & \multirow[b]{2}{*}{Total Number (1)} & \multicolumn{2}{|l|}{Attended by University of Baghdad staff} & \begin{tabular}{l}
Index \\
Price
\end{tabular} & \[
\begin{array}{|l|}
\hline \text { Value } \\
\text { of } \\
\text { Service }
\end{array}
\] \\
\hline & & Percent
(2) & Number (3) & \[
\text { In } \operatorname{ID}
\] & \[
\operatorname{In}_{(5)} \operatorname{ID}
\] \\
\hline Diagnostic radiology & 52421 & 40\% & 20968 & 7.5 & 157260 \\
\hline Radiotherapy treatment & 905 & 100\% & 905 & 3.5 & 3168 \\
\hline Total & & & & & 160428 \\
\hline
\end{tabular}

\section*{Source:}

Col. (1) from Annual Repot of the Statistics Department of the Yarmuk Hospital; Col. (2) estimated by Statistics Department of Yarmuk Hospital; Column(3) Col. (1) X Col. (2); Col. (4) from the index price of the medical services in Iraqi Public enterprises, complied by Rasheed, K. J. and Ali, I. \(\mathrm{K}_{\mathrm{i}}\) (In Arabic), Baghdad, Iraq, 1985; Col. (5) Col.(3) X Col. (4).

Table D. 6
Spillover Medical services provided by the Medicine Section, College of Medicine, University of Baghdad, 1986/87.
\begin{tabular}{|c|c|c|c|}
\hline Type of Service & Number Performed by University of Baghdad Staff (1) & Index Price in ID (2) & Value of Service in ID (3) \\
\hline General Medicine & 8000 & 1.0 & 8000 \\
\hline Neurology and psychiatry & 5550 & 12.5 & 69375 \\
\hline Physiotherapy & 10380 & 3.5 & 36330 \\
\hline Electro-encephalography & 580 & 15.0 & 8700 \\
\hline Electro-cardiography & 5821 & 2.5 & 14553 \\
\hline Paediatrics & 8780 & 1.5 & 13170 \\
\hline Diabetics & 1818 & 2.5 & 4545 \\
\hline \multicolumn{3}{|l|}{Total} & 154673 \\
\hline
\end{tabular}

Source:
Col. (1) from Annual Repot of the Statistics Department of the Yarmuk Hospital; Col. (2) from the index price of the medical services in Iraqi Public enterprises, complied by Rasheed, K. J. and Ali, I., K. (In Arabic), Baghdad, Iraq, 1985; Col. (3) Col. (1) X Col'. (2).

Table D. 7
Summary of Spillover Medical Services provided by the College of Pledicine, University of Baghdad, 1986/87.
\begin{tabular}{|l|c|}
\hline Section & \begin{tabular}{c} 
Value of Spillover \\
Services Performed
\end{tabular} \\
\hline Surgery section & 503,416 \\
Gynaecology and Obstetrics Section & 164,700 \\
Pathology Section & 29,740 \\
Microbiology section & 68,351 \\
Radiology Section & 160,428 \\
Medicine Section & 154,673 \\
\hline Total & \(1,081,308\) \\
\hline
\end{tabular}

Source: From Table D. 1 to D. 6.

\section*{REFPRRENCES}

Abdul-Salam, M. Studies in the Economics of Education. (Dar Al-Talea Press, Beirut, 1974, (In Arabic).

Abu Al-Abbas, A and Dr. Al-Rawi, M., The Dropout in the primary level in Iraq, Educational and Psychological Research Center, University of Baghdad, Al-Huriha press, 1972, p. 63.

Ahmad, A. A. A., The Interrelationship Between the Educational System and economic Development in Irag. A Thesis Submitted to the University of Wales for the Master Degree in education in the Field of Economics of Education, University of Wales, 1980.

Akin J. S. and I. Garfinkel, "School Expenditures and the Economic Returns to Schooling", The Journal of Human Resources, Fall 1977, Vol. 12, no. 4, pp. 460-481.

Alexander, K., "The value of an Education". Journal of education Finance, Vol.1, No. 4, (Spring 1976), pp. 429-467.
Alfered W. Stonier and Douglas C. Hague, A textbook of Economic Theory, (London: Longman Group, 1972), pp.440-441.

Al-Habeeb, M. J., Education and Economic Development, Al-Rasheed Distribution Co., Baghdad-Iraq 1981.

Al-Qudsi, S. S. "Returns to Education, Sectoral Pay Differentials and Determinants in Kuwaitis", Economics of Education Review, Vol. 8, No. 3, 1989, pp. 263-76.

Al-Zauba'e, A. and Al-Ghannam M. Higher Education in Iraq, Its Trends and Problems, University of Baghdad, Government Press, 1968. (In Arabic Version)

Anderson C. A. and Mary Jean Bowman (eds), Education and Economic Development, Aldine Publishing Co., Chicago, 1965.

Angus Maddison, "What is Education for?", Lloyds Bank Review, no. 112, (April 1974), pp. 19-21.

Ardittide Fred D., "The Reinvestment Assumption in the Internal Rate of Return", Journal of Business Finance, Vol.5. no. 1, (Spring 1973), PP.1-2.

Atkinson G. B. I. The Economics of Education. (Hodder and Stoughton, London, 1983.

Bailey D. and C. Schotta, "Private and Social Rate of Return to Education of Academicians", American Economic Review, March 1972, Vol. 62, no. 1, pp. 19-31.

Balogh, T. and Streeten P. P. "The Coefficient of Ignorance" Bulletin of the Oxford University Institute of Economics and Statistics, Vol. 25, no. 2. (May 1963), pp. 97-107.

Bartlett \(\mathbb{S}_{\text {., " }}\) Education, Experience, and Wage Inequality: 1939-1969", The Journal
of Human Resources, Summer 1978, Vol. 13 , no. 3, pp. 349-365.
Barsby, S. L. Cost-Benefit Analysis and Manpower. Toronto: D. C. Heath, 1972.
Becker G. S., "Underinvestment in College Education? American Economic Review, Feb. 1960, Vol. 50, pp.346-353.
"Investment in Human Capital: A Theoretical Analysis". Journal of Political Economy, Vol. 2, (March 1961), p. 11.
, Human Capital: A Theoretical and Empirical Analysis with Special References to Education, (New York, Columbia University Press, 1964).
, Human Capital and Personal Distribution of Income: An Analysis Approach. Woytinsky Lecture No. 1. Ann Arobor, Michigan: University of Michigan.

Beladi H., Brunner L. R., and Zuberi H. A., "The Rate of Return on Investment in Education in Michigan", Atlantic Economic Journal, 1986, Vol. 14, no. 4, pp. 50-64.

Birch D. W. and J. \(\mathbb{R}\). Calvert, How Profitable is Teaching? Higher Education Review, Autumn 1973, Vol. 6, no. 1, pp. 35-45.

Blair L. M., M. G., and Stevenson W., "The Returns to the Associate Degree for Technician", The Journal of Human Resources, Vol. 16, No. 3, pp. 449-458.

Blaug M., "The Rate of Return on Investment in Education in Great Britain". Manchester School of Economic and Social Studies, Manchester, (September, 1965) pp. 205-251.

Economics of Education, Vol. 1, Mark Blaug (ed.) (Baltimore: Penguin Books, 1968.

An Introduction to the Economics of Education, (The Penguin press, London, 1972).
, Correlation between education and Earnings: What does it signify? Higher Education, Vol. 1, No. 1, 1972, pp 53-76.
, Education and the Employment Problem in Developing Countries. International Labour Organization, Geneva, 1973.
"Education and Employment Problem in Developing Countries. Geneva: International labor office, 1974.
\(\longrightarrow\), "The Empirical Status of Human Capital Theory: A Slightly Jaundiced Survey". The Journal of Economic Literature, Vol. 14, No. 3, September 1976, pp. 827-855.

Blaug M., C. Dougherty, and G. Psacharopoulos, "The Distribution of Schooling and distribution of Earnings: Raising the School leaving Age 1972", The Manchester School of Economic and Social Studies, March 1982, Vol. 50, no. 1, pp. 24-40.
Blaug Mark, Peston Maurice and Ziderman Adrian, The Utilization of Educated Manpower in Industry, (Oliver and Boyd, Edinburgh and London), 1967.

Blaug M., Layard P. R. G., and Woodhall, M. The cases of Graduate Unemployment in India, London, Allen Lane, The Penguin press, 1969.
Bowen, W. G., Economic Aspects of Education: Three Essays. Princeton, N. J.: Industrial Relations Section, Princeton University, 1964.
_, "Assessing the Economic Contribution of Education". Economics of Education. Edited by Blaug, M., 2 Vols, (penguin Books Ltd. 1971).

Bowman, M. J., "The New Economics of Education". Educational Science, An International Journal, Vol. 1, No. 1, (February 1966), pp. 29-46.
, "Human Capital Concepts and Measures". In Bowman, M. J., et. al. (eds). Reading in the economics of education. Paris: UNESCO, 1968, pp. (246-269).
vol.39, no. 5, "Economics of Education". Review of Educational Research, 1969 , 1 , 670 .
, "Education and Economic Growth". in Johns \(\mathbb{R} . \mathbb{L}_{0}\), et al (eds.). Economic Factors Affecting of Education. Gainesvill, Florida: National Education Finance Project, 1970.

Carnoy M. and D. Marenbach, "The Return to Schooling in the United States, 1939-1969", The Journal of Human Resources, Summer 1975, Vol. 10, no.3, pp 312-331.

Carr-Hill R. and Magnussen, Indicators of Performance of Educational Systems, (Paris: OECD, 1973), chp. VI.

Chamberlain, N. W., "Some Further Thought on the Concept of Human Capital". In Somers, G. G., and W. D. Wood (ed.). Cost-Benefit Analysis of Manpower Policies. Kingston, Ontario: International Relation Center, Queen's University.
Charnsuphaindr P., "The Rate of Return to Investment in Thailand Education", The Philippine Economic Journal, 1979, Vol. 18, no 3, pp.289-327

Chiswick, B. R., "Schooling, Screening, and income". In Solomon, Lewis C., and Paul J. Taubman (ed.). Does College Matter? Some Evidence on the Impacts of Higher Education. New York: Academic press.

Cohn Elchanan, The Economics of Education (Lexington Books D.C. Heath and Company Lexington, Massachusetts Toronto), 1972.

Clotfelter Charles T. , Public spending For Higher Education: An Empirical Test of two Hypotheses, Public Finance, Vol.31, No. 2, 1976, pp. 177-194.
Colberg, M. R., Forbush, D. R., and Whitaker, G. R. Business Economics: Principles and Cases. Homewood, Ill: Ricard D. Irwin, 1970.
Coombs, P. H. and J. Hallak, Cost Analysis in Education: A Tool for Policy and Planning. Published for the World Bank, the Johns Hopkins, University Press, London, 1987.

David M. and Morgan J., Education and Income, Quarterly Journal of Economics, (August 1963), pp. 436-437.

Davis, J. Ronnle, "The Social and Economic Externalities" In Johns, R. L., et.al. (eds.) Economic Factors Affecting the Financing of Education. Gainesvilles Florida: National Education Pinance Project, 1970.
de Faro Clovis, "On the Internal rate of Return criterion", The Engineering Economist, Vol. 19, no. 3, Spring 1974, pp. 164-194.
DeGarmo \(\mathbb{E}\). Pual and John \(\mathbb{R}\). Canada, Engineering Economy, (The Macmillan Co., New York, 1973).
DeGarmo E. Pual, Engineering Economy, (London: Collier - Macmillan), 1973.
Demetriades E. I. and G. Psacaropoulos, "Education and Pay Structure in Cyprus", International Labour Review, Jan.- Feb. 1979, vol. 118, no. 1, pp.103-111.
"Education Expansion and the Return to Education: Evidence from Cyprus", International Labour Review, Sept.- Oct. 1987, Vol. 126, no. 5, pp. 597-602.
Denison \(\mathbb{E} . \mathbb{F}\)., The resources of Economic Growth in the United states and the Alternatives Before Us. Committee for Economic Development, 1962.
, "Measuring the Contribution of Education and the Residual to Economic Growth". In John Vaizy, (ed.) The Residual Factor and Economic Growth. (Paris: OECD, 1964), pp.(13-66). Countries. \({ }^{\text {. }}\) (Washington, D. C.: Brookings Institution, 1967).

Dibski, D. J. Private returns to teacher education. Unpublished Doctoral thesis. University of Alberta, Edmonton, Alberta, 1970, p. 49.

Dodge D. A. and D. A. A. Stager, "Economic Returns to Graduate Study in Science, Engineering and Business," Canadian Journal of Economics, May 1972, Vol. 5, no. 2, pp. 182-198.

Dodge, D. A. "Returns to Investment in University Training: The Case of Canadian Accountants, Engineering, and Scientists", International and Labour Relations Center, Queen's University, Canada, 1972.
Droe R. \(\mathbb{R}\)., The Diploma Disease: Education, Qualification and Development. Allen and Unwin, London, 1976.
Eugene C. Bell "A College of Business Administration as production system", Academy of Management Journal, Vol. 17, no.2, (June 1974).
Eugene \(\mathbb{F}\). Brigham and James L. Pappas, Managerial Economics, (London, Holt, Rinehart and Winston, 1974), pp. 304-309.
Ferber M. A. and W. W. McMahon, "Women's Expected Earnings and their Investment in Higher education", The Journal of Human Resources, Summer

1979, Vol. 14, no. 3, PP. 405-420.
Foster, P. J., Education and Social Differentiation in Less Developed Countries. Comparative Education Review, Vol. 21, 1977, pp. 211-229.

Freeman, R. B., "The Decline in the Economic Rewards to College Education", Review of Economics and Statistical, Vol. LIX, No. 1, 1977, pp.18-29.
Freeman, R. B., "The Changing Economic Value of Higher Education in Developed Economics, A Report to the O.E.C.D., Harvard Institute of Economic Research, Harvard University, Cambridge, Massachueets, Jan. 1982, Discussion Paper Number 874, pp 1-55.
Garmas, W. 1. "A Benefit-Cost Analysis of the Upward Bound Program", The journal of Human Resources, 1971, Vol. 6, no.2, pp. 201-220.

Glick P. C. and H. P Miller, "Educational Level and Potential Income", American Socological Review, Vol. 21, 1956, pp.207-312.
Gomez Castellanos, B., and Psacharopoulos, G., Earnings and Education in Ecuador : Evidence from the 1987 Household Survey, Economics of Education Review, Vol. 9, No. 3, 1990, pp. 219-27.

Goode, \(\mathbb{R}\). \(\mathbb{B} .\), "Adding to the Stock of Physical and Human Capital". American Economic Review, Papers and Proceedings, Vol. 49, (May 1959), pp. (149-155).

Green C. R., "Returns to Investment in Undergraduate Education by Race and Sex in 1960 to \(1970^{\prime \prime}\), Review of Business and Economic Research, Winter 1976/77, Vol. 12, no. 2, pp. 57-68.

Griffiths G. and A. Saunders, Return on Investment: A Note on Males and Female Higher Education in United Kingdom, 1966-1973", Public Finance Quarterly, Jan. 1979, Vol. 7, no. 1, pp. 110-121.
Grootaert, C., Returns to Formal and Informal Education in Cote d'Ivoire: The Role of the Structure of Labour Market, Economics of Education Review, Vol. 9, No. 4, 1990, pp. 309-19.

Guisinger S. E., J. W. Henderson, and G. W. Scully, "Earning, Rates of Return to Education and the Earnings Distribution in Pakistan", Economics of Education Review, 1984, Vol. 3, no. 4, pp. 257-267.

Gustman A. L., "On Estimating the Rate of Return to Education", Applied Economics, 1973, Vol. 5, no. 2, PP. 89-99.

Heyneman, S., Educational Investment and Economic Productivity: Evidence from Malawi, International Journal of Educational Development, Vol. 4, No. 1, pp. 9-15.

Hansen, W. Lee, "Rates of Return to Investment in Schooling in the United States". In Blaug, Mi. (ed.). Economics of Education 1. London: Penguin Books, 1968, pp. 137-155.

Hallak, J. Some Methodological comments on compiling unit costs and their
utilization in educational planning, Paris, UNESCO: IIEP, 1966 (limited circulation).

Hanoch G., "An Economic Analysis of Earnings and Schooling", The Journal of Human Resources, Vol. 2,Summer 1967, pp. 310-329.

Hansen, Lee W., "Total and Private Rates of return to Investment in Schooling," Journal of Political Economy, 1963, Vol. 71, pp. 128-141.
"Investment in Higher Education and Its Returns." The economic of Higher Education, New York: College Entrance Examination Board, 1967, p. 29-34.
, "Rate of Return to Investment in Schooling in the United States." In Blaug, M. (ed.), Economics of Education 1. London: Penguin Books, 1968, pp. (137-155).

Hansen Lee W., Burton A. Weisbrod, Benefits, Costs, and Finance of Public Higher Education", Markham Publishing Co., U.S.A., 1969.

Harberger, A. C, "Investment in men versus investment in Machines: the case of India. In Anderson C. A. and Mary Jean Bowman (eds), Edlucation and Economic Development, Aldine Publishing Co., Chicago, 1965, pp.11-50.

Haseeb, \(\mathbb{K}\)., The National Income of Iraq, 1953-1961, (Oxford University Press, 1964).

Herfindah1, O. C., and Kneese, A. W. Economic theory of natural resources. Columbia: Charles E. Merrill Publishing Co. 1974.

Hinchliffe \(\mathbb{K}\)., "Education, Individual Earnings and Earnings Distribution", Journal of Development Studies, Jan 1975, Vol. 11, no. 2, pp. 149-161.

Hinchliffe, \(\mathbb{K}\)., The Returns to vocational training in Botswana-Research Note, Economics of Education Review, Vol. 9, No. 4, 1990, pp. 401-4.

Hines, \(\mathbb{F}_{0}\), T. Luther, and \(\mathbb{R}\). Martin, "Social and Private rates of return to Investment in Schooling, by Race-Sex Group and Regions". The Journal of Human Resources, Vol. 5, No. 3, 1970, pp.318-340.
Hirsch, W. Z., Segelhorst, E. W., and Marcus, M. J. Spillover of Education Cost and Benefit. Los Angeles: Institute of Government and Public Affairs. University of California, Los Angeles, 1964.
Hoffer S. N., "Private Rate of Return to Higher Education for Women", Review of Economics and Statistics, Nov. 1973, Vol. 55, no. 4, pp. 482-486.
Hoffman, S. D., "Black - White Differences in Returns to Higher Education : Evidence from the \(1970 \mathrm{~s}^{\prime \prime}\), Economics of Education Review, 1984, Vol. 3, no. 1, pp. 13-21.

Hollister, R., "Education and Income - A Study of Cross- Section and Cohorts". In Education and Distribution of Income: Some Exploratory Forays. Paris: OECD, 1970, pp. 63-136.

Hough, J. R., Education and the National Economy, (Croom Helm, 1987).
Houthakker H. S., "Education and Income, The Review of Economics and Statistics, Feb. 1959, pp.24-28.

International Labour Organization (ILO), Matching Employment Opportunities and Expectations: A Programme of Action for Ceylon. ILO, Geneva, 1971.

Jain, B., Returns to Education: Further Analysis of Cross Country Data, Economics of Education Review, Vol. 10, No. 3, 1991, pp. 253-58.

Jallade, Jean-Pierre, Basic Education and Income Inequality in Brazil: The Long Term View. World Bank Staff Working Paper No. 268, Washington, D. C.: The World Bank, 1977, pp. 25-26.

James Mao C. T., "The Internal Rate of Return as a Ranking Criterion", The Engineering Economist, Vol. 11, no. 4, Winter 1966, pp. 1-13.

Jespersen, N. H., "Simulation Model of a university", Decision, Planning, Budgeting: studies in Institutional Management in Higher education, University of Copenhagen, Center for Educational Research and Innovation (CERI), Organisation for Economic Co-operation and Development, 1972, Ch.6.

John R. Canada, "Rate of Retum: A comparison between the discounted cash flow model and a model which assumes an explicit reinvestment rate for the uniform income flow case", The Engineering Economist, Vol. 9, no. 3, spring 1964, pp. 1-15.

Kahan Arcadius, Russian Scholars and Statement on Education As Investment. In Anderson C. A. and Mary Jean Bowman (eds), Education and Economic Development, Aldine Publishing Co., Chicago, 1965, pp.3-10.

Kenneth L. Boulding, Economic Analysis (rev. ed.; New York: Harper \& Bros., 1948), Chp. xxxv and xxxvi.

Keynes J. M., The General Theory of Employment interest, and money (New York: Macmillan Co., 1936).

Khanna R. K. and A. Bottomaley, "Cost and Return on Graduates of University of Bradford", Accounting and Business Research, 1970, pp. 56-70.

Klevmarken A. and Quigley J. M. "Age, Experience Earnings and Investment in Human Capital". The Journal of Political Economy, 1976, Vol. 84, no. 1, pp. 47-72.

Knight, J. B. and Sabot, \(\mathbb{R}\). H., Education, Productivity and Inequality, The East African National Experiment (Oxford University Press), 1990.

Koch James V., "Student Choice of Undergraduate Major Field of Study and Private Internal Rates of Return". Industrial and Labour Relations Review Vol. 26, No.1, 1972, pp. 680-685.

Koulourianos, D. Th., Educational Planning for Economic Growth. Beckeley Cal.: Center of research in management Science, University of California, 1967.

Leite, M. et al., The Economics of Educational Costing, Vol IIIA: Capital and Returns in Education. Lisbon: Istito Gulbenkian Deciencia. 1969, pp. 89-90.

Lipsey Richard G. and Steiner Peter O., Economics 2nd ed., (New York: Harper \& Row, 1969).

McMahon, W. W. "Consuption and Other Benefits of education". In Psacharopoulos G. (eds.) Economics of Education Research and Studies. (peramon Book Ltd. Oxford, 1987).

McMahor W. W. and A. P. Wagner, "Expected Returns to Investment in Higher Education in Higher Education", The Journal of Human Resources, 1981, Vol. 16, no. 2, pp. 274-285.

Maddison Angus, What is education for? LLoyds Bank Review, no 112, (April 1974), pp. 19-30

Maglen Leo and Layard Richard, 'How Profitable is Engineering Education? High Education Review, Vol. 2, (spring 1970), pp. 51-67.

Marar, \(\mathbb{R}\). \(\mathbb{P}\)., and Fraser \(\mathbf{S}\). \(\mathbb{E} .\), A Cost-Benefit Analysis of the Harijan Education Program of Kerala, India, International Journal of Educational Development, Vol. 6, No. 1, 1986, pp.

Marshall, A., Principles of Economics, Bk. 4, chp. 6, no. 7, Third Edition, (Macmillan and Co. Ltd., London, 1895).

Martin Kenneth Starr, Production Management; System and Synthesis, Prentice Hall, 1964.

Mathews \(\mathbb{E}\). D. and Akrawi M. Education in Arab Countries of Near East. America Council on Education, Washington, 1949.

Matz Adolph, Curxy O. J. and Frank G. W., Cost Accounting, (south-Western Publishing Company, Cincinnati, Ohio), 1967.

Merrett S., The rate of return to education: A Critique, Oxford Economic Paper, Oxford, Clarendos press (November 1966).

Metcalf David, "The rate of return to investing in a doctorate: A case study", Scottish Journal of Political Economy, Vol. 20, no. 1, (February 1973), pp. 43-51.

Mill John Stuart, Principles of Political Economy. (W. J. Ashley Ed.) New York: Longmans, 1909.

Mincer, J.s "On-The-Job Training: Costs, Return, and Some Implication". The Journal of Political Economy, Supplement, Oct. 1962, pp. 50-79.
\(\qquad\) , "Consumption and Investment", World Year Book of education, 1967.

Economic Research, experience, and Earnings. New York: National Bureau of Economic Research, 1974.
, "Progress in Human Capital Analyses of the distribution of earnings": In: Atkinson A. B. (ed.) The Personal Distribution of Incomes. Allen and Unwin,

London, 1976, pp. 136-92.
Morgan, J. and David M., "Education and Income". Quarterly Journal of Economics, LXXII, (August, 1963), PP. (429-437).

Morris \(V_{\text {o, " "Investment }}\) in Higher Education in England and Wales: A Subject Analysis", In Carolyn Baxtor, P. J. O'leary and Adam Westoby, Economics and Education Policy, a reader, at open University, 1977, pp. 72-91.

Morris V. and A Ziderman, "The Economic Return as Investment in Higher Education In England and Wales", Economic Trends, May 1971, pp. xx-xxxi.

Mount, R. I., R. E. Bennett, and C. A. Casper,"The Influence of Educational Differences on Income by Occupation", The American Journal of Economics and Sociology, Jan. 1982, Vol. 41, no. 1, p. 28.

Myrdal G., Asian Drama: An Inquiry into the Poverty of Nations, Vol.3, (New York: The Twentieth Century Fund, 1968).

Mulvey Charles, "Rate of return to the legal profession in Scotland, Scottish Economic Society, 1980, Vol. 27, no. 3, pp. 250-259.
Nelson \(\mathbb{R}\). \(\mathbb{R}\)., "Comment" on a paper by Grilliches, Published in W. Lee Hansen, Education, Income and human capital, N. B. E. R., 1970, pp. 124-127.
Niemi, W. Albert Jr., "Racial and Ethnic Differences in Returns on Educational Investment in California and Texas", Economic Inquiry, 1974, Vol. 12, no. 4, pp. 398-402.

Nord S., "An analysis of College on Inequality in Male and Female Wages in the United States: A Human Capital", Rivista international of Science Economic Commercial, 1987, Vol. 34, no. 12, pp. 109-128.

Nurkse Rangar, Problems of Capital Formation in Underdeveloped Countries. (new York: Oxford University Press, 1955).

O'Donoghue, M., Economic Dimensions in Education. Chicago: Aldine - Atherton, 1971.

Okigbo, P. N. C. "Criteria for Public Expenditure on Education". In Robinson, E. A. G. and Vaizey J. E. (eds.). The Economics of Education. New York: St. Martin's press, 1969, pp. 479-494.

Organization of Economic Cooperation and Development. Policy conference on economic growth and investment in education: Washington 16th-20th October 1961. Washington, D. C.: Author, 1962.

Parnes, H. S., Forecasting Education Needs for Economic and Social Development, (paris: OECD, October 1962).

Perlman \(\mathbb{R}\)., The economics of Education. (Mcgraw-Hill Book Company, London, 1973).

Pike Richard \& Dobbins Richard, Investment Decisions and Financial Strategy, (Philip

Allan, London), 1986.
Psacharopoulos, G., "Estimation Shadow Rates of return to Investment in Education" Journal of Human resources, Vol. 5, (Winter 1970), PP. (34-50)

Rates of Return: An International Comparison. (Elestvier Scientific Publishing Company, London, 1973).
, Earning and Education in OECD Countries. Organisation for Economic Co-operation and Development, paris, 1975.
, "Returns to Education: an Updated International Comparison", Comparative Education, Vol. 17, no. 3, 1981, pp. 321-41.
Psacharopoulos, G., Return to Education: A Further International Update and Implications, The Journal of Human Resources, 1985, Vol. 20, No. 4.
Fcome "Earnings and Education in Greece, 1960-1977", European Economic Review, March 1982, Vol. 17, no. 3, pp. 333-347.
"Education as an Investment", Finance and Development, Sept. 1982, Vol. \({ }^{9}\) 19, no. 3, pp. 39-4.4.

Economics of Education: Research and Studies. (peramon Book Ltd. Oxford, 1987).
Psacharopoulos, G., Time Trend of the Returns to Education Cross- National Evidence, Economics of Education Review, 1989, Vol. 8, No. 3, pp. 225-31.
Psacharopoulos, G. and Alam, A., Earnings and Education in Venezuela: An Updated from 1987 Household Survey, Economics of Education Review, Vol. 10, No. 1, 1991, pp. 29-36.
Psacharopoulos, G. and R. Layard "Human Capital and Earnings: British Evidence and a Critique", Review of Economic Studies, Vol. 46, no. 3, 1979, pp. 485-503.
Psacharopoulos, G., and Steier, F. "Education and the Labour Market in Venezuela, 1979-1984", Economics of education Review, Vol. 7, No. 3, 1988, pp. 321-32.
Psacharopoulos, G., and Y. NG: "Earnings and Education in Latin American", The World Bank, 1992, WPS 1056.
Pual H. Jeynes, "The Significance of Reinvestment Rate", The Engineering Economist, Vol. 11, no. 1, 1965, pp. 1-9.
Randll, King H., Some Further Evidence on the Rate of Return to School and The Business-cycle, The Journal of Human Resources, Vol. 15, no. 2, 1980, pp. 264-272.

Rasheed, \(\mathbb{K}_{.}\)J. and Ali, \(\mathbb{I}_{\mathrm{o}}, \mathbb{K}\). . The Index Price of the Medical Services in Iraqi Public Enterprises. Baghdad, Iraq, 1985, (In Arabic Version).

Rudolph C. Blitz, The Nation's Educational Outlay in Economics of High Education, (ed.) by S. Mushkin (Washington, D. C.: U. S. Department of Health, Education and Welfare, 1963).

Raymond \(\mathbb{R}\). and R. Sensnowitz, "Returns to Investments in Higher Education: Some New Evidence", Journal of Human Resources, Spring 1975, Vol. 10, no. 2, pp. 139-154

Raymond \(\mathbb{R}\). and M. Sesnowitz, "The Rate of Return to Mexicans Americans and Anglos on an Investment in a College Education", Economic Inquiry, July 1983, Vol. 21, no. 3, pp. 400-411.

Renshaw E. \(\mathbb{F} .\), "Estimating the rate of return to education." Review of Economics and Statistics, Vol. 63, Aug. 1960' pp.318-324.

Republic of Iraq, Ministry of Education, A Report on Educational Development in Iraq. Baghdad, 1977, p. 2, (in English Version) 75-/76, Baghdad, 1977.
——, Ministry of Education, Official Report (1969-77) Directorate General of Educational Planning, Baghdad, 1978, (in Arabic Version).

Ministry of Education, Development of Education in Iraq, During 1974/75-1975/76. Directorate General of Education Planning, Baghdad, 1978, (in English version).

Republic of Iraq, Ministry of Higher Education and Scientific Research, Statistics Department, Unpublished Financial Report, 1989.

Republic of Iraq, Revolutionary Command Council Resolution No. 391 (5th February 1974).

Republic of Hraq, Revolutionary Command Council Resolution No. 82 (23th Jan. 1976).

Republic of Hraq, Revolutionary Command Council Resolution No. 1325 (12th May 1976).

Republic of Iraq, Revolutionary Command Council Resolution No. 1119 (14th July 1980).

Republic of Iraq, Ministry of Planning, Annual Nominal Salary Range and Cost of Living Allowance From Civilh Service No. 24, Government Gazette, No. 300, Government Press, February \(6^{\mathrm{h}}, 1960\).
, Ministry of Planning, Annual Abstracts of Statistics, (Baghdad: Central Statistical Organization), 1973

Ministry of Planning, Educational and Social Office, Department of Educational Planning, report No. 3, 1971, Higher Education in Iraq for the period 1960/61-1969/70, Baghdad, 1971. (Baghdad, 1973), Vols. I and II.
\(\qquad\)

Central Statistical Organization), 1973.
\(\qquad\) \(\rightarrow\) Ministry of Planning, The 1987 Census of Population in Iraq, Central statistical Organization, 1988, Table 32, pp. (125-129).

Ministry of Planning, Central Statistical Organization, Annual Abstracts of Statistics, 1982.

Ministry of Planning, Central Statistical Organization, Annual Abstracts of Statistics, 1983.

Ministry of Planning, Central Statistical Organization, Annual Abstracts of Statistics, 1984.

Ministry of Planning, Central Statistical Organization, Annual Abstracts of Statistics, 1985.

Ministry of Planning, Central Statistical Organization, Annual Abstracts of Statistics, 1986.

Ministry of Planning, Central Statistical Organization, Annual Abstracts of Statistics, 1987.

Ministry of Planning, Central Statistical Organization, Annual Abstracts of Statistics, 1989.

Richard G. Lipsey and Peter O. Steiner, Economics, 2nd ed., (New York: Harper \& Row, 1969).

Riveros, L. A. The economic Return to Schooling in Chile. An Analysis of its long-term Fluctuations, Economics of Education Review, Vol. 9, No. 2, 1990, pp. 111-21

Robert M. Solow, Capital Theory and Rate of Return, (Amsterdam: North Holland Publishing Co., 1963).

Rodriguez, L. J., and Davis D. D. The Economics of Education. Lincoln, Nebraska: Professional Educators publications, 1976.
Rogers, D. C., and Ruchline, H. S. Economics and Education: Principles and Application. New York: The Free Press, 1971.

Sahota, G. S., "Theories of personal income distribution: A Survey". The Journal of Economic Literature, Vol. 16, No. 1, (March 1978), p. 1-55.

Seneca J. J. and Taussig, M. K. Environmental Economics. (Englewood Cliffs. N. J.: Prentice-Hall, Inc., 1974).
Selby-Smaith C., "Costs and Benefits in Further Education: Some Evidence from a Pilot Study", Economic Journal, Sept. 1970, pp 583-604.
Schultz, T. P. Returns to education in Bogota, Columbia. New York: Rand Corporation Memorandum NO. R. M. 5645/AID, 1968.

Schultz, T. W., "Investment in man: An Economic View". Social Services Review, Vol. 33, No. 2, 1959, pp. (109-117).
"Investment in human capital". The American Economic Review, Vol. 51, 1961, pp. 1-17.
"Economic Prospects of Primary Products." In Ellis, H. S. (ed) Economic Development for Latin America (Proceeding of a conference held by the International Economic Association), Ch. 11, pp. 308-331, London, Macmillan, 1961.
"Reflections on Investment in Man". Journal of Political Economy, Vol. 70, 1962 , pp. (1-8).
press, 1963). The Economic Value of education. (N. Y.: Columbia University Education The Rate of Return in Allocating investment Resources to Education. Journal of Human Resources, Vol. 2, 1967, P. 293-347.
\(\rightarrow\) "Investment in Human Capital". In Blaug Mark, (ed.). Economics of Education 1. London: Penguin Books, 1968, pp. (13-33).

Research Investment in Human Capital: The Role of Education and of Research. New York: The Free Press, 1971.
. "Capital Formation by Education". Journal of Political Economy, Vol. 68, No. 6, 1960, pp. 471-483.

Shaffer, \(\mathbb{H}\). G., "A Critique of the Concept of Human Capital". In Blaug, Mark ( ed.). Economics of Education 1. London: Penguin Books, 1968, pp. (45-57).

Shaffer H. G., "Investment in Human Capital: Comment". American Economic Review, 1962, pp. 1026-1035.

Shanasul Hug M. Education, Manpower, and Development in South Asia. New York: Praeger Publisher, 1975.

Sheehan, J. The Economics of Education. (George Allen \& Unwin Ltd., London, 1973).

Smith, A., The Wealth of Nations. Bk. 1, Chp. 10, pt. 1, no. 6, 2nd Edition edited by James E. Thorold Rogers, (Clarendon press, Oxford), 1880, p. 106.

Social Responsibility of the Uaiversity in Asian Counties, paper of International Association of Universities, no. 12, (Paris, 1973).

Solow, R. M., Capital Theory and the Rate of Return. Amsterdam North Holland Publishing, 1963.

Squire, L., Employment Policy in Developing Countries: A Survey and Evidence. Oxford University Press, New York, 1981 p. 121.

Stager, D. A. A. Monetary returns to Post-Secondary education in Ontario. Doctoral Dissertation, Princeton University, Ann Arbor, Mich: University Microfilms, 1969, No. 69-2783.

Starr M. K. , Production Management; System and Synthesis, Prentice Hall, 1964.
Stoikov, V. The Economics of Recurrent Education and Training. Geneva: International Labour Office, 1975.

Tan, J-P, and Paqueo, V. B., The Economic Returns to Education In the Philippines, International of Educational development, Vol. 9, No. 3, 1989, pp. 243-50.

Tannen, M. B., New Estimates of the Returns to Schooling in Brazil, Economics of Education Review, Vol. 10, No. 2, 1991, pp. 123-35.

Taubman, P. "Earnings, Education Peretics, and Environment". Journal of Human Resources, Vol. XI, No. 4, 1976a, p. 447-461

Thurow, Lester, Investment In human Capital. Belmont: Waelsworth Publishing Co., Inc., 1970.

Thias, HH. H., and M. Carnoy, Cost Benefit Analysis in Education. A case study of Kenya. Baltimore, Maryland: The Johns Hopkins press, 1972.
Turvey \(\mathbb{R}\). and Prest A. R. "Cost-Benefit Analysis: A survey". The Economic Journal, LXXV, (December, 1965), p.683-735.

University of Baghdad, Registration Office, Annual Abstracts of statistic, Al-Zaman Press, 1960.
, Leaflet of university of Baghdad, for the year 1962/63, Al-Ianai Press, Baghdad, 1963.

Al-Zaman Press, 1965 Registration Office, Abstract of Statistic for year 1964/65,
Press, 1965 Registration Office, Annual Abstracts of statistic, Al-Zaman Press, 1965.
\(\xrightarrow{\text { —Planning Office, Annual Abstracts, Al-Zaman Press, } 1970 . ~}\) -P Planning Office, Annual Abstracts, 1975.
-, Planning Office, Annual Abstracts, Al-Zaman Press, 1977.
, Planning Office, Annual Abstracts, Al-Zaman Press, 1980.
, Institutional Cost of Graduate in Iraq. Unpublished Study, Baghdad University, Republic of Iraq, 1983.
U. N., Department of Economic and Social Affairs, Report on the world situation (New York, 1961).

Vaizey, j., The Economics of Education. (Fabor \& Fabor, London, 1962).
- The Role of Education in Economic Development, in Herbert S. Parnes, (ed). Planning Education for Social and Economic Development, (paris, OECD, 1963), pp. 40, 50-52.
-. The Economics of Educational Costing, (Centro De Economica E Financas, France, 1969).
_, "The Returns to Education." In Bowman, M. J., et. al. Reading in the economics of education. Paris: UNESCO, pp. (592-601).

Co., 1972). The Political Economy of Education, (London: Gerald Daukworth \&
Vaillancouri \(\mathbb{F}\). and I. Henriques, "The Returns to University School in Canadian", Canadian Public Policy, 1986, Vol.12, no. 3, pp. 449-458.
Verry, D. W., "Planning Higher Education at the Sectorial Level: With Special Reference to Higher Education Costs in Britain", in Council of Europe Information Bulletin, 1974.

Von Thunen, H., "Cost of Education as Formation of Productive Capital". In Cohn, E., The Economics of Education. Lexington Book, D. C. Health and Company, Lexington, Massachusetts, Toronto, 1979.

Walsh J. R., "Capital Concept Applied to Man, Quarterly Journal of Economics, Feb. 1935, pp.225-285.

Walter W. Heller, "Economics and the Applied theory of public Expenditures" Federal Expenditure Policy for Economic Growth and Stability, (Washington, Joint Economic Committee, 1957).
Weisbrod, B. A. "Education and Investment in Human Capital". Journal of Political Economy, LXX, No. 5, part 2, 1962. pp. 106-123.
\(\rightarrow\) External Benefits of Public Education: An Economic Analysis, (princeton, 1964).
, "Preventing High School Dropouts", In R. Dorfman (ed.), Measuring Benefits of Government Investments, (Washington, D. C.: The Brookings Institution, 1965).
"Present Values of Lifetime Earnings for Deferent Occupation". The Journal of Political Economy, Dece. 1966, vol. 74, no. 6, pp. 556-573.

Weisbrod, \(\mathbb{B}\). A., and Swift, W. "on the Monetary value of Education's Intergeneration Effects". Journal of Political Economy, 1965.

Weich Finis, Black-White Differences in Return to Schooling, American Economic review, Vol. 63, no. 5, 1973, pp. 895-907.

William A. Niskanen, "Measures of Effectiveness". In Thomas A. Goldman (ed.), Cost-Effectiveness: New approaches in Denison Making, (New York: Frederick A Praeger), 1967.

Williams G. and A. Gordon, "Perceived Earnings Functions And Ex ante Rates of Return to Post Compulsory Education in England", Higher Education, Vol. 10, pp. 199-227.

Wilson K. A., Private Monetary Returns to Baccalaureat Education. Unpublished Doctoral thesis. University of Alberta, Edmonton, Alberta, 1970.

Wilson R. A., "The Rate of Return to Becoming a Qualified Scientist or Engineer in Great Britain, 1966 - 1976", Scottish Journal of Political Economy, Feb 1980, Vol. 27, no. 1, pp. 41-62.
? The Declining Return to Professional states in British Economy (with special reference to scientists and engineers). Thesis submitted for Ph.D, Department of Economics, University of Warwick, 1983.
, "Rates of Return: Some Further Results", Scottish Journal of Political Economy, June 1983, vol. 30, no. 2, pp. 114-127.
"A Longer Perspective on Rate of Return", Scottish Journal of Political Economy, June 1985, Vol. 32, no. 2, pp. 191-198.

Wolff \(\mathbb{E}\). N. "Schooling and Occupational earnings", Review of Income and Wealth, Journal of the International Association for Research in Income and Wealth, Sept. 1977, Vol. 23, no. 3, pp. 259-278.
Woodhall, M., Cost Benefit Analysis In Educational Planning, UNESCO, Internal Institute for Education Planning, 1970.
, Economic Aspects of Education: A review of Research in Britain. (National Foundation for Educational Research in England and Wales, 1972).
"The Economic Returns to Investment in Women's Education", Higher Education, 1973, Vol. 2, PP. 275-300

Earning and Education, in Psacharopoulos G. (ed.), Economics of Education: Research and Studies. (peramon Book Ltd. Oxford, 1987) pp. 209-217.

Wood, W. D. and Campbell H. \(\mathbb{H}^{-}\). Cost-Benefit Analysis and the economics of investment in human resources. Ontario: Queen University at Kingston, 1970.

Yorm Weiss, "Investment in Graduate Education", American Economic Review, Dec. 1971, Vol. 61, no. 5, pp. 833-852.

Ziderman, A., "Rate of Return on Investment in Education: Recent Results for Britain", The Journal of Human Resources, Vol. 8, no. 1, 1973, pp. 85-97.

University Does Pay to Take a Degree? The Profitability of Private Investment in University Education in Britain. In Baxter C., O'Leary P. J. and Westoby, Economics and Education Policy: a reader, (Longman in Association with the Open University Press, 1977.```

