



**THEORISING GOVERNMENT EXPENDITURE GROWTH
IN MALAYSIA, 1961-1990: AN ECONOMETRICS ANALYSIS
OF WAGNER'S LAW, KEYNESIAN RELATION AND
PEACOCK-WISEMAN HYPOTHESIS.**

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Submitted For:

The Degree of Doctor of Philosophy
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Submitted On:

27 November, 1998.

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Title: Theorising Government Expenditure Growth In Malaysia 1961-1990: An Econometrics Analysis of the Wagner's Law, Keynesian Relation and the Peacock-Wiseman Hypothesis.
Author: Ku 'Azam TUAN LONIK.

A b s t r a c t s

We applied cointegration, Granger-causality and Error Correction Mechanism [ECM] model to test for the Wagner's Law and Keynesian relation in an effort to explain the government expenditure growth in Malaysia for the period 1961-1990. We defined Wagner's Law following Musgrave [1969], Gupta [1967], Goffman [1968] and Mann's [1980] definitions. We modified Musgrave definition by excluding transfer payments from the total government expenditure to test the significance of transfer payments. We tested the Keynesian relation by reversing the Gupta's definition to see the effect of government expenditure on GNP. Following Diamond's [1977] interpretation of Peacock and Wiseman Hypothesis as a theory of structural break, we employed Perron's test for structural break to test for Peacock-Wiseman Hypothesis by considering the May 13, 1969 racial conflict as a form of social upheaval.

Following Nelson and Plosser [1982] and as a pre-requisite to cointegration, Granger-causality and ECM, we tested the data generating process to determine whether the time-series used in this study are generated by trend stationary [TS] or differenced stationary [DS] process. On discovering that the time-series are DS, we proceed by testing the unit root hypothesis using Dickey and Pantula [1985] procedure.

On Wagner's Law, we discovered that a) the variables from Musgrave, modified-Musgrave and Mann's definition are NOT cointegrated, b) using differenced variables, we find no Granger-causality to support Wagner's Law which is a sharp contrast when we tested the relationship using the level of the variables and c) ECM test confirmed out finding in (b). We obtained the same result as (b) when we tested the Keynesian relation. Using Perron's procedure, we cannot trace a structural break in total government expenditure, GNP and ratio of government expenditure in GNP to verify the Peacock-Wiseman Hypothesis.

ACKNOWLEDGEMENT

I am deeply indebted to both my parents, Tuan Lonik b. Megat Abdullah and Tuan Som Tuan Mud, without their support and encouragement I may not have undertaken this study. To my wife, 'Adilah Mohamed, I owe a great deal of gratitude for all your sacrifices to see me through. To my daughter Engku Asilah, I seek your forgiveness for sometime I left you when you are still deep in your sleep and come back when you are preparing to go to bed again or, worst still, you have already gone to bed. To my newly born daughter, Engku Adawiyah whom I have hardly see, I missed your birth and the most valuable experience of watching your early development; nothing can ever redeem my guilt.

To the handful of friends that I have around with me, here in UK or back home, I extend my thankfulness for all your helps, thought and most importantly concern and for keeping me firm on my feet. To avoid missing anyone, I exercise my prerogative by not mentioning names.

I would like to take this opportunity to thanks Universiti Sains Malaysia for giving me the scholarship to undertake this study. My appreciation goes to my supervisor, Prof. P.M. Jackson.

Finally, I dedicated this work to the loving memory of my Grandfather (Tuan Mud Tuan Losoh), my uncle (Hj. Husin Tahir) and my beloved cousin (Nik Apandi Husin, who has gone to meet his Creator at such a young age). To my whole family, I seek your forgiveness for not being able to be there during those sorrow periods for I'm here in UK struggling with this ambition.

*Ku 'Azam Tuan Lonik
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September 1998.*

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CHAPTER ONE

THEORISING GOVERNMENT EXPENDITURE GROWTH IN MALAYSIA: AN OVERVIEW

With all these blessings, what more is necessary to make us a happy and prosperous people? Still one thing more, fellow citizens - a wise and frugal government, which shall restrain men from injuring one another, which shall leave them otherwise free to regulate their own pursuits of industry and improvement, and shall not take from the mouth of labour the bread it has earned. This is the sum of good government, and this is necessary to close the circle of our felicities.

Thomas Jefferson
First Inaugural Address
March 4, 1801.

Big Government poses a much serious threat to the nation than either big labour or big business.

Gallup Poll, 1979, p.252

1.1 INTRODUCTION

Thomas Jefferson's 'good government', as the above quotation shows, is one which restrains men from injuring others, allows them to freely regulate their own business and protects individual rights. Two hundred years on and Jefferson's good government have expanded far beyond the functions defined by Jefferson so much so that the present tide is trying to shake off the bulging image and the protruding waist-line of government. Yet, some argue that the expansion of government is a natural course of development. Often we find it difficult to rationalise and are caught in this perplexity: which gives rise to which, the government expenditure or the economic development? Is the growth of government expenditure so alarming as portrayed by the second quotation above¹.

¹ So serious is such scepticism that governments all over, backed by IMF and World Bank, are trying to shake themselves off the conventional responsibility of providing the public goods.

On the other hand, the growth of government expenditure has, for quite some time, received an unprecedented interest both from economists as well as politicians. Other than unemployment, inflation and budget deficit, the growth of government has become both an economic as well as a political issue especially in the developed or advanced economies. These two groups of profession, though often for different reasons and interests, have contributed much to its debate. Undoubtedly, economists are concerned with the long-term effect of the growth of government expenditure on the economy. In contrast, politicians, at least are concerned with their short-term political agenda. It has and will be a highly debated election agenda especially in Western industrialised countries, in particular the United Kingdom and the United States. The same interest has not prevailed in Malaysia yet.

Modern Malaysia has transformed from an economy heavily reliant on its natural resources and agricultural produce in the sixties and seventies to a highly diversified economy in the eighties. Within a very short time span, it leapt the way a tiger cub leaps. It has since competed not only with the industrialised countries, to a lesser extent though, but also with the existing 'tiger clubs' comprising Hong Kong, Taiwan, South Korea and Singapore². Coincidentally, Malaysia and other cubs including Thailand and Indonesia, with the Philippines seem likely to join the club in the near future, are all ASEAN [Association of South East Asian Nations] countries. Probably it is proper instead to name the former as the dragons [Jin, 1995] and the latter as the tigers for Hong Kong, Taiwan, South Korea and Singapore are predominantly of Chinese roots whereby the centre-stage of the Chinese folklore is dragon whereas tigers are ever-present in the South-East Asian legend. Either way, cubs or not, their fast rising economy has caught much interest. First, because of the power shift - economic and politic - that may follow this development. Second, is the different socio-cultural set-up it has especially when compared to the industrialised economies. Malaysia, in particular its Prime Minister, has declared that Malaysia will develop in its own way. What this really means is subject to various interpretations.

² IMF's World Economic Outlook [1997] classification has categorised countries on the following line: the advanced economies, developing countries and transition countries. Hong Kong, Taiwan, South Korea and Singapore have since been categorised as advanced economies.

China, another fast growing economy with a remarkable growth rate, though may not be as developed as the four tigers, is not suitable to be grouped in the cubs club not for its vast size but for its different social, political and most importantly ideological set-up. Together, these economies - the tigers, the cubs, China and Japan - form the eastern part of the much discussed Pacific rim.

The achievement of the three new cubs as well as China is relatively at a later stage compared to the tigers. Malaysian progress in particular started in the second half of the eighties after recovering from the effect of the global recession in the period of the 1984-85. The growth rate in that period was even negative. Remarkably, since 1987, her annual growth rate was over eight per cent. What, if any, was the secret formula for this quantum leap? No serious study of Malaysian emergence can ignore the basic and important fact that government plays a major and significant role in the process. It was the government, with its long arms that introduced and drove the economy towards industrialisation.

The foregoing study is intended to explain the relationship between the growth of government expenditure and economic development in the context of Malaysia in the light of various theories explaining this kind of relationship.

In what follows, we do not differentiate between the growth of government expenditure and the growth of government. In general terms, the growth of government might mean the expansion of government activities, bureaucracy as well as the services provided by the government. Nonetheless, considering that this kind of expansion is financed by budgets, therefore, it is safe to equate the expansion in government expenditure with the growth of government.

In this chapter, we first discuss two factors that shape the economic policy adopted by Malaysia. This is followed by a brief overview of the economic development experienced by Malaysia since independence from the British in 1957 in Section 1.3. In Section 1.4, we proceed by briefly presenting the government expenditure growth in

Malaysia within the period of the study [1961-1990]. In Section 1.5, we put forward Wagner's Law explanation of the growth of government expenditure. This is followed in Section 1.6 with two alternative explanations to the growth of government expenditure. These are the Keynesian economy precept of the role of government expenditure and Peacock and Wiseman Displacement Effect Hypothesis. Following this, in Section 1.7, we present the main objectives of the study. In Section 1.8 we explain some methodological issues related to this study. Finally, in Section 1.9, we outline the course to be taken in this study prior to our summary of this chapter.

It is useful to make three brief notes at this juncture. First, we should note that our explanation of Wagner's Law and Peacock-Wiseman Hypothesis in this Chapter is very brief compared to our discussion on the Keynesian explanation. Both Wagner's Law and Peacock-Wiseman Hypothesis will be discussed at length in our literature review in Chapter 2. The reasons for this shall be obvious later. Whereas Wagner's Law and Peacock-Wiseman Hypothesis identify the reasons why government expenditure grows, Keynesian economics, on the other hand, treat government expenditure as stimulus to the growth of the economy. In hypothesis testing, government expenditures in the Keynesian model is the independent variable. In contrast, in Wagner's Law and Peacock-Wiseman Hypothesis, government expenditure is the dependent variable. Following Ram [1986b], Wagner's Law and Keynesian explanation is model in the following way:

$$\begin{array}{ll} \text{Wagner's Law} & \frac{G}{P} = f\left[\frac{GNP}{P}\right] \\ \text{Keynesian explanation} & \frac{GNP}{P} = f\left[\frac{G}{P}\right] \end{array}$$

where, GNP = Gross National Product, G = Government Expenditure, P = Population.

Secondly, the reference to Keynesian economics in this study is made only with respect to the role of government expenditures on national income measured by way of GNP .

Third, it is worth noting at this juncture that the name Malaysia only emerged in 1963 when Singapore and the two North Borneo States [Sabah and Sarawak] joined the federation. Prior to the formation of Malaysia, it was known as the Federation of Malay States, in short, Malaya. On the other hand, *Malay* refer to both the race as well as the language spoken. Nevertheless, *Malay* as a language is known this day as *Bahasa*³ Malaysia.

1.2 MALAYSIA ECONOMY : THE SHAPE OF THINGS

As for Malaysia, two stages of her economic history are worth consideration in understanding the shape of her economy since *merdeka* [independence] in 1957.

The first is undoubtedly the racial conflict on May 13, 1969; better known as the May 13 incidence. During the British colonial period⁴, spanning over 171 years between 1786 until 1957, the Malays were either groomed to take up bureaucratic work, which included leadership *vis-a-vis* politics or to remain as peasant farmers tending to their *padi*⁵ field [Gale, 1981: 17]. To put it another way, the British policy did not help the Malays to advance their economic position. Resulting from this unexplainable policy, and in order to get labours to work in the tin industry and the rubber plantations, the British resorted to bringing workers from its other colonies. Hence, labourers from southern India were brought to work in the rubber plantations and from southern China to work in the tin industry.

Why the Chinese were brought into the tin industries and the Indian into the rubber-plantation is also unexplainable. Why not the other way round? The Chinese were unfamiliar with tin mining; likewise the Indians were not familiar with the rubber plantation although before rubber was brought to Malaysia it was planted first in Ceylon [the present day Sri Lanka] on an experimental basis. Nevertheless, the

³ Literally means language.

⁴ We highlighted the British colonial period because Malaysia, or Malaya for that matter, prior to the British period, also fell into the hand of the Portugese [from 1511] and the Dutch [from 1641]. Nevertheless, the Portugese and Dutch presence was limited to the state of Malacca only.

⁵ *Padi* or paddy is normally translated as rice. In Malay, rice is the end-product of processed *padi*.

biggest question is why the British refused to involve the Malay community in the economic activities. Instead, they resorted to bringing labours from other parts of its colonies; a policy which was unique to Malaysia only. The policy was the first and only kind in its nature where the colonial power used its muscle to mobilise the movement of people from one colonial territory to another colonial territory. Official government officers were assigned and offices were set-up to assist this mobilisation⁶. The Tin industry required large number of workers compared to the rubber industry. Within a relatively short time span, the tin communities prospered and expanded. Being in a richer and productive industry compared to the Indians in the rubber plantations, the Chinese community expanded and prospered into trade and businesses which they inherit until today.

The British have managed to get to the core of the Malay societies i.e. the Malay rulers by becoming the advisers to the Malay rulers⁷. They succeeded in introducing a dual-educational policy - the *sekolah rakyat*⁸ and the English medium schools⁹. The former were for the ordinary Malay children and the latter were funded and reserved for the children of the elite Malay families who were later given scholarship to study in Britain. Using their influence on the Malay rulers, they managed to persuade the rulers and the elite Malay families to send their children to the English medium school. For what reason then, did they fail to use the same influence on the ordinary Malays to work in the tin mining and the rubber plantations? Furthermore, prior to the presence of the Chinese, tin mining was already being taken up by the Malay rulers in several places throughout the country. These activities were undertaken using Malay labourers. This [labour] policy of non-

⁶ An almost similar example can be seen in the case of Papua New Guinea which saw huge migration of Indians who today form the majority race in the country. We note the huge migration to Australia and America but they differ in nature. Except for the convicts sent to Australia, others migrate to the two countries to begin new lives in those countries. The same applies to Papua New Guinea. Unlike the case with Malaysia, the Chinese labourers, in particular, have no prior intention of settling down permanently in the country. We discuss this further in Chapter Four. We note also the number of the aborigines in the two countries, Australia and America, are small compared to their vast geographical territory.

⁷ Malaysia has thirteen states; eleven in the Peninsula [West] Malaysia. Out of the eleven states in Peninsula, nine are headed by rulers [*sultan*]. The other two, together with the two states in the East Malaysia are headed by a governor. Every five years, the nine rulers will appoint by turn one of them to be the head of the federation known as the *Yang Di pertuan Agung*. The *Yang Di pertuan Agung* will also appoint the governor for each of the four states without *sultans*.

⁸ Literally means 'people's school'. These were schools run and managed by the Malays; the medium of instruction was Malay.

⁹ This type of school was established in every state, at primary and secondary level. The most elite of them all is the Malay College, Kuala Kangsar, better known by its acronym, MCKK.

Malay involvement has left a very serious irreversible repercussion which later shaped the history of post-independence Malaysia. This theme will be the subject of Chapter Four.

The fact is that Malaysia remains a plural society - a very diverse plural society. The survival of future Malaysia depends on this delicate and often complicated racial balance. The history of modern Malaysia was tainted with the bloody racial clash on May 13, 1969¹⁰. From the economic perspective, the incident lead to the introduction of the *New Economic Policy* in 1970. The government hoped that the objectives set by the policy will be met within the period of twenty years, when the policy expired in 1990.

In an attempt to explain Malaysian rapid development, Alasdair Bowie [1991] utilised Peter Gourevitch's [1986] actor model approach¹¹. For several obvious reasons, Bowie found that the Gourevitch actor-model has limited application in the context of Malaysian structural change. This prompted Bowie to conclude that "the changes in Malaysian economic development strategy as products of the changing nature of a communal settlement that has prevailed in Malaysia since 1957" [p.9]. It is tantamount to saying that Malaysian economic development is a result of social *vis-a-vis*. racial structure of its society.

It is not the objective of this study to scrutinise nor discuss Bowie's conclusion. Nevertheless, as we noted earlier in this section, post-independence Malaysia has seen a serious racial conflict which later produced the New Economic Policy [NEP]. We will model this racial conflict in explaining the growth of government in Malaysia to see whether it has any significant effect on the growth of government expenditures.

¹⁰ Racial tension again erupted to an alarming extent in 1987. The police intervened quickly enough to prevent any unnecessary conflict.

¹¹ Gourevitch's actor model associates development with the role of five actors or factors. These are [i] the individual actor representing specific interest groups in the country, [ii] the intermediate actors or associations as an intermediary between individual actors and policy-makers, [iii] the structural role such as state institutions or bureaucracy that shape the economic policy, [iv] the ideological factor and finally, [v] the international factor.

The second stage was the drive for industrialisation. In 1981, on the resignation of the then Prime Minister, the late Dato' Hussein Onn, his deputy, Dr. Mahathir Mohamed was appointed as Prime Minister. The reason cited for Dato' Hussein resignation was ill-health. Nevertheless, various other unverifiable interpretations have emerged. Among others is the differences with his then deputy, in government as well as in party, i.e. *UMNO* [United Malay National Organisation], which is a major and dominant partner in the National Front [comprising also, among others, *MCA* - Malaysian Chinese Association, and *MIC* - Malaysian Indian Congress] which rules Malaysia since independence till this day.

One of the major steps taken by the new government, beside privatisation and look-east policy, was to introduce and launch the National Industrialisation Policy. To assist this, a Heavy Industry Corporation [*HICOM*], was set-up. Among the first major industrial activities undertaken at that stage was the establishment of steel industry, *PERWAJA*, and the production of Malaysia national car industry, *PROTON* [*Perusahaan Otomobil Nasional* - National Automobile Industry]. The latter was a joint-venture activity with Mitsubishi of Japan.

This industrialisation policy has produced a very significant result. Within the space of ten years Malaysia has strode proudly together with other new but late industrialising nations. This was further strengthened with "The Vision 2020" launched in 1990 with the aim of achieving the status of a developed nation by the year 2020¹².

1.3 MALAYSIA ECONOMY : A BRIEF OUTLOOK

In the period between 1957 till present, two facets of Malaysian economy have emerged. Prior to 1982, the Malaysian economy was highly dependent on agricultural produce and natural resources. She

¹² During the period June-July 1997, Malaysia following Thailand and Indonesia currencies faced a heavy speculative attack which reduced the value of the ringgit, bath and rupiah respectively. Thailand has since sought the help of IMF in the devaluation of its currency. Following this incident, these economies have since faced a serious economic problems. We do not model nor discuss these problems in detail for two obvious reasons. First, it is beyond the time period of this study. Secondly, this new development emerged when this study was almost completed.

was, and still is, the main world producer of rubber [and rubber products], palm oil, kernel and pineapples. Malaysia is also the world's main producer of tin. Having said that, it should be acknowledged that the rubber and tin boom during the early half of this century have played a very significant role in shaping the post-*merdeka* Malaysia. However, beginning from 1982, Malaysia has embarked on industrialisation policy.

The Malaysian economy is a very open economy, even by the standard of Third World country [Jomo, 1991]. Export have always played an important role in the economy. Table 1.1. above gives some glimpse of the openness of Malaysian economy. In the period under study, export as a proportion of GNP ranged between 34.7% in 1972 to its highest stake of 71.2% in 1990. On average, for the period of thirty years between 1961-1990, exports constituted 48.7% of GNP. On the other hand, Malaysia is also heavily dependent on imports. During the same period, imports range between 31.9% of GNP in 1969 to 66.5% in 1990. On average throughout the period, imports was 40.8% of GNP.

Table 1.1
Export, Import, Balance-of-Trade and Balance-of-Payments
1961-1990 [\$ Million], at current price.

Year	GNP [at market price]	Export [fob]	Import [fob]	Balance of Trade	Balance of Payments	As Percentage of GNP	
						Export	Import
1961	6681	3208	2669	+539	+78	48.0	39.9
1962	6916	3232	2892	+340	+20	46.7	41.8
1963	7354	3296	3010	+286	-74	44.8	40.9
1964	7822	3346	3071	+275	-140	42.8	39.3
1965	8593	3752	3226	+526	+137	43.7	37.5
1966	9177	3808	3249	+559	-164	41.5	35.4
1967	9652	3679	3202	+477	-256	38.1	33.2
1968	10068	4070	3427	+643	-26	40.4	34.0
1969	10973	4986	3505	+1481	+580	45.4	31.9
1970	11617	5020	3953	+1067	+68	43.2	34.0
1971	12501	4884	4198	+686	+203	39.1	33.6
1972	13641	4736	4371	+365	+389	34.7	32.0
1973	17443	7263	5669	+1594	+576	41.6	32.5
1974	21244	10022	9482	+540	+452	47.2	44.6
1975	21684	9057	8443	+614	+171	41.8	38.9
1976	26988	13330	9608	+3722	+2054	49.4	35.6
1977	31064	14854	11116	+3738	+755	47.8	35.8
1978	36170	16932	13242	+3690	+625	46.8	36.6
1979	43092	24060	17152	+6908	+1789	55.8	39.8
1980	50124	28013	22775	+5238	+1002	55.9	45.4
1981	55602	26900	27143	-243	-1093	48.4	48.8
1982	59690	27946	29704	-1758	-614	46.8	49.8
1983	65154	31762	30760	+1002	-55	48.7	47.2
1984	74182	38452	31466	+6986	+312	51.8	42.4
1985	72039	37576	28693	+8883	+3209	52.2	39.8
1986	66814	34970	26592	+8378	+4345	52.3	39.8
1987	74679	44733	30030	+14703	+2893	59.9	40.2
1988	86777	54607	40083	+14524	-1104	63.7	46.7
1989	95560	66818	56219	+10599	+3332	69.9	58.8
1990	109663	78110	72944	+5166	+5365	71.2	66.5
% change	1541.4	2334.9	2633.0	Average [1961-1990]		48.7	40.8

source: Bank Negara Malaysia, Quarterly Bulletin. Various Editions

Table 1.2
Main Commodity Exports, 1961-1990 [\$ million] at current price.

	Crude Oil	Palm Oil ^a	Rubber	Sawlogs	Manuf.	Tin	Sawn Timber	Other	Total Export ^b
1961	107.2 [3.3]	61.3 [1.9]	1566.9 [48.4]	136.6 [4.2]		553.1 [17.1]	51.3 [1.6]	761.80 [23.5]	3238.2 [100.0]
1965	86.7 [2.3]	107.3 [2.8]	1461.8 [38.6]	263.3 [7.0]		871.8 [23.0]	95.4 [2.5]	896.2 [23.7]	3782.5 [100.0]
1970	202.6 [3.9]	264.3 [5.1]	1723.7 [33.4]	643.6 [12.5]	614.2 [11.9]	1005.6 [19.5]	205.8 [4.0]	503.3 [9.7]	5163.1 [100.0]
1975	861.0 [9.3]	1319.5 [14.3]	2025.6 [21.9]	670.4 [7.3]	2020.4 [21.9]	1206.1 [13.1]	440.6 [4.8]	687.3 [7.4]	9230.9 [100.0]
1980	6709.1 [23.8]	2603.1 [9.2]	4618.0 [16.4]	2618.2 [9.3]	6319.2 [22.4]	2505.3 [8.9]	1344.1 [4.8]	1454.6 [5.2]	28171.6 [100.0]
1982	7694.2 [27.4]	2742.3 [9.8]	2655.1 [9.4]	3382.1 [12.0]	7311.5 [26.0]	1483.9 [5.3]	1164.6 [4.1]	1674.5 [6.0]	28108.2 [100.0]
1984	8737.4 [22.6]	4546.5 [11.8]	3671.5 [9.5]	2806.1 [7.3]	12466.7 [32.3]	1162.3 [3.0]	1175.7 [3.0]	4080.7 [10.6]	38646.9 [100.0]
1986	5400.9 [15.3]	3019.5 [8.5]	3182.7 [9.0]	2872.7 [8.1]	15351.9 [43.5]	649.6 [1.8]	1395.0 [3.9]	3446.3 [9.8]	35318.6 [100.0]
1988	6116.0 [11.1]	4540.0 [8.2]	5255.9 [9.5]	4008.2 [7.3]	26849.6 [48.6]	910.4 [1.6]	1843.0 [3.3]	5736.9 [10.4]	55260.0 [100.0]
1990	10638.5 [13.4]	4410.7 [5.5]	3028.1 [3.8]	4041.2 [5.1]	46840.5 [58.8]	902.2 [1.1]	3064.7 [3.8]	6720.5 [8.4]	79646.4 [100.0]
% ann.change 1961-70	8.9	33.1	1.0	37.1	-	8.2	30.1	-	5.9
% ann.change 1971-80	162.0	58.4	21.6	30.8	94.5	17.8	58.9	-	46.2
% ann.change 1981-85	5.1	8.0	-4.5	2.4	19.1	-4.6	0.3		8.0
% annual change 1986-90	19.4	9.2	-1.0	8.1	41.0	7.8	23.9		25.1

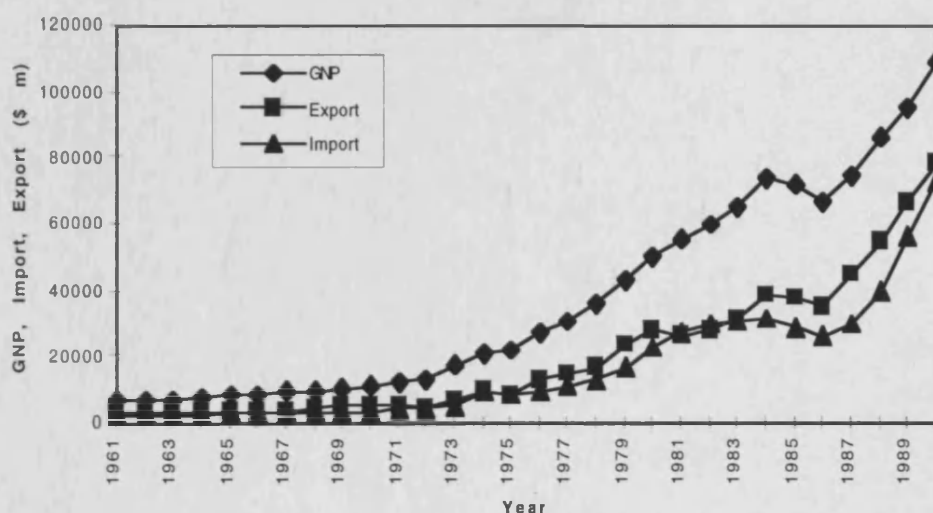
Source : Table VII.3 and VII.6, Bank Negara Malaysia, Quarterly Bulletin 1973 [figure before 1970] and Table VII.3 and VII.7 Bank Negara Malaysia, Quarterly Bulletin 1993 [figures after 1970].

note: a. Include processed palm oil
b. Total does not summed up because some item are not included
c. Figure in parenthesis is the percentage of each sector to the total export for each year

Table 1.2 above shows the composition of Malaysian exports for the period 1961-1990. Major commodities include crude petroleum, palm oil, rubber, timber, tin and sawn timber. Beginning from the mid-eighties, manufacturing products constitute much of the total exports.

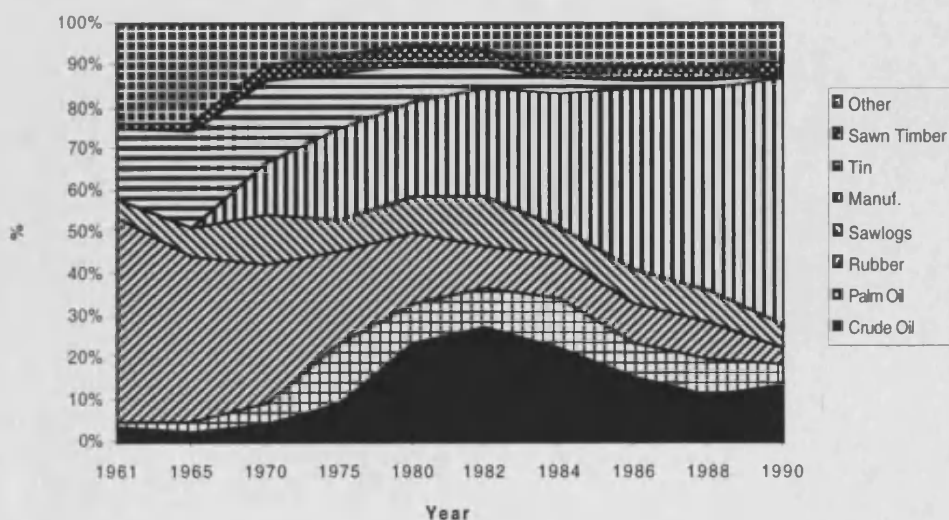
Prior to 1980, rubber and tin constitute much of the total export of the country. In 1961, for example, jointly rubber and tin were 65.5% of the total export. This fell to 59.6% in 1965 and 52.9% in 1970. By 1975, both petroleum and manufacturing sector showed a remarkable growth, constituting 9.3% and 21.9% of total export respectively; a rise from 3.9% and 11.9% in 1970. This means that total share of rubber and tin, has declined further to 35.0%.

Figure 1.1
GNP, Export and Import, 1961-1990



Note: Based on Table 1.1

Figure 1.2
Composition of Export 1961-1990 [%]



Note: Based on Table 1.2

By 1980, petroleum contributed 23.8% to the total export and manufacturing outputs contributed 22.4%. Since then, manufacturing sectors have increased tremendously, which consequently reduced the share of other sectors including petroleum. In 1982, manufacturing

output was 26.0% of total export; increasing further to 32.3% in 1984, 43.5% in 1986, 48.6% in 1988 and finally 58.8% in 1990.

Government has always played a major and significant role in the Malaysian economy, at least until 1990s when the government started to encourage the private sector to play a bigger role in the economic development. This is evidently true even before the implementation of the New Economic Policy. To achieve the two prong objectives of NEP - the eradication of poverty irrespective of race and the restructuring of society to correct economic imbalances between the races - undoubtedly required a much more active government involvement in the economy.

1.4 GOVERNMENT EXPENDITURE GROWTH IN MALAYSIA - AN OVERVIEW.

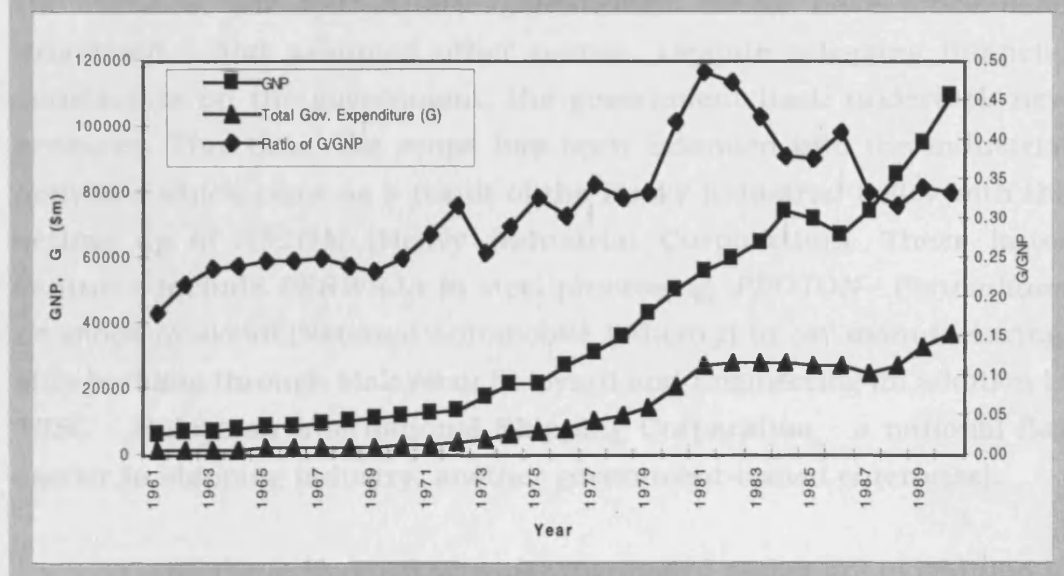
Departing far from its traditional role of maintenance of law and order, in the sense defined by Wagner [1883], the Malaysian government has been actively involved in various economic activities. In 1961, government expenditure was a mere 18 per cent of GNP. By 1970 when the New Economic Policy was launched, government expenditure reached 24.9 per cent of GNP. This figure rose steadily throughout the next two decades. In 1981 it peaked at 48.6 per cent of GNP but later stabilised at a much lower level and in 1990 government expenditure stood at 33.4 per cent of GNP. This is shown in Table 1.3 below. Figure 1.3 shows the growth rate of GNP and Total Government Expenditure for the period 1961-1990.

Table 1.3
Percentage of Total Government Expenditure
To GNP 1961-1990.

Year	%	Year	%	Year	%
1961	18.01	1971	27.86	1981	48.64
1962	21.50	1972	31.60	1982	47.17
1963	23.55	1973	25.62	1983	43.04
1964	24.12	1974	29.16	1984	38.03
1965	24.68	1975	32.52	1985	37.77
1966	24.74	1976	30.41	1986	40.96
1967	25.01	1977	34.17	1987	33.38
1968	24.01	1978	32.69	1988	31.53
1969	23.23	1979	33.23	1989	34.04
1970	24.86	1980	42.22	1990	33.44

Figure 1.3

GNP, Total Government Expenditure and Ratio of Government Expenditure to GNP, 1961-1990



This brief overview is sufficient enough to show the extent of government involvement in Malaysia. Both at federal and state levels, the government has been actively involved in carrying out various economic activities. Various federal agencies were created under various ministries to advance government's business involvement. Aside from the [public] utilities such as KTM - *Keretapi Tanah Melayu* [Malayan Railways], MAS [Malaysian Airline System], LLN - *Lembaga Letrik Negara* [National Electrical Board], and Telekom [Telecom] which was a common avenue for government economic activities, not only in Malaysia but also elsewhere, the government has also been involved in many other economic ventures.

All this was done through various government agencies. In the business sectors, there are agencies like MARA - *Majlis Amanah Rakyat* [Council Of Trust For Indigenous People], formerly known as RIDA [Rural and Industrial Development Authority] which undertake to develop Malay small scale entrepreneurs and PERNAS [National Trade Corporation]. In addition to producing Malay entrepreneurs, MARA and its various subsidiaries are involved also in various other economic activities. In promoting the petroleum sector, the government is involved through PETRONAS [Petroleum National] and its subsidiary PETRONAS-

*Carigali*¹³ in oil exploration. At the height of the privatisation 'disease' in the eighties, the four utilities mentioned earlier have since been privatised - and assumed other names. Despite releasing financial constraints on the government, the government itself undertook new ventures. This time, the scope has been extended into the industrial activities which come as a result of the Heavy Industrial Policy with the setting up of *HICOM* [Heavy Industrial Corporation]. These latter ventures include *PERWAJA* in steel processing, *PROTON* - *Perusahaan Otomobil Nasional* [National Automobile Industry] in car manufacturing, ship building through Malaysian Shipyard and Engineering [in addition to *MISC* - Malaysian International Shipping Corporation - a national flag carrier in shipping industry, another government-owned enterprise].

All the [economic] activities mentioned earlier are in addition to the various agricultural [and land] based government development schemes. The list includes *FELDA* [Federal Land Development Authority], *FELCRA* [Federal Land Consolidation and Rehabilitation Authority], *FAMA* [Federal Marketing Authority], *MARDI* [Malaysian Agricultural Research and Development Institute], the various land development schemes at the state levels in which the federal government involves, and in fact governs by the federal legislatures¹⁴.

All these show the extent and the scope of government economic involvement in the economy. As usual, government economic involvement in the economy is carried out by way of public enterprises. Table 1.4 below shows the growth of the Public Sector Enterprises from 1960 until 1992. It grew from 22 enterprises in 1960 to a staggering 1149 in 1992. Major concentrations of these enterprises were in the Manufacturing and Services sector which have prevailed since 1970. Other than the Manufacturing and Services sector, the other main concentration of Public Sector Enterprises were in Agriculture, Building and Construction and the Financial Sector.

¹³ The word *Carigali* literally means 'search and dig'.

¹⁴ The list include *KESEDAR* [South Kelantan Development Authority], *KETENGAH* [Central Trengganu Development Authority], *KEJORA* [South-East Johor Development Authority], *JENGKA*-Triangle in Pahang and others.

Table 1.4
The Growth Of Public Sector Enterprises 1960-1992.

Industry	1960	1965	1970	1975	1980	1985	1992*
Agriculture	4	5	16	38	83	127	146
Construction	2	9	9	33	65	121	121
Extraction	0	1	3	6	25	30	32
Finance	3	9	17	50	78	116	137
Manufacturing	5	11	40	132	212	289	315
Services	3	6	13	76	148	258	321
Transportation	5	13	17	27	45	63	68
Others	0	0	0	0	0	6	9
Total	22	54	109	362	656	1014	1149

Note: * We present this as an illustration though it is outside the period specified for this study.

Source: Rugayah Mohamad, *Public Enterprise in K.S. Jomo, Privatising Malaysia: Rents, Thetoric, Realities*. Westview Press, Colorado, 1995.

The above statistics lead one to ponder whether privatisation policy which was embraced by the government since the early eighties has borne some results¹⁵.

Nevertheless, the mere mention of these various government involvements in economic activities does not in any way reflect the direction in which this study will proceed. It will not in anyway study whether these various economic activities contributed to the level of economic development and prosperity enjoyed by Malaysia this day. The sheer mention of it is meant only to portray the extent to which the government involvement in the economic activities has subsequently contributed to the high level of government expenditure.

Over the period under study, government expenditure has grown substantially, as shown in Table 1.5 below. Three consecutive times - during the period 1971-1975, 1976-1980, 1981-1990 - the change in the total government expenditure was well over one hundred per cent. And, throughout the period 1961-1990, except for 1986-1990, the rate of increase in the total government expenditure was always higher than the rate of increase in the GNP. In the period of 1986-1990 the rate of growth of total government expenditure was relatively and substantially very low, 7.1 per cent, even though the GNP grew by 32.4 per cent. Understandably, in 1986, when the Fifth Malaysian Plan was

¹⁵ The Economic Planning Unit at the Prime Minister Department produced a Privatisation Guideline in 1985. Among others, it read: *Privatisation has a number of objectives. First, it is aimed at relieving the financial and administrative burden of the government Second, to promote competition, improve efficiency and increase productivity of the services. Third, by stimulating private entrepreneurship and investment, it is expected to accelerate the growth rate of the economy. Fourth, assist in reducing the presence and size of the public sector. Fifth, to contribute towards meeting the objective of NEP.*

launched, Malaysia was on the way of recovering from the [world-wide] recession.

Table 1.5
Contribution of Total Government Expenditure To the GNP 1958-1990

Period	GNP for the period	% [+/-]	Total Gov. Expenditure	% [+/-]	% of GNP	Of this and as percentage of GNP are	
						Economics and Social Services	Others
1961-65	37,366		8,429.2		22.6	10.6	12.0
1966-70	51,487	37.8	12,539.3	48.8	24.4	12.2	12.2
1971-75	86,513	68.0	25,508.8	103.4	29.5	15.8	13.7
1976-80	187,438	116.7	66,127.8	159.2	35.3	17.5	17.8
1981-85	326,667	74.3	138,666.3	109.7	42.4	21.5	20.9
1986-90	432,493	32.4	148,532.0	7.1	34.3	16.2	18.1

source: Data compiled from *Quarterly Economic Bulletin, Bank Negara Malaysia, various edition.*

note: Others are - Defence and Security, General Administration, Public Debts Charges, Transfer Payments and Pensions.

In the period 1961-1965, total government expenditure stood at \$8,429.2 million which was 22.6 per cent of GNP at \$37,366 million. Subsequently, in the period 1966-1970, total government expenditure increased by 48.8 per cent to \$12,539.3 million.

NEP was launched in 1970. From 1971 to 1975, total government expenditure grew by 103.4 per cent to \$25,508.8 million. This coincides with the time when NEP started to take shape [considering that the exact formulation of NEP was published in the mid-term review of the Second Malaysia Plan, published in 1973]. During the period 1976-1980, total government expenditure has grown by over 150 per cent to \$66,127.8 million. Later, in the period 1981-1985, government expenditure grew by another 109.7 per cent to \$138,666.3 million. However, in the period 1986-1990, it only grew to \$148,532 million i.e. by about 7.1 per cent only.

1.5 EXPLAINING GOVERNMENT EXPENDITURE GROWTH : WAGNER'S LAW

In 1883, Adolf Wagner, a German economist, studied the government expenditure growth in Western industrialised countries. His finding, better known in the literature as Wagner's Law of 'increasing expansion of public and [particularly] state activities' has received much interest over the past three decades.

Wagner envisaged that as the economy grows, government expenditure will eventually grow. The latter grew to meet an increase in the state, and local government's requirements. The law is a result of "the pressure for social progress and the resulting change in the relative spheres in private and public economy"¹⁶.

It seems from here that Wagner's thesis is related to a particular stage in the development process - a stage in which there is "a pressure for social progress". Wagner supported this by arguing that it was the case with the German and Western European countries of his time. It can be inferred from this that government growth is a phenomenon of developing countries in the process of development. If development is looked upon as structural change [Thirlwall, 1994] i.e. from an agricultural based economy to industrial based economy, Wagner's Law is therefore a phenomenon towards industrialisation [Brown and Jackson, 1990].

The second aspect of the law is that it put emphasis on the "compulsory public economy". Musgrave [1969] defined this in terms of the traditional role of government activities which include defence and security, health and education. This does not, however, explain the increase in government expenditure which arises from other functions and activities undertaken by the government. The passage of time since Wagner formulated his thesis has changed the scope and structure of governments which change and eventually increase the scope and activities of governments far in excess of its traditional role.

The third aspect of the 'law' is concerned with the process of governing. Wagner envisaged that the growth was a result of governance "when administration is decentralised and local government well organised". To put this in another perspective, this implies that the growth of government expenditure is a result of decentralisation of governments' functions and activities.

¹⁶ This translation, i.e. the first english translation of Wagner's Law appeared in the *Classic in the Theory of Public Finance*, edited by R.A. Musgrave and A.T. Peacock [1958].

The fourth aspect relates to the way Wagner treats government. Wagner's used the words, "the pressure for social progress" and "the desire for development". This can be taken as implying that the government's behaviour is similar to human behaviour; having a taste and preference of its own nature. In other words, Wagner considered government as an 'organic entity'; behaving like an individual does.

1.6 EXPLAINING GOVERNMENT EXPENDITURE GROWTH : ALTERNATIVE INTERPRETATIONS FROM THE KEYNESIAN PERSPECTIVE AND PEACOCK-WISEMAN HYPOTHESIS.

In view of Wagner's proposition, Peacock and Wiseman [1961] attempted to explain the growth of government expenditure in the UK for the period of 1890-1955. Earlier in 1936, John Maynard Keynes published his book entitled *The General Theory of Employment, Interest and Money*. Keynes' writing was meant to address the problems that arose following the Great Depression in 1933. Later and subsequent studies on Keynes contribution have produced what is known as Keynesian economics.

One major facet of Keynesian economic is the active role expected from the government in massaging the economic cycle. Government, through government expenditure is expected to lessen the inflationary pressure during the up-turn in the economic cycle and to accelerate the recovery during the down-cycle. To put this in another perspective, Wagner's Law associates the growth of government to the level of development attained. Keynesian economics, on the other hand, view government expenditures as stimulus to the growth of the economy. Evidently, arising from Keynesian way of understanding macroeconomics behaviour which shapes policy formulations, the various economic development theories that arise subsequently stressed the important role of government expenditure in the process of economic development.

This section is dedicated to address two related issues pertaining to the role or behaviour of government expenditures. First, we discuss the basic premise of Keynesian Economics with respect to the role of government in managing the economic cycle. Second, we briefly look at the Peacock-Wiseman hypothesis in explaining the effect of social upheaval in altering the pattern of government expenditure growth.

1.6.1 GOVERNMENT EXPENDITURE AND KEYNESIAN ECONOMICS

In one of his correspondences with George Bernard Shaw, John Maynard Keynes wrote¹⁷:

When my new theory has been duly assimilated and mixed with politics and feelings and passions, I cannot predict what the final upshot will be in its effect on actions and affairs, but there will be a great change

Lord Keynes was right when he predicted the upshot of his economic theory and the way it revolutionalise the understanding of economic behaviour. In the same letter to George Bernard Shaw as quoted above, he predicted that his new theory will “revolutionalise not I supposed at once but in the course of the next ten years the way the world thinks about economic problems¹⁸”.

The work and the new theory he referred to turned to be *The General Theory of Employment, Interest and Money*, published a year later in 1936. As he predicted, it did revolutionalise the way we understood economic theory. The above quotation show how Keynes and Keynesian economics revolutionised the economic thinking of the decades that followed his first work with the *General Theory*. An important policy requisite in Keynesian macroeconomics requires an active government participation in economic activities.

Activist participation by the government can be viewed from two perspectives. First, it means that the government involvement in a

¹⁷ Letter written to George Bernard Shaw, New Year's Day 1935 in *The Collected Writings Of John Maynard Keynes*, edited by D. Moggridge. London, Macmillan, 1973, p.492.

¹⁸ *ibid.*

wide range of economic activities - planning, implementation, production, distribution and so on - activities that contribute directly to the growth of government expenditures. Second, which is more relevant to Keynesian policy recommendation is that the government act as a stabilising factor in managing the economic cycle. This latter effect of Keynes thought is of interest to us in the context of the present study.

In the period prior to the Great Depression, Classical macroeconomics model demonstrated its ability to explain fluctuations in the level of output and employment. The main tenet of the classical school revolves around Say's Law. Say's Law simply stated that supply determined its own demand. What ever is produced will be consumed. This produced a vertical aggregate supply curve. The basic assumption is the price and wage flexibility as a stabilising factor.

Flexibility in price and real wage affect not only the product market but also the capital market. This will always ensure that both product and capital markets will clear automatically, thus ruling out unemployment in the economy. It is also believed that money supply in the economy plays an important role. An increase in money supply, when price is fixed will increase the level of output; a decrease in money supply, will decrease the level of output.

Therefore, in the classical model, the government is assumed to play a non-active role in the economy. Government intervention and participation will only distort the equilibrium level of the economy. However, this does not totally disregard the role of government particularly in influencing the level of money supply through the interest rate.

Eventually, during the period of Great Depression in 1933, not only did prices failed to clear product market but also real wages failed to adjust to clear the labour market. Unemployment increased to a record level and output levels [and employment] decreased. It seemed that the basic classical framework failed to provide a solution to the problems that gave rise to the depression and the high level of unemployment, which was 22% in 1932 in UK.

In the wake of these events, J.M.Keynes produced his *General Theory of Employment, Interest and Money* in 1936 aimed at addressing the issue and relieving the economy from the depression. Keynes proposed an active role of the government in managing the economy via the management of aggregate demand schedule.

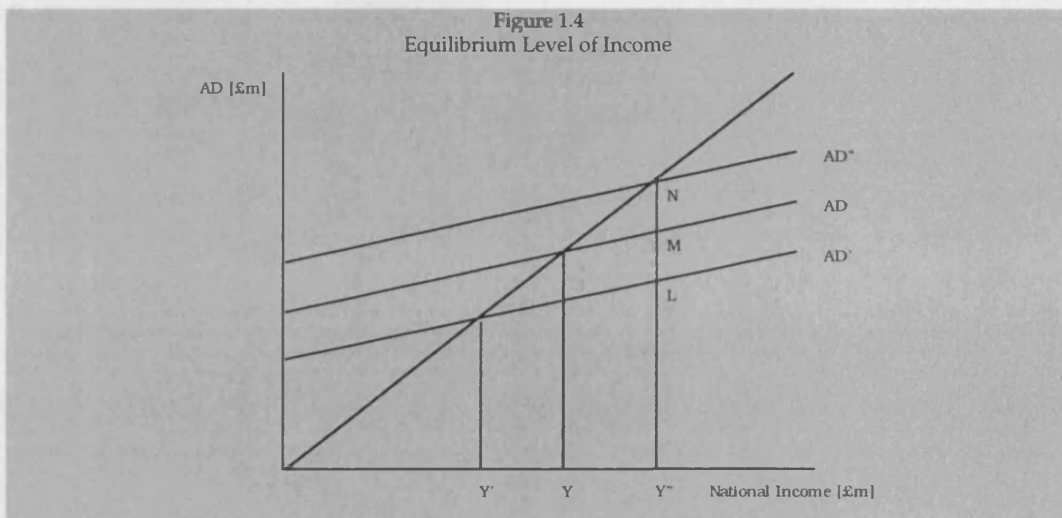
His basic idea was for the government to influence aggregate demand through government expenditure. Unlike individuals, government expenditure can be increased and reduced easily. This management can be tuned according to the economic conditions of a given time, which gives rise to the use of active fiscal policy as a stabilisation measure.

Keynesian stabilisation policy requires the use of the budgetary process to stabilise the fluctuations in the economic activities. This can be achieved by the various budgetary strategy available. Keynesian economic differentiate three types of budgetary process - balanced budget, surplus budget and deficit budget. These budgetary processes are central in understanding the public choice critics of Keynesian economic to be discussed later in Chapter 2.

During the period of recession, that is when aggregate demand is low, Keynesian measures consist of a budget deficit to allow the government to increase its aggregate spending thus increasing the aggregate demand and output in the economy. On the other hand, when there is an inflation as a result of too high aggregate demand, the government should adopt a surplus budget; reducing the level of its spending and aggregate demand¹⁹.

¹⁹ Consequently, to some, Keynesian economic emphasis on fiscal policy is viewed as disregarding the role of monetary policy [Levacic and Rebman, 1982]. Keynesian economic however, called for the application of both fiscal and monetary policies through a consistent and co-ordinated harness [Tobin, 1987]. Investment and saving [through consumption] which are the components of aggregate demand can be manipulated effectively via the monetary regulation.

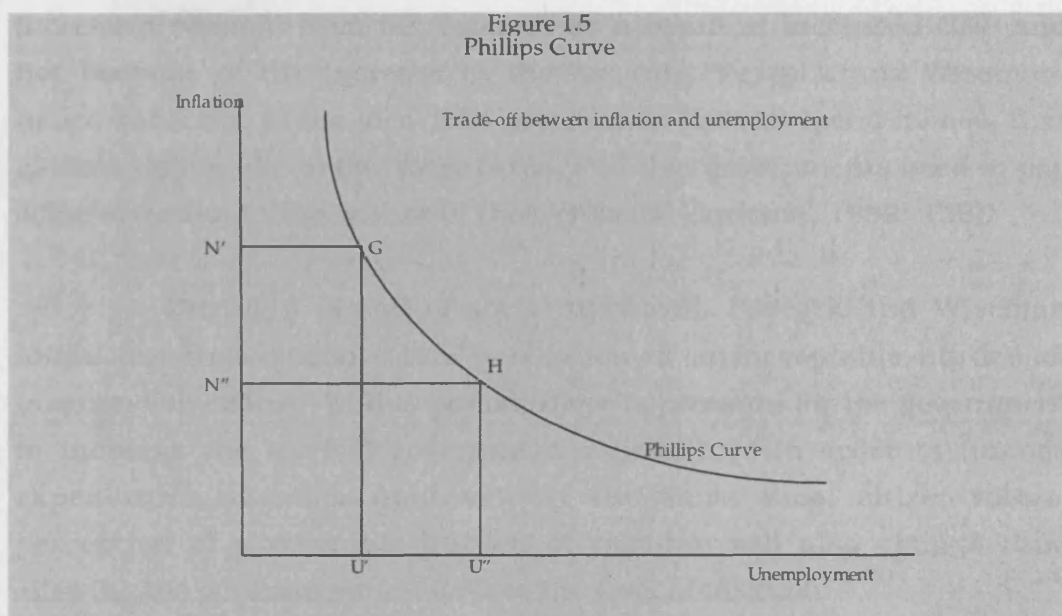
Figure 1.4
Equilibrium Level of Income



Assuming Y as a full equilibrium level with aggregate demand AD and the economy is in equilibrium. During the depression period i.e. when AD is too low [say AD'], the government can increase the level of output by increasing government spending thus increasing the aggregate demand from AD' to AD and the level of output from Y' to Y . On the other hand, assuming Y'' is an inflation situation, the government can reduce aggregate demand by reducing the level of its spending thus forcing the aggregate demand to fall from AD'' to AD and the level of output from Y'' to Y . NM is the inflationary gap and ML is the deflationary gap.

Harvey [1988] likened government behaviour to the cautionary attitude of a car driver, negotiating the slopes and corners to keep the car on the road.

Another feature of the Keynesian economics is the trade off between inflation and unemployment. The policy alternative at hand for the government is either to increase employment or reduce inflation. Reducing inflation will bring about higher unemployment and increasing employment [reducing unemployment] will increase inflation. This trade-off is explained via the usage of the Phillips curve. We will come back to the Phillips curve when we discuss the political business cycle in Chapter Two.

Figure 1.5
Phillips Curve

Keynesian economics was predominant at least until the seventies. By the seventies, the theoretical foundations of Keynesian economics had come under severe criticism. This arose as a result of a simultaneous persistence of inflation and unemployment, hence rejecting the notion underlining the Philips curve. Dominant among these critics was Nobel Laureate Thomas Sargent and the New Classical Macroeconomics school. It was said that by early eighties, no economist below 40 years of age was Keynesian.

1.6.2 PEACOCK AND WISEMAN EXPLANATION OF THE GROWTH OF GOVERNMENT EXPENDITURE

Peacock and Wiseman studied the growth of government expenditure in the United Kingdom for the period 1890-1955. Through out this period they found that government expenditure exhibited a gradual growth pattern in line with the growth in GNP. They hypothesised that this gradual growth trend is constrained by the tax revenue or, as they termed it, 'an acceptable burden of taxation' perceived by citizen-voters. Citizen-voters objection to an increase in the level of tax put a constraint on the growth of government expenditure. To put it another way, the 'acceptable burden of taxation' limit the growth of government expenditures. Therefore, the gradual growth pattern arise because of the

increased receipts from tax revenue as a result of increased GNP and not because of the increase in the tax rate. Peacock and Wiseman, hence subscribe to the idea 'that government likes to spend money, that citizens do not like to pay more taxes, and that governments need to pay some attention to the wishes of their citizens' [Jackson, 1992: 123].

During a period of social upheaval, Peacock and Wiseman found out that citizen-voters perception of an acceptable burden of taxation will change. In this period, there is pressure for the government to increase the level of government expenditure in order to finance expenditure on such upheaval. At the same time, citizen-voters' perception of a desirable burden of taxation will also change thus allowing the government to increase the level of taxation.

Peacock and Wiseman also argued that in their sample period, changes in the acceptable burden of taxation took place twice, that is during the first and second world war. Pressure to fight and win the war forced the government to increase the level of government expenditure, especially on war related expenditures. On the other hand, realising the need to finance this increase in expenditure, the citizen-voters would be willing to pay higher taxes. This is to say that the social upheaval is capable of displacing the gradual growth trend in the level of government expenditure. Hence, the term "Displacement Effect" arises.

Once the new level is reached, government expenditure will continue to increase exhibiting a [new] gradual growth pattern until another social upheaval disturb this growth pattern. With the end of the social upheaval, i.e. war in the context of Peacock and Wiseman analysis, the government is able to alter the mix of its expenditure: a higher military mix during the war period is replaced by a higher civilian mix in the post-war period.

1.7 OBJECTIVES OF THE STUDY

Realising the wide ranging role played by the government, and the huge expansion of government expenditure in the context of Malaysia as shown earlier in Section 1.4, we attempt to examine the effect of the huge government expenditure on the level of development attained by Malaysia within the period of 1961 until 1990. Accordingly, we would also like to examine whether the level of development itself contributed to the growth of government expenditure.

This examination takes the following form:

- a. It is tested within the framework of Wagner's Law, that the expansion in the level of government expenditure is the consequence of economic development i.e. growth in national income. To put this in another way, Wagner's Law argues that economic development contributes to the growth of government expenditures.
- b. In contrast to [a], Keynesian economics explanation of the effect of government expenditure on the economy is modelled to test the hypothesis that government expenditure causes the economy to grow.
- c. In view of Peacock and Wiseman analysis, we test the hypothesis that the May 13, 1969 incident is a social upheaval which forms the basis of the Displacement Effect Hypothesis.

1.8 METHODOLOGICAL ISSUES

We present below some methodological issues to set the direction for the present study.

1.8.1 ECONOMETRICS METHODOLOGY

The relationships set in Section 1.7 [a,b,c] are tested within the framework of econometric modelling, utilising time-series data for Malaysia for the period 1961-1990.

Our main focus in this study is to establish a causal relationship between government expenditure and economic growth. In econometric modelling, this analysis can be tested within the framework of the Granger-causality test. Granger [1969] has proposed a kind of test procedure to establish the causal relationship between variables²⁰.

The word causality in Granger causality itself suggests that the relationship established will determine the causal - cause and effect - relationship between the variables. We should emphasise that the term Granger-causality should not be misunderstood with the normal usage of the word 'cause' which is widely used in describing the various economic relationships. They are two different things. On this basis, the literature in this area uses the term Granger-causality to describe the causal relationship formulated by Granger. Undoubtedly economists use the word 'cause' extensively in describing various economic theories and relationships. In those circumstances, the usage of the word cause does not imply that the theories have undergone rigorous econometrics analysis. Hence, it is important to be able to distinguish the term cause as implied in these various economic theories and the term Granger causality.

Specifically, Granger causality will show the causal relationship between the variables specified within the framework of econometric modelling which follow Granger's formulation. By utilising this kind of test procedure we sought to test the causal relationship between government expenditure and economic growth in Malaysia.

We have chosen to use Granger causality for one main reason. As specified earlier, this study would like to see whether the present economic growth, prosperity or development enjoyed by Malaysia is a result of active government participation in the economy or whether the latter leads to growth, prosperity or development.

The decade of the eighties witnessed further development in the econometric analysis of time-series data. This stemmed from the

²⁰ Two modifications of Granger's model were suggested by Sims [1971] and Pierce and Haugh [1977]. The Granger causality test has been widely used in testing various relationships, in economic as well as in other social-science areas.

work of Granger [1986, 1988] and especially Engle and Granger [1987] on cointegration analysis.

Granger [1988] cautioned that many important macro-variables are non-stationary or possess a unit root. This prompted another set of developments in econometric analysis of time-series data, namely the unit root analysis. A time-series is said to possess one unit root if it has to be differenced once to obtain stationarity. Central to the unit root analysis is the stationarity of the time-series data. A stationary time series has a constant mean and the variance is independent of time. On the other hand, for a non-stationary time-series, the mean and variance fail to converge to its true value as sample size increases. In other words, both the sample mean and variance are time dependent. The implication of this will emerge when interpreting economic fluctuations. It is theoretically assumed that economic fluctuation is temporary and that in the long-run this fluctuations will return to its true value. The unit-root analysis in contrast argues that an economic fluctuation will be permanent if the time-series is non-stationary. The basic idea behind the unit root analysis had been proposed earlier by Fuller (1976). However, not until the eighties was unit root analysis been taken seriously. Regression on series possessing unit roots will lead to the problem of 'spurious regression' as discussed in Granger and Newbold [1974].

Cointegration analysis on the other hand is a technique to estimate long-run relationship of economic variables possessing unit root. A series is said to be integrated of order d , denoted by $x_t \sim I(d)$ if it has to be differenced d times to obtain stationarity. An important element of co-integration analysis is that, if two variables are co-integrated, then there exists a Granger-causality in either direction between the variables.

In light of all this development, our econometric methodologies proceed as follows. We first utilise unit root analysis to test for the stationarity of our times-series data. Failure to reject non-stationarity, lead us to test for co-integration before proceeding to test for Granger-causality.

Diamond [1988] modelled Peacock and Wiseman Hypothesis as a theory of structural change or break. Following this line of argument, we shall model Peacock and Wiseman Hypothesis as a theory of structural break. To test this, we employed the Perron [1989] test for a [structural] break in a time series. In other words, the Peacock and Wiseman Hypothesis is not being tested within the framework of cointegration and Granger causality.

1.8.2 THE PERIOD STUDIED

We focus our study on the period 1961 until 1990. A World Bank mission visited Malaya in 1955 and suggested that Malaya should introduce a five year development plan. Following this recommendation, the First Malaya Plan was introduced and implemented in 1956. Nevertheless, Malaya itself gained independence in 1957. To save the trouble in deciding where to start and also because of insufficient data prior to 1960, we have decided to start in 1961 - the year when the Second Malaya Plan was launched.

On the other hand, 1990 was chosen because in that year, the New Economic Policy came to an end. It also marked the launching of the Second Outlined Perspective Plan [1990-2010] first formulated in 1970 together with the New Economic Policy.

We consider the thirty year period is sufficient to examine the effect of the relationship between the variables described in 1.7 above.

1.8.3 DATA

For the purpose of this study, we rely only on secondary data. There are three main sources of data:

- a. *Bank Negara Malaysia* [Malaysia Central Bank] quarterly and annual statistics.

- b. International Financial Statistics produced by the World Bank
- c. Various Malaysia [and Malaya] Plan.

Besides these, some data were also taken from several other sources. These have been stated and acknowledged each time.

1.8.4 EXPLANATION OF TERMS

Throughout these study, the terms below carry the following meaning and usage:

- a. government:
 - refers to the Federal government only.
- b. government expenditure:
 - refers to the expenditure of the federal government and therefore excludes expenditures of states as well as local governments.
 - The Bank Negara Malaysia classifies government expenditure into current and development expenditure. The former refers to government purchase of current goods and services; the latter is government purchases of capital goods and services. This is referred in the literature as exhaustive public expenditures²¹. Another category of government expenditure is transfer expenditure which constitutes a transfer within the society and hence not a claim by the public sector.
 - We acknowledge, as Brown and Jackson [1990: 120] reminded:

When it comes to examining the growth of public expenditure it is useful to keep these two categories of public expenditure [exhaustive and transfer expenditures] separate. Factors that affect the growth of one category may not apply with equal force to the other. What we want to know, therefore, is what factors influence the growth in the absolute level of public expenditures, and the size of the public sector relative to other sectors of the economy.

²¹ Brown and Jackson [1990: 119] warned that "an increase in government expenditure does not necessarily imply an increase in public output; neither does it imply a reduction in efficiency, which makes efficiency calculations using national income data tricky!"

c. monetary unit:

- The official monetary unit is Ringgit and sen [100 sen = 1 ringgit]. Original symbol for Ringgit is \$. This was changed in 1995 to RM. For ease of exposition, throughout this study, we will use the original symbol, i.e. \$ on the reason that this study started before the changes was made. [Roughly, £1=\$4 or US\$1=\$2.5 - the rate before the financial crisis that has engulfed the region since mid 1997].

1.9 THE WAY AHEAD

Following this introduction, we review the literature on the subject of the growth of government expenditure in Chapter Two. We divide the review into two parts. First is the general review of the literature on the growth of government. Second, emphasis is shifted mainly onto Wagner's Law, being the main theme of this study.

In Chapter Three, we discuss the growth of government expenditure in Malaysia in the period under study [1961-1990] emphasising the trend and direction of government expenditure.

Considering that communal relationship plays an important role in shaping Malaysia's economic policy, we devote Chapter Four to discuss "Communalism And Its Effect On Economic Policy". To do that, we have to discuss the historical perspective of the rise of communalism and the way it affects the economic policy especially through the implementation of the New Economic Policy [1970-1990]. This has an important place in our study because the failure of racial integration has resulted in the bloody racial clash on the May 13, 1969. We view this clash as embodying the displacement effect as discussed by Peacock and Wiseman.

We proceed in Chapter 5 to discuss the econometric methodologies adopted in this study. Following this, we present the result of the econometric analysis of Wagner's Law in Chapter Six. In

Chapter Seven, we report the analysis of Keynesian relationship which is in fact a reverse of Wagner's Law.

In Chapter Eight, we examine whether the May 13 incident can be treated as a social upheaval in the context of the Peacock and Wiseman Hypothesis. Finally, we conclude this study in Chapter Nine.

1.10 SUMMARY

Throughout this introductory note, we present a brief overview and the direction the foregoing study is heading. We note the remarkable growth in the Malaysian economy experienced throughout the period under study [1961-1990]. We also highlight the extent to which government expenditure has grown throughout the period. On this basis, the study is intended to investigate the relationship between economic development and government expenditure. This is done from three perspectives, Wagner's Law, Peacock and Wiseman Displacement Effect Hypothesis and the Keynesian explanation of the relationship between government expenditures and economic growth.

In Section 1.2, we mentioned two main events that shaped post-independence Malaysian economy. These are the racial conflict and the industrialisation policy. In the course of this study, we concentrate on the first by modelling it within the framework of the Peacock and Wiseman Hypothesis.

CHAPTER TWO

GOVERNMENT EXPENDITURE GROWTH: AN INSIGHT INTO THE LONG-RUNNING DEBATE.

The important thing for the government is not to do things which individuals are doing already, and to do them a little better or a little worse, but to do those things which at present are not done at all.

Edmund S. Phelps
Private Wants and Public Needs, p.97

2.1 INTRODUCTION

In the opening paragraph of Chapter One we raised the question on the uncomfortable relationship between economic development and government expenditure. The question asked was: which gives rise to which, the government expenditure or the economic development? If government expenditure has grown so big and become so much of a threat, why have successive governments still failed to combat this? On the other hand, why, throughout history, have the same governments been elected and re-elected to office? In modern history, especially in western developed countries, politicians and political parties have been making promises to combat the increasing levels of government expenditure; still they failed and still they are being trusted.

This introduction is meant as what it is. The basis for the whole of the present study is to answer the above puzzle, that is, which gives rise to which, the government expenditure or the economic growth, especially in the context of Wagner's Law, Keynesian relation and the Peacock and Wiseman Hypothesis. Wagner's Law argued that economic growth, measured by way of national income figures, leads to the growth of government; Keynesian macroeconomics formulation

suggests that government expenditure 'affects' the level of national income. The question is which affects which? Or, is it possible that both are true? It is our hope that the result of this whole exercise will shed some light on the relationship between the two especially in the context of our case study i.e. Malaysia; an effort that has been done out on several other countries. To the best of our knowledge, we found that no attempt has ever been made to address this issue in the context of Malaysia. As we showed in Chapter One, government expenditure has increased tremendously during the period of our study i.e. 1961 until 1990.

In so doing and to facilitate the understanding of the nature of the government expenditure growth, it is plausible to begin by addressing and identifying the sources of the growth of government expenditure. On this basis, the present chapter will try to identify the sources of the growth of government. A review of this aspect of the public finance literature shows that various explanations have been put forward to explain the causes [and consequences] of the growth of the government.

Since the publication of *The Three Abstract of Public Finance* by Adolf Wagner [1883] in the *Classics of Public Finance* [Musgrave and Peacock, 1958], enormous efforts have been directed towards the study of public expenditure growth¹. These studies were made for the purpose of analysing the scope as well as the effect of the growth of the government expenditure on the economy. On the same level, ever since Lord Keynes formulated his demand management theory, government and government expenditure has been central to the understanding of macroeconomics behaviour. The Classical, the Keynesian, the New Classical, the New Keynesian alike²; each have assigned special, but different emphases to the role of government³.

¹ A serious study on the subject of the growth of government [beside the work of Wagner] with a specific aim at theorising the public expenditure growth was made by Peacock and Wiseman in 1961.

² We purposely do not include the Monetarist in the list. It is often considered that the New Classical school is the extreme case of monetarism although the latter are often critical of the former [see Aljo Klammer, 1984]

³ Note that we highlight the role of government instead of the role of government expenditure. Nevertheless, later in the chapter, the two, government and government expenditure will be regarded as synonymous. Our precept is that, as a public economist, we concentrate on the way the government regulates the economy. This role of government, requires the government to be spending.

On the other hand, several development theories flourished in the sixties in an attempt to provide a magic formula to develop the third world economy. These theories also emphasised the instrumental role of government expenditures. A few interesting questions which need serious answers arise: a) did the few that developed do so by following their prescriptions, b) if so, why did others, while applying the same tools fail to develop. This then brings us to our main question: is there a linkage between government expenditure and economic growth?

The economic role of government has long been recognised⁴. In *The Wealth of Nations*, Adam Smith, for example wrote that, among others, the government has a 'duty of erecting and maintaining certain public works and certain public institutions, which it can never be for the interest of any individual, or small number of individuals, to erect and maintain...'. To put this within the framework of Musgrave [1969], government in this sense plays an *allocative* role⁵.

This chapter is divided into 6 sections. Following this, in Section 2.2, we present our two broad categorisations on the subject of the growth of governments. We analyse this from four different categories. Noting that the main focus of the study is on Wagner's Law, we devote section 2.3 mainly to analysing Wagner's Law. In Section 2.4 we present different approaches suggested by past researchers in formulating a proper Wagner's Law. This is followed by our discussion on some difficulties in formulating an appropriate model for Wagner's Law in Section 2.5. We then end this chapter with our summary.

We would like to point that we do not consider the theoretical review presented here as exhaustive. Having said that though, we have tried our best to cover all aspects of the public expenditure growth literature, though briefly. Since our main focus is on Wagner's Law, much effort is made, and emphasis is put, in discussing this particular area alone. Likewise, we spent little effort in discussing the position of government expenditures in the Keynesian perspective because it has been discussed in length in Chapter One. As a result of this one-sided

⁴ See, for example Chapter 2, Brown and Jackson (1990) for a brief review of this.

⁵ Musgrave (1959) identified three roles of government namely allocation, stabilisation and distribution.

approach, we have to limit our discussion of other areas pertaining to the growth of government expenditure. This is clearly evident in the following section when we discuss different aspects of the study of government expenditure growth. We note that some studies on Wagner's Law proceed by testing the elasticity of government expenditure.

For the purpose of this discussion, we would like to highlight one main simplifications that we have made. As mentioned earlier in Chapter One, the term government growth used throughout this chapter means government *expenditure* growth or public expenditure growth.

2.2 THEORISING THE GROWTH OF GOVERNMENT EXPENDITURE: A GENERAL PERSPECTIVES.

The vast amount of literature analysing the growth of government expenditure in itself shows the extent to which the subject has caught the interest of economists. Nevertheless, the subject of the government expenditure growth has reached beyond the domain of economics and spilled over into politics. Economic issues belong not only to economists; they have become both social and political issues. In predicting the impact of his theory, Keynes was right when he said that⁶: "When my new theory has been duly assimilated and mixed with politics and feelings and passions, I cannot predict what the final upshot will be" That is exactly what took place.

As usual, it is rather difficult to categorically classify any subject without unfairly distorting it. Furthermore, any attempt towards categorisation and classification might result in certain category or class cannot fit into one single heading only. The same is happening here, some classifications tend to relate to other classifications as well.

Considering this problem and after going through a vast amount of literature, we finally decided that the best way to present the literature on the growth of government expenditure is to review the subject from four broad categories: government as provider of public

⁶ Keynes letter to G.B.Shaw as mentioned in Section 1.7.1

goods, government as a stabilising factor, the Peacock-Wiseman hypothesis, and the public choice theory.

2.2.1 Government As Provider Of Public Goods⁷

Often enough we see that the argument put forward to justify the provision of public goods by the government was done on the ground of market failure in the provision of such goods. Frequently, the reasons cited for such failure is market inefficiency. When a public good is provided privately, it is feared that the private sector providing such goods will gain monopolistic power⁸. When the public sector provide such goods, the inefficiency will be passed on to the public sector. Nevertheless, this was deemed acceptable. Other reasons normally cited for the public provision of public goods are externality and the problem associated with free-riders.

The nature of public goods is that its consumption is *non-rivalrous* and *non-excludable*. The former means that one person's consumption of the public goods will not affect the other person's consumption. The latter means that no one can be excluded from consuming such goods when they are made available.

This basic understanding of the conventional role of government has however been revolutionised with the drive for privatisation in the early 1980s. The government of Margaret Thatcher in Britain and President Ronald Reagan in the United States have pushed privatisation to its present frontier. Government is no longer been considered as the legitimate provider of public goods. Their motives or objectives however was not on the ground of government inefficiency but for fear that the government expenditure have become so large. The same scenario is happening in Malaysia, and, as such, Malaysia is among the first to embrace the privatisation policy.

⁷ Government as a provider of public goods means that the provision of the public goods is financed from the government coffers. The actual provision might possibly be done by the private sector. However, even in this case, the public goods are being financed by the budget. Government can be seen as provider of public goods and eliminator of externalities [Mueller, 1989].

⁸ Market economy is considered incapable of arriving at a pareto-optimal outcome in the provision of public goods. Beside the efficiency question, other arguments for market failure are the inability of the market economy to secure efficient resource allocation and income distribution.

In analysing the role of government as a provider of public goods, we shall concentrate on three fundamental aspects which are related to the public expenditure growth literature. These are Wagner's Law which predicts that government growth is an inevitable consequence of economic growth; the so-called *Baumol Disease* which looks at the sectoral, geographic and demographic imbalances in the society and lastly the socio-economic environments.

a. *Wagner's Law*

Adolf Wagner predicted an increasing scope of government activities which would result in an increase in government expenditure as the economy developed. Most interpretations argued that Wagner envisaged government expenditure growth as a consequence of economic growth. Wagner argued that it was the phenomenon 'at least in our Western European civilisation' which had seen the progress and prosperity of the industrial revolution.

Wagner argued that this arose because of 'the pressure for social progress'. Wagner's main concern was the conventional government activities - "protection and social welfare in which expansion is foreseen in education, law and order, economic and general administration as well as the expansion in public enterprises" [Musgrave, 1969: 73n]. This pressure for social progress will increase the demand for public goods by the citizen-voters.

Consequently, to meet this increased demand for public goods, government expenditure will increase. Wagner also argued that financial stringency will not hamper the 'desire for development of a progressive people' implying that the citizen-voters are willing to pay higher taxes to allow the government to finance such expansion.

Since Wagner's Law is the main focus of this study, this subject is dealt in detail in and beginning from Section 2.3 onwards.

b. *The Baumol Disease*⁹.

Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crises [Baumol, 1967] was an attempt to identify the sources of unbalanced growth between two different economic sectors - the technologically progressive and the technologically non-progressive sector. Underlying Baumol's treatment is what Baumol termed 'cost disease'. The model was extended to identify the reason for the decline in the quality of life *vis.-a-vis.* quality of services provided by the government [see also Baumol and Oates, 1975]. The cost disease has two main consequences. First, it leads to a rising comparative cost between the two, progressive and non-progressive, sectors. Second, it results in rising consumption costs as a result of increasing comparative cost in the supply side of the equation.

Instrumental in the differences between these two, productive and non-productive sectors are the labour force. Labour is either the instrument¹⁰ or the end product. The manufacturing sector is the example cited for the former whereas the service sector is the latter¹¹. In broader sense this implies a private against a public sector. Some of the examples given are services provided by the government - such as hospital and education¹². Between these two sectors, the differences is in the productivity level, which result in the productivity in one sector rising faster than in another sector¹³.

Assuming that wages increase in both sectors, Baumol's thesis was that the productivity rise in one sector - the progressive sector - will offset the wage rise in that sector. The same did not happen

⁹ The term Baumol Disease owes its name to huge and sporadic responses to Baumol's *Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crises*. Among others, see for example, Bell [1968], Worchester [1968], Birch and Cramer [1968], Spann [1977] and recently, Ferris and West [1996]. These reviews also criticised Baumol's thesis on several grounds. See also, Bradford, Malt and Oates [1969], Bacon and Eltis [1976, 1979] and Hadjimatheou [1979] and Hadjimatheou and Skouras [1979].

¹⁰ Labour is described here as capable of being reduced without affecting the price nor the quality of the product. It is also contended that often the quality improves where labour is replaced by machinery.

¹¹ Baumol [1975] gives an example of teaching; whatever amount is given to improve the teaching mechanism, class size is still fundamental for a successful teaching environment.

¹² Also included in the non-progressive sector are labour-intensive types of occupation: fine pottery and glassware produced by the careful labour of skilled craftsman [Baumol, 1967: 421] whereby rising cost will push this industry into "the category of luxury goods with very limited markets or disappear almost completely" [ibid., p. 421].

¹³ Brown and Jackson [1990] stressed that often it is assumed that productivity does not increase in the non-progressive sector.

in the non-progressive sector, or, if happening, the off-setting process is small. Consequently, the rise in wage in the unproductive sector which was not off-set by the same amount of increase in productivity will eventually increase the cost in the unproductive sector. The manufacturing sector which, according to Baumol is more productive, will continue to decline in relative cost. Accordingly, it will absorb a lesser amount of work force. In the non-productive sector, i.e. the service sector, some industry may survive if the demand is inelastic. However, some other industries, specifically Baumol identified hospital i.e. health services and education, may be forced to leave the market unless financed greatly by the public. This means that, public expenditure will increase to finance these activities.

Departing from this scenario, Baumol extended the model to describe the problem facing the urban area i.e. the cities. Mass migration of population from rural to the urban areas, attracted by job prospect, flooded the urban neighbourhood creating an urban slum and resulting in a deterioration in the quality of urban life. To fight these increasing social ills, greater financial pressure was put on the cities; pressure arises from the services to be channelled to the “relatively non-progressive sector of the economy” [Baumol, 1967: 423] so much so that “the municipality will have to be expanded if standards of city life are to be maintained” [Baumol, 1967: 426]¹⁴. Baumol argued that productivity in most of the government activities are inherently difficult to increase; activities like teaching or medicine, which cannot be replaced by machine¹⁵. In a modified model, Baumol, Blackman and Wolff [1985] contended that “[T]he ‘rising share of services’ turns out to be somewhat illusionary” [p. 816]. Nevertheless this does not reject the unbalanced growth theory for the reason that although the output share of the progressive and stagnant¹⁶ sectors remains constant, but, with the rising prices, the share of total expenditure and labour force in the

¹⁴ In Baumol’s model, government activities are mostly of a service nature. Baumol argued that “.... we recognise how large a proportion of the services provided by the city are activities falling in the relatively non-progressive sector of the economy” [p. 423].

¹⁵ In support of Baumol thesis, Bradford, Malt and Oates [1969] argued that “improvement in technologies, while, leading to superior services (e.g.) have not been of a cost-reducing form. As a result these advances have not in general allowed local governments to offset the rising prices of inputs through utilising fewer units” [p. 201-202].

¹⁶ A new term used in Baumol, Blackman and Wolff [1985] to replace the non-progressive sector.

stagnant sector has increased tremendously which leads again to the unbalanced growth between the two sectors¹⁷.

Baumol's thesis on unbalanced growth theory has been extended further [see for example Bacon and Eltis, 1976, 1979; its critics by Hadjimatheou and Skouras, 1979; and Gemmell, 1982] to encompass the market and non-market sector¹⁸. It is meant to show the unbalanced growth particularly in the non-market sector compared to the market sector.

Bacon and Eltis [1976] argued that Britain's main economic problem - the unsteady growth - arose because of the growth of the public sector defined as a non-market sector economy. They argued that in Britain, the growth in the non-market sector eventually crowded-out market sector investment [Bacon and Eltis, 1979]. Bacon and Eltis proposition was strongly refuted by Hadjimatheao and Skouras [1979]¹⁹. Gemmell [1982: 369] provides "a framework in which international comparisons of the macroeconomic implications of different market and non-market sector growth rates can be identified". He also cautioned that for a government which emphasised employment, the expansion of the non-market sector may have adverse repercussions on the economy than the expansion of market sector²⁰.

c. *The Socio-Economic Environment*

Socio-economic factors are the third element that contribute to the increased demand for public goods by the citizen-voters. The changes in socio-economic environment pose such a threat that the government will have to spend more money to rectify this problem. This either comes

¹⁷ This proposition was supported by Ferris and West [1992]. They conclude that "changes in real wage movements across sectors accounts for roughly a third of the rise in the cost of government services, while slower productivity growth, which is the focus of the cost disease theory, accounts for the remaining two-thirds" [p.50].

¹⁸ One the critics on Baumol's thesis revolve around Baumol's failure to recognise the absence of competitive forces in the public sector [Bradford, Malt and Oates, 1969].

¹⁹ Among others, Bacon and Eltis [1976: 28] argued that "all investment are marketed"; a proposition refuted by Hadjimatheou and Skouras.

²⁰ What appears to be a similarity is the classification of public and private sector. Baumol's approach divided the economy into the progressive and non-progressive (stagnant) whereas Bacon and Eltis, and Gemmell approach divided it into market and non-market sector.

about from a direct provision of social services or from transfer payments. The socio-economic environment can be classified into three headings.

First, is the demographic factor [Peltzman, 1980]. This include the number of dependent populations [Goffman and Maher, 1968]²¹ in the society i.e. the composition of age groups in term of the proportion of the school age children and the elderly. At the lower end of the age group, a higher proportion of school age children require certain type of public goods. In particular, governments have to spend more on education - schools, teachers, educational facilities etc. In the case of Malaysia, these facilities were extended to cover also free school books and pocket money especially for the poor and rural children. At the upper end of the age group, government expenditure includes nursing homes and medical aid. Another form of demographic factor is the increasing independence associated with demographic trends [Ermish, 1977] in the society. Demographic factors also include population density [Pye, 1960; Thorn, 1967; Bird, 1970]. Density brings with it health, environmental and hygienic expenditure. In such a situation, government expenditure has to be increased to care for these factors.

Second, is the urbanisation factor²² [Pye, 1960; Thorn, 1967; Bird, 1970] which requires higher provision and better quality of public goods and services. Borcharding [1977a]²³ argued that urbanisation also leads to congestion in the demand of public goods. The urbanisation process requires government to ensure the provision of certain types of public goods. It require not only expenditure on environmental, health and hygiene but include also expenditure on infra-structure [such as better road, street light, etc.], policing and pollution control²⁴.

²¹ Goffman and Maher argued that in the case of six Caribbean countries studied by them, a high proportion of young population increased the level of public expenditure via an increase demand for education.

²² This differs with Baumol Disease in the sense that Baumol Disease concentrates more on the existence of slum area in urban township which requires the government to improve that area. Urbanisation in this sense may refer to the expansion of urban area or the urbanisation of previously rural area.

²³ Borcharding also believed that urbanisation is a result of a higher income which should reduce not only economic interdependence but also the level of government interference.

²⁴ This requirement is, of course, different between the developed and the developing countries. For example, popular in Britain and United States townships or cities are parks. This movement has been a new phenomenon in a few developing countries [see for example, Yuen, B. Creating The Garden City - The Singapore Experience, *Urban Studies* 33(6): 955-970] but not in the majority of others.

The third factor is distribution [Meltzer and Richard 1978, 1981]²⁵. Economists have recognised the distributive function of the government [see Musgrave, 1969]. The distributive function require the usage of government machinery to redistribute the wealth of the nation in order to reduce, if not eliminate, inequality in the economy. This may take the form of an increase in the number of tax offices and the tax inspectorate and an efficient public finance management.

Niskanen [1981] argued that these socio-economic requirements will increase the demand for transfer and social services from the citizen-voters. However, based on his study, Borcharding [1977a] rejected the notion that urbanisation will put a pressure on the level of public spending while accepting that population increase does²⁶.

2.2.2 Government As Stabilising Factor

We presented in our introductory chapter, i.e. Chapter One, the Keynesian perception of the role of government expenditure. From a Keynesian perspective, government plays an important role in managing the [aggregate] demand side of the national income equation. On account of this, we can see that the development economists, from Rostow to Harrod-Domar to Thirlwall to Musgrave and others, directly or indirectly require government involvement in the economy. We will not, in any way, discuss this various development theories in detail because it is beyond the scope of this study.

This sub-section is trying to review this approach in understanding government role in the economy which gives rise to an increase in government expenditure. This is done in the light of Keynesian policy implications of government expenditure, the various development theories that require government involvement and the international factors that affect the stabilisation of the domestic economy which in turn require government's active participation in the economy.

²⁵ Musgrave (1969) has earlier identified the *distributive* function of government activities.

²⁶ Thorn (1967) argued that the urban population benefits more from a larger social expenditure per capita than the rural population basically because first the rural population is scattered and second, because of the ability of the urban population to form a collective voice in order to create an effective demand.

a. *Keynesian Explanation*

As mentioned earlier in Chapter One, Keynesian macroeconomics arose as an answer to the failure of classical economics in explaining the Great Depression in 1933. Both the product and factor market failed to clear. This have struck at the core of classical economic, that is, the Say's Law which says that *supply creates its own demand*²⁷. In the wake of this event, John Maynard Keynes [1936] wrote his book *The General Theory of Employment, Interest and Money*.

Keynesian²⁸ economics recommend that the government should play an active role in massaging the economic cycle through the principle of effective demand. Central to Keynes' thesis, and relevant to our present discussion, is the role of government expenditure. In Keynesian perspective, aggregate demand is the function of consumption, investment, net export and government expenditure; $AD = C + I + G + [X - M]$ where AD is the aggregate demand, C is consumption, I is investment, G is government expenditure and $[X - M]$ is net export i.e. export less import.

Keynesian policy rule can be divided into two. In the period of inflation when the aggregate demand is high, the government is expected to reduce the government expenditure, G , to reduce the aggregate demand. This will halt and reduce the inflationary pressure on the economy. In the period of depression, when aggregate demand, AD , is insufficient, government can increase its expenditure, G , to push the aggregate demand upward. Hence, from the Keynesian perspective, government expenditure plays a pivotal role in the economy.

b. *Development Approach*

Development is defined as "the process of economic and social transformation within countries" [Thirlwall, 1994: 9]. This implies a

²⁷ Say's Law is associated to Jean-Baptiste Say. In Say's own words, "it is production which opens outlet to productions". For discussion of Say's Law, see for example, Sherman and Evans [1984] and Niehan, J. [1990].

²⁸ Undoubtedly, Keynesian school of macroeconomics follows J. Maynard Keynes postulates. Nevertheless, Keynesian economics have evolved such that Keynesian policy recommendations does not really portray Keynes idea; mostly it is the interpretations of later economists of Keynes' work. A brief description is given in Aljo Kramer [1984].

transformation of the economic dependency i.e. structural transformation of a country from an agricultural-base economy to an industrial-base economy. For the purpose of the foregoing study, we define development only in this sense. We acknowledge that this definition of development focuses only on the physical or economic development of a country. It does not, in any way, refer to the other component of the equation, i.e. the human development²⁹.

Our main focus here is to evaluate how development theory contributes to the growth of government expenditure. The particular area that concerns us is the financing of such development projects and activities. Economists have identified two main sources for financing economic development projects. First is from domestic resources. Second, development expenditure can also be financed from foreign assistance³⁰ and debts. One important question on the choice of development finance is the cost of such financing [Thirlwall, 1994]. For instance, the cost of debt financing is the interest payable on such loans.

Thirlwall [1994] identified three mode of financing from domestic sources. These are the *prior-savings approach*, the Keynesian approach and the *quantity theory approach*. We will briefly discuss these modes of financing development projects, in turn.

Thirlwall argued that, being classical in principle, the prior-saving approach to financing development concentrates on accumulating enough savings in the economy. In classical terms, saving is treated as a prerequisite to investment, where $S=I$, that is all money saved will be invested. It is normally assumed that for a developing countries, private saving is very limited. Therefore, the pressure is on the government to

²⁹ World Development Report, World Bank, 1991 defined development in the following way: *The challenge of development is to improve the quality of life. Especially in the world's poor countries, a better quality of life generally calls for higher incomes - but it involves much more. It encompasses as ends in themselves better education, higher standards of health and nutrition, less poverty, a cleaner environment, more equality of opportunity, greater individual freedom, and a richer cultural life.*

³⁰ We acknowledged that in most cases, foreign assistance and aid have certain pre-conditions i.e. the aid and assistance is tied-up to certain agreed conditions. For example, first emerged in 1990, the then Prime Minister Margaret Thatcher agreed in March 1988, to provide British aid worth £234 million to finance the development of Pergau Dam in Kelantan, Malaysia. This was made as part of the agreement signed with the Malaysian government to purchase Hawk fighter planes worth £1.3 billion. For detail, see *The Economist* February 1, 1997

invest in development projects. This will eventually increase the level of government expenditure.

There are three aspects to the Keynesian approach. First, when the economy is below capacity, investment will increase income and hence will increase savings. Second, increased income will increase transfers from income-earners with high propensity to consume to profit earners with high propensity to save, which will eventually increase savings and investment. Third, the inflationary effect of investment will increase the nominal rate of return on investment and reduce the real rate of interest; this again will induce savings and investments. However, for most developing countries, domestic investment i.e. domestic capital formation is very low. This requires the government to invest in the economy. The government does this by running a deficit budget and hence injecting into the economy i.e. into the circular flow, a huge amount of government expenditure to stimulate the economy.

The quantity theory approach "stressed the effect of inflation as tax on real money balances" [Thirlwall, 1994: 293]. The government is required to finance development by increasing the money supply which will produce an inflationary effect. This inflationary effect will then reduce the desire to hold real balance by reducing the purchasing power of money and therefore will encourage savings in the economy. Thirlwall also argued that this approach will produce a higher rate of capital accumulation and hence higher rate of employment growth.

Failure to generate enough finance from within the economy, the country have to resort to the international sources mainly from international organisations especially the International Monetary Fund [IMF] or the World Bank. As mentioned earlier, the costs of this sort of financing, in terms of interest servicing, has to be taken into account.

c. *International Explanations*

International explanations to the growth of government expenditure associates the reason for the growth of government expenditure to international factors. These expenditures arise mainly through the

introduction and implementation of trade barriers that restrict free trade.

According to Cameron [1978] the international explanations to the growth of government expenditure can be viewed from two perspectives. First, following Lindbeck [1975], Cameron argued that this expansion arises through international macroeconomics fluctuations and influences as a result of open economic policy. According to Cameron, “nations are not wholly autonomous” [p: 1249]. Nation tends to be dependent on international economies for market of export goods as well as sources of capital investment. This is normally defined as openness in economic activities. Openness is defined by Cameron, as with Lindbeck [1976], in term of the substitutability of domestic and foreign goods whereby domestic price, labour and capital are determined by its supply and demand in the international market. Cameron noted that openness can be looked upon as trade dependence especially in the context of smaller nations. This follows Dahl and Tufte [1973] who argued that openness is related to the size of the nations³¹. On this basis, Cameron argued that nations are exposed to international fluctuations.

Following Krasner [1976], Cameron argued that openness impairs macroeconomics policies; the view that was echoed earlier by Dahl and Tufte [1973: 116] that is “.... economies of scale tends to erode the independence and autonomous of the smaller democracy, making it independent on the actions of people outside the country”.

Cameron discussed the international influences in term of the fluctuations that affect the behaviour of domestic economy that is to say the international business cycles that determine the domestic cycles. Cameron argued that since price [for exports] are set internationally, i.e. in the international market, the economy can do little which makes the domestic economy uncontrollable and exposes it to fluctuations.

³¹ Dahl and Tufte [1973: 115] argued that: “In general, the smaller a political system the higher the proportion of foreign trade to total trade”.

Cameron put forward two sides of this argument. First, low profitability may arise if international demand and price fail to match domestic costs and hence “destabilise the economy” [p. 1250]. This may produce a chain effect: low profitability leads to lower funds for capital investment which will reduce the growth rate. Second, effects arise as a result of high profitability when international demand and price increase is greater than domestic costs. Inflation may creep in by way of higher wages in the export industries³² which may spread into the rest of the economy.

The impending discussion in Cameron revolves around the inability of the government to resist these international influences on the domestic economy especially when the degree of openness is high and the economy or nation is small. This includes the inability to make decisions to determine domestic requirements, to control inflation and balance of payment deficit.

Cameron contended that these disadvantages can be overcome by re-asserting the role of the state. This follows Gilpin [1975] who suggested a mercantilist approach whereby the state intervenes between the domestic and international economy. The same was suggested also by Myrdal [1960] to protect national economic stability from international forces and Lehmbruch [1977] who suggested that governments take a “more direct attempts at influencing the economic behaviour of business and/or labour” [p.98]. This can be done through increasing the scope of the public economy. Government, it was suggested by Lindbeck [1975], can smoothen the effect of international business cycle fluctuation by way of extensive labour market policies i.e. through unemployment compensation, increasing public employment and capital funds provision for private sector³³.

Cameron, nevertheless argued that government expansion may not always be sufficient to control the effect of the open economy. This point was supported by arguing that the “efforts by European

³² Basic economic textbooks have already dealt with the international effects on domestic inflation. See for example, Ekelund and Tollison [1990], Lipsey and Chrystal [1995].

³³ Lindbeck [1975: 56] argued that “.... government can maintain near full employment in spite of the uncertainties of demand inherent in an open economy”.

countries failed because of increasing openness produced by the creation of the EEC and EFTA and the maturation of multinational enterprises" [p: 1251].

Second, is the influence of international economic entities, the multinational enterprises or corporations, that affect the domestic economy. Nevertheless, this point was not being elaborated further by Cameron.

Finally, Cameron pointed out that "a high degree of trade dependence is conducive to a relatively large expansion of public economy. Nations with open economies were far more likely to experience an increase in the scope of public funding than were nations with relatively closed economies" [p. 1253]³⁴.

In response to all these international forces - economic volatility due to open economic policy and multinational enterprises - governments are forced to take corrective measures to counter such external effects on the domestic economy. These includes protective policies to protect domestic industries from international competition³⁵.

Recently, new interest has developed in studying the relationship between export and GNP in several countries. Basically these studies were trying to analyse the effect of exports on national income. For example, we can point to Afxentiou and Serletis [1991,1992], Ahmad and Harnhirun [1996], Amoateng and Amako-Adu [1996], Burney [1996].

³⁴ Cameron divides the source of government expansion into five: economic explanation of Wagner's Law, the fiscal explanation around the fiscal illusion argument, political explanation or political business cycle, institutional explanation emphasising government viz.-a-viz. bureaucratic behaviour and finally international explanation. From these a priori sources of government growth, Cameron found out that only two resulted in an expansion in government expenditure. Those are the political business cycle explanation viewed from the context of political partisanship which give rise to political competition and the international i.e. open economy explanation.

³⁵ The continuing gap that exists between the developed and the developing countries is due mainly to the international set-up that exists which hinders the progress of the developing countries. When the present developed countries started to develop, there was no international competition to hinder their progress. The same environment is not present today which consequently slows if not hinders, the development of the present developing countries. The same environment explain the success of Marshall plan in building up Europe post World War Two. Nevertheless, the same Marshall Plan fails to alleviate the developing countries when applied to their context. Beside this international environment, failure can also be traced to the different structural, institutional and attitudinal conditions between the two. For further readings on this, see for example Todaro, 1995.

2.2.3 Peacock and Wiseman Hypothesis

Following Wagner, some attempt was made to theorise the growth phenomenon of government expenditure. Notably among these are Peacock and Wiseman, 1961; Baumol, 1967; Musgrave, 1969 and Beck, 1979³⁶. Here, we shall concentrate on Peacock and Wiseman hypothesis.

The Peacock and Wiseman's study centred on a time-pattern analysis of the government expenditure growth. There are two basic premises of Peacock and Wiseman's analysis. First, they argued that government expenditure growth exhibits a gradual growth pattern. This gradual growth pattern, constrained by 'a tolerable burden of taxation' on the part of the citizen-voters, follows the gradual growth pattern of GNP. Second, their analysis revolved around the behaviour of government expenditure following a period of social upheaval. They discovered that during this period of social upheaval, government expenditure growth will tend to deviate from its original and gradual growth path.

Working on the public expenditure data for the United Kingdom between 1890 - 1955, the Peacock and Wiseman hypothesis was acknowledged for its supply-side approach; taking into account the financing aspect of government expenditure that is, government's financial constraints. Their notion of a tolerable burden of taxation addressed the ability of government to raise taxes to finance the expansion of its activities. During the 'stable' period, government's ability to raise taxes to finance its expenditure is limited because of the constraint imposed by the tolerable burden of taxation of the citizen-voters. This means that government expenditure is constrained by tax revenues. From here, we can proceed by identifying two aspects of Peacock and Wiseman hypothesis.

First, a social-upheaval befallen the economy. In their study, this social upheaval was the two world wars fought by Britain. The social

³⁶ Beck [1979] hypothesised that the growth of government expenditure is a result of the growth of transfer payments: "In several countries, the phenomenon of public sector expansion arises mainly from the growth of transfer payments and that one might not observe the size of public sector to increase with economic development if only the 'classical' government expenditure on goods and services is considered" [p. 82].

upheaval i.e. the war, changed the public perception of a tolerable burden of taxation. The public comes to realise the need for an increase in government expenditure to finance these wars. With this altered perception, the public will be willing to pay a higher tax rate to finance such expansion. Note that as a result of the war, an increase in military expenditure is therefore inevitable [Brown and Jackson, 1990]. As a consequence of this, total government expenditure will also increase. This constitutes a displacement of the original growth path of the total government expenditure. This is to say that war related expenditure displaced the original growth pattern of government expenditure to a new higher level. In addition, though theoretically not necessary, the share of civilian expenditure will fall to allow the government to spend more on the social upheaval, in this case military expenditure.

The second aspect is concerned with what will happen after the social-upheaval or after the war. In other words, how long will the displacement last. Brown and Jackson [1990] presented three possible post-war outcomes. First, as suggested by Peacock and Wiseman itself, the relative size of total government expenditure will not fall to its pre-war growth path. Instead, still constrained by the [new] tolerable burden of taxation but at a higher tax level, the total government expenditure will continue with its war period growth pattern. Since war has ended, this will allow the civilian mix of the government expenditure to increase. Second, following Musgrave [1969] and Bird [1970], both the civilian public expenditure and the total public expenditure will fall but only in the long-run. This allows the government to slowly adjust their spending habits. The pressure from citizen-voters will eventually force the government to reduce its spending level back to the original growth pattern. Third, post-war civilian public expenditure and total public expenditure will immediately fall to follow the original growth path after the war.

A later study by Gupta [1967] extended this social-upheaval thesis to cover the Great Depression as well, especially in the context of the United States and Canada.

2.2.4. The Public Choice Approach

Within the economic discipline, emerged a new branch of economics beginning in the fifties and sixties but gaining greater momentum in the seventies and eighties. This new branch, known as the public choice school, evolved as an effort to understand and explain political behaviour from the economic view. The public choice school extended further the basic foundation of economic analysis that is man are utility maximising self-interest. The notion of *homo economicus* is extended to encompass the political domain and behaviour. In the words of Buchanan [1989: 13]³⁷, “public choice is a perspective on politics that emerges from an extension and application of the tools and methods of economics to collective or non-market decision-making”. Buchanan (ibid.) argued that economics should be viewed as ‘catallaxy’, following a suggestion made by Hayek, which means “the process of exchange, trade or agreement to contract” [p.14]. Buchanan also argued that there is no clear demarcation line separating ‘economics’ and ‘polity’. Therefore, he suggested that economists should extend their inquiries beyond man’s behaviour within the market and “look on politics and on political process in term of the exchange paradigm” [p.15].

Public choice therefore, can be taken to mean “the application of economics to political science” [Mueller, 1989:1] or “the economic analysis of political institutions” [ibid.: p.320] and can also be viewed as an “economic theory of politics” [Buchanan, 1979:10, 1989: 22]³⁸ or “the new political economy” [Buchanan, 1979:10]. This application is done in line with the basic precept of self-interest³⁹, exchange and [following self-interest is] individualism⁴⁰. The extension of the notion *homo economicus* beyond the economic discipline is done on the basis that in political game, economic man is either a voter or a politician or a

³⁷ Buchanan received a Nobel prize in 1986 for his contribution to the Public Choice theory or school.

³⁸ Buchanan [1979: 144] defined politics in such way: “In my vision of social order, individual persons are the basic component units, and ‘government’ is simply that complex of institutions through which individual make collective decisions and through which they carry out collective as opposed to private activities”. ‘Politics’ is the activity of persons in the context of such institutions.

³⁹ Underlining the public choice approach is the assumption of *homo economicus*, which assumes all men are self-interested being hence rejecting the altruistic character of human beings. As against self-interest being, altruistic will produce benevolent and kindness. Alienating himself from the public choice approach, Barro [1979] extended this altruistic trait in the context of a benevolent policy-makers and planners. This type of policy-makers “devise policy so as to maximise social welfare or minimise distortions” [Cukierman, et.al., 1992: vii].

⁴⁰ For detail, see Buchanan 1988.

bureaucrat which exhibit a predominantly self-interest⁴¹ personality trait. This leads to the criticism that the public choice school is trying to replace *homo politicus* with *homo economicus* [Udehn, 1996]⁴².

Mueller's introductory paragraphs are worth considering in understanding the paradigm of the public choice school. Mueller begins his discussion quoting Aristotle's famous saying that "man is by nature a political animal" and Adam Smith's propensity in human nature i.e. "the propensity to truck, barter, and exchange one thing for another". Departing from this, Mueller proceeds to argue that [1989:1-2]:

Political science has often assumed that political man pursues the public interest. Economics has assumed that all men pursue their private interests, and has modelled this behaviour with a logic unique among the social science.

But is this dichotomy valid? Could both Aristotle and Smith have been right? Could political man and economic man be one and the same? In the field of public choice, it is assumed that they are.

Public choice can be defined as the economic study of non-market decision making, or simply the application of economics to political science. The subject matter of public choice is the same as that of political science: the theory of state, voting rules, voters behaviour, party politics, the bureaucracy, and so on. [BUT]⁴³. The methodology of public choice is that of economics, however. The basic behavioural postulates of public choice, as for economics, is that man is an egoistic, rational, utility maximiser.

Considering the vast scope of the economic interpretation of political behaviour leads Tullock [1972] to regard this as an act of 'economic imperialism'⁴⁴. Lars Udehn [1996] term it as 'economic invasion of politics'⁴⁵. This notion of economic imperialism was however

⁴¹ The self-interest argument that underlie the behavioural norms of economic agents can be found in most of the writing by the public choice scholars for example J.M.Buchanan, G.Tullock, R.D.Tollison and others.

⁴² The strongest and systematic criticism so far of Public Choice school comes from Lars Udehn [1996]. Udehn questions what he termed as an "exaggerated claims concerning the universality and explanatory power of economic theory" [p. 9] in explaining human behaviour. As Frey [1982] pointed out, the public choice theorist seems to believe in the superiority of the market and the inferiority of politics. Needless to say, at least in advanced Western countries, economic issues becomes the main political debate during the election period.

⁴³ Addition is mine.

⁴⁴ Tullock [1972] argued that economists have involved in lots of other disciplines as well, in military strategy, in management and efficiency, business administration, education, public administration; all of which are branches of governments.

⁴⁵ As a basis of understanding the public choice school, it is imperative to understand the historical perspective underlying its emergence. It emerged as a counter Keynesian-Revolution at the time when Keynesian policy formulation by way of stabilisation packages, were dominant. By Keynesian, we means the active role of the state in managing the economic cycles. This can be traced to none-other than J.M.Buchanan himself, in his lecture entitled *Political Economy 1957-1982* delivered at the G.Warren Nutter Lecture on Political Economy, [G.W.Nutter was his co-founder of the Thomas Jefferson Centre at Virginia] published by American Enterprise Institute [1983]. According to Buchanan, those were the years when academia were clout by "implicit-socialist" [p.4] whose main ideological force were "driven by an ideological commitment to the benevolent leadership of the nation states on all matters economic" [p.4]. This also underlined the establishment of the Thomas Jefferson Centre. Buchanan dubbed the period as a "Keynesian-diversion" [p.4],

rejected by Buchanan [1989]. Nonetheless, it must be viewed as an attempt to model the behaviour of various economic agents especially its institutional structure in prescribing collective choice [Brown and Jackson, 1990]. The main development of the public choice school follows the publication of *The Calculus of Consent* by James M. Buchanan and Gordon Tullock [1962]⁴⁶. This was followed later by

the period where "market failure was all the rage" [p.11] to justify "political-government intervention" by neglecting the basic premise of economic theory that lied in the price theory. Hence, public choice school, in Buchanan's words, should be viewed as "a return to the stance of the classical political economists" [p.6]. It emphasise the superiority of the price theory in the sense of classical economist.

This anti-Keynesian tones can also be traced in another writing by Buchanan, published by Institute of Economic Affairs as Hobart Paper 78 [1978] *The Consequences of Lord Keynes*, together with R.E. Wagner [in Part I] and J.Burton and R.E.Wagner [Part III], [Part II was a writing by J. Burton]. Part 1 was indeed a restatement of the argument put forward in their book, *Democracy in Deficit, The Political Legacy of Lord Keynes*, published by Academic Press, New York and London [1977]. It is not surprising that the full title for Hobart Paper 78 is *The Consequences of Lord Keynes, An Analysis of the misuse of economic theory for political profiteering, with proposals for constitutional disciplines*. The title itself is descriptive enough to realise the anti-Keynesian mode of the writing. The Preface by Arthur Seldon have this to say: "Hobart Paper 78 presents a new critique of Keynes" [p.8] and "This is the critique of Keynesianism by Professors J.M.Buchanan and Richard E.Wagner" [p.8].

In *The Consequences*, Buchanan and Wagner main discontent was that Keynesian economic or Keynes in particular 'turned the politicians loose' [p.27] by providing them apparatus in which they [the politicians] can manipulate the economy [this allows us to understand the long title of this writing]. This tool exist in the form of a divergence from the norm of balance budget [the very foundation of Classical Economics]. As against Classical Economics, Keynesian viewed economy an inherently unstable [in itself a diversion of the Classical tenet of Say's Law, known also as Say's Equality]. By viewing government as inherently unstable, Keynes, it was accused, provide the justification for the politicians and governments to interfere in the economy. Government role in fine-tuning the economy result in excessive interference in the economy and lead to Keynesian instability as compared to Classical stability of the economy. This is done by budgetary process in the form of deficit or surplus budget. They interpreted that Keynesian believed that the "budgets *need not* be in balance: indeed, they *should not* be in balance, since that would means government was failing in its duty" [p.14, italic are theirs]. Nevertheless, this does not means that Keynesian reject "the principles of balance budget, but only lengthened the time-period" [p.15]. The main problem arise when politicians who are supposed to manage the unstable economy, "may lack the knowledge required to promote such an outcome" [p.16]. Most likely, this assume that politicians act without any sort of advice from economists!. Such was the case because "it render the surpluses fictional and the deficits disproportionately large or ill-timed" [p.17]. On political perspectives, this interference lead to the weakening of democratic politics. Government is able to use the budget to their benefits because expenditure is no longer being constraint by taxation and therefore "altered the institutional constraints within which democratic politics operated" [p.20]. Likewise, in *Democracy In Deficits: The Legacy of Lord Keynes*, Buchanan and Wagner [1977] argued that Keynesianism lead to excessive public expenditures. It provides license for politicians in democratic society to do so as a way to secure support of the electorates. This is done by legitimising borrowing and deficit financing as a sound economic policy.

Public Choice emphasis on the expansion of government is therefore an attempt to highlight the problems of government failure as opposed to the market failure arguments. On this account, public choice traces the government expansion to the role of interest groups as economic agents whose underlying precept are self-interest; interest group in broad term [not only in rent-seeking behaviour] which covers the bureaucratic and political behaviour of economic agents. Hence, we see the suggestions to control government behaviour. Government failure is seen as the inability of the government to regulate itself even before regulating the economy because politicians are self-interest. It argued that "elected politicians respond to pressure emanating from constituents and the state bureaucracy" [*The Consequences*, p:17]. *The Consequences* argued that Keynes and Keynesian neglect the force that surround the political competition which make it inferior than market competition. This includes, first, the existence of political bribery in winning support of the electorates and fellow politicians [log-rolling]; second, political decisions [by way of election] is binding for some time-period and, third, political competition produce an 'all-or nothing' outcome. All this require a sort of constitutional reform to regulate the role of governments so that the government are to be held subjective to the sovereign of the economic agents. An extension of this can be seen in the development of constitutional economy [for example J.M.Buchanan together with G.Brennan have produced a book entitled *The Power To Tax: Analytical Foundations of A Fiscal Constitutions*, Cambridge, 1980]. See also, Buchanan, 1981.

⁴⁶

It is difficult however to pin-point the emergence of the public choice school. The *Calculus of Consent* itself was build up on the foundation laid by A. Down *The Economic Theory of Democracy* [1957], D. Black's *The Theory of Committee and Elections* [1958] as well as G. Tullock's *Some Problems of Majority Voting* [Journal of Political Economy, December 1959, 67: 571-9]. Mueller [1989] even argued that the pioneering work in public choice is Harold Hotelling's *Stability in Competition* [Economic Journal, March 1929, 18: 501-523]. Other works include Richard Musgrave [1938], Howard Bowen [1943] as well as J. Buchanan [1949]; see for details, Brown and Jackson [1990].

several other contributions notably from Robert D. Tollison, Geoffrey Brennan and Robert Wagner who, like Buchanan and Tullock were at one time from Virginia⁴⁷. Together, they have jointly enriches this public choice approach.

The Calculus of Consent is a venture to explain the problem of collective actions⁴⁸. This is in fact an extension of earlier contributions by Anthony Down [1957] through *The Economic Theory of Democracy* and, Duncan Black *The Theory of Committee and Elections* [1958]. The two, together with *The Calculus of Consent* can be regarded as the classics in the public choice literature. In *The Economic Theory of Democracy*, Down introduced the political concept of 'median-voter's rule'. Parties, according to Down [1957: 28] "formulate policies in order to win elections, rather than win elections in order to formulate policies". In a two-party system demonstrated by Down, each party is identified with its left and right ideology. From the voters' point of view, this ideological spectrum tends to converge in the middle. The further away from the middle, the more extremist the voice from within the party can be. In political competition, i.e. elections, each party tends to concentrate on winning the support of the middle electorate, that is the median voters. Translated into public policy, this means that each political party will compete in offering the most attractive public goods basket to the median voters.

Another contribution to the public choice approach comes from Mancur Olson [1965] *The Logic of Collective Action*. Self interest individual in Mancur Olson prisoner's dilemma⁴⁹ model exhibit the problems of free-riders in the provision of public goods. In a small and homogeneous community, the voluntary provision of public goods is high compared to a big and heterogeneous community with a lack of

⁴⁷ On this basis the public choice school is also known as Virginia school approach. Together, these Virginia economists established the Public Choice society and produced the Public Choice journal.

⁴⁸ There are two aspects of collective action - the social choice with no institutional structure and the public choice which inhibits the institutional structure [for detail, see Brown and Jackson, 1990]. The problems of collective action have been addressed earlier by Knut Wicksell [1896] linking the potential for all to the benefit from collective action. Wicksell also introduced the concept of unanimity rule which according to Mueller [1989: 50] could lead to Pareto-preferred public goods quantities and tax shares.

⁴⁹ In a prisoners dilemma game theory, two prisoners in different cells are trying to decide between co-operation or not in an attempt to escape from the jail. The reward is whether they can successfully escape or not. Since both cannot communicate with each other, each have to judge their own position.

communications. In the latter case, Olson argued that individuals measure their participation between rewards and penalties.

Underlying public choice approach is the economic theory of democracy. In other words, the behaviour pattern of the public choice approach can only exist in a democratic environment with democratic process.

From all the foregoing discussion, we are inclined to consider the public choice theory as an 'interest group' theory. It shows how the interested party will try to dominate the outcome of the public policy for their own self-interest. Conventional wisdom refers the interest group theory only to the behaviour of pressure group in the context of rent-seeking. Nevertheless, as Mueller [1989] argued that "[I]nterest groups come in a wide variety of institutional forms" [p.308].

We focus on four major aspects of the public choice approach in explaining government growth. These are the behaviour of bureaucrats; politics and political behaviour; the fiscal federalism and *leviathan government* arguments and finally rent-seeking in economy.

a. *The Behaviour of Bureaucrats*

This approach is concerned with the role and influence of the [self-interest] bureaucrats in determining the level of public spending. The most important and pioneering work on the effect of bureaucratic behaviour is Niskanen [1971]. Niskanen argued that bureaucrats derived their utility by the size of their bureau's budget⁵⁰. This follows a "career centred motivation" with a desire "to move up, in the hierarchy" [Tullock, 1965: 29]. Niskanen [1971] introduced the concept of budget-maximising bureaucrats. Budget maximising behaviour of bureaucrats, therefore, can be seen as a product of the utility maximisation game [Borcheding, 1977a,b; Niskanen, 1971]⁵¹. This approach in analysing

⁵⁰ Niskanen, obviously, was referring to the United States bureaucrats. As rightly pointed out by Jackson [1985], in the United States, the salary of bureau's chief is related to the bureau's budget. Jackson argued that this is not the case in Britain whereby the salary of the bureau's chief is not related to the size of the bureau nor its budget. Neither it is the case with Malaysia.

⁵¹ Borcheding argued that non-economic factors explain "more than one-third, and possibly, one half of the growth of the government spending"[1977b: 56].

public expenditure growth considers that the [over-] expansion of public sector is due to the existence of bureaucratic power [Tullock, 1976].

The literature shows several ways in which bureaucrats can contribute towards a higher government expenditure. Primarily important in this analysis is that bureaucrats are self-interested individuals seeking personal gains.

Bureaucratic behaviour involves budgetary games by bureaucrats. In the framework set by Niskanen, bureaucrats proposed a set of activities for certain expected outputs. This set of activities is to be financed by a certain level of budget. As mentioned earlier, underlying bureaucrats behaviour is utility maximisation. This means that, during the budgetary process or negotiations, bureaucrats are not neutral agents [Brown and Jackson, 1990] and therefore will show tendency to seek larger bureaux [Breton: 1978]. Through this, bureaucrats will make sure that this year's budget is the function of last years' budget plus some increment [Wildavsky, 1964].

Niskanen's budget maximising bureaucrats derived utility from the budget of the bureau. The utility derived by bureaucrats are the function of:

$$U = f[S, C, R, P, Pa, O, MC, M]$$

where S = salary, C = comfort or perquisites [of the office], R = public reputation, P = power, Pa = patronage, O = output of the bureau, MC = ease of making change and M = ease of managing the bureau.

Niskanen argued that all, except the last two - ease of making change and ease of managing - could have a dramatic effect on the bureau's budget being the "positive monotonic function of the total budget of the bureau during the bureaucrat's tenure in office" [Niskanen, 1971: 38]. In deciding on the bureau's budget, the bureaucrat will ensure that "the budget must be equal to or greater than the minimum total costs of supplying the output expected by the bureau's sponsor" [Niskanen, 1971: 42].

Niskanen's bureaucratic model was an extension of Anthony Downs' [1967] *Inside Bureaucracy*. Similar to Niskanen, Down's bureaucrats are also self-interest seekers in terms of power, income and prestige. Down divides bureaucrats into five categories: climbers, conservers, zealots, advocates and statesman⁵². Down argued that the effect on bureau's budgets is lesser from one category to another with climbers being the most budget-maximising. Nevertheless Margolis [1975] argued that for the climbers [the most self-interested seekers of all the categories] it is easier to make a career by changing from one bureau to another⁵³. Therefore, if climbers can achieve a better position by changing from one bureau to another, it is unlikely that they will be budget maximisers. Conservers, as defined by Down will only conserve what they already have, which also means that they will not be budget-maximisers. The only likely ones are zealots and advocates. Down seems to accept that zealots and advocates will tend to create new bureaux.

The strength of bureaucratic theory depends much on the transparency of bureaucratic activities. Weber [1978] for example argued that bureaucrats prefer poorly informed and powerless parliaments, not to expose themselves to the public, so as to keep their work secret from the public scrutiny and will fight any attempt to gain control over them. This is possible through the game they establish with politicians in the context of a principal-agent relationship⁵⁴. Niskanen [1971: 137] points out that "one can expect that the interactions between executives and legislators, bureaucrats and politicians are subjected to the constraint of re-election" which shows the self-interest behaviour in both arms of the government.

⁵² All these exhibit different goals. Climbers are obviously are self interest. Conservers will conserve their position. Zealots are devoted to the cause of the bureau. Advocates are loyal to the cause of the bureau. Lastly, statesman are considered as an ideal public servants. If applied to Niskanen budget maximising behaviour, with this type of personality differences, except for the statesmen, it is likely that others could contribute to the expansion in their bureau's budget.

⁵³ In practice, it is probably difficult for climbers to change from one bureau to another because the decision is not made by the bureaucrats themselves but by certain board. In the case of Malaysia, this is done by the Public Service Department.

⁵⁴ Brown and Jackson [1990] argued that the relationship between the bureaucrats and politicians can be viewed in the context of principal-agent relationship. Nevertheless, this relationship is exposed to shirking. Unique probably is the case of the bureaucrats in the State of Kelantan, Malaysia whereby the relationship between the bureaucrats and the elected government is at odds. In principal-agent relationship, the elected government is the principal and the bureaucrats is the agent. However, the agent in this case refused to abide to the directives of the principal. [Note: the State of Kelantan is the only state in Malaysia ruled by the opposition party to the Federal Government].

Downsian and Niskanen theory of democracy rest mainly on the assumption of budget-maximising behaviour of bureaucrats and Niskanen believed that bureaucrats succeeded in their budget-maximisation quest. The main problem with Niskanen's theory is the assumption that *all* bureaucrats are budget-maximisers. Dunleavy [1985] argued otherwise, that budget maximisation is not the maximand of the majority of bureaucrats. Nonetheless, Niskanen's assumption itself lacks empirical evidence even though in a later writing, Niskanen [1975] cited evidence in support of it.

Among the ways bureaucrats can raise the level of government spending is by demanding better pay and better working conditions [Klein, 1976] which will also allow them what Peacock [1978] termed as 'on the job leisure'. On the other hand, bureaucratic expansion may also arise because of a much more complex network of government functions [Jackson, 1990, Klein, 1976] due to industrialisation and development.

b. Politics and Political behaviour

As the heading suggests, this [sub-]section attempts to analyse the effect and consequences of political process in determining the behaviour of government. This follows Anthony Down's [1957] analysis of a political competition in *The Economic Theory of Democracy*. Politicians representing political parties compete in an attempt to win elections and to remain in, or, to form the government⁵⁵.

The political behaviour analysis is based on the assumption that the government budget is not transparent. This allows the politicians and especially the government to hide the true cost of public goods from the citizen-voters [Morgan, 1977]. The literature on political behaviour describes this as *fiscal illusion*⁵⁶ associated with Buchanan and Wagner [1977] and Down [1960]. Fiscal illusions arise through indirect revenue-raising technique [Lewis-Beck and Rice, 1985: 17]. They [the government] are capable of doing this because voters are

⁵⁵ The word government is used in this context to describe the elected member as a result of a political process, which is also known as the executive members of the government or the elected representatives. This will differentiate it with other branches of government namely the bureaucrats or the civil servants and the judiciary.

⁵⁶ Some interesting writing on the fiscal illusion can be found, among others, in Morgan [1977].

ignorant of the true cost and benefit of public goods [Brown and Dawson, 1969].

We analyse this political behaviour from three perspectives - the vote maximising politicians, the political process and the political business cycle - to show how each of these can contribute towards the expansion in governmental budget and hence government expenditure. It could be argued that this division revolves around the same behaviour i.e. political behaviour. However, close examination will reveal the differences between each of the category. Vote-maximising politicians will concentrate on the political behaviour of politicians. The political process will describe the behaviour of party-politics. The political business cycle, on the other hand describes the behaviour of politicians and party-politics specifically during the period of an election and more importantly, as normally shown, within the context of the Phillips Curve relationship. As with the analysis in bureaucratic behaviour, the main assumption underlying political behaviour is also the self-interest i.e. the self interest politicians.

i. Vote Maximising Politicians

Down's political behaviour assumes that politicians and citizen-voters have competing utility function. The former are vote maximisers and the latter as utility maximisers. Within the public choice perspective, self-interest voters' utility is viewed as a function of the basket of public goods being offered to them [Mueller, 1989]. What we are interested here is to understand some aspects of the behaviour of politicians.

One cannot deny that state [and government] are central in analysing economic policy. Even the classical theory of economics has recognised the position and role of state. Adam Smith, for example, in the *Wealth of Nations* have erected three fundamental roles of state that is:

.... first, the duty of protecting the society from the violence and invasion of other independent society, second, the duty of protecting, as far as possible, every member of the society from the injustice or oppression of every other member or the duty of establishing an exact administration of justice, and third, the duty

of erecting and maintaining certain public works and certain public institutions

Government on the other hand is the manifestation of the desire for collective actions and collective decisions within the society. In this pursuit we shall concentrate and limit our review within the framework of public choice school. Buchanan, [1979:144] wrote:

In my vision of social order, individual persons are the basic component units, and 'government' is simply that complex of institutions through which individuals make collective decisions and through which they carry out collective as opposed to private activities. 'Politics' is the activity of persons in the context of such institutions.

The process of collective decision-making involves either of the two games, that is, co-operation and competition. The theory of public choice dwells a lot on the competition i.e. political competition among the contrasting parties. Underlying this political competition is the behaviour of the self-interest, vote-maximising politicians.

Buchanan and Wagner [1977] argued that politicians compete with each other for the political support. According to Buchanan and Wagner, they do this by offering and promising policies and programmes that will get them elected or re-elected in the election. Each competing parties will offer and promise a different mix of public goods and services to the citizen-voters. [We use the word citizen-voters instead of only voters because the public goods offered by politicians are for the whole community and that not all citizens vote in the election]. Assuming a two party system, in responding to this offer, voters will choose between the two competing offers.

Self-interested politician seek election to the political office to formulate policies in order to win election rather than winning elections to formulate policies [Down, 1957]. Buchanan [1977] argued that the motive behind this behaviour is to reap the gains from the political office; "gains that are unrelated to the benefit filtered down to the ordinary citizens" [p.6].

If such is the case, why don't voters revolt against this behaviour? Down argued that voters exhibit 'rational ignorance' behaviour; each voter realised that his or her vote has a negligible effect on the outcome of the election if the rest succumb to the offers made by politicians. On the whole, if each of the voters have this same attitude, and each remain 'rationally ignorant' the result will be favourable to the politicians who is able to make the nicest promise⁵⁷. Brennan and Buchanan [1984] liken this to the support of a sporting fan. The fan knows that his or her individual support will not contribute to the success or failure of the team. This also explains why a voter's participation is less than full [Tollison and Willet, 1973]. Other reasons for less than full voters participation are the cost of voting e.g. travel to and from the polling station, and because of the public good characteristic of election such that individual can free-ride [Brown and Jackson, 1990].

On the part of the politicians, this explain why they can behave contrary to the interest of their constituents without fearing that the constituents will revolt against them to the extent that if the stake is high, he will be willing to sacrifice re-election [Buchanan, 1977]. Another reason probably can be looked from Schumpeter's [1942] perspective in *Capitalism, Sociology and Democracy*, that it is unrealistic to assign to the will of an individual an independent and rational quality because for the will to be respected, it must first exist. To Schumpeter, this will is "merely vague impulses playing about slogans and mistaken impressions" [1942: 253].

The behaviours of politicians as described above results in less than Pareto-optimal provision of public goods. Consequently, this will be transmitted into the level of government expenditure.

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The political business cycle analysis evolves around this behaviour that citizen-voters are short-sighted and forgetful, prefer present welfare to future welfare. This allows the government to manipulate the economic cycles to their interest.

ii. Political Process

In a competitive political i.e. democracy⁵⁸, the demand for public policy [and public goods] by citizen-voters is made among others via voting or by joining pressure groups [Udehn, 1996: 21]. Citizen-voters use their voting power to determine which of the competing political parties [or at a lower level, the politicians] to vote. Downs [1957] argues that :

The political parties in our model are not interested *per se* in making society's allocation of resources efficient; each seeks only to get re-elected by maximising the number of votes it receives. Therefore, even if the government has the ability to move society to a Paretian optimum, it will do so only if forced by competition from other parties.

Within this set-up, politicians supply a number of public goods. These public goods are at variance for the purpose of attracting different sections of the citizen-voters; some of them do not meet the preference of their supporters [Breton: 74: 50]. Being self-interest, it was assumed that the basic rule of thumb is that voters will choose the candidate who offers the highest expected utility [ibid.] even though it might lead to negative utility for the entire community [Tullock, 1976].

Downsian political behaviour assumes only a two party system which is easier to analyse compared to the complexity of multi-party system. The basic assumption is that the citizen-voters maximise their utility function on the basis of the basket of public goods offered by each of the competing parties. In order to get into power or to remain in power, the political parties will compete in offering the best mix possible of the public goods basket. Both parties can be differentiated with a left-right ideology.

The same argument was put forward by Black [1958]. In political competition, ideology or partisanship plays an important role. Ideology or partisanship produces a core of die-hard supporters who subscribe to the ideology of a party for better or for worse. Udehn [1996] termed this as party activists⁵⁹; a sort of ideological-inertia

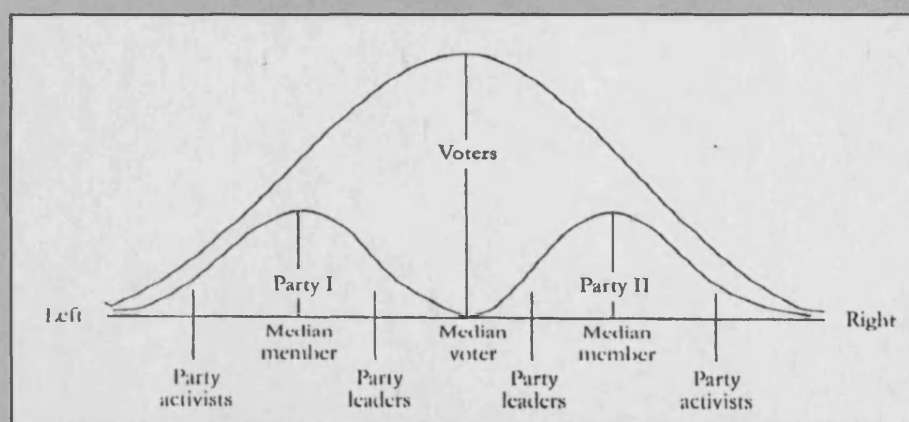
⁵⁸ For the sake of this discussion, we assume that competitive politics only exist in democracy. Public choice literature is this aspect centred mainly on the American politics with its full-fledged democratic society.

⁵⁹ The term 'party activists' may be too general a term because it does not differentiate between a die-hard supporters and normal or ordinary supporters. The latter classification, of course does not include the party leaders who certainly falls within different class as well as the sympathisers.

[Mueller, 1989]. Having this type of supporter, the role of each party is therefore to concentrate on the third segment of the voting population i.e. the indecisive voters or, as known in the literature, the median-voters⁶⁰.

The median-voter literature emphasises the role of the median voters in the bargaining process. This can be seen from two perspectives. First, the attempt by the median voters to exert their influence on each of the competing political parties to offer the best possible mix of the public goods basket "by voting for candidates who offer him the most efficient set of public services and taxes" [Borcherding and Deacon (1972)]. Second, as most widely discussed, the competing political parties compete in attracting the median voters by offering the public goods basket which is attractive to the median voters. All this will be passed on later, in the form of increased public expenditure into the governmental budgets. In analysing the same behaviour, Breton [1974: 56-66] was concerned that the public goods basket offered might have some negative utility for the society at large. It was nevertheless being offered to attract the votes of the median-voter because within the Downsian framework, voters themselves seek their own personal gains.

Figure 2.1
Udehn Modified Media Voters In A Two-Party System



Source: Udehn [1996], Figure 3.3 p. 127.

⁶⁰ Down's main assumption is that voters preference are evenly distributed. Therefore, in a two party system, the ideology underpinning the parties tends to converge in the middle.

In criticising this model, Udehn [1996] extended the model to show the behaviour of two-party game. Both parties have their own party activists, party leaders and median members. Parties are differentiated with a left-right ideology.

In party I [the leftist], party activist inhabit the left hand side of Party I's political spectrum, the party leader in the right hand side leaving the middle for the median members. The opposite position can be shown with regards to the party spectrum i.e. the distribution curve of Party II [the righties]. Engulfing those two curves is a voters spectrum such that the middle [of the voters spectrum] are the median-voters. Udehn argued that, this game could lead to the emergence of a liberal party in the middle of these two extreme case as a balancing power; citing the emergence of the Liberal Democrats in the United Kingdom as an example⁶¹.

A few considerations have to be made in analysing these behavioural aspects. First, in attracting the median voters, the political party may attempt to use some form of political advertising [Judge and Hampson, 1980] to influence the voting behaviour⁶². Second, this phenomenon - the median voters and political advertising - arise as a result of political competition in a democratic society. We can further this argument by asking whether democratisation leads to the increase in public spending; the subject that has been considered earlier by Meltzer and Richard [1978] and Bird [1970]. In formulating the political business cycle theory, Nordhaus [1975] argued that the government will use the budget to remain in power. Musgrave and Musgrave [1989] point out that government may introduce an expansionary policy to stimulate employment as well as structural measures, for example, farm policies, to please that section of the voting citizens. Nonetheless, this policy is not limited to the socialist or capitalist democracies [Nordhaus, 1975]. Third, the level of public spending is affected not only by the level of the public goods basket being offered by the political parties but arises also

⁶¹ Yet it is difficult to theorise this in relation to the May, 1, 1997 general election [in UK] whereby one of the main players [the Conservatives] suffered a serious blow which put it almost at similar level as the Liberal Democrats who are supposed to be the median party. The other main player [the Labour Party] had a land-slide victory.

⁶² Galbraith [1956] considered political advertising as leading to over-expansion especially in the context of leviathan government. For discussion, see Tuerck, Wagner and Staff, 1978.

from the behaviour of the politicians themselves. As mentioned earlier, Buchanan [1977] fears that politicians, who have their separate utility function in the form of political income, may enter politics in order to reap the political rewards or income.

Another aspect of the political process that is worth mentioning in understanding the political behaviour that leads to the government expansion is what is termed as “log-rolling”. Log-rolling resembles vote-trading or a political co-operation game [Brown and Jackson, 1990] among the legislators. Politicians co-operate with each other to get support to ensure that projects in each constituency are approved by the government. This will lead to budgetary expansion in view that the politicians will succeed in their game; project allocation is therefore used as an exchange for support in the bargaining process with the government.

iii. Political Business Cycle

The Political Business Cycle approach to the study of government expenditure growth is an attempt to model government behaviour during the period of election in order to get re-elected [Breton, 1974]. Politicians and government can be considered as notorious in an attempt “to remain in power and thus continue to determine government policy” [MacRae, 1977: 240]. They will resort to a “vote-loss-minimising behaviour” [p. 240]. To achieve this objective, the government i.e. the politicians in power, will try to manipulate the outcome of macroeconomics policy to their benefit. In political competition, “[P]arties are assumed to be interested only in election outcomes. They want to win elections The government therefore chooses economic policies during its incumbency which maximise its plurality at the next election⁶³” [Nordhaus, 1975: 174]. All this is accomplished by manipulating the level of unemployment and inflation; undoubtedly, the two major macroeconomics issues of modern time. This must also be seen in the context of Keynesian economic apparatus. The trade-off between unemployment and inflation, otherwise known as the Phillips

⁶³ Nordhaus [1975] basic assumption is that the government knows the voter’s preferences: “individuals prefer stable prices and low unemployment rates to high inflation and unemployment rates” [p. 171].

curve, is a Keynesian phenomenon. In the Philips curve theory, a reduction in inflation will result in an increase in unemployment and vice-versa. Nordhaus [1975: 184] explain this by the following description:

The typical cycle will run as follows: immediately after an election the victor will raise unemployment to some relatively high level in order to combat inflation. As elections approach, the unemployment rate will be lowered until, on election eve, the unemployment rate will be lowered to the purely myopic point.

Garratt and Jackson [1996] divide the literature and hence the study of the political business cycle⁶⁴ into four categories. These are: the pure political business cycle, the strong partisan theory, the weak partisan theory and the rational political business cycles.

The pure⁶⁵ political business cycle owes much to the work of Nordhaus [1975] and MacRae [1977]. Both present economy as depicting the Philips curve⁶⁶ relationship which exhibit a trade off between inflation and unemployment. Government, i.e. political party in power, are assumed to be a vote-maximisers in order to remain in power. Voters are left to choose between "present welfare and future welfare" [Nordhaus, 1975:169]. Government will use the governmental budget to influence the outcome of the election process. It is assumed that the voters are myopic, that is, short-sighted. Nordhaus argued that "voters are sensitive to both these variables in the election choice" [p: 169]. Prior to the election, government will increase spending to reduce the level of unemployment. Consequently, as depicted by the Philips curve relationship, after the election has been fought, the increased pre-election spending will push the post-election inflation upward. The incumbent party, during its early term in office, post election, starts with austerity or severity in economic policy. This can be extended to show how post-election government policy is used to combat inflation. As the next election approaches, the policy tends to be relaxed.

⁶⁴ The term political business cycle itself dates back to Kalecki [1943]. Kalecki used the term political trade cycle out of concern that the business community will try to exert their influence on the government policies to their advantage. Kalecki model presents a 'buy-out' of political mechanism by the business leaders or capitalists who feared that the politicians or government is trying to interfere in the business activities.

⁶⁵ "The term pure is used to describe those political business cycles which are deemed to be caused by vote-maximising behaviour" [Garratt and Jackson, 1996: 2].

⁶⁶ Phillips curve as a Keynesian phenomenon argues that there exists a trade off between inflation and unemployment in short-run. This explains the rationale behind the pure business cycle usage of Phillips curve to depict the behaviour of the economy - a short-run trade off between inflation and unemployment.

Benevolence will be shown, spending will be increased in order to reduce unemployment.

The strong partisan theory “recognises the ideological component in the utility function of politicians” [Garratt and Jackson, 1996: 10]. The strong partisan theory distinguishes political parties into the right and the left. The difference between the two is the priority of each party in their treatment of inflation and unemployment. It argues that the party of the right prioritises inflation, whereas, the party on the left prioritises unemployment.

Weak partisan theory is associated to the work of Frey [1978], Frey and Schneider [1978a], Alesina [1987] and Alesina and Roubini [1992]⁶⁷. Government and politicians, on one hand, are opportunistic in the countdown to the election. On the other hand, on ideological grounds, they are partisan. The objective function of the politician is to obtain a popularity surplus as a measure of the election safety. The choice between opportunistic and partisanship depends on the popularity surplus during the election period. Being opportunistic means government will use governmental budgets to influence its election prospects. The greater the popularity surplus the more ideological government will be. In the context of the UK, Frey and Schneider [1978a] argued that ideologically, a Conservative government will tend to reduce government spending and a Labour government will tend to increase government spending.

A rational political business cycle follows the work of Cukierman and Meltzer [1986] but more importantly, Rogoff and Sibert [1988], Rogoff [1990] and Persson and Tabellini [1990]. In rational political business cycles, voting citizens will choose competency rather than the [macro]economic outcomes. However, competency is measured in terms of financing the public goods provision. As such a competent government will require lesser finance and hence, lower taxation.

⁶⁷ Garratt and Jackson [1996] nevertheless divide the weak partisan theory into two. The first is conventional weak partisan theory associated to Frey [1978] and Frey and Schneider [1978]. The second is rational weak partisan theory associated to Alesina [1987] and Alesina and Roubini [1992].

c. *Leviathan Government.*

Thomas Hobbes [1651] book '*Leviathan*' portrays the state as a evil and ever expanding monster. The term leviathan has been used since then to describe the ever expanding state. Leviathan government theory evolved in the public choice discipline to address the reasons for the expansion of government.

Leviathan government theory argues that, unless constrained, the power to tax, issue debt and printing money⁶⁸ [Brennan and Buchanan, 1980] not only gives room for government to expand but expand beyond control as depicted by Hobbes' Leviathan devil monster. The Leviathan government argument stresses that the government is maximising revenue collection - a revenue maximand behaviour. Politicians in the Leviathan government model are assumed to exhibit the same function. Taxation then is imposed for the purpose of raising revenue rather than out of benevolence. The government is capable of doing this due to fiscal illusion.

Public choice associates this to the acceptance of a 'one-eyed Keynesianism' following Rose and Peters [1978]. Departing from the classical tenets of balanced-budget, the Keynesian policy tools especially the budget deficits have turned the politicians loose [Buchanan, 1978].

The Leviathan literature views government from two perspective i.e. as monopolist and as monolith [see for example and mainly Brennan and Buchanan, 1980 and Musgrave, 1981]. In Brennan and Buchanan [1980], an analogy of market economy is used. Monopoly is inefficient because of the absence of competition. Likewise, Brennan and Buchanan argued that government is inefficient because of the absence of competition.

The monolithic argument argued that government must be viewed in whole sum because government does not refer only to the

⁶⁸ In Brennan and Buchanan [1980] model, money creation is viewed as an interest-free debt. In a two-period model, this ability means tax revenue in period 2 is shifted forward to period 1, hence allows the government extra revenue to spend in period 1. To put a constraint on Leviathan government, this power itself must be constrained which requires an independent Central Bank free from government influence.

politicians but includes also the bureaucrats. This was well recognised by Brennan and Buchanan who argued that “[J]ust as politicians have the power so do bureaucrats exercise genuinely discretionary power in the selection and implementation of policy proposals whereas the action of politicians may be somewhat constrained by the threat of electoral defeat, the actions of bureaucrats are not” [p. 23]. In this monolithic set-up, even if one unit of government structure may not pursue their own self-interest except that of the public interest, another unit will do so. Eventually, this will lead to government expansion.

In such a situation, the arguments proceed to argue that the Leviathan government must be constrained. But, the question is how? Will the threat of electoral defeat act as a constraint on the Leviathan government? Breton [1974] thinks that the threat of entry from an opposition party could posed as a constraint on government expansion⁶⁹. Brennan and Buchanan [1980] think it is not; that political competition i.e. the electoral process is insufficient to constrain government expansion. Furthermore, Brennan and Buchanan argue that “majority rule has been recognised to generate outcome that may be non-optimal or insufficient by ordinary Paretian standards⁷⁰” [1980: 23].

This prompted Buchanan and his comrades to suggest that the government should be constrained through the constitution⁷¹. Constitutional constraint will impose a limit on the ability of the government to access and manipulate the various fiscal instruments, in particular the taxes [Oates, 1985].

Another form of constraint suggested by Brennan and Buchanan is through fiscal decentralisation⁷² as a movement away from

⁶⁹ However, the government is capable of downplaying this threat. Breton [1974: 143] identified at least four ways for the government to do this: a) implement discretionary policy including changing tax rates, basic exemption, tax credits, loopholes etc., b) discriminatory adjust the penalties levied against and the probability of apprehending those committing legal offences, c) engage in logrolling by combining policies to elicit or maintain political support, and d) seek to alter the preferences of the citizens.

⁷⁰ The main requirement for majority rule is a democratic system whereby social choice is determined by either direct democracy or representative democracy.

⁷¹ For further reading, see in particular Brennan and Buchanan [1980], Musgrave [1981] and Oates [1985].

⁷² Originally, it stemmed from the debate between fiscal federalism and fiscal decentralisation in the US in the nineteenth century. In those days in the US, there was a serious philosophical conflict between the Jeffersonian view of limited functions of federal government and the federalist [see for example Musgrave and Musgrave, 1989]. The Jeffersonian camp prefer a wider scope for states government, to protect the state's position. Federal government finance depends on the contributions of states. The first step towards greater

fiscal federalism. Oates [1985: 24] was concerned that the whole idea of fiscal decentralisation would contradict the “basic theorems in public finance for an efficient and equitable tax system” leaving “a sorry mess of the fiscal system”. The new view of fiscal federalism which emerged during the Reagan administration “stress decentralisation, including increased reliance on state-local outlays” [Musgrave and Musgrave, 1989] that helped “fuelled the states’ resurgence” [Cigler, 1993] which emerged from the “fend-for-yourself” [Shannon, 1987] policy⁷³.

Fiscal decentralisation calls for a decentralised structure of government activities. Nevertheless, unless stipulated by the constitution, as in the case of the United States⁷⁴, the main complication is to define the function of each level in the federal-state-local government relationship - the Tiebout-Musgrave layer cake relationship⁷⁵. The main question is what will the federal government forsake and allow the state and local government to provide on its own. The Tiebout-Musgrave layer cake problem also arises in the relationship between state and local government in the form of “decentralised fiscal federalism” [Cigler, 1993: 184] which called for greater power to the state as against the local government over the “basic policy-making and regulatory authority of local governments, as well as local revenues”.

There is the fear that De Tocqueville’s view, in *Democracy in America*, will prevail when he argued that centralisation is the natural norm of government in the democratic age. A major difficulty with fiscal decentralisation is population mobility. It allows the public to access the level of public expenditure, taxation and public services elsewhere and hence move to an area which suits individual requirements as well as to reap the fiscal gains [Oates, 1978]. Another aspect which must also be considered is the ability of states or local government to compete in

fiscal federalism follows the Civil War. However, not until the Great Depression in the 1930s and the World War II that greater fiscal responsibility was passed on the federal government.

⁷³ Cigler [1993] provides a very thorough overview of the development of the ‘new federalism’ in the US from late 70’s until 1990s.

⁷⁴ The United States constitution stipulated that, among others, military, medical services must be performed by the Federal Government.

⁷⁵ The Tiebout-Musgrave layer cake model refers to the division of government function between the federal and state government. It says that the stabilisation and distribution functions is the domain of federal government whereas the allocative function can be discharged by the state government.

offering the 'best fiscal package', a sort of 'tax-heaven state' to attract certain group of population.

On the other hand, fiscal decentralisation in a federal state⁷⁶ is supported on two grounds. First, it allows states and/or local governments to provide public goods which suit local tastes [Oates, 1977] on the ground that not all public goods are suitable for all locations i.e. different locations require different sort of public goods. Second, is the high cost that could arise from centralised planning [Brown and Jackson, 1990]; cost that arise as a result of the various processes or steps that takes place for any decision are tabled by federal planners. This requires that the local or state governments must be able to raise tax revenues as a pre-requisite for decentralisation.

Brennan and Buchanan [1980] supported their case for decentralisation by making an analogy with the efficiency of market competition between firms. Federal government, they argued, is inefficient because there is lack of competitiveness. However, if the power to tax is left to the states and local government, the competition between them will encourage state and local government to be efficient. They were concerned that centralisation of [economic and social] activities at the central government levels instead of the local and state government levels coupled with the availability of debt financing and money creation facilities will allow the former to easily increase the level of taxes to finance public spending. This will lead to further expansion of government expenditure. On this basis Brennan and Buchanan, [1980] argued for the decentralisation of government activities as a way to control the Leviathan government from expanding. Furthermore, as observed by Wirl [1996], the Leviathan motives of taxation is to tax for the purpose of raising revenues, i.e. to finance government expenditure, and not for distribution⁷⁷.

It is interesting to note that the framework for fiscal federalism was discussed by Adolf Wagner as well. Nevertheless,

⁷⁶ We noted that Malaysia is a federal state as well. But, the power to tax is very minimal.

⁷⁷ Wagner [1983] outlined several principles of taxation between federal and state government. These are [a] highly progressive redistributional taxes should be centralised, [b] lower-level government should avoid taxes on highly mobile tax base, [c] tax bases that are distributed highly unequally across sub-central jurisdiction should be centralised, and [d] user taxes and fees are attractive at highly decentralised levels of government.

Wagner's view was in contradiction to the public choice school. Nonetheless, unlike the public choice school, Wagner saw an expansion of government resulting from decentralisation and an organised local government.

Two fundamental questions can be posted with respect to fiscal federalism. First, concerning efficiency in the public sector. Our concern is whether the state or local government will be more efficient than the federal government in providing public goods. Second, in the context of our analysis, will decentralisation not lead to the expansion of government activities as foreseen by Wagner.

Musgrave [1981] also suggested several other means to correct Leviathan government. Among the proposals are i] overall limitations on the size or rate of growth of the budget, ii] a requirement of two third majority voting, iii] increased use of executive veto, iv] inter-bureau competition in the supply of public service, v] competition among review committees, vi] reducing the monopoly power of agenda setting, vii] use of progressive rates of taxation and, viii] avoidance of broad-based taxes.

d. Rent seeking behaviour

Rent-seeking, as an aspect of the public choice literature on government expansion follows the work of Tullock [1967] and Kruger [1974]⁷⁸. The term itself was coined by Kruger [1974]. In defining rent seeking, Tollison [1982] argued that rent seeking takes two forms. First, rent that arises from the price system and second, rent that is 'contrived' artificially through governmental actions. Whereas the first is equivalent to profit seeking, the public choice references to rent-seeking are in the context of the second i.e. attempts from agents to abstract rent dissipated from the government actions.

Economic agents compete in order to reap the artificial rent created by the government. This competition takes the form of lobbying

⁷⁸ Another term used to describe rent seeking behaviour is the 'directly unproductive, profit seeking [DUP] activities' popularised by Jagdish N. Bhagwati [1982].

and pressure put onto the government by the interest groups; the purpose of it is to acquire the rent. As Adam Smith in *The Wealth of Nations* put it:

They [merchants and manufacturers] accordingly seem to have been the original inventors of these restrictions upon the importation of foreign goods, which secure to them the monopoly of the home market.

As an example, restriction in the forms of import permits on certain goods will lead the interest groups to lobby the government in order to obtain the permits⁷⁹. Lobbying and pressure may also arise from those preferring the introduction of such permits and those against its introduction. On the other hand, if rent-seeking behaviour arises from regulation of monopolies for example, the monopolies have to incur extra cost to employ legal staff to clear their [mis]behaviour. These extra expenditures constitute a waste to the society at large. Rent seeking, therefore, “embodies a social cost in terms of the foregone product of the resources employed in rent seeking” [Tollison and Congleton, 1995: xi]. Expenditures resulting from lobbying “are purely wasteful from the standpoint of society as a whole: they are spent not in increasing wealth, but in attempts to transfer or resist transfer of wealth” [Tullock, 1967: 228]. This shows how rent-seeking behaviour arises through governmental actions to restrict the business activities which opens avenues for the society to compete in order to benefit from such restrictions.

Kruger [1974] argued that government regulations on economic activities in a market economy constitute a rent up for grabs by the general public. People may compete to grab this rent. Whereas competition is perfectly legal, in some instances, rent abstraction can involve bribery, corruption, smuggling and black market. This type of [mis]behaviour has lead Buchanan [1980: 4] to define rent seeking as a “behaviour in institutional settings where individual efforts to maximise value generate social waste rather than social surplus”. In other words, it is “the expenditure of scarce resources to capture an artificially

⁷⁹ When the government imposes a protective tariff to protect domestic producers, the tariff will itself increase the price. The objective is to reduce the demand for such imports. In turn, higher imported price induces the domestic producers to increase supply. This is referred to in microeconomics textbook as “dead-weight” loss.

created transfer" [Tollison: 1982: 578] especially when it arises as a result of government actions "beyond the limits defined by the minimal or protective state to interfere piecemeal in the market adjustment process...." [Buchanan, 1980:4]. This is in line with Stigler [1971] that government can affect the distribution of income by regulation and trade restrictions on monopolies.

Nevertheless, this behaviour alone is not detrimental in the sense that it does not affect government expenditure. It is only detrimental if and when such restrictions require government to monitor and regulate the activities of the various economic agents. For example, government expenditures channelled towards the maintenance of an increasing size of anti-trust division, border patrols, immigration check-points and so on.

Even when bribery, corruption, smuggling and black market activity does not exist in this monitoring process, government regulation itself constitutes an expenditure on the part of the government. Kruger argued that in the case of licensing which is a form of regulation, some costs are associated with it such as paperwork, time spent, administrative functions etceteras. These are not limited to licensing but cover also quotas, permits, authorisations, approvals, and franchise assignments created by the government, all of which shows the scope of government activities and hence the size of the public sector [Buchanan, 1980].

Buchanan [1980] identified three types of rent-seeking that is detrimental and socially wasteful. First, the effort and expenditure of potential recipients of monopoly. Second, and relevant in our context is the effort of government official diverted to prevent rent-seeking behaviour. Third, the effect on the third party as a result of the distortion arising from the behaviour of the monopoly and/or the government in the rent-seeking game.

Following Stigler [1971, 1976] and Peltzman [1976], Tollison [1982] extends the rent seeking behaviour described above, amongst others, to political competition. It shows how interest groups will lobby

the government [Tollison, 1982: 588-595; also Stigler 1971] eventually capturing the regulatory bodies [Peltzman, 1976] to extract wealth transfer to their favour. It also highlights the support by the interest groups for legislatures that can protect their interest [Stigler, 1976].

In analysing rent-seeking behaviour, another major concern of the public choice school is rent-seeking behaviour that arises from government contracts and legislatures. In the former, it was argued that a larger state could use their numerical advantage in the legislative body [Wallis, 1986] to extract rent, in this case, emanating from government contract. We can also extend this in the context of log-rolling behaviour among the legislatures in extracting rent, the behaviour depicted as “you vote for my pet issue and I’ll vote for yours” [Mueller, 1989]. In the latter, McCormick and Tollison [1981] argued that all legislature consists of wealth transfer which takes from those with less capability to extract the rent and pass it to those capable of resisting the transfer. This can be seen by the very existence of the parliamentary pressure groups to influence decisions of the legislators.

2.3 THEORETICAL FRAMEWORK OF WAGNER’S’ LAW

We have presented in Section 2.2 above different perspectives on the growth of government expenditure. What we did then was to highlight the various but general theoretical explanations on the growth of government.

Since our main focus in this study is the relationship between the growth of government and the growth of economy, as propounded through Wagner’s Law, our emphasis from this point onward will be directed on this theme. This section will analyse the theoretical foundation of the law. The remainder of this chapter will look at different aspect of Wagner’s Law.

Writing between 1877 and 1893, Adolph Wagner⁸⁰ hypothesised that as an economy developed, the level of government expenditure would increase. Wagner argued that public expenditure growth is a natural consequence of the growth and development of the economy. Wagner's main arguments were presented in the following paragraph.

The "law of increasing expansion of public, and particularly state, activities" becomes for the fiscal economy the law of the increasing expansion of fiscal requirements. Both the State's requirements grow and, often even more so, those of local authorities, when administration is decentralised and local government well organised. Recently, there has been a marked increase in Germany in the fiscal requirements of municipalities, especially urban ones. That law is the result of empirical observation in progressive countries, at least in our Western European civilisation; its explanation justification and cause is the pressure for social progress and the resulting changes in the relative spheres of private and public economy, especially compulsory public economy. Financial stringency may hamper the expansion of state activities, causing their extent to be conditioned by revenue rather than the other way round, as is more usual. But in the long run the desire for development of a progressive people will always overcome these financial difficulties.

Wagner postulated that the expansion of government expenditure arises because of the expansion in the fiscal requirement of "public, and particularly state activities". According to Wagner, this expansion is due to the expansion "of fiscal requirement" of the state and "even more so, local authorities" of government of "progressive countries" as a result of the "pressure for social progress". The "pressure for social progress" and "the desires for development" will eventually "overcome the[se] financial difficulties" to finance such expansion.

This clearly put Wagner's view into perspective. It explains, from Wagner's point of view, the reasons and causes for government expenditure growth in Germany as well as in the Western European countries in his time. We have briefly presented in Chapter One, four fundamental aspects of the law. Our task here is to elaborate and expand this even further.

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Most references on Wagner's Law established that Wagner's writing dated between 1883 and 1893. However, Wagner and Waber (1977) noted that Wagner's original idea was written in 1877. The main English translations, *Three Extracts On Public Finance*, which were translated by Nancy Cooke were taken from *Finanzwissenschaft*, Part I, Third Edition, Leipzig 1883, pp. 4-16, and 69-76. These were first published in the *Classics in the Theory of Public Finance* edited by R.A.Musgrave and A.T.Peacock, MacMillan, 1958.

2.3.1 Pressure For Social Progress

Wagner was referring to the “pressure for social progress”. This pressure existed in the context of “progressive countries”. Clearly, Wagner was referring to a particular stage of development, for, a progressive country is not a developed country. Taking into consideration that Wagner was writing somewhere between 1883 and 1893 clearly shows that Germany and other Western European countries were far from fully developed as they are today. Nonetheless, this is not to deny that they were far ahead of others in development. They were undergoing and were reaping the fruits of the industrial revolution.

Two questions emerge from this. First, is the growth of government expenditure limited only to that specific time-period where a country is in the process of progressing. In describing the stages of growth, Rostow [1960] described this period as a “take-off”⁸¹ stage preceding the developed stage. If that was the case, it seems that Wagner's Law phenomenon i.e. the increase in government expenditure, is only applicable for that specific time-period and will cease to exist once the economy has managed to progress beyond that “take-off” stage. This means that the Wagner's Law phenomenon is a phenomenon of developing countries and not the developed countries.

Musgrave [1969] argued that the expansion of government expenditure could hardly fail as the economy developed. Nonetheless, as we said earlier, one must also bear in mind that development also brings about structural changes in the economy. On this basis, as noted by some studies, one can believe that Wagner's Law is applicable only to countries in the early phase of development [see for instance, Bird, 1970; Abizadeh and Gray, 1985]. Afxentiou [1982] believed that this explained the variations in the results when Wagner's Law was tested for different countries. As we discuss earlier, one major difficulty for countries at this stage is the lack of financial sources to finance economic development. Although Wagner acknowledged these financial

⁸¹ The term take-off goes back to W.W.Rostow [1960] in *The Stages of Economic Growth - A Non-Communist Manifesto*. It describes the different stages of development. In Rostow's growth model, take-off process precedes the developed stage. It is a precondition before the country enters into a developed stage.

difficulties facing the government but at the same time he argued that the government is capable of overcoming these difficulties because of *the desire for development of a progressive people*.

Wagner based his observation on the situation in Germany at the turn of the nineteenth century although he tried to relate it to the situation within the Western European civilisation. Industrial and technological development was the backbone or the driving force for their progress. The applicability of his law to other parts of the world particularly when applied to the developing countries of today is something which needs further research. This was well noted by Musgrave [1969] when he acknowledged that the developing countries today operate in a different set-up when compared to the present developed countries when they were at the same stage of development. During this period, the world and Europe in particular have not experienced the impact of the World Wars. This explains why Wagner's believed that wars will not only fall in number but also in their duration [Peacock and Wiseman, 1961]⁸².

The second question obviously is whether the law is applicable to all developing countries in the process of development, including Malaysia. If not, the validity of the law is questionable; for a law to become a law, it must be applicable in all instances. Or, is it unique to Germany and Western European civilisation only?

2.3.2 Functions of Government

The second aspect of Wagner's Law relates to the functions of government. Functions of government or in other words, the scope of government activities is directly related with the level of government expenditure. Wagner argued that "[B]oth the State's requirements grow and, often even more so, those of local authorities". The increase in state

⁸² We have shown that when Peacock and Wiseman developed their hypothesis, they discovered that the war has indeed contributed to the expansion of government expenditure not only via an increase in war related expenditures but also the reluctant fall in government expenditure after the period of the world. We have also shown when discussing Peacock and Wiseman hypothesis that what happened was that the mix of military and civilian expenditure changed after the war which allowed for an increase in civilian expenditures.

[and local authorities] requirement means an increase in the scope of government's functions and activities.

Bird [1971b] associated this expansion to the increase in administrative and protective functions, cultural and welfare expenditure, changes in technology and an increase in investment in the private sector which gave rise to a large number of monopolies that require greater government regulation. This is considered as a natural consequence of economic growth and development [Singh and Sahni, 1984]. In an attempt to theorise this phenomenon, Beck [1979] associated the expansion not to an increase in the traditional government activities but to the increased in transfer payments. However, Beck's explanation was refuted by Ram [1986a] arguing that it was not consistent with what Wagner believed it to be when considering the scope of government.

Although not really related to the increasing scope of government activities, Baumol [1967] argued that one major factor that contributes to such expansion is the productivity lag arising from the low productivity of the public sector which is mainly a service sector. This productivity lag constitutes the Baumol Disease discussed earlier.

What can then be inferred from Wagner's own writings? Wagner's only consideration was that the "expansion of fiscal requirement" leads to the growth of government expenditure. Nonetheless, Wagner also argued that this expansion was due to three main reasons: the expansion in "especially public economy"; "when administration is decentralised and local government well organised"; and finally the expansion of urban expenditure.

Following this, the discussion in the "Three Extracts of Public Finance" concentrated on the increasing role of the state in the provision of the public goods. In other words, this implied that Wagner saw the failure of the market economy in the provision of public goods which forced the public sector to provide such goods and services. Wagner seemed to believe that market failure forced the public sector to replace the market economy in providing the public goods. Following this line of

argument, several studies have been undertaken to test the elasticity of public goods [see for example, Ganti and Kolluri, 1979; Pryor, 1968; Gandhi, 1971; Goffman, 1968; Chrystal and Alt, 1971; Gupta, 1967]. The purpose of all these tests was to show that the income elasticity of the public goods is positive or indeed greater than unity. Ganti and Kolluri [1979] summed up this by concluding that government output are both normal goods [elasticity is positive] as well as superior goods [elasticity is greater than unity]⁸³.

One difficulty in testing for the elasticity of government expenditure is how one should define elasticity of government expenditure. Pryor [1968] tested for the elasticity of government expenditure by only testing the ratio of government expenditure with respect to the GNP. More generally, Gandhi [1971] argued that the elasticity of government expenditure depends on many factors which includes income elasticity of tax revenues, the level and income elasticity of non-tax government receipts. We present in Appendix 1, the various tests of the elasticity of government expenditures as formulated by Gandhi [1971].

2.3.3 Government Structure

The third aspect of Wagner's Law relates to the organisational structure of the government. Wagner himself considered that decentralisation is a major factor that contributes to the expansion of government expenditure. Wagner argued that government expenditure increased "when administration is decentralised and local government well organised". We have touched on this aspect when discussing Fiscal Federalism earlier.

2.3.4 Organismic Treatment of the Government

It is often argued [see for example Buchanan, 1949] that Wagner treated government [or state] as an organismic entity which has desires, tastes

⁸³ Chrystal and Alt (1979) argued that in order to prove the validity of Wagner's Law, the elasticity of government expenditure has to be greater than one. They, however believed that Wagner himself only believed that the elasticity is close to one.

and preferences similar to human beings⁸⁴. These desires, tastes and preferences which formed the "pressure for social progress" are what constitute government expenditures. Wagner argued that: "Both the State's requirements grow and, often even more so, those of local authorities". This clearly implies the increase as the result of the growing requirements of the state in a way similar to the growing needs of an organic being.

2.4 APPROACHES IN FORMULATING WAGNER'S LAW

There are two main purposes of this section. First, it is intended to highlight the differences of opinion among the researchers in the choice of the appropriate variables to be used in formulating Wagner's Law. Second, is to show the different interpretations given and used by the past researchers in formulating the law.

Wagner himself was very vague in his explanations as to the terms of his reference. Resulting from this, it was never quite clear whether what he meant was the absolute level of government expenditure or the relative size of government sector as compared to the level of income. He made references to both the absolute and relative value. Yet, when he proceeded to formulate his law, nothing was mentioned on this aspect. Musgrave [1969] tends to believe that Wagner was referring to relativity of government expenditure on the basis that Wagner made consistent reference to 'quotas'. Following this, Musgrave proposed that the test of Wagner's Law should be carried out by testing the relative size of government expenditure in relation to the level of national income.

Even when focus and attention have been on the relative size of government expenditures, various interpretations of this relativity existed. In other words, the next questions that arise are - what is the measure of this relativity; what is the appropriate measures of government expenditure - is it total government expenditure, total government consumption expenditure or government exhaustive

⁸⁴

The organic concept of state can also be traced back to Weber. For detail, see Niskanen, 1971: 5n.

expenditure [total government expenditure less transfer payments]. Likewise, national income can either be measured by Gross National Product [GNP] or Gross Domestic Product [GDP], both at market prices or factor costs.

The various studies on Wagner's Law can be divided into several categories.

2.4.1 Data Series

The first categories have attempted to test the validity of Wagner's Law using either time series data [for example Afxentiou and Serletis, 1991; Gupta, 1967; Carr, 1979; etc.] or cross-section data [for example Gupta, 1969; Carr, 1979; etc.]. The use of cross-section data raises one major problem since cross-section studies measure the variables at some point in time, but, within a vast number of countries. Therefore, it does not give an exact relationship between government expenditure and economic growth at different phases of the development process. In addition, as noted by Ram [1987], variations in the relative price of goods and services across country and region could render some difficulty in deriving a beneficial comparison. Nevertheless, it is useful when the basic task is to compare the validity of Wagner's Law in relation to the development levels of each individual country in the sample study. Even then, when comparison is the basic consideration, a more appropriate methodology is to compare the time-series result of different countries. Undoubtedly, this will be a very tedious endeavour.

On this basis, most studies have concentrated on testing Wagner's Law on time-series data for individual countries. This is also what we are doing in the present undertaking.

2.4.2. Comparing between Countries

In relation to the preceding argument, the second category, have embarked on comparing between countries on the basis of development. The first type compares between developed and less developed countries [for examples, Hinrichs, 1965; Hinrichs and Bird, 1963;

Landau 1983; etc.]. The second type makes comparisons within developed countries only [for example, Garand 1988a, 1988b; Frattiani and Spinelli, 1982 ; Gould, 1983; Bird, 1970]. And the third type compares between the less developed countries themselves [for example, Goffman and Maher, 1968; Lall, 1969].

2.4.3. Econometric Tools

The third category involves using different set of tools of analysis in testing the law. There are three testing techniques available at the disposal of economists in carrying out hypothesis testing. These are correlation analysis, causal analysis and co-integration analysis. Co-integration is nevertheless an extension of causality analysis. Causal relationship, specifically Granger-causality relationship is tested, for example, in Ram [1986b], Ahsan, Kwan and Sahni [1989], Singh and Sahni [1984, 1986] and Sahni and Singh [1984]. Most earlier studies used correlation analysis. Later studies have used cointegration [for example, Murthy, 1993, 1994; Oxley, 1994].

2.4.4 Extensions

In addition, some attempts [for example, Ram, 1986b; Singh and Sahni, 1984; Afxentiou and Serletis, 1991] have also been made to analyse Wagner's Law by means of extending it to incorporate the Keynesian macroeconomics stabilisation policy. This extension is the reverse of the a causality test on Wagner's hypothesis. In the 'pure' Wagnerian approach, causality test is conducted to formulate the causal effect of national income on government expenditure i.e. to test whether there is a causal relation from national income to government expenditure. The reverse of this causal analysis will involve testing the causal effect of government expenditure on the level of national income.

2.5 DIFFICULTIES IN FORMULATING AN APPROPRIATE MODEL

As an extension to the previous section, in this section, we present some difficulties in formulating an appropriate model for testing Wagner's Law. To be more precise, we will try to show the different approaches or steps taken by past researchers in formulating Wagner's Law. Since there is no conclusive evidence or arguments to support any of these differences, we will, subject to our later definitions, use any of these definitions to formulate our test.

The main problem here is not merely methodological but mostly definitional i.e. difficulties in defining the variables to be used in the test.

2.5.1 Real Vs Nominal Value

Although most studies used nominal value of government expenditures and national income to test the Wagner's Law, a few studies [for example Beck, 1979; Pluta, 1981; Abizadeh and Basilevsky, 1990] have also opted for the real data. The choice of an appropriate deflator can be a major problem when real data is used. This is evidently true when the few studies using real data have used different deflators to deflate both the national income as well as the government expenditure. It was also argued that this will not give a proper account of the growth of government. However, the question whether this is appropriate or not is beyond the scope of this chapter.

Abizadeh and Basilevsky [1990] among others, were in favour of using real figures arguing that the rate of inflation in the public sector is usually higher than the entire economy and thus, when nominal values are used, they will overstate the relative size of government expenditure. On the other hand, some researchers were in favour of using nominal values arguing on the basis that changes in price will be reflected in the government's expenditure "to give a better indication of government scope and power *vis.-a-vis.* the national economy" [Lewis-Beck and Rice, 1985, p.6]. Musgrave and Musgrave [1989, p.149] preferred the nominal

value arguing that it gives a “better pictures of public sector share” since the “relative price of social and private goods reflect consumer valuation” [Musgrave, 1981, p.85]. Lewis-Beck and Rice [1985] also argued that nominal value is less troublesome when regression analysis is applied.

As mentioned above, if, however real value are to be used, there arises a problem in the choice of a proper index for deflating the nominal values because, again, as Beck [1981] and Musgrave and Musgrave [1989] argued, the rate of inflation in the public sector is higher than in the private sector. Interestingly, however, a later study on Canada by Abizadeh and Yousefi [1988] found that neither real nor nominal values have any significant differences.

2.5.2 Absolute or Relative Figure

Some researchers used absolutes value in estimating the effect of government expenditure on the economy arguing for transparency of information [Usher, 1986]. Musgrave [1969] was in favour of ratios [of government expenditure to GNP] because Wagner’s constant references to quotas was an indication of using relative values. This view was shared by Gould [1983] arguing that it was what Wagner really intended. However, Goffman [1968, p.360] prefers using an absolute figure so as not to “exaggerate the direct role of the state”.

2.5.3 Measuring National Income

Most studies have used per capita income as a measure of the level of development attained by a country. While the number of population can easily be ascertained, there is yet, a problem in measuring the National Income. National Income can be measured using either of the following three criteria i.e. the gross national product [GNP], gross domestic product [GDP] and net national product [NNP]. Lewis-Beck and Rice [1985] used GNP arguing that GNP measures the incomes of the citizen and their property regardless of where it was produced. Several other have used the same measure, for example Gupta [1967]. Diamond [1977] preferred using GDP on the basis that for less developed countries, the power of the government to collect tax is higher. He also

preferred using market prices rather than factor cost arguing that it is what the government paid when making its purchase⁸⁵. The same measure was used by Ram [1987].

2.5.4 Measuring Government Expenditure

Like the problem in the choice of an appropriate measure of national income, there is also a problem in the choice of an appropriate measure of government expenditure. There are two different measures that can be used. These are total government expenditure and total government consumption expenditure [excluding transfer payment]. Yet, within this, there also arises a problem as to the proper treatment of the government investment expenditure, i.e. whether to include or exclude it from government spending. However, the big debate is whether to include transfer payments in calculating government expenditure or otherwise. Starting with transfer payments, we present several other areas of debate in this context:

a. transfer payment

Some researchers argue that transfer payments should not be included in the government expenditure [Bird 1970; Crystal and Alt, 1979]. Brown and Jackson [1990] argue that since government act as intermediaries in redistributing income from one to another, transfer payments should not be included in government expenditure. Citing the reason that transfer payments exaggerate the size of government expenditure, Bird [1970] also supports its exclusion. Gupta [1969] also agreed to the exclusion arguing that government should be regarded as either the final consumer or as an enterprise selling public goods and services.

However, Musgrave [1969] includes transfer expenditure in his calculations. It is also used in Musgrave and Musgrave [1989]. Lewis-Beck and Rice [1985] include transfer payments arguing that the

⁸⁵ Presumably, Diamond assumed that in many LDCs, the government is not fully democratic thus allowing the government to impose taxes without fearing the set back on their re-election. Whereas in the case of developed countries, the governments' ability to increase the tax rate is restricted fearing that the policy will be unfavourable during the election period. Yet, this arguments seems to suggest that electorate have perfect information as to the cost of government policy thus ruling out fiscal illusion.

government exercises its influence in collecting it [from taxes]. Also, Beck [1976]⁸⁶ include transfers in his study of US data and attributes the rise in government expenditure to the increase in transfer payments. This view was shared by Peltzman [1980]. Like Musgrave [1969], Beck [1976, 1980] also believes that it is a correct portrayal of public sector size. Pluta [1981] and Saunders and Klau [1985] found that the elasticity of government expenditures does not differ much with the inclusion or exclusion of transfer payments.

It was also argued by Afxentiou and Serletis [1991] that since the administrative cost in collecting the amount spent on transfer payments is included in the government expenditure, it therefore has an impact on government spending behaviour. If this is to be taken into consideration, the exclusion of transfer payment requires the exclusion of its collection cost from the total government spending. In other words, a separate accounting treatment should be made for the administrative cost of collecting taxes to finance transfer payments. The difficulties in accepting this approach is great and in reality is seems impractical to do so.

b. levels of government

Lewis-Beck and Rice [1985] and Landau [1986] include all level of governments from federal to state to local governments. However, Gupta [1969] proposes that the local governments which should be included are those that are not financed by taxes raised by the local governments themselves. One major problem in including all levels of governments is to ascertain that double counting does not occur. Double counting arises because part of the expenditure made by both state and local governments are financed by the federal governments. Therefore, to include all levels of government, the initial task is to identify that part of expenditure of state and local government which are financed from the federal coffer.

⁸⁶ Beck's (1976) conclusion that the increase in transfer payments was the main reason for the expansion of public expenditure gives rise to what is known as Beck hypothesis.

c. *Market Price or Factor Cost*

A minor difficulty but has been address by few, is the way in which government purchases should be measured. Carr [1979] was in favour of using market prices in measuring government expenditure. However, Ram [1986a, 1987] was in favour of factor cost and suggested that government expenditure be deflated with the price index of government output.

In view of these difficulties in measuring government expenditure, some studies [Pryor, 1968; Landau, 1986] have suggested that the share of government consumption expenditure is used as a proxy in measuring government size with respect to the national income. Nevertheless, the United Nations, when calculating government expenditure uses and includes government consumption expenditure, transfer payments, interest on public debts and miscellaneous current expenditure.

2.6 SUMMARY

We mentioned at the onset that the subject of the growth of government has managed to attract much attention over the last three and half decades. So much so that, tens of books and hundreds of journal articles have been written around its theme. It would be impossible to cover all this vast amount of literature in this review.

What we did in this review is, but a small effort to piece together all the jigsaws. We considered that all the past contributions fall into two categories. First, contributions to enrich the subject. Second, contributions in the form of tests to verify each subject area. In section 2.2. we examined the major developments and contributions to the subject which fall within the scope of the first category. Since the main theme of the present study is on Wagner's Law, we reviewed the law from section 2.3 onward; an overview which falls in the second category.

Wagner's Law has been tested under various conditions using various explanatory variables either in developed or developing countries using either time-series or cross-section data or both. These various tests have produced nothing but one important result; that, at best, the evidence is contradictory. The magnitude of this contradictory evidence is alarming. Even within one particular country, or within one particular group of countries, when using different tools or different time periods or different ways of calculation, the results can be different. Thus, a general conclusion either to accept or to reject it can hardly be made which prompted Musgrave [1969] to conclude that the evidence on Wagner's Law remains puzzling.

The purpose of this study is not intended to validate or invalidate Wagner's Law. Instead the purpose is to see whether there is any kind of relationship between the growth of government and the growth of the economy in the context of Malaysia.

These contrasting results on the validity of Wagner's Law, lead Wagner and Weber [1977: 67] to suggest that "there is no universal Wagnerian law of public spending" which also prompted them to argue that ".... the preceding analysis has suggested strongly that Wagner's Law is not a 'law'". Perhaps it is also worth considering the view put forward by Bukhead and Miner [1972]. They suggested that "[P]erhaps the most general observation that can be made about government activities is that they have grown, both relatively and absolutely, in all countries of the world" [p. 1].

An alarming aspect of these contrasting results of Wagner's Law can be seen in several recent discussions on the issue as evident from the [journal of] *Public Finance* 1993-1994. It begins with the work of Vasudeva Murthy [1993], for simplicity we shall refer to this as VM. VM tested for stationarity and cointegration employing the Augmented Dickey-Fuller test and tested the result using Fuller [1976] test statistics and concluded that it "detects the long-run relationship between the share of government expenditure in real GDP and real GDP per capita, in the framework of Wagner's Law using data for Mexico over the period, 1950-1980" [p: 95]. This finding was disputed by Hayo [1994].

employing instead the Dickey-Fuller test and comparing the test statistics using MacKinnon [1991]. Ashworth [1994] also raised some doubts of VM's finding, yet again, employing a different set of tools in analysing the cointegration, namely the Johansen procedure against the Engle-Granger procedure used by VM.

With this scenario, caution must be exerted in making a comparison especially when different tools are used in analysing the relationship underlying Wagner's Law.

Critics of Wagner's Law focused on its assumptions of an "organismic theory" of the state in contrast to the diverse taste and preference of individuals who make-up a state [Bird, 1970]. It was also criticised by Peacock and Wiseman [1961] for its neglect of the effect of war. Furthermore, Wagner's Law is criticised for its demand side approach - a kind of Keynesian revolution [Buchanan and Wagner, 1977].

This chapter has highlighted some contrasting results based on previous studies on the relationship between the size of government expenditure and the level of national income in either absolute or relative form. Though the degree of contradiction is quite high, it by no means justifies total rejection or acceptance of the relationship between government growth and economic growth. Even when major studies employing causal relationship find no causal relation between the two variables, it has yet to be proven that it applies to every other country, especially when tested individually.

CHAPTER THREE

PUBLIC EXPENDITURE GROWTH IN MALAYSIA: EXPENDITURE PROFILE [1961-1990]

Great nations are never impoverished by private, though they sometimes are by public prodigality and misconduct. The whole, or almost the whole public revenue, is in most countries employed in maintaining unproductive hand Such people, as they themselves produce nothing, are all maintained by the produce of other men's labour.

Adam Smith
*An Inquiry into the nature and cause of
The Wealth of Nations*
1776 II 3.

3.1 INTRODUCTION

The extent of direct government involvement in economic activities in Malaysia is relatively high. The economic justification for this is that, Malaysia is in the early stage of economic development and that the private and domestic capital formation within the economy is so limited. This requires the government to be involved actively in economic activities. As will be shown later, a huge proportion of the government spending in the period under review was directed towards expenditure on economic and social services. Unmistakeably, this shows that the government has taken onto its shoulders the task of developing the nation.

This discussion is intended to seek the directions in which government expenditure in Malaysian has grown; what activities were involved, what proportion of the total government expenditure were used and how much was directed to each of the activities, as well as the percentage of each activity to the Gross National Product [GNP].

3.2 SOME EXPLANATORY NOTES

Unless otherwise stated, the data used in this study is taken from the Quarterly Economic Bulletin, Bank Negara Malaysia which was first published in 1968 but contained data from 1958 onwards.

For the purpose of this review, this period is being examined in five-years duration starting from 1961-1965. As stated earlier, the time-period of our study is between 1961 to 1990. We have mentioned in Chapter One that the first five-year development plan, i.e. the First Malaya Plan was introduced in 1956 and the country itself gained independence in 1957. In 1961, the Second Malaya Plan [1961-1965] was launched which coincides with the first year of our review. We must stress that this is just a coincidence. Therefore, we must also warn that the expenditure for each of the periods in our review is not the expenditure spent for the respective Malaya or Malaysia Plan for that same period. The reason is purely accounting, for the data was based on the fiscal year which runs from 1 January until 31 December whereas the plans were not based on the fiscal year.

In this review, our discussion is limited to the nominal amount only. No attempt is made to deflate the figure to take into account the effect of inflation. This is done, following Musgrave [1969], to give a better picture of the extent to which the government expenditure has grown. Throughout this discussion, some terms have been used which might sound unfamiliar. The following are the definitions of those terms and names used in this chapter to give a clearer perspective of the discussion:

i. Malaya Plan

This refers to the five-years development plan adopted by the then Malaya¹ prior to the establishment of Malaysia in 1965. Following the suggestion by the World Bank mission in 1955, the plan was launched in 1956.

¹ There is much ambiguity in the term Malaya. As noted by Lim [1973: 1f], "before independence and certainly before 2nd World War, the term was used to refer to the present West Malaysia together with Singapore. After 1957, it was used to refer to Malaya sometimes with Singapore and sometimes without'. When Malaya i.e. present West Malaysia, gained independence in 1957, Singapore, like Brunei, remained as a British colony. On 16 September 1963, when Singapore joined the federation, together with Sabah and Sarawak, the name was changed to Malaysia. She was expelled from the Federation on 9 August 1965.

ii. Malaysia Plan

This refers to the five-year development plans after the establishment of Malaysia in 1963. The first Malaysia Plan started in 1966.

iii. NEP

NEP is the acronym for the New Economic Policy launched in 1970; the most important economic policy ever formulated since independence.

iv. Bank Negara Malaysia

Bank Negara Malaysia is the Central Bank of Malaysia.

v. Government Expenditure

This refers to the total Federal Government Expenditures only. This means that it excludes expenditures of the state and local governments as well as the Non-Financial Public Enterprises or the Off-Budgets Agencies [OBA's].

3.3 MAJOR ECONOMIC POLICIES - A BRIEF NOTES

The first five-year Malaya Plan was launched in 1956 following the recommendations made by the World Bank mission in 1955. When the country gained her independence in 1957, the task to oversee the development programmes and formulating policies rested on a special development unit set-up in the Prime Minister's Department. In 1961, this unit was upgraded and named THE Economic Planning Unit. In 1963, Malaysia was formed which saw the inclusion of Singapore and the two North-Borneo States [Sabah and Sarawak] into the Federation. Subsequently, the name, Federation of Malaya was changed to Malaysia. Understandably, this also implied that the task bestowed upon this unit was getting bigger.

The emphasis of the first and the subsequent plans until 1970 were more on agricultural, rural and infra-structural development. The main thrust of these plans was to achieve a higher growth rate by taking advantage of the high price of the two major produces of the country, namely rubber and tin - a growth oriented development plan.

The growth objective was achieved. GNP grew from \$6,681 million in 1961 to \$11,617 million in 1970, that is, by \$14,936 million - see Appendix 1. This means that the economy grew by 73.9% over the period of 10 years, i.e. an average growth rate of 7.4% per year. However, by neglecting the pluralistic nature of the Malaysian society, emphasis on growth alone had resulted in socio-economic imbalances among the three major races. The climax of it was the bloody racial tension on May 13, 1969. Following this, a new chapter in the socio-economic and political set-up of the country emerged. On the economic frontier, the government launched the New Economic Policy in 1970. The aim was that by 1990 when the policy came to the end, the incidence of poverty would be reduced substantially and share capital ownership in limited companies would represent a better balance between the three major races. In the political sphere, a broader *National Front* was formed in replacement of the *Alliance Party*.

Table 3.1
Income Disparities (1960 and 1970)
Between Region and Races

Year	Rural	Urban
1960	\$173	\$319
1970	\$202 [16.76%]	\$432 [34.42%]

Year	Malays	Chinese	Indians
1960	\$139	\$300	\$237
1970	\$177 [27.34%]	\$399 [33.00%]	\$310 [30.80%]

Sources: Snodgrass, D.R. 1980
note: Figures in parenthesis refers to growth rate [between 1960 to 1970]

Prior to the implementation of the New Economic Policy, the average monthly income for the rural and urban population was \$202 million and \$432 million respectively [refer to Table 3.1]. This represented a slight increase from that of 1960 which was \$173 and \$319 per month respectively. The inequality among the races was more obvious. In 1960, the average monthly household income of the Malays, Chinese and Indians was \$139, \$300 and \$237 respectively. This later rose to \$177 [Malays], \$399 [Chinese] and \$310 [Indians] per month in 1970.

The incidence of poverty for the whole nation was 49.3% in 1970. 49% of the Malays received an income of less than \$120 per month compared to 13.9% for Chinese and 20.2% for the Indians. On a

regional basis, 58.7% of the rural population were poor compared to 21.3% for the urban population.

In terms of share capital ownership in limited companies, only 2.4% were owned by the Malays² in 1970. In contrast, 34.3% were in the hands of the non-Malays and the remaining 63.3% were owned by foreign investors.

In view of this background, the New Economic Policy was launched with two main objectives.

Box 3.1

The two prong strategy of NEP is:

- a. *eradication of poverty by raising income levels and increasing employment opportunities for all Malaysians, regardless of race. This is to be achieved by programmes aimed at raising the productivity and income of those in low productivity occupations, the expansion of opportunities for intersectoral movements from low productivity to higher productivity activities and the provision of a wider range of social services especially designed to raise the living standards of the low income groups.*
- b. *accelerating the process of restructuring Malay society to correct economic imbalances, so as to reduce and eventually eliminate the identification of race with economic functions. Programmes for the purpose includes the modernisation of rural life, the rapid and balanced development of urban activities, the establishment of new growth centres and the creation of Malay commercial and industrial community in all categories and at all levels of operation. The objectives is to ensure that Malays and other indigenous people will become full partners in all aspects of the economic life of the nation.*

*Mid-term Review,
Second Malaysia Plan [1973:1]*

It was envisaged that by the end of 1990 when NEP ended, the incidence of poverty would be reduced from 49.3% to 16.7%. On the other hand, restructuring aimed at a much more balanced ownership of share capital with a target of 30% in the hand of the Malays, 40% for the non-Malays and the remaining 30% to be held by foreign investors.

In order to achieve this target, various development programmes were introduced which required the government to play a much more active role in the economic activities of the country. Federal Government share in the Gross National Product of the country varied

² Malays are categorised as the Bumiputra which means "people of the land" and the terms are used synonymously. This definition however does not includes the aborigines. However, in respect to the two North-Borneo states of Sabah and Sarawak, Bumiputras represents not only the Malays but also several other indigenous people which include the Kadazan, Murut, Bajau, Iban, Dayak etc. The latter, however, are known as "peribumi".

from as low as 18.0% in 1961 to as high as 48.6% in 1981 - see Table 3.2. The first half of the eighties saw a very high percentage of government expenditure share in the Gross National Product [GNP].

Other significant development programmes introduced during NEP were the Industrialisation Policy, National Agricultural Policy, Privatisation Policy and Malaysia Incorporated Policy. Except for the Privatisation Policy, the others required a greater involvement from the government in the economic frontier in order to achieve the specified targets of the respective policies.

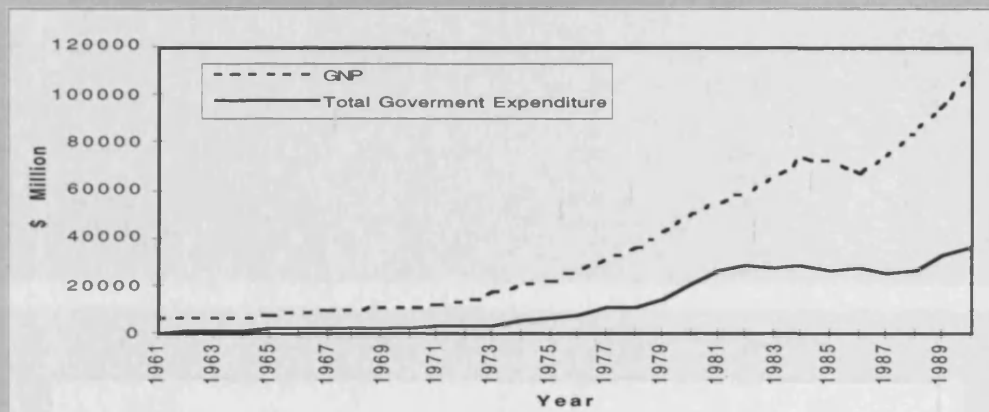
3.4 GENERAL TREND IN GNP AND GOVERNMENT EXPENDITURES GROWTH.

Throughout the period 1961-1990, GNP showed a very remarkable growth rate. Figure 3.1 below shows the trend that existed between the Total Government Expenditure and GNP during the period 1961-1990. It shows the yearly growth pattern in the Total Government Expenditure against the growth pattern in the Gross National Product. On the other hand, Figure 3.2 shows the periodic composition of development expenditure and current expenditure in the Total Government Expenditure throughout the period. Figure 3.3 shows the growth pattern of GNP, Total Government Expenditure, GNP per capita, Total Government Expenditure per capita and population.

In 1966, in view of the formation of Malaysia in 1963, the Malaya Plan took a new dimension which saw the replacement of the Malaya Plan with the Malaysia Plan. Hence, in 1966, the First Malaysia Plan [1966-1970] was launched.

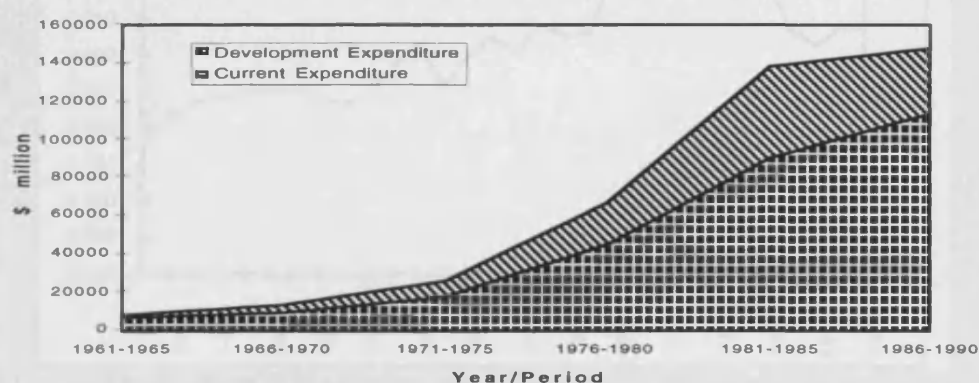
Total Government Expenditure as a ratio of GNP ranged between 0.18 in 1961 to as high as 0.49 in 1981 [Table 3.2]. Since 1975, it has never dropped below 0.30 of GNP. In the height of recession in 1986, its ratio in GNP was 0.41. The pattern of government expenditure-GNP ratio is shown in Figure 3.4. This high ratio in early eighties has lead to the privatisation drive, first introduced in Malaysia in 1982.

Figure 3.1
GNP and Total Government Expenditures 1961-1990



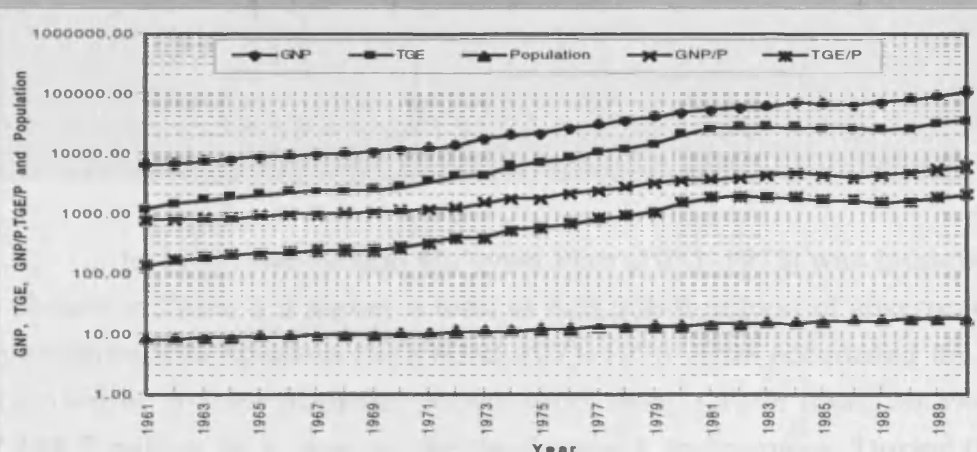
note: Based on Appendix 2

Figure 3.2
Share of Current and Development Expenditure
In the Total Government Expenditure 1961-1990



note: a. Vertical separator between Development Expenditure and Current Expenditure is the Total Government Expenditure.
b. Based on Table 3.3

Figure 3.3
Growth Pattern of GNP, TGE, GNP per capita, TGE per capita and
Population, 1961-1990

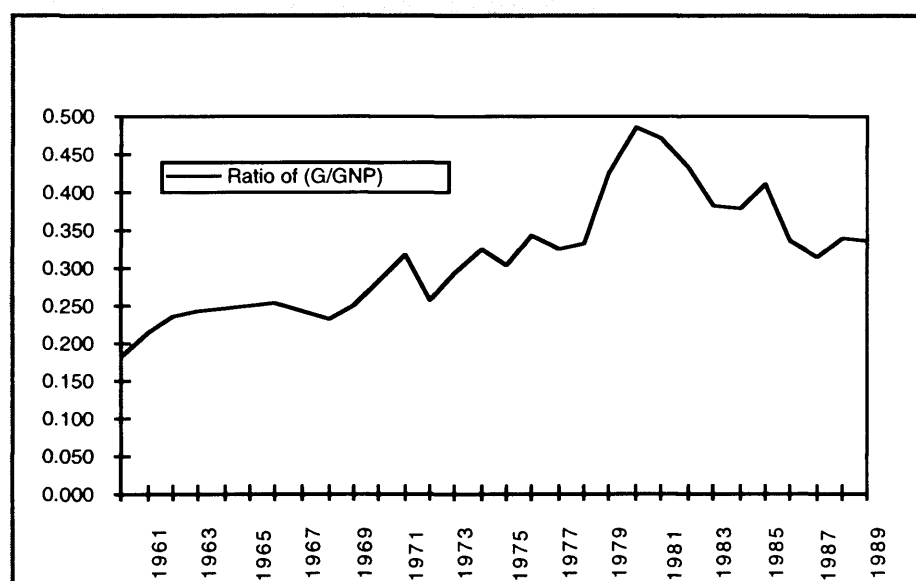


note: a. TGE = Total Government Expenditure
b. Based on Appendix 2

Table 3.2
Ratio of Total Government Expenditure To Gross National Product, 1961-1990.

Year	Ratio	Year	Ratio	Year	Ratio
1961	0.18	1971	0.28	1981	0.49
1962	0.22	1972	0.32	1982	0.47
1963	0.24	1973	0.26	1983	0.43
1964	0.24	1974	0.29	1984	0.38
1965	0.25	1975	0.33	1985	0.38
1966	0.25	1976	0.30	1986	0.41
1967	0.25	1977	0.34	1987	0.33
1968	0.24	1978	0.33	1988	0.32
1969	0.23	1979	0.33	1989	0.34
1970	0.25	1980	0.42	1990	0.33

Figure 3.4
Ratio of Government Expenditure to GNP, 1961-1990



note: Based on Table 3.2 above

Table 3.3
Various Levels of Government Expenditures, 1961-1990 [\$ million, current prices]

Period	Cumulative GNP	Total Gov. Expenditure Total	% of GNP	Current Expenditure Total	% of TGE	Development Expenditure Total	% of TGE
1961-65	37366.0	8429.2	22.6	6213.8	73.7	2215.4	26.3
1966-70	51487.0	12539.3	24.4	9304.0	74.2	3235.3	25.8
1971-75	86513.0	25508.8	29.5	18025.6	70.7	7483.2	29.3
1976-80	187438.0	66127.8	35.3	45000.3	68.1	21127.5	31.9
1981-85	326667.0	138666.3	42.4	90603.7	65.3	48062.6	34.7
1986-90	432493.0	148532.0	34.3	113230.5	76.2	35301.5	23.8

note: Total Government Expenditure = Total Current Expenditures + Total Development Expenditures.

In 1971, the Second Malaysia Plan (1971-1975) was launched. As shown in Table 3.3 above, a total of \$25,508.8 million of government expenditure was spent in the period 1971-1975. This accounted for an increased of 103.4% from the period 1965-1970. Of the total, 29.3% or \$7,483.2 million was spent on the development programmes. During this period, the portion of the total Federal Government Expenditure to GNP increased by 5.1% to 29.5%.

Over the period 1976-1980, \$66,127.8 million was spent, contributing 35.3% to GNP. The increase in total Federal Government Expenditure was 159.2% which was higher than the increase in the previous period. Of this amount, 31.9% or \$21,127.5 million was spent on the development programmes. The remaining \$45,000.3 million or 68.1% went to operating expenditures.

In the period 1981-1985, a total of \$48,062.6 million was spent on development programmes. This was equivalent to 34.7% of the total Federal Government Expenditure of \$138,666.3 million. The percentage of total Federal Government Expenditure to GNP reached the record height of 48.6% in 1981. For the period [1981-1985], Total Government Expenditure was 42.4% of GNP.

In 1986 the economic conditions deteriorated. GNP in 1986 dropped to \$66,814 million compared to \$72,039 million in 1985, that is a growth rate of -7.3%. However, by 1987 the economy started to accelerate again - see Appendix 2. GNP rose by 11.8% to \$74,679 in 1987 and the trend persisted until the end of the period when GNP managed to reach \$109,663 million in 1990. Overall, the growth rate in the period 1986-1990 was 52.2% with an average of 10.44% per annum. Total Federal Government Expenditure spent during the period was \$148,532 million. This was a 7.1% increase from the previous period - the lowest increase ever. From this amount, \$35,301.5 million or 23.8% was spent on the development expenditure. The percentage of the Federal Government Expenditure to GNP in this period fell by 8.1% to 34.3%.

3.5 FUNCTIONAL GOVERNMENT EXPENDITURE: OVERALL VIEW

The tremendous growth of the total government expenditure in the period 1961-1990 was transparent in the functional government activities. Over the period 1961-1990, each of the economic sectors has showed a remarkable growth rate. Both Table 3.4 and 3.5 below show

the growth pattern of various government activities in the period under review.

Table 3.4
Functional Government Activities (1961-1990)
\$ million, current prices

Period	Economic Social Services	General Admin.	Defence/ Security	Public Debts Charge	Transfer Payments	Pensions	Total Non-Economic & Social Serv.
1961-1965	3976.1	1491.7	1542.1	566.7	527.4	325.2	4453.1
1966-1970	6257.0 [57.77]	1249.8 [-16.11]	2752.4 [78.48]	892.4 [57.47]	997.7 [89.17]	390.0 [19.93]	6282.3 [41.08]
1971-1975	13685.7 [118.73]	2054.8 [64.41]	5683.1 [106.48]	2131.1 [188.81]	1278.3 [28.12]	675.8 [73.28]	11823.1 [88.20]
1976-1980	32798.9 [139.66]	4373.8 [112.86]	11760.2 [106.93]	5748.5 [169.74]	9854.7 [670.12]	1591.7 [135.53]	33328.9 [181.90]
1981-1985	70219.8 [114.45]	9148.0 [109.15]	22782.5 [93.73]	17694.9 [207.82]	15562.2 [57.92]	3258.9 [104.74]	68446.5 [105.37]
1986-1990	70143.9 [-0.11]	11906.8 [30.16]	20237.8 [-11.17]	30724.0 [73.63]	10601.0 [-31.88]	4918.5 [50.93]	78388.1 [14.52]

Table 3.5
Percentage Contributions By Each Sectors To
The Total Federal Government Expenditures [GE] and GNP [1961-1990]

Percentage of	1961-1965		1966-1970		1971-1975		1976-1980		1981-1985		1986-1990	
	GNP	GE	GNP	GE	GNP	GE	GNP	GE	GNP	GE	GNP	GE
Defence and Security	4.1	18.3	5.3	22.0	6.6	22.3	6.3	17.8	7.0	16.4	4.7	13.6
General Administration	4.0	17.7	2.4	10.0	2.4	8.1	2.3	6.6	2.8	6.6	2.8	8.0
Public Debts Charges	1.5	6.7	1.7	7.1	2.5	8.4	3.1	8.7	5.4	12.8	7.1	20.7
Transfer Payments	1.4	6.3	1.9	8.0	1.5	5.0	5.3	14.9	4.8	11.2	2.5	7.1
Pensions	0.9	3.9	0.8	3.1	0.8	2.6	0.8	2.4	1.0	2.4	1.1	3.3
Economics & Social Ser.	10.6	47.2	12.2	49.9	15.8	53.7	17.5	49.6	21.5	50.6	16.2	47.2
of which current	6.7	29.6	7.4	30.3	8.6	29.1	8.3	23.6	9.3	21.8	8.9	26.0
Agri and Rural Dev.	0.4	1.9	0.5	2.0	0.5	1.8	0.6	1.8	1.2	2.8	1.0	3.1
Commerce and Industry	0.0	0.2	0.1	0.2	0.2	0.7	0.2	0.7	0.6	1.4	0.5	1.5
Transport	0.2	0.9	0.4	1.5	0.3	1.1	0.2	0.7	0.4	0.9	0.4	1.1
Post and Broadcasting	0.6	2.5	0.4	1.8	0.5	1.7	0.5	1.4	0.5	1.1	0.2	0.7
Telecommunication	0.2	0.9	0.4	1.8								
Education	3.4	14.9	4.0	16.6	5.0	17.0	4.8	13.5	4.7	11.0	4.9	14.2
Medical Services	1.3	5.6	1.4	5.6	1.6	5.4	1.5	4.2	1.4	3.3	1.4	4.0
Others	0.6	2.5	0.2	0.7	0.4	1.4	0.5	1.3	0.5	1.3	0.5	1.5
of which Development	4.0	17.6	4.8	19.6	7.2	24.5	9.2	26.0	12.2	28.8	7.3	21.2
Agri and Rural Dev.	1.0	4.4	1.7	7.2	2.1	7.0	2.1	5.9	2.0	4.6	1.3	3.7
Industrial and Mining	0.5	2.1	0.4	1.7	1.6	5.4	1.8	5.0	2.1	4.9	1.3	3.7
Transport	0.9	3.8	0.8	3.2	1.6	5.4	1.9	5.4	2.2	5.2	1.5	4.5
Communications	0.3	1.4	0.4	1.6	0.3	1.0	0.6	1.8	0.9	2.1	0.2	0.6
Utilities	0.3	1.4	0.3	1.4	0.4	1.2	1.0	2.7	1.4	3.3	0.9	2.5
Education & Planning	0.6	2.8	0.5	2.0	0.9	2.9	0.9	2.5	1.4	3.4	1.3	3.7
Health & family Planning	0.3	1.2	0.3	1.1	0.2	0.7	0.1	0.4	0.2	0.5	0.2	0.6
Social Community Services	0.03	0.11	0.04	0.16	0.05	0.18	0.19	0.54	0.41	0.96	0.30	0.89
Others	0.02	0.08	0.01	0.05	0.04	0.14	0.02	0.05	0.02	0.04	0.01	0.03
Total Contributions To GNP	22.6		24.4		29.5		35.3		42.4		34.4	

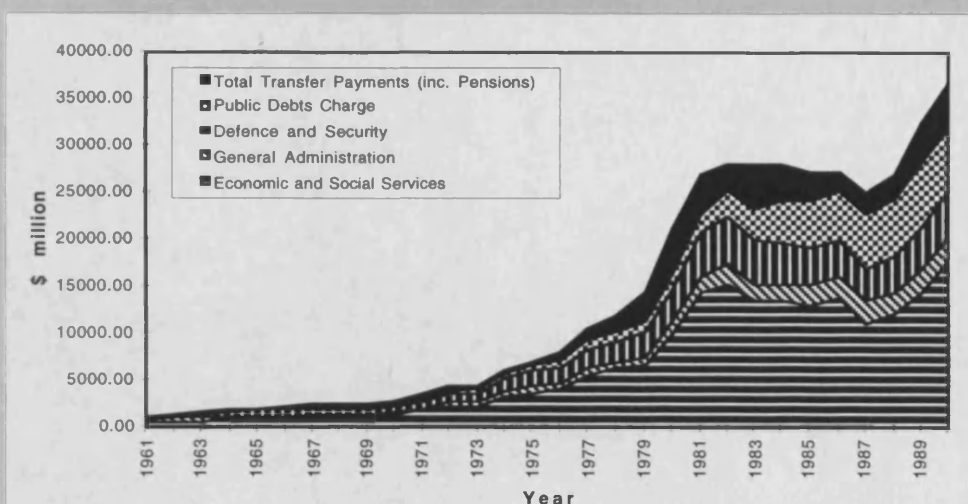
Throughout the period, Economic and Social Services was the major player and consumed the highest percentage of the Total Government Expenditures. Economic and Social Services have grown from a mere \$3,976.1 million in the period 1961-1965 to \$70,143.9 million in 1986-1990. It had grown by 57.77% from the period 1961-

1965 to 1966-1970; by 118.73% to 1971-1975; by 139.66% to 1976-1980; by 114.45% to 1981-1985 and finally by -0.11% to 1986-1990.

The slowdown in the mid-eighties as a result of the world-wide recession has seriously affected some sectors. The most seriously affected was transfer payments with a growth rate of -31.88% between the period 1981-1985 and 1986-1990, followed by 'defence and security' with a growth rate of -11.17%. The 'economic and social services' was also affected but at a lesser extent. Its growth rate for the period dropped to -0.11%; a fall from \$70,219.8 million to \$70,143.9 million.

Despite the small increase [7.11% increase from \$138,663.3 to \$148,532.0 million - refer to Table 3.3] in the Total Government Expenditure in the period 1986-1990, three sectors still showed a high growth rate. As shown in Table 3.4 above, these are the General Administration, Public Debts Charges and Pensions which grew by 30.16%, 73.63% and 50.93% respectively. This trend off-set the negative growth rate in the other three sectors - the Economic and Social Services, Defence and Security and Transfer Payments. Overall, Economic and Social Services showed a negative growth rate of -0.11% which was offset by a positive growth rate of 14.52% in the total Non-Economic and Social Services for the period 1986-1990.

Figure 3.5
MALAYSIA: Functional Government Activities [1961-1990]



note: Based on Table 3.4

Economic and social services was [and most likely will always be] the single major sector of the economy and received the highest allocation from government expenditure. Throughout the period under review, it never fell below 40% of the total Federal Government Expenditure; ranging between 41.17% in 1961 to 55.32% in 1974 - see Appendix 3. As a percentage of GNP, it ranged between 7.84% in 1961 to 26.12% in 1981 - see Appendix 2.

3.6 TREND IN NON-ECONOMIC AND NON-SOCIAL ACTIVITIES

3.6.1 Brief Overview

Bank Negara Malaysia categorises the government's spending into six different headings. Box 3.2 below shows how the Bank Negara Malaysia classifies the government expenditure. Throughout this review, we will follow this line of classifications.

Box 3.2

Bank Negara Malaysia Classification of Government Expenditures:

1. *Economic and Social Services*
2. *Defence and Security*
3. *General Administration*
4. *Public Debts Charges*
5. *Pensions*
6. *Transfer Payments*
 - *Grants to State Governments*
 - *Contributions to Statutory Funds*
 - *Subscriptions to International Organisations*
 - *Others [unspecified]*

Government Expenditure is classified under current and development categories. Nevertheless, development expenditures involves only expenditures on Economic and Social Services, Defence and Security and General Administration.

The following are current and development headings under the economic and social services:

<u>current</u>	<u>development</u>
+ Agriculture and Rural Development	+ Agriculture and Rural Development
+ Commerce and Industry	+ Social and Community Services
+ Transport	+ Transport
+ Post and Broadcasting	+ Communication
+ Telecommunications	+ Education and Planning
+ Education	+ Health and Family Planning
+ Medical Services	+ Housing
+ Others	+ Others

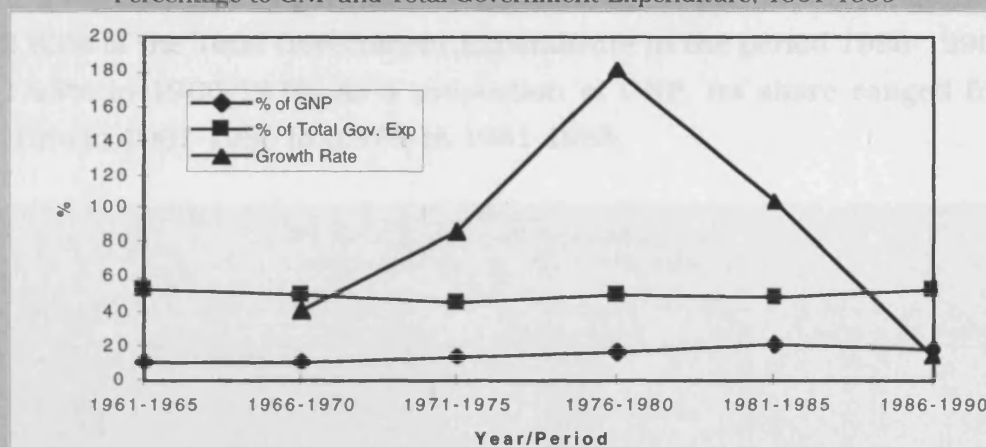
The focus of this section is to elaborate on the expenditures committed by the Federal Government in connection with defence and security, general administration, pensions, transfer payments and public debts charges. This leaves the expenditure profile for economic and social services to be dealt in the next section.

Throughout 1961-1990, around half of the total expenditure committed by the government was spent on items other than economic and social services. This varied from 52.83% in the period 1961-1965 to 50.10% [1966-70], 46.35% [1971-75], 50.40% [1976-80], 49.36% [1981-85] and 52.78% [1986-90]. Table 3.6 below shows total government expenditure on various sectors other than economic and social services.

Table 3.6
Total Government Expenditure on Non-Economic and Social Services
1961-1990 (\$ million).

Period	Cumulative GNP	Total Non-Economic and Social Services	Growth Rate	% of GNP	% of Total Government Expenditure
1961-1965	37366.0	4453.1		11.92	52.83
1966-1970	51487.0	6282.3	41.08	12.20	50.10
1971-1975	86513.0	11823.1	88.20	13.67	46.35
1976-1980	187438.0	33328.9	181.90	17.78	50.40
1981-1985	326667.0	68446.5	105.37	20.95	49.36
1986-1990	432493.0	78388.1	14.52	18.12	52.78

Figure 3.6
Non-Economic and Social Services Sector: Growth Rate,
Percentage to GNP and Total Government Expenditure, 1961-1990



note: Based on Table 3.6

Figure 3.6 above show the trend in the Non-Economic and Social Services sectors with regards to the growth rate, percentage to Total Government Expenditure and percentage to GNP between 1961-1990.

In absolute terms, the period 1961-1980 saw the government spend \$4,453.1 million for all these various non-economic and social activities. This figure rose to \$6,282.3 million in the period 1966-1970, \$11,823.1 million in the period 1970-1975, \$33,328.9 million in the period 1976-1980, \$68,446.5 million in the period 1981-1985 and \$78,388.1 million in the period 1986-1990. As shown in Table 3.6 above, the growth rate of this expenditure from the period 1961-1965 to 1966-1970 was 41.08%, then grew by 88.20% in the period 1971-1975, 181.90% in the period 1976-1980, 105.37% in the period 1981-1985 and 14.52% in the period 1986-1990.

We proceed below to review the sectoral expenditures under the Non- Economic and Social Services.

3.6.2 Defence and Security

Defence and security have always received considerable attention from the government. The government expenditure for this sector ranged from 13.63% of the Total Government Expenditure in the period 1986-1990 to 21.95% in 1966-1970. As a proportion of GNP, its share ranged from 4.13% in 1961-1965 to 6.97% in 1981-1985.

Table 3.7
Federal Government Expenditure On
Defence and Security 1961-1990 [\$ million]

Period	Sub Total	Current Expenditure	Development Expenditure	% Share To GNP	% share to Total Gov. Expenditure
1961-1965	1542.1	1235.8	306.3	4.13	18.29
1966-1970	2752.4	2063.1	689.3	5.35	21.95
1971-1975	5683.1	4674.7	1008.4	6.57	22.28
1976-1980	11760.2	8429.7	3330.5	6.27	17.78
1981-1985	22782.5	15524.7	7257.8	6.97	16.43
1986-1990	20237.8	17277.4	2960.4	4.68	13.63

Table 3.7 above shows the expenditure committed for this sector together with its share to the Total Government Expenditure and the GNP.

3.6.3 General Administration

General administration constitutes a relatively small proportion of government spending throughout the period, except for the period 1961-1965 whereby its expenditure was 17.70% of Total Government Expenditure. In the subsequent periods, its share to the Total Government Expenditure was below 10%, as shown in the following Table 3.8.

Table 3.8
Federal Government Expenditure
On General Administration 1961-1990 [\$ million]

Period	Sub Total	Current Expenditure	Development Expenditure	% Share To GNP	% share of Total Gov. Expenditure
1961-1965	1491.7	1062.0(71.2%)	429.7(28.8%)	3.99	17.70
1966-1970	1249.8	1161.4(93.0%)	88.4(7.1%)	2.43	9.97
1971-1975	2054.8	1838.8(89.5%)	216.0(10.5%)	2.38	8.06
1976-1980	4373.8	3751.7(85.8%)	622.1(14.2%)	2.33	6.61
1981-1985	9148.0	8324.7(91.0%)	823.3(9.0%)	2.80	6.60
1986-1990	11906.8	11057.8(92.8%)	849.0(7.1%)	2.75	8.02

note: Figure in parenthesis refers to percentage to sub-total.

Likewise, its share to GNP was much lower. In the period of 1961-1965, it was only 3.99%. This later fell below 3% in the subsequent periods.

Table 3.8 above also shows that a huge proportion of Government Expenditure on General Administration was dedicated towards operating expenses. This covers items such as salary, emoluments and bonuses to the government's servants.

3.6.4. Public Debts Charge

This item show a very high rate of change. In the period 1961-1965, the expenditure for this item was \$566.7 million that is 6.72% of the total Federal Government Expenditure or 1.52% of the cumulative GNP for the period. By the period 1986-1990, it had reached \$30,724.0 million.

Its relative share to both the GNP and the Total Government Expenditure increased from period to period. As shown by Table 3.9

below, in the period of 1986-1990, it took up 20.69% of the Total Government Expenditure or 7.10 per cent of the total GNP for the period.

Table 3.9
Federal Government Expenditure On
Public Debts Charges 1961-1990 [\$ Million]

Period	Sub Total	Growth Rate	Share To GNP	Share to Total Government Expenditure
1961-1965	566.7		1.52	6.72
1966-1970	892.4	57.8	1.73	7.12
1971-1975	2131.1	138.8	2.46	8.35
1976-1980	5748.5	169.7	3.07	8.69
1981-1985	17694.9	207.8	5.42	12.76
1986-1990	30724.0	73.6	7.10	20.69

3.6.5. Pensions

The pensions fund payable to the government servants took up between 0.76 percent of GNP in the period 1966-1970 to 1.14% in the period 1986-1990. It also used up between 2.35% in the period 1981-1985 to 3.86% in the period 1961-1965, of the Total Government Expenditure.

In absolute terms, the expenditure for this item was \$325.2 million in 1961-1965. It increased to \$390 million in 1966-1970, \$675.8 million in the period 1971-1975, \$1,591.7 million in the period 1986-1980, \$3,258.9 million in the period 1981-1985 and finally \$4,918.5 million in the period 1986-1990.

Table 3.10
Federal Government Expenditure
On Pensions 1961-1990 [\$ Million]

Period	Sub Total	Growth Rate	Share To GNP	Share to Total Government Expenditure
1961-1965	325.2		0.87	3.86
1966-1970	390.0	19.93	0.76	3.11
1971-1975	675.8	73.28	0.78	2.65
1976-1980	1591.7	165.53	0.85	2.41
1981-1985	3258.9	104.74	1.00	2.35
1986-1990	4918.5	50.93	1.14	3.31

3.6.6. Transfer Payments

As shown in Box 3.2 earlier, there are four items that fall under the category of transfer payments. Those are grants to state governments,

contributions to statutory funds, subscriptions to international bodies³ and finally an account under the title of 'others' which was unspecified. As shown in Table 3.11 below, in the period 1961-1965, \$527.4 million was spent for transfer items with a share of 6.3% of the Total Government Expenditures and its share to the GNP stood at 1.4%. The account has also become increasingly important. Its share to the Total Government Expenditure increased gradually over the period 1961-1990.

As shown in Table 3.12 below, in the period 1961-1965, 86.4% or \$455.7 million was spent as grants to the states government. The remaining was the contribution to various statutory funds [\$52.3 million] and subscriptions fee to the international bodies [\$19.4 million].

Table 3.11
Federal Government Expenditure On
Transfer Payments 1961-1990 [\$ Million]

Period	Sub Total	% Share To GNP	% Share to Total government Expenditures
1961-1965	527.4	1.4	6.3
1966-1970	997.7	1.9	8.0
1971-1975	1278.3	1.5	5.0
1976-1980	9854.7	5.3	14.9
1981-1985	15562.2	4.8	11.2
1986-1990	10600.9	2.5	7.1

Table 3.12
Division of Transfer Payments, 1961-1990.

Period	Grants To State Governments		Contributions To Statutory Bodies		International Subscription/Fee		Others	
	Total	% of Transfer	Total	% of Transfer	Total	% of Transfer	Total	% of Transfer
1961-1965	455.7	86.4	52.3	9.9	19.4	3.7	0.0	0.0
1966-1970	836.3	83.8	73.8	7.4	87.6	8.8	0.0	0.0
1971-1975	1065.3	83.3	191.7	15.0	21.3	1.7	0.0	0.0
1976-1980	1543.6	15.7	7508.4	76.2	137.9	1.4	664.8	6.7
1981-1985	3254.3	20.9	9637.9	61.9	61.5	0.4	2608.5	16.8
1986-1990	5141.3	48.5	5379.3	50.7	80.3	0.8	0.0	0.0

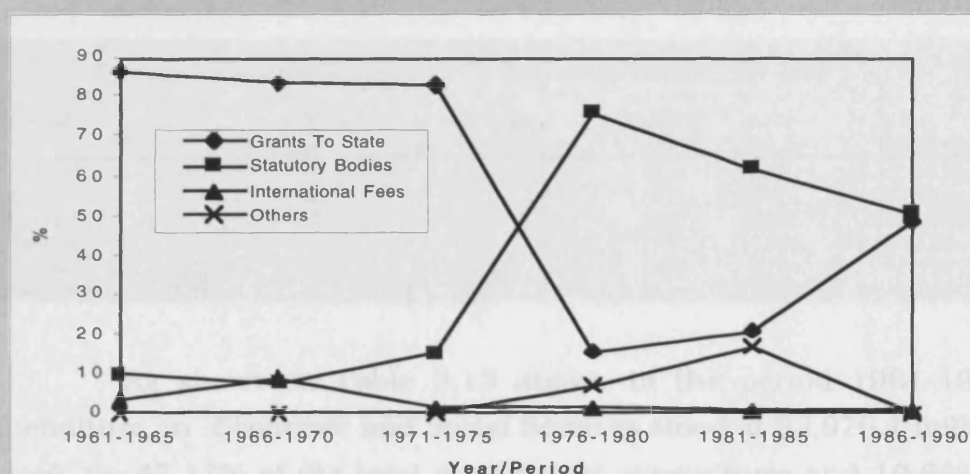
A look at the distribution of this account shows another interesting picture. As shown in Table 3.12 above, there was a shift in emphasis. Grants to State Governments have become relatively less important. Its importance was replaced by the Federal Government's contributions to various statutory bodies. The latter, which was 9.9% and 7.4% respectively, for the period 1961-1965 and 1966-1970, have increased to 15.0%, 76.2%, 61.9% and 50.7% in the period 1971-1975,

³ Subscriptions to international bodies started only from 1964.

1976-1980, 1981-1985, 1986-1990 respectively. On the other hand, grants to state governments fell from 86.4% in 1961-1965 to 83.8%, 83.3%, 15.7%, 20.9% and finally increased back to 48.5% in the same periodic division.

Our only explanation for the increasing importance of the contributions to the statutory bodies is related to the introduction of the NEP in 1970. As mentioned elsewhere, although the NEP was first introduced in 1970, its exact formulation and policy objectives were only made in the Mid-term review of the Second Malaysia Plan in 1973. Among the steps taken by the government in order to meet the objectives of the NEP was to establish lots of statutory bodies which includes land development schemes.

Figure 3.7
Division of Transfer Payments [Percentage]



Note Based on Table 3.12

It has been identified that one of the reasons for the backwardness of the Malays rural population was the role played by the middle-men in marketing. As such, a few statutory bodies were set-up for the purpose of eliminating the role of the middle-men. These include FAMA (Farmers Marketing Association), LPN (National Rice Board), LTN (National Tobacco Board), *Majuikan* (Fisheries Board) etceteras. The objectives of all these statutory bodies were to promote the economic well-being of the rural, especially Malay population by reducing, if not eliminating the role of middle-men, many of whom were [or are] Chinese entrepreneurs.

3.7 ECONOMIC AND SOCIAL SERVICES

3.7.1 Brief Overview

Economic and Social Services was indeed [and is still is] the single major activity taking the most out of the total government expenditure as well as representing the highest percentage of GNP when compared with the other government activities. Nevertheless, the grouping by the Bank Negara Malaysia itself is too broad; it can in fact be classified into two different groups - the economic services and the social services. Having said that though, we make no attempt to divide it as such. We shall be following the Bank Negara's grouping instead. This is made by considering that the objective of this study is not to look at the effect of each sector on the national income but rather the effect of Total Government Expenditure. Therefore, there is no justification for classifying it. Probably, future and further research can do that.

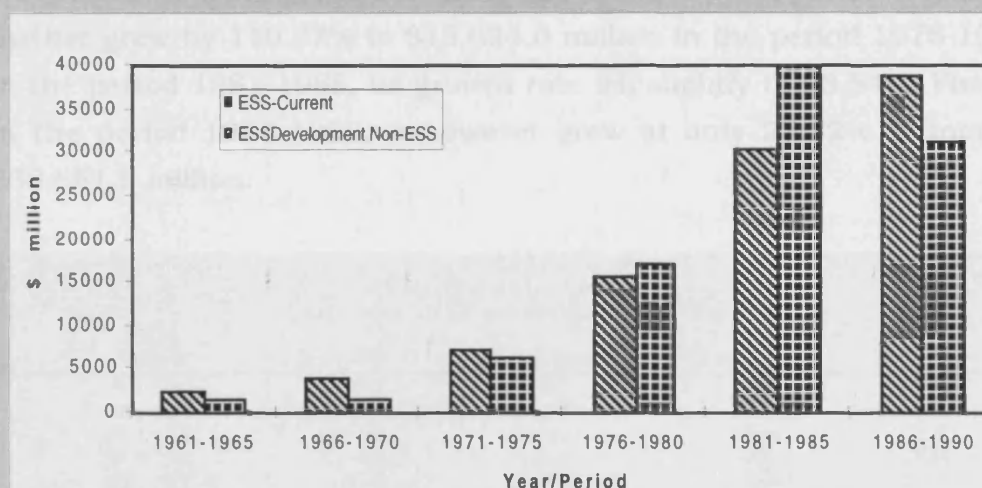
Table 3.13
Government Expenditure On Economic and Social Services

Period	ESS	Growth Rate	As % to Total Gov. Expenditure	As % to GNP	% for Current	% for Development
1961-1965	3976.1		47.17	10.64	62.79	37.21
1966-1970	6257.0	57.37	49.90	12.15	60.72	39.28
1971-1975	13685.7	118.73	53.65	15.82	54.27	45.73
1976-1980	32798.9	139.66	49.60	17.50	47.64	52.36
1981-1985	70219.8	114.09	50.64	21.50	43.06	56.94
1986-1990	70143.9	-0.11	47.22	16.22	55.10	44.90

As shown in Table 3.13 above, in the period 1961-1965, expenditure on Economic and Social Services stood at \$3,976.1 million. It took up 47.17% of the total government expenditure and 10.64% of GNP. In the period 1966-1970, it grew by 57.37% to \$6,257.0 million and constituted 49.90% of Total Government Expenditure and 12.15% of GNP. In the subsequent periods, except for the period 1986-1990, it showed a huge growth rate of over a hundred per cent each period. However that trend stopped in the period 1986-1990 whereby its growth rate was -0.1%. This however, is not surprising because some other sectors also record a similar trend, most notably Defence and Transfer. This was in contrast to the overall Non-Economic and Social Services sector which grew by 14.5 per cent in the same period.

Following the introduction of NEP, in the period of 1971-1975, government expenditure on Economic and Social Services grew by 118.73% from \$6,257.0 million to \$13,685.7 million. Of this amount, 45.73% was channelled for development activities and 54.27% for operating expenditures. In the period 1976-1980, it grew to \$32,798.9 million, i.e. a growth rate of 139.66% from the previous period. Out of this, 52.36% was directed for development activities and 47.64% for operating expenditures. With a growth rate of 144.09%, it grew further to \$70,219.8 million in the period of 1981-1985; development expenditure share was 56.94% compared to 43.06% for current expenses. In the following period, it amounted to \$70,143.9 million i.e. with a growth rate of -0.1% and the share of development expenditures was 44.90% compared to 55.1% for operating expenditure. Its share in Total Government Expenditure stood at 47.22%. Figure 3.8 below shows the distribution of current and development expenditures of Economic and Social Services in comparison with the total [current + development expenditure of] non-Economic and Social Services.

Figure 3.8
Government Expenditure On Economic and Social Services
(Current and Development), 1961-199.)



Note: Based on Table 3.4 and 3.13.

As shown in Box 3.2 earlier, the data and the classification by the Bank Negara Malaysia, Quarterly Economic Bulletin does not provide coherent headings or sub-sectors covered under the economic and social services sector. Due to that, it is impossible to discuss this sector based

on its sub-headings. What we are going to do is to divide, as the data does, the economic and social services sector into two, i.e. the current expenditure and the development expenditure. Based on this division, elaboration will then be made on each of its sub-sectors for both current and development expenditures⁴.

For ease of exposition, we shall refer to the current expenditure on Economic and Social Services as ESSCurrent and the development expenditure as ESSDevelopment.

3.7.2 Current Expenditure

The percentage of the current expenditure in the Total Government Expenditure on Economic and Social Services [ESSCurrent] is shown in the Table 3.14 below. It varied from 43.06% in the period 1981-1985 to 62.79% in the period 1961-1965.

In absolute terms, in the period 1961-1965, it amounted to \$2,496.7 million. It then grew by 52.18% to stand at \$3,799.4 million. By the period 1971-1975, it had grown by 95.48% to \$7,426.9 million. It further grew by 110.37% to \$15,624.0 million in the period 1976-1980. In the period 1981-1985, its growth rate fell slightly to 93.54%. Finally, in the period 1986-1990, it however grew at only 27.82% to total at \$38,651.5 million.

Table 3.14
Current Expenditure On
Economic and Social Services, 1961-1990

Period	Total ESS	ESS/Current	Growth rate	% of ESS
1961-1965	3976.1	2496.7		62.79
1966-1970	6257.0	3799.4	52.18	60.72
1971-1975	13685.7	7426.9	95.48	54.27
1976-1980	32798.9	15624.0	110.37	47.64
1981-1985	70219.8	30238.4	93.54	43.06
1986-1990	70143.6	38651.5	27.82	55.10

⁴ The development expenditure for the economic services is divided into agriculture and rural development, industrial and mining development, transport, communications and utilities. In contrast to this, the current expenditure for the economic and social services is classified under different categories, i.e., agriculture and rural development, commerce and industry, transport, telecommunications, education, medical services and others

Table 3.15
Various Activities Under ESSCurrent 1961-1990 [\$ Million]

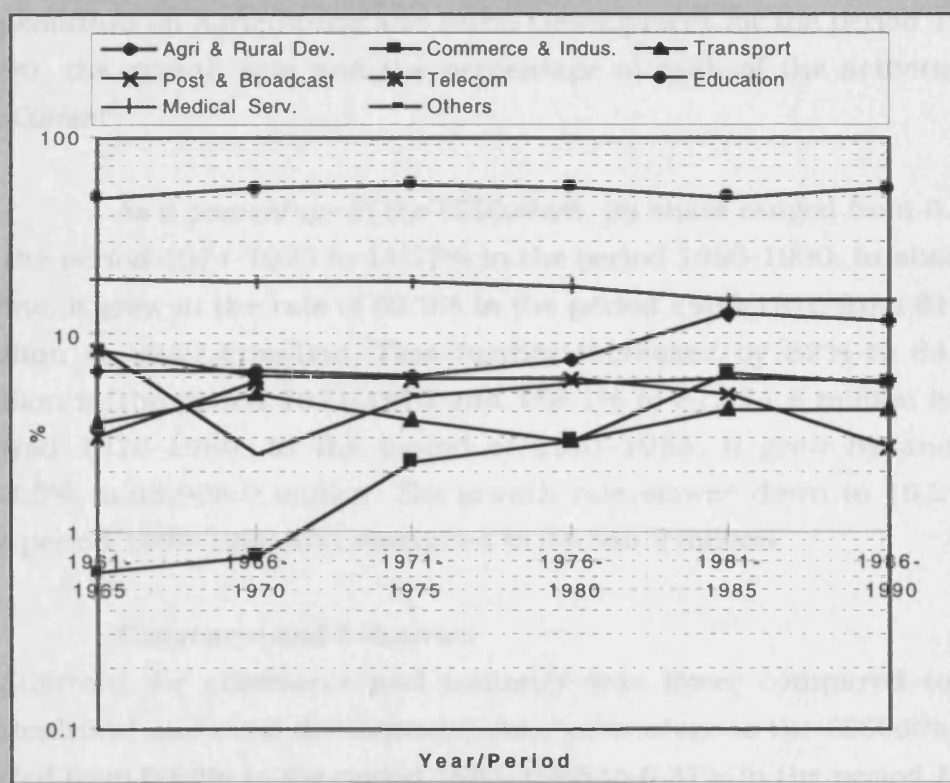
Period	Agriculture and Rural Development	Commerce and Industry	Transport	Post and Broadcast	Telecom	Education	Medical	Others
1961-1965	163.1	15.7	89.7	207.7	76.6	1257.1	473.4	213.4
1966-1970	249.4	28.7	191.7	230.5	220.7	2083.7	703.1	91.6
	[52.9]	[82.8]	[113.7]	[11.0]	[188.1]	[65.8]	[48.5]	[-57.1]
1971-1975	454.0	169.9	276.0	443.1		4348.7	1375.2	360.0
	[82.0]	[492.0]	[44.0]	[92.2]		[108.7]	[95.6]	[293.0]
1976-1980	1171.8	453.4	454.3	936.5		8948.3	2785.9	873.8
	[158.1]	[166.9]	[64.6]	[111.4]		[105.8]	[102.6]	[142.7]
1981-1985	3908.0	1927.6	1263.2	1529.8		15288.3	4544.9	1777.0
	[233.5]	[325.1]	[178.1]	[63.4]		[70.9]	[63.1]	[103.4]
1986-1990	4540.9	2160.4	1607.8	1037.5		21128.8	5908.4	2267.7
	[16.2]	[12.1]	[27.3]	[-32.2]		[38.2]	[30.0]	[27.6]

note: Figures in parenthesis are growth rate

Table 3.16
Percentage of each activities to ESSCurrent 1961-1990

Period	Agriculture and Rural Development	Commerce and Industry	Transport	Post and Broadcast	Telecom	Education	Medical	Others
1961-1965	6.53	0.63	3.59	8.32	3.07	50.35	18.96	8.55
1966-1970	6.56	0.76	5.05	6.07	5.81	54.87	18.51	2.41
1971-1975	6.11	2.29	3.72	5.97	-	58.55	18.52	4.85
1976-1980	7.50	2.90	2.91	5.99	-	57.27	17.83	5.59
1981-1985	12.92	6.37	4.18	5.06	-	50.56	15.03	5.88
1986-1990	11.75	5.59	4.16	2.68	-	54.66	15.29	5.87

Figure 3.9
Share of Various Activities To ESSCurrent



Note: Based On Table 3.16

Table 3.15 above shows the various expenditures which fall under the heading Current Expenditure On Economic and Social Services [ESSCurrent]. It also shows the amount spent under each activity. Table 3.16, on the other hand, shows the percentage of each activity to ESSCurrent.

ESSCurrent is divided into eight different activities - agriculture and rural development, commerce and industries, transport, post and broadcasting, telecommunications, education, medical services and several minor items summed up under others [refer to Box 3.2].

a. Agriculture and Rural Development

Before the government introduced a more aggressive approach towards industrial activities, agricultural activities were the back-bone of Malaysian economy. Various agricultural-based agencies were set-up by the government to facilitate this.

Table 3.15 and Table 3.16 above shows the current expenditure on Agricultural and Rural Development for the period 1961-1990, the growth rate and the percentage of each of the activities to ESSCurrent.

As a percentage of the ESSCurrent, its share ranged from 6.11% in the period 1971-1975 to 11.75% in the period 1986-1990. In absolute terms, it grew at the rate of 52.9% in the period 1966-1970 from \$163.1 million to \$249.4 million. This further increased by 82% to \$454.0 million in the period 1971-1975 and 158.1% to \$1,171.8 million in the period 1976-1980. In the period of 1981-1985, it grew by another 233.5% to \$3,908.0 million. The growth rate slowed down to 16.2% in the period 1986-1990 and amounted to \$4,540.9 million.

b. Commerce and Industries

ESSCurrent for commerce and industry was lower compared to the agricultural and rural development. As a percentage to the ESSCurrent, it varied from 0.63% in the period 1961-1965 to 6.37% in the period 1981-1986.

The biggest growth rate was in the period 1981-1985 at 325.1% with a total expenditure of \$1,927.6 million. In the subsequent period [1986-1990] it only grew by 12.1% to \$2,160.4 million.

c. *Transport*

Current expenditure on transport industries was also relatively low. Its share in ESSCurrent was between 2.91% in the period 1976-1980 to 5.05% in the period 1966-1970.

Like commerce and industry, government involvement in the transport industry in Malaysia was limited. In those days, government involvement was confined to the railway and air services. Other than that, transport was provided by the private sector. By the mid-eighties, both the *Keretapi Tanah Melayu* [KTM - Malayan Railway] and Malaysian Airline System [MAS, now known only as Malaysian Airline] were privatised.

d. *Post and Broadcasting*

Postal services have recently been privatised by the government. In the broadcasting sector, the public involvement includes the *Radio-Television Malaysia* (RTM).

Nevertheless, especially in the early period of independence, the sector was deemed important. On this basis, Table 3.16 above shows that in those early periods, its share in the ESSCurrent was higher than the agricultural and rural development and the commerce and industry sector. For example, in the period 1961-1965, its share was 8.32% of ESSCurrent. However, in subsequent periods, its share fell gradually such that in the period 1986-1990, its share was only 2.68% with a total expenditure of \$1,037.5 million.

e. *Telecommunications*

The data available from the Bank Negara Malaysia showed that the expenditure on this sub-sector only appeared in the period 1961-1965 and 1966-1970. In the period 1961-1965, \$76.6 million was spent, that is 3.07% of ESSCurrent.

In the period 1966-1970, its total expenditure amounted to \$220.7 million. Its share to ESSCurrent increased to 5.8%. No further expenditure was recorded from 1976. Development of telecommunications in Malaysia was undertaken by the *Telekom Malaysia* as a statutory body prior to privatisation.

f. Education

Looking at the expenditure on Education, one can realise the importance attached to this sub-sector by the government. It constitutes the single most important sub-sector and consumes the highest percentage of ESSCurrent - well over 50%.

In the period 1961-1965, its share of ESSCurrent was 50.35% with a total expenditure of \$1,257.1 million. Gradually this increased. In the period 1966-1970, with a growth rate of 65.8%, it grew to \$2,083.7 million with a share of 54.87% of ESSCurrent. It further increased by 108.7% to \$4,348.7 million and 105.8% to \$8,948.3 million in the period 1971-1975 and 1976-1980 sharing 58.55% and 57.27 % of ESSCurrent respectively.

In the period 1981-1985, its share to ESSCurrent was 50.56% and this amounted to \$15,288.3 million. In the period 1986-1990 when other sectors suffered from government cut backs in expenditure, it still grew at 38.2% to a total of \$21,128.8 million with a share of ESSCurrent at 54.66%.

g. Medical Services

Medical services remained the second most important sub-sector which accrued the second highest proportion of the ESSCurrent. Its share in ESSCurrent ranged from 15.03% in the period 1981-1985 to 18.96% in the period 1961-1965. Like education, it has not really been affected by the slow-down in government expenditure growth in the second half of the eighties. Total expenditure in 1961-1965 was \$473.4 million. This increased by 48.5% to \$703.10 million in the period 1966-1970 and further increased by 95.6% to \$1,375.20 million in the period 1971-1975. In the period 1976-1980 it stood at \$2,785.90 and increased by

63.1% to \$4,544.9 million in the following period. In the period 1986-1990, it grew by 30.0% to \$5,908.4 million.

3.7.3 Development Expenditure On Economic And Social Services.

As shown in Table 3.13 earlier the development expenditure on Economic and Social Services [ESSDevelopment] was less than its current expenditure [ESSCurrent]. Table 3.17 below shows its composition to GNP, the total government expenditure on Economic and Social Services and the Total Government Expenditures.

In absolute value, the government expenditure on ESSDevelopment was \$1,479.4 million in the period 1961-1965. This then grew by 66.12% to \$2,457.6 million in the period 1966-1970 and 154.67% to \$6,258.8 million in the period 1971-1975. In the period 1976-1980, it grew at a growth rate of 174.41% to \$17,174.9 million. In the following period, it increased by another 132.79% to \$39,981.50 million. However, it showed a negative growth rate in the period 1986-1990 following the government's cut-back on expenditure, to fall by -21.23% to \$31,492.2 million.

Its percentage to the Total Government Expenditure On Economic and Social Services ranged from 37.21% in the period 1961-1965 to 56.94% in the period 1981-1985. As a percentage of Total Government Expenditure as a whole, its share ranged from 17.55% in the period 1961-1965 to 28.83% in the period 1981-1985.

The data by Bank Negara Malaysia divide development expenditure on Economic and Social Services [ESSDevelopment] into two sections, namely the economic activities and the social activities. The economic activities were agriculture and rural development, industrial and mining development, transportation, communications, utilities and some miscellaneous account. On the other hand, the social services were divided into four sub-sectors comprising education and planning, health and family planning, housing and social and community services.

Table 3.17
Federal Government Development Expenditure On
Economic and Social Services 1961-1990 [\$ million]

Period	Total Development Expenditure On Economic and Social Services	Total Expenditure On Economic Soc. Service	% of GNP	As % of Total Government Expenditure On Economic and Social Services	As % of Total Government Expenditure
1961-1965	1,479.4	3976.1	3.96	37.21	17.55
1966-1970	2,457.6 [66.12]	6257.0	4.77	39.28	19.60
1971-1975	6,258.8 [154.67]	13685.7	7.23	45.73	24.54
1976-1980	17,174.9 [174.41]	32798.9	9.16	52.36	25.97
1981-1985	39,981.5 [132.79]	70219.8	12.24	56.94	28.83
1986-1990	31,492.2 [-21.23]	70143.9	7.28	44.90	21.20

note: Figure in parenthesis refers to the growth rate

Table 3.18 below shows the total amount spent on development expenditure for both the economic and social services throughout the period of 1961 until 1990. Table 3.19 and 3.20 shows the amount spent for each sub-sector and the percentage of each sub-sector to the total development expenditure for the economic and social services sector.

a. *Agriculture and Rural Development*

Table 3.20 below illustrates the declining importance of this sub-sector as the economy progressed further. In the period of 1986-1990, it only received 17.53% share of ESSDevelopment. This was a sharp contrast to its proportion in the earlier periods whereby its share was 24.85%, 36.57% and 28.69% for the period 1961-1965, 1966-1970 and 1971-1975 respectively. During the period 1986-1990, the government spent \$5,521.3 million on this sub-sector, a fall of -14.23% compared to the total of \$6,437.6 million spent in the previous period.

b. *Industrial and Mineral Development*

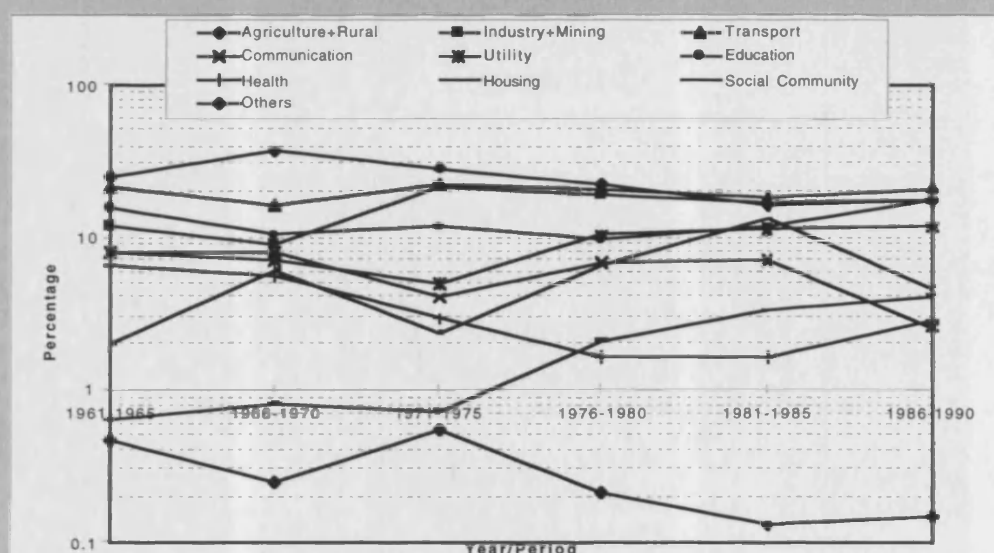
In contrast to agricultural and rural development, industrial and mining development has become more and more important as the economy had progressed. Even though its share in ESSDevelopment dropped in the period 1966-1970 from 12.07% to 8.92%, but by the period 1971-1975 it increased to 21.84%. In absolute terms, its share in the period 1966-1970 was \$219.10 million and this increased to \$1,366.80 million in the following period. From there on, it maintained a high proportion of the

ESSDevelopment ranging from 19.21% in the period 1976-1980, 17.08% in the period 1981-1985 and 17.54% in the period 1986-1990.

c. Transport

The transport sub-sector has always enjoyed a high proportion of the ESSDevelopment throughout the period 1961-1990. It ranged from 16.47% of ESSDevelopment in the period 1966-1970 to 21.91% in the period 1971-1975. This shows the effort made by the government in improving the transport infrastructure of the country which includes better road services and facilities and improved rail and air services.

Figure 3.10
Share of Various Economic and Social Services Activities
in the ESSDevelopment, 1961-1990 (Percentage)



Note: Based on Table 3.20

d. Communication

The share of communication sub-sector in ESSDevelopment ranged from 4.08% in the period 1971-1975 to 7.94% in the period 1966-1970. In absolute terms, it totalled \$116.7 million in the period 1961-1965 and grew at 67.18% to \$195.10 million in the following period. In the period 1976-1980, it grew by a remarkable 361.0% from \$255.4 million to \$1,177.40 million. Its growth rate fell to 142.29% in the period 1981-1985 to total at \$2,852.70 million and later fell again to -71.32% to settle at \$818.10 million in the period 1986-1990.

Table 3.18
Development Expenditure On Economic Services and Development Expenditure On Social Services, 1961-1990.

Period	ESSDevelopment	Development Expenditure On Economic Services	As % To ESSDevelopment	Development Expenditure On Social Services	As % To ESSDevelopment
1961-1965	1479.4	1100.1	74.36	379.3	25.17
1966-1970	2457.6	1896.7	77.18	560.9	22.82
1971-1975	6258.8	5141.3	82.15	1117.5	17.85
1976-1980	17174.9	13729.7	79.94	3445.2	20.06
1981-1985	39981.5	27931.1	69.86	12050.4	30.14
1986-1990	31492.1	22332.3	70.91	9159.9	29.09

Table 3.19
Expenditure On Each Sub-sectors to ESSDevelopment 1961-1990 [\$ million].

Period	Agriculture and Rural Development	Industry and Mining	Transport	Communication	Utility	Education	Health	Housing	Social Community	Others
1961-65	367.60	178.60	320.80	116.70	116.40	233.70	99.70	29.50	9.40	7.00
1966-70	898.70 [144.48]	219.10 [22.68]	404.70 [26.15]	195.10 [67.18]	173.00 [48.63]	254.30 [8.81]	135.40 [35.81]	150.90 [411.53]	20.30 [115.96]	6.10 [-12.86]
1971-73	1795.50 [99.76]	1366.80 [523.82]	1371.60 [238.92]	255.40 [30.91]	317.60 [83.58]	738.90 [190.56]	183.20 [35.30]	149.10 [-1.19]	46.30 [128.96]	34.40 [463.93]
1976-80	3873.00 [115.71]	3298.80 [141.35]	3551.30 [158.92]	1177.40 [361.00]	1793.40 [464.67]	1649.20 [123.20]	278.30 [51.91]	1159.20 [677.46]	358.50 [674.30]	35.80 [4.07]
1981-85	6437.50 [66.21]	6827.30 [106.96]	7211.10 [103.06]	2852.70 [142.29]	4551.00 [1543.76]	4731.90 [186.92]	661.80 [137.80]	5325.50 [359.41]	1331.20 [271.32]	51.50 [43.85]
1986-90	5521.30 [-14.23]	5525.30 [-19.07]	6697.80 [-7.12]	818.10 [-71.32]	3724.10 [-18.17]	5478.60 [15.76]	901.20 [36.17]	1465.40 [-72.48]	1314.70 [-1.24]	45.70 [-11.26]

note: Figure in parenthesis is growth rate.

Table 3.20
Percentage of Each Sub-sectors to ESSDevelopment 1961-1990 [\$ million].

Period	Agriculture and Rural Development	Industry and Mining	Transport	Communication	Utility	Education	Health	Housing	Social Community	Others
1961-65	24.85	12.07	21.68	7.89	7.87	15.80	6.74	1.99	0.64	0.47
1966-70	36.57	8.92	16.47	7.94	7.04	10.35	5.51	6.14	0.83	0.25
1971-75	28.69	21.84	21.91	4.08	5.07	11.81	2.93	2.38	0.74	0.55
1976-80	22.55	19.21	20.68	6.86	10.44	9.60	1.62	6.75	2.09	0.21
1981-85	16.10	17.08	18.04	7.14	11.38	11.84	1.66	13.32	3.33	0.13
1986-90	17.53	17.54	21.27	2.60	11.83	17.40	2.86	4.65	4.17	0.15

e. *Utilities*

Utilities or public utilities have enjoyed a steady share of ESSDevelopment over the period under review. It ranged between 5.07% of ESSDevelopment in the period 1971-1975 to 11.83% in the period 1986-1990. In the period 1981-1985, its expenditure peaked at \$4,551.0 million then fell by -18.17% to \$3,724.1 million.

f. *Education and Planning*

Unlike its current expenditure which consumes the most of the ESSCurrent, Education and Planning's share of ESSDevelopment ranged from 9.60% in the period 1976-1980 to 17.40% in the period 1986-1990. In nominal terms, development expenditure on education and planning amounted to \$233.70 million in the period 1961-1965. It then increased by 8.81% to \$254.30 and further increased by 190.56% to \$738.90 million in the period 1971-1975. In the period 1976-1980, its expenditure amounted to \$1,649.20 million with a growth rate of 123.20%. It further increased by 186.92% to \$4,731.90 million in the period 1981-1985. In the period 1986-1990, its growth rate fell to 15.76% to a total of \$5,478.60 million.

g. *Health and Family Planning*

Similar to the sub-sector education and planning, health and family planning share in ESSDevelopment was not as high as its share in ESSCurrent. In the period 1961-1965, its share was only 6.74% then fell to 5.51% in the period 1966-1970. It fell further to 2.93% in the period 1971-1975 and 1.62% in the period 1976-1980. In the period 1981-1985, it increased slightly to 1.66% and later in the period 1986-1990, it increased again to 2.86%.

h. *Housing*

Since Malaysia is not a welfare state, expenditure on the housing sector is relatively small. As such, development expenditure on housing was relatively low. In the period 1961-1965 its share was only 1.99% of ESSDevelopment. This increased to 6.14% in the following period and fell again to 2.38% in the period 1971-1975. It then increased to 6.75% in the period 1976-1980 and increased further to 13.32% of ESSDevelopment

in the period 1981-1985. In the period 1986-1990, its share in ESSDevelopment fell to 4.65%.

i. Social and Community Services

For the same reason as the housing sub-sector, development expenditure on social and community services has been very minimal. It ranged from 0.64% of ESSDevelopment in the period 1961-1965 to 4.17% in the period 1986-1990.

3.8 SUMMARY

Economic progress and development since independence experienced by the country follows the expansion in the government spending. The rate at which government expenditure has grown in Malaysia was tremendously high. As mentioned earlier, in 1981, total government spending constituted 48.6% of the GNP. This figure is indeed very high. In the decade of the eighties in general, the ratio of government expenditure to GNP was very high. In this period, the ratio of government expenditure to GNP ranged from 31.5% in 1988 to 48.6% in 1981. Consequently this was the second half of the New Economic Policy. It is interesting to know whether the huge ratio of the total government expenditure in the eighties has something to do with the attempts by the government to meet the targets set by NEP, in particular the objective of having a 30:40:30 ratio in share capital ownership among the Bumiputras, non-Bumiputras and foreign capitalists.

However, the decade of the eighties also coincided with the implementation of two major economic policies introduced by the government. These are the Heavy Industrial Policy and Malaysian Incorporation Policy which formed part of the Industrial Master Plan. In the hope of putting Malaysia among the developed countries, the government has taken serious measures to develop the industrial sector. The focus of this industrial development program was heavy industry. Emphasis on medium and small scale industries started later in the eighties. Resulting from this, the government has established various

industries which include the steel production plant, the car production plant and ship building.

We have shown that almost half of the expenditure committed by the government in the period since 1961 until 1990 was dedicated towards economic and social activities. And, since the mid-seventies, more attention has been directed towards the development of the sector itself.

Within the economic sector, industrial development has become more important since mid-seventies. Consequently, agricultural activities have become less and less important. However, the government has stressed that industrialisation will not be pursued by neglecting agriculture totally. Within the social activities, undoubtedly, education has been given greater attention by the government. A great proportion of both the current and development expenditure on economic and social services was directed towards the improvement of education.

Defence and security have also been given much attention by the government. More or less 20% of the total government expenditure in the period under review was directed towards those ends. From the data available, it is evident that debt servicing has become increasingly costly since the early eighties. From 3.7% of GNP in 1981, it has gradually increased and reached its peak in 1986 standing at 7.8% of GNP. Since then its relative importance has slowly declined.

The government itself is [or was] quite concerned with the increase in its spending. As an attempt to reduce government spending, in the early eighties, the government extended the Employee Provident Fund [EPF] scheme - an alternative for the pension scheme for the private sector employee, to the public sector. Further to that, it introduced a policy on the "Reduction In The Public Expenditure of The Public Sector" in the mid-eighties. The objectives of these policies were to strengthen the financial position of the government, to reduce the budget deficit and to control the development of public debts so as not to affect the balance of payments and foreign exchange.

CHAPTER FOUR

COMMUNALISM AND ITS EFFECT ON ECONOMIC POLICY.

*Poverty in the midst of plenty and joyless affluence
are but symptoms of a profound disorder*

*Tibor Scitovsky
The Joyless Economy, 1976.*

*Those who care deeply about social justice have
often felt themselves to be conducting a dialogue
with the deaf.*

*Michael Prowse
Financial Times 4 May 1989.*

4.1 INTRODUCTION

We have shown in Chapter One the tremendous growth of Malaysian economy since independence in 1957 and especially from 1961 until 1990. One main feature emerged - a balance economy between industrial and agricultural sectors coupled with a vast amount of natural resources [refer to Table 1.2]. Its growth rate is remarkable. Only twice since independence has it experienced a negative growth rate. Since recovering from the recession in the mid-eighties, its GNP growth rate has been well over eight per cent per annum. Nonetheless, modern Malaysia was shaped heavily by its historical past.

A serious socio-economic study of modern Malaysia could not blindly neglect two important parts of its past history. The first was the presence of the colonial power with its vast geographical and economic interest in the country. Back in 1511, the Malacca sultanate, laid along the Malacca Straits with its vast power in the region was defeated and conquered by the Portuguese, followed later by the Dutch in 1641. By 1786, the British made its presence in the peninsula which lasted for 171 years. Second, resulting from the British policies driven mainly by

economic considerations, especially the production and expansion of tin and rubber industry, was the emergence of a plural society with its enormous socio-cultural and religious differences. The latter determined not only the political equations of the country but also its economic policies.

We will endeavour to look at the effect of the two in the development of the Malaysian economy since independence. Both are, nevertheless, related to each other. British intervention in the domestic affairs of the country, be it because of its strategic geographical location or its economic significance, has played a major role in shaping the independent Malaysia. Newly independent Malaya and later Malaysia has been plagued with racial crisis from the beginning as a consequence of its plural social set-up. Racial issues were at the heart of her *merdeka* [independence] negotiations. It shaped the post-independence political atmosphere. Tension grew after Singapore joined the federation in 1963. The expulsion of Singapore in 1965 did not help matters¹.

Section 4.2 is devoted to the discussion of the country's historical background prior to and during the British colonial period up to independence. In Section 4.3, we discuss the emergence of a plural society in Malaysia. Undoubtedly, the issue of a plural society was a major factor in the pre-independence negotiations from the British. In Section 4.4, we present what constituted the pre-independence negotiations which were supposed to set the racial relations post-independence. This agreement, known otherwise as the 1957 bargains, contributed a lot in shaping the post-independence political and economic environment which is dealt in section 4.5. This, we think is crucial in understanding the factor that gave rise to the racial conflict of May 13, 1969. This incident can be viewed as a form of social-upheaval in the sense outline by Peacock-Wiseman Hypothesis.

We present as Appendix 4 a brief historical time-data, a summary of main events, of the historical development of Malaysia as a nation-state.

¹ This marked the last phase of the formation of Malaysia which remains until this day with a total area of 330,000 sq.km.

4.2 PRE-INDEPENDENCE MALAYSIA - A HISTORICAL BACKGROUND

The [sub]heading, pre-independence Malaysia may be misleading. Malaysia gained her independence from the British on August 31, 1957. At the time of independence, it was known as '*Persekutuan Tanah Melayu*' - Federation Of Malaya, or Malaya in short; though proper transliteration of '*Persekutuan Tanah Melayu*' should be 'Federation of Malay Land'. The Federation of Malaya was what is known as Peninsula [or West] Malaysia today which excludes the two Borneo States [Sabah - formerly North Borneo and Sarawak] which together form East Malaysia².

Malaya has been recognised as having played a major role in shaping the present world since 6,000 BC. The following quotation was an excerpt from a well-known Malaysian historian, R. O. Winsteadt [1951: 1-2] which summed-up Malaya's past history:

Seven times the Malay Peninsula has played a notable part on the world's stage. [First] About 6,000 BC. it was a bridge down which the ancestors of the Australian aborigine and the Papuan made their way to the narrow waters they crosses one after another to their present homes. [Second] About 2,000 BC the ancestors of the Malays descended its rivers on their trek from Yunnan to Sumatra and Java and beyond. [Third], when India and China had built ships for the high seas, a Malay Buddhist empire, Sri Vijaya, maintained a footing in the north of the peninsula to command the Straits of Malacca, as it maintained a footing in Palembang to command the Sunda Straits [Fourth] In the Fourteen century, Sri Vijaya and its colonies fell before the attacks of Majapahit, Java's last Hindu empire, and one of its fugitive princes founded about 1403 a port kingdom of Malacca [Fifth] Malacca became a centre from which the Indian and Arab missionaries carried the religion of Muhammad to the islands of the archipelago.

[Sixth] Then came the European [Seventh] the demand of motor industry for tin and rubber lifted Singapore into one of the world's ten greatest ports.

Since the early fourteenth century, the kingdom of Siam³ in the north of Malaya tried to extend its territorial boundaries and influence southward covering Pattani⁴ [which remains as part of it] and the northern states of Malaya - Kedah, Kelantan and Trengganu.

² Nevertheless, the term East and West Malaysia have not been used now apparently learning from the bitter experience which led to a break-up [and war] between East [now Bangladesh] and [West] Pakistan [Jomo, 1986]. Sabah and Sarawak are called by that name instead. Refer to footnote 1, Chapter 3, as well.

³ Siam was an old name for Thailand.

⁴ The defeat of Pattani to the invading Siamese saw another chapter of the region's history ended. Pattani was an independent kingdom prior to the attack.

Pre-independence Malaya⁵ was not a united nation⁶. Each states were independent of each others. There was no central government. Co-operation between them was limited. Some states were related with others by marriages of the royal households. Nevertheless, the movement of people and to some extent, goods and merchandise, between these states was unrestricted. Each state has its own ruler known as *sultan*.

MAP 4.1
MALAYA BEFORE INDEPENDENCE



Source: Scanned from Kennedy [1967].

⁵ Little has been written on the history of Malaya before the Malacca sultanate which was established around 1400 AD. The fact was that Malaya before Malacca fell under the Funan empire which disintegrated around 550 AD. Funan Empire was centred on the river Mekong around the third century, roughly in southern Vietnam and Kampuchea now. By 550 it started to disintegrate 'as a result of sustained southward pressure from Chenla, the Khmer state centring at Bassac, which was situated some distance up the Mekong River' [Cady 1964, p. 51]. Prior to that, around the second century, in the north of Malaya, there established the Langkasuka empire, dating from as early as the second century which later became a vassal state of Funan, though it continued to be an important trade avenue after the disintegration of Funan [Gray, 1964]. During the last quarter of the seventh century, the Sri Vijaya empire which later covered also Malaya came into existence.

⁶ The independent states existed even before the British period. For the sake of the present discussion, this observation would hold because only during the British period were the three different categories of the Malay States identified. This identification was associated with the nature of the British influence and presence.

Before the presence of the colonial powers, Malacca on the west coast of Malaya along the Straits of Malacca was the hub of the region - economically, politically and militarily. The Malacca Sultanate was established around 1400⁷ [Kennedy, 1967] by a Sumatran Prince - Parameswara. He was later known as Sultan Iskandar Shah following his conversion to Islam shortly after establishing the kingdom. For over a century [1400-1511], the kingdom established itself as an important power in the area of the Straits of Malacca. With its close relations with China, Malacca managed to stop the influence of Siam towards the south of the Malay Peninsula. It also established itself as an important port in the region.



The sultanate disintegrated with the attack by Portuguese in 1511 which followed the success of Vasco da Gamma, a Portuguese

7 Some accounts put it at 1403 [for example, Winsteadt].

admiral, in the discovery of India in 1498⁸. In 1641, Malacca fell to the hand of the Dutch⁹ who first made its presence in the region by the end of the 16th century in the neighbouring Indonesia.

During the British colonial period, Malaya can be divided into three different parts, namely, the Straits Settlements¹⁰ [which comprised of Penang, Singapore and Malacca], the Federated Malay States¹¹ [comprised of Perak, Selangor, Negeri Sembilan and Pahang] and the Unfederated Malay States [comprised of Johor, Kelantan, Trengganu, Kedah and Perlis] - see Map 4.1 earlier.

In the Straits Settlements, the opening of Penang by Francis Light on August 11, 1786 marked the beginning of the British presence in Malaya¹². Unsatisfied with the location of Penang, Stamford Raffles sought to find new base for the British and on January 29, 1819, landed

⁸ The Portugese conquest was headed by Alfonso de Albuquerque. A recent book [1990] termed him "Caesar of the East". The book which was based on the various letters he wrote, also gave account of Albuquerque's attack and the defeat suffered by Malacca. As a schoolboy, we were taught that the western interest in the east, especially the Portugese sea-adventures arose as a way to ensure a continuous flow of spices from the south east Asia which was disturbed by the war in the middle-east. The book however revealed otherwise. Alfonso, in particular, stemmed out of religious-zealots. His main objective for travelling to the East was to conquer Mecca and Madina [the two holy cities for the Muslims] and to dig Prophet Muhammad's grave and bring his body to Spain as ransom for the freedom of Jurusalem. Failing to do that, he went back to India, his initial base. The book also gave an account whereby he landed in Goa, India and and ransacked the town, killing all Muslims, men and women, some of them in fighting and some were gathered in mosques and were burnt down. In total 6,000 Muslims were killed.

⁹ In the West, war broke out between the Netherlands and Spain in 1566. After the death of King Henry [of Portugal] in 1580, Phillip II [of Spain] took Portugal under his control. This forced the Dutch, who traded extensively with Portugal, to seek potential trade in the East after their traders were denied access to Lisbon in 1594. In the East, they focused their business activities in Java, Indonesia. They formed alliances with Acheh [north of Sumatra, Indonesia] and Johor [south of Malaya], both of whom were the enemy of Portugese Malacca. As early as 1606, the Dutch, with the help of Johor had made several failed attempt to invade Malacca and to drive away the Portugese. Johor was particularly interested in these activities because when Malacca failed to the Portugese, Sultan Mahmud, the last Sultan of Malacca escaped to Johor. Finally, in 1641, after extensive attacks, Malacca fell under the colonisation of the Dutch.

¹⁰ The term Straits Settlement was formally used in 1832. All three, Penang, Singapore and Malacca were placed under one administration in Singapore headed by a Governor of Straits Settlement.

¹¹ The four states which formed the Federated Malay States each had a British Resident. The Residents was supposed to advise the sultans. In 1893, Sir Frank Swettenham submitted a proposal for a federation of the four states with British residents to the governor of the Straits Settlements, Sir Cecil Clementin Smith. With the agreement of the Malay Rulers, the federation came into existence on 1 July 1896 and Kuala Lumpur was chosen as the headquarter. A 'Resident-General' was appointed to supervise the administration of the four states and was subjected to the supervision of the Governor of the Straits Settlements.

¹² The British East-India Company in Calcutta, had long been looking for a base in the region of the Straits of Malacca. This arose because of three factors - the need to have a naval base, the need to enter the South-East Asia Market and the need to have a port of call for English ships travelling between India and China [Kennedy, 1967]. On the other hand, Kedah which was constantly under threat from Siam was looking for help and assistance to protect themselves. Francis Light who was in Kedah in 1771 knew the wishes of the Sultan and conveyed to the East Indian Company the opportunity of having a base in Penang which was then under the rule of Sultan of Kedah. The East Indian Company was reluctant to have a binding military commitment and the negotiations seemed almost to have failed. However, in 1784, in view of French naval movement in the region forced the East Indian Company to reconsider Penang. In 1786, with the approval of the East Indian Company and the agreement of the Sultan, Francis Light opened a factory in Penang. However, the East Indian Company refused to commit to any kind of military commitment. This angered the Sultan. Felt cheated, the Sultan of Kedah assembled his ships to attack Penang. Knowing this, Light struck first and forced the Sultan to sign a treaty to cede Penang to the East Indian Company. In return, the Company agreed to pay the Sultan 6,000 Spanish dollar a year. Another treaty was signed in 1800 to buy Province Wellesley [a strip of land on the mainland Malaya]. This increased the Sultan's annuity to 10,000 dollars a year.

in Singapore. Singapore was then under the rule of Johor¹³. He and Temenggong of Johor [the ruler of Johor] signed a treaty on January 30, 1819 to establish a factory and in return the British would protect the island and paid the Temenggong three thousand dollars a year¹⁴. The British and the Dutch agreed to exchange Bengkulin and Malacca in March 1824¹⁵.

Unlike the Straits Settlements, in the Federated Malay States, different and separate circumstances invited the British to establish its foothold in the country. It was made through the appointment of a British Residence in each states. The duty of a Resident was supposed to advise the sultan.

The first British Resident in the Federated Malays States was in Perak¹⁶. This came as a result of the Pangkor Agreement in January

¹³ Penang did not really satisfy the East Indian Company because it lay far to the north of the main shipping route in the Straits of Malacca. When the Dutch were occupied with the French invasion, Malacca became the British base in the region. With the end of the French invasion, Malacca was handed back to the Dutch. Earlier in 1805, a young officer, Stamford Raffles was posted as Assistant Secretary in Penang. Raffles was not pleased with the non-strategic location of Penang as a British base in the region compared to the Dutch presence in Malacca and Riau [south of Singapore] and sought to explore other possibilities down south of the Straits of Malacca. On January 29, 1819, Raffles landed in Singapore which was under the rule of Temenggong of Johor. Both signed a 'Preliminary Agreement' on January 30 which allowed the East Indian Company to establish a factory on the island. In return, the Temenggong was paid 3,000 dollars a year and the Company promised to protect him from any military threat.

¹⁴ The British East India Company treated Singapore more favourably than Penang, "for Singapore was trusted upon its famous servant, Stamford Raffles" [Snodgrass, 1980:15].

¹⁵ During the winter 1794/95, the Dutch were occupied with the French invasion. William V, the Dutch king in exile in England gave out an instruction, known as the Kew Letters, to admit British troops into Dutch territories, which includes Malacca, as a measure to prevent these territories from falling into the hand of the French. It was considered as a wartime measure only. As a result, in 1795, Malacca and several other Dutch territories in Indonesia were governed by the British. When the war with French ended, Britain handed over Malacca to the Dutch in 1818. In March 1824, the British and the Dutch signed a treaty in London. Resulting from this, among others, the Dutch agreed to hand over Malacca to the British in exchange for Bengkulin [down south on the west coast of Sumatra] which was in the hands of the British since 1685.

¹⁶ A unique system of succession in Perak required that the Sultan's appointment to be made with the approval of the *mentris* - [district] chiefs. Upon the death of Sultan Ali in 1871, the *mentris* gathered to install his successor and to bury his body. The tradition was that, the sultan's body could not be buried before his successor is appointed. Unfortunately, after waiting for forty days, Raja Abdullah, the Raja Muda, who was rightly the heir to the throne failed to attend. This forced the *mentris* to appoint Raja Ismail as the new Sultan in order to proceed with the funeral. Raja Abdullah responded by appointing himself as sultan in 1872. At the same time, the rivalry between the two Chinese gangs, the Ghee Hen and Hai-Sang was getting serious. In order to get recognition of himself as Sultan as well as to handle the Chinese gang-war, Raja Abdullah visited Singapore to meet Sir Andrew Clarke, the Straits Settlement's governor in November 1873. This opportunity was seized by Clark. To the British, a disruption in tin production from the Kinta Valley meant a disruption in the business of Penang because tin from Kinta Valley had been exported through the Penang port. This led to the Pangkor Agreement in January 1874 which marked the first British intervention in the affairs of the Malay States [apart from the Straits Settlements]. Clark, who was not accustomed to the Malays tradition [in the complex selection of *sultan* in Perak] had excluded the *mentris* from the Pangkor negotiations. The agreement recognised Raja Abdullah as the Sultan of Perak, hence dethroning Raja Ismail who was chosen by the *mentris*. The move had undoubtedly angered the *mentris*. Consequently, it gave rise to the anti-British sentiments among the Malays. All this put together, on November 2, 1875, Birch was assassinated by an angry mob while river-bathing at Pasir Salak, in Perak.

1824. This was followed by Selangor¹⁷, Negeri Sembilan¹⁸ and lastly Pahang¹⁹.

However, not until 1909 did the British intervention cover all the Malay States. This followed the Anglo-Siamese treaty in 1909. Siam²⁰ agreed to cede its claim and influence on the Northern States of Kelantan²¹, Trengganu²², Kedah²³ and Perlis, to the British protection. These states were used to send *Bunga Mas* [Golden Flowers i.e. flowers made of gold] every year to the Siamese King as a symbol of 'submission'. In return, the British agreed to loan four million pounds for Siam to build its railway network.

Johor was a bit exceptional. Though not within the fold of the Federated Malay States, the Temenggong [Sultan] of Johor had a close relationship with the British. The advisers possessed vast power and were very influential in the affairs of the state²⁴. By 1905, it seemed that

¹⁷ In November 1873, a Malacca vessel was attacked by a group of pirates in the Straits of Malacca which killed eight of its nine crews. The suspected pirates, of Selangor origin, were caught in Malacca. Clark pressed for their trial to be taken in Selangor in his meeting with the Sultan Abdul Samad in February 1874. The Sultan, fearing that the British would attack his territory in view of the presence of a squadron of British vessels on its coast agreed to the proposed trial. This meeting also forged a diplomatic relationship between the Sultan and Clark. To this, Clark appointed Frank Swettenham as adviser to the Sultan. With the approval of the Residency System, the British government encouraged Clark to appoint J.G. Davidson as the first Resident of Selangor in November 1874.

¹⁸ In April 1874, Clarke managed to sign a treaty with Dato Kelana, the chief of Sungai Ujong in Negeri Sembilan who was at war with Dato Bandar of Rembau. By August, Dato Kelana had asked for a British Residence in Sungai Ujong which started the Residency system in Negeri Sembilan.

¹⁹ In 1883, a boundary dispute arose between Pahang and Jelebu in Negeri Sembilan whereby the British tried to mediate. Frank Swettenham was sent by the Straits Governor, Sir Cecil Smith, to Pahang in 1885 to settle the boundary dispute. Swettenham, later recommended the British to appoint an agent at Pekan [the then capital for Pahang] to protect the British interest. To this, the Straits Governor appointed Hugh Clifford. In February 1888, a British Chinese shopkeeper was murdered which gave ground for Clifford to pressure Sultan Ahmad to seek British protection which he complied with in August the same year. The governor appointed J.P. Roger as the first resident in Pahang.

²⁰ The Siamese influence dated back to 1300 AD. starting with its claim on Kedah. However, by 1826, Kedah was left on its own under the first Anglo-Siamese treaty.

²¹ The Sultan of Kelantan had also asked the British to build a 'factory' in Kelantan though this suggestion was not being fulfilled by the British [T.Newbold, 1839].

²² The British shelled the fort at Kuala Trengganu in 1862 when the ex-Sultan of Lingga, down south of Singapore, who claimed the throne of Johor was using Trengganu as his base [Kennedy, 1967].

²³ Kedah was in fact being left alone by Siam earlier in 1826 [Kennedy, 1967] following the Anglo-Siamese Treaty in 1826. Tajuddin, the then Sultan of Kedah had angered the Siam king by giving away Penang to the British. Because of that he was summoned to Bangkok in 1821, to which he refused to go fearing for his safety and life. Siam despatched an army under the command of the Raja of Ligor to invade Kedah. Tajuddin left for Penang which had been under the British control. Under the Anglo Siamese Treaty [1826], Siam demanded that Tajuddin would cease to be the Sultan of Kedah. Following this Tajuddin left for Malacca. In 1836, Tajuddin left Malacca for Perak to prepare for an invasion of Kedah. British ships despatched to stop him managed to force him back to Malacca. In 1841, Tajuddin sent his eldest son to ask for pardon and restoration from Bangkok. His submission was accepted in 1842 but as a punishment his territory was reduced to what is known as Perlis now.

²⁴ Thio [1969] established four incidents which marked the British hold over Johor. First, the withdrawal of the recognition of the Advisory Board in London in 1905. Second, the enforced retirement of Abdul Rahman, private secretary to the Sultan and Secretary to the Johor Government in 1907. Third, the appointment of a British General Adviser in 1909. Fourth, when Johor accepted a British officer with powers similar to those of a resident in the Federated Malay States in 1914.

the power of these advisers had superseded the Temenggong himself [Thio, 1969].

During World War II, Malaya was occupied by the Japanese²⁵ for three and half years. During this period, anti-Japanese movements were dominated mainly by the activities of the Malayan Communist Party [MCP] and Malayan People's Anti-Japanese Army [MPAJA]; both were Chinese-based. The Chinese anti-Japanese attitude arose as a consequence of the Sino-Japanese war²⁶. The Japanese army themselves treated the Chinese as anti-Japanese elements, thus, after the fall of Singapore, it was estimated that between 40,000 to 100,000 Chinese were executed [Purcell, 1967]. Following the surrender of the Japanese as a result of the atomic bomb attack and the subsequent withdrawal of Japan and the returning of the British, Malaya was in chaos. This was a result of the communist insurgency, known as the period of *Bintang Tiga* [meaning three star]²⁷ orchestrated by MCP and MPAJA. It was mainly a Chinese, instead of communist revolt as a way of making a bid for power [Kennedy 1967]. At the height of this chaos, a state of emergency was declared on June 18, 1948 by the British.

Realising the need for a centralised government, just after the war, the British Government produced a White Paper on January 22, 1946. This White Paper proposed to unite the Federated Malay States, Un-federated Malay States as well as Penang and Malacca into the Malayan Union with the exception of Singapore which was to remain as a British colony mainly on the ground of its [Singapore's] strategic importance - economically²⁸ and geographically²⁹ - and for fear of the Malays objection on the ground of its large number of Chinese population [Chee, 1971]. Under the proposal, the Malayan Union would be headed

²⁵ Japan landed at Pengkalan Chepa in Kelantan on December 7, 1941. Singapore surrendered to the advancing Japanese troops on February 15, 1942. Based on the fact that the Japanese did not invade Siam, Kennedy [1967] interpreted the Japanese invasion on Malaya as an attack on the British. Furthermore, Japan had entered into an alliance with Hitler in 1926-37 in retaliation for the British attitude during the Sino-Japanese War.

²⁶ Since the Japanese invasion of China, Chinese traders have undertook to boycott Japanese goods. [Simandjuntak, 1969].

²⁷ Communists in Southeast Asia, particularly in Malaya and Thailand together with their counterpart in Indochina embraced the ideology of China's Communist Party. Like their mentor, their symbol, pinned on their cap as well as their flag, was three-star.

²⁸ The Malayan Union and Singapore Statement of Policy on Future Constitution, Cmd.6724 [London: HMSO, 1946] para 5, put it as '....being economic and social interest distinct from the mainland'.

²⁹ Chee [1971] also speculated on the possibility of the British to maintain their naval base in the island as a reason for the British to retain Singapore as its colony.

by a [British-appointed] Governor. Strangely, there would be common citizenship between the Malayan Union and the colony of Singapore.

From the start, this proposal was opposed by both the Malay public as well as the *Sultans*. To the former, the main point of opposition was the proposed citizenship to be given and covering all non-Malays either born in the Union after 1942 or had been resident in the Union for ten of the past fifteen years. The public also realised that the proposed Malayan Union would make Malaya not as an independent state but as a British colony [Simandjuntak, 1969]. To 'sell' the idea of the Malayan Union, the British despatched Sir Harold MacMichael with a mounting task of consulting and getting the approval of the *Sultans*. Initially, the *Sultans* agreed to the proposal only to change their minds later. If the idea of the Malayan Union went through, the role of the *Sultans* would be limited to things pertaining to the Muslim matters with no political influence. The *Sultans* argued that their earlier agreement [to the proposal] arose from the fear that the British would not recognise them as worthy rulers if they refused to sign it [Simandjuntak, 1969]. They also argued that they have been given little time [Kennedy, 1967] for consultation. Lead by Dato' Onn Jaafar³⁰, who formed the United Malay National Organisation [UMNO] in March 1946, public objections grew stronger.

Resulting from this wider opposition, the idea of the Malayan Union was then abandoned. In 1948, a new set-up was proposed which would recognise Malaya not as a colony but as an independent state. With this, Malaya gained her independence on 31 August 1957 and was known as *Persekutuan Tanah Melayu* or the Federation of Malaya.

In May 1959, Singapore went into election. The result of this election saw the People's Action Party [PAP] headed by Lee Kuan Yew come into power. PAP pursued the idea of gaining independence for Singapore, but, by joining the Federation of Malaya³¹. On July 19, 1961, Dr. Toh Chin Chye, PAP Chairman formally announced PAP's intention to

³⁰ Dato' Onn left UMNO in 1951 to form *Parti Negara*. The leadership of UMNO was taken over by a prince from Kedah, Tunku Abdul Rahman, who later became the *Bapa Merdeka* - Independence Father - and the first Prime Minister.

³¹ Earlier efforts to join the Federation which was proposed by the Labour Government headed by David Marshall and Lim Yew Hock were rejected by the Malayan Prime Minister.

be 'independence through merger with the Federation of Malaya or a larger federation, including the Borneo territories'³². This followed earlier remarks by the then Prime Minister of the Federation of Malaya, [the late] Tunku Abdul Rahman on May 27, 1961 urging for closer political and economic relation between the Federation, Singapore³³, Sabah, Brunei and Sarawak³⁴. The four, Singapore, Sabah, Brunei and Sarawak were then under British rule. The idea was objected to by both the Philippines³⁵ and Indonesia³⁶.

Singapore held a referendum on September 1, 1962 with 71 percent of the voters agreeing for a merger. The Malaysian Agreement was signed on July 1963 in London to take effect from September 16, 1963. Brunei backed-out from the idea [of joining the new federation]³⁷, mainly on the question of the precedence of the Sultan of Brunei in becoming The *Yang Dipertuan Agung*³⁸ [Simandjuntak, 1969]. Hence, on September, 16, 1963, Malaysia came into existence as a federation between the *Persekutuan Tanah Melayu*, Singapore, Sabah and Sarawak³⁹. Nevertheless, the marriage did not last longer. On August 9, 1965, Singapore was expelled from Malaysia⁴⁰.

³² Straits Times, July 19, 1961.

³³ Singapore's interest was based on three reasons [Chee, 1971:4-5]. First, was the economic factor following Kuan Yew's remark that 'it is the hinterland which produces rubber and tin that keeps our shop window economy going' [Lee Kuan Yew, the Battle For Merger, 1961]. Second, 'an independent Singapore would not be economically, militarily and politically viable'. Third, as a way to halt Singapore politics from shifting further to the left. A left Singapore would also become a threat to Malaya. This fear encouraged the Malayan Prime Minister to change his attitude.

³⁴ Straits Times, May, 28, 1961.

³⁵ In June 1962, Philippines claimed ownership over Sabah on the ground that Sultan of Sulu [Sulu lies to the south of Philippines] leased it to the British on January 22, 1878. The Philippines claim has not been dropped until today despite the fact that the relation between Malaysia and Philippines especially through ASEAN [Association of South East Asia Nation] is strong. Also, in June 1962, the then President Macapagal of Philippines suggested the formation of Greater Malaysian Confederation comprising Malaya, Philippines, Singapore, Sabah and Sarawak. His Vice-President, Emmanuel Palae suggested the formation of an even greater federation, MAPHILINDO, to include also Indonesia.

³⁶ Indonesia also objected the idea of Malaysia and later sent its army to Johor.

³⁷ Brunei remained as a British colony until it obtained its independence in 1990.

³⁸ The constitution set that the King, known as the Yang Di Pertuan Agung would be rotated every five years between the nine Sultans.

³⁹ On the initiative of the United Nations, it was agreed that a referendum would be held for both Sabah and Sarawak. On 7 September, 1963, the then UN secretary general, U Thant announced that 'there is no doubt about the wishes of the sizeable majority of the people of these territories to join the Federation of Malaysia' [UN Malaysian Mission Report].

⁴⁰ Ever since joining Malaysia, Singapore had become a problem - a thorn in the flesh - for the Federal government of Prime Minister Tunku Abdul Rahman. The initial decision to expel Singapore was made by Tunku on July 25, 1965 while lying in bed in a hospital in London after attending the Commonwealth Prime Minister Conference in June 1965. He returned to Malaysia on August 5. An official announcement was made in Parliament on August 9. Political enthusiasm was the main reason for this. Singapore's PAP treated the national Alliance [UMNO-MCA-MIC] 'as both a partner in Malaysia and as a political opponent' [Meades, 1976:337]. In the 1964 general election, PAP attempted to make a foot-hold on Malaysian politics by fielding nine parliamentary candidates. This move was a direct attempt to challenge the alliance by choosing to contest against MCA's candidates, in the constituency where the Chinese vote is large. Nevertheless, only one out of their nine candidates won the contest. Yet, damage have been done. A challenge on MCA was considered as a

4.3 THE BACKGROUND AND EMERGENCE OF THE PLURAL SOCIETY

4.3.1 The British Intervention.

British intervention in the Malay States in the nineteenth century arose as a result of increased interest and stake in the tin and [later] rubber industry. Administrative and political commitment placed upon the British a huge financial responsibilities. In 1930, "salaries paid to European officers used up to eighty per cent of the annual revenue" of Malaya [Heussler, 1981: 247]. These responsibilities were met merely by revenue from the tin industry which played a major role in the government finance.

Malaya was indeed a rich country. This was proven when in 1926, its exports "were worth more than all the other British dependencies combined The export value per head of population of British Malaya was the highest in the world⁴¹" [Ormsby-Gore, 1928]. This was contributed mainly by the tin industry.

In 1898, duty from the tin industry alone was 34.2 per cent of the total revenue from the Federated Malay States⁴²; in 1909, it accounted for 28.3 per cent of the total revenues collected from these states [Chan 1967]. The interest in the development of tin industry⁴³ also resulted in the British building the first railway line between Taiping and Port Weld in Penang which was opened in 1885⁴⁴. In 1877, the British introduced rubber into Malaya. Twenty-two rubber plants were brought from Ceylon [now Sri Lanka] to Singapore; some were planted at the Botanical Gardens in Singapore and some were taken to Perak and were

challenge on UMNO because of the close alliance between the two. On the other hand, their slogan 'Malaysian Malaysia' was considered as a direct challenge on the special status accorded by the constitution on the Malays.

⁴¹ This included India, Ceylon, Nigeria, Uganda, Kenya, Egypt and Fiji; see Cmmd. Paper 3235, 1928.

⁴² Duty on Tin against Revenue of F.M.S. [Chan, 1967, p.176]:

1898 - \$3,210,699 [34.29%] of \$9,364,167	1899 - \$6,181,542 [45.84%] of \$13,486,410
1900 - \$7,050,382 [45.17%] of \$15,609,807	1901 - \$6,968,183 [39.72%] of \$17,541,507
1902 - \$8,438,775 [41.06%] of \$20,550,543	1903 - \$9,590,505 [42.30%] of \$22,672,567
1904 - \$8,814,688 [39.61%] of \$22,255,269	1905 - \$9,249,627 [38.60%] of \$23,964,593
1906 - \$10,036,798 [36.87%] of \$27,223,476	1907 - \$9,395,825 [32.63%] of \$28,793,745
1908 - \$7,285,864 [29.59%] of \$24,623,325	1909 - \$7,155,124 [28.34%] of \$25,246,863

⁴³ Tin was discovered around 1711 in Peninsula Malaysia [Wong Lin Ken, 1965 and Yip Yat Hoong [1969].

⁴⁴ In 1886, the Kuala Lumpur and Port Swettenham [now Port Klang] line was opened. The Teluk Intan-Ipoh line was opened in 1891. In 1895, Tapah-Telok Anson [in Perak] and Seremban to Port Dickson [in Negeri Sembilan] were joined by railways. So much so that, by 1923, the railway lines stretched from Singapore in the south to the border with Thailand in the North.

planted at Hugh Low's - the then Resident for Perak from 1877-1889 - Residency Garden in Kuala Kangsar [Kennedy, 1967].

Interest in the development of the tin industry⁴⁵ and later the rubber industry encouraged the British to have an open policy with respect to the immigration of the Chinese⁴⁶ and Indian⁴⁷ communities into Malaya. And, it was also a factor that led to the first British 'intervention'⁴⁸ in the affairs of the Malay States in Perak⁴⁹.

Prior to the Pangkor Agreement in 1874, the British attitude was one of non-intervention. Lord Kimberly, the Secretary of State wrote to Sir Andrew Clarke that "Her Majesty's Government have, it need hardly be said, no desire to interfere in the internal affairs of the Malay States; but, looking to the long and intimate connection between them and the British Government Her Majesty's Government find it incumbent to employ such influence as they possess" [Swettenham, 1906: 174-175]. The effect of this was a mandate given to the Governor of the Straits Settlement to intervene in the Malay States⁵⁰. This was enforced by Swettenham when he said that "the Residents has exercised, or tried to exercise, an influence which could not truthfully be defined as the simple offer of advice" [Swettenham, 1906: 221]. With the signing of the Pangkor Agreement in 1874, an active British intervention followed. Clause Six and Ten of the agreement stipulated that the Sultan's jurisdiction was limited to those concerning Islam and Malay customs only and that all revenues and administration were subjected to the

⁴⁵ In Perak, the major tin mining area was the Larut District where large scale mining started in 1840. In Selangor, the mining industry developed in several places - Lukut [by early 1824], Kanching [1840] and Ampang [1840]. In Negeri Sembilan, the main mining industry was at Sungai Ujong.

⁴⁶ Purcell [1967] argued that most of Chinese immigrants overseas originated from Kwangtung and Fukien on the south-eastern province of China. Acknowledging the pressure of over-population which was less severe than other provinces, Purcell suggested that the main reason for the Chinese to come to Malaya was the close proximity between that southern part of China to Malaya and the similarity in climate.

⁴⁷ Most of the Indians were brought in to work in the estates. Before rubber were introduced in Malaya, these people were brought in to work in coffee plantation.

⁴⁸ Interestingly, the term intervention was also used by earlier writers. See, for example, Kennedy [1967], Tarling [1969], Chan [1969]. Chan suggested that the main motive for the British to change its non-intervention policies in the Malay States was the fear that the French who had been in the Indochina would invade Siam and hence, Siam's territorial claim over Kedah, Perlis, Kelantan and Trengganu would mean that the French would eventually land on the Malay Peninsula. Undoubtedly, the economic factors were behind all this calculation.

⁴⁹ We note that the first British intervention in Perak as well as in Malaya arose after the Pangkor Agreement with the appointment of J.W.W. Birch as the first British residence. This in itself differs from the British presence in the Straits Settlement. Apart from Malacca which was exchanged [!] with Bengkulen, the opening of Penang by Francis Light and Singapore by Stanford Raffles was done by force. Nevertheless, this intervention itself arrived at the naivety of the rulers at the time which opened avenues for such intervention.

⁵⁰ The Malay States referred to here exclude the Straits Settlement since the British were already present in the Straits Settlement earlier.

advice of the Resident [Chan, 1967]. Following the Pangkor Agreement, J.W.W. Birch was appointed as the first Resident for Perak.

At the time of the Dutch siege of Malacca in 1641, the Chinese⁵¹ population in Malacca was only around 300-400 people [Purcell, 1967]. Sir Hugh Low, writing in 1882, eight years after the Pangkor Agreement, wrote the following to describe the situation in Perak⁵² with respect to the Chinese population:

"the number of Chinese miners has increased from about 9,000 in 1877 to probably 50,000 at the time of writing, and they are still arriving in crowds Having been **imported** direct from the inland districts of China, they are of all men the most rude, conceited and ignorant, with no confidence in Europeans, easily oppressed and misled by their own countrymen who employed them and who were themselves greatly influenced by the secret societies in Penang, especially in the coast districts of Perak".⁵³

Table 4.1 below describes the development of the Chinese [and Indian] communities in Malaya. In the Straits Settlements, the percentage of the Chinese community surpassed the Malays since 1891. In 1891, the Malays constituted 41.45 per cent of the total population compared to the Chinese 44.60 per cent. Sixty years earlier in 1833-34, the Malays were 64.96 per cent and the Chinese a mere 17.52 per cent. By 1931, the percentage of the Malays dropped to 24.95 per cent whereas the percentage of the Chinese communities increased to 60.02 per cent. Prior to the Japanese invasion in 1942, Malays constituted only 21.75 per cent of the Straits Settlement's population compared to 64.73 per cent Chinese and 10.42 per cent Indians.

⁵¹ The first contact between the Malays and the Chinese was much earlier than that. Malacca was established by a prince from Palembang on the west coast of Sumatra, Indonesia. Before coming to Malacca, Parameswara declared his Palembang territory independent from the ruler of Majapahit. Pursued by the ruler of Majapahit, he was forced to flee and was welcomed by the ruler of Singapore in about 1390. He later tried to overthrow the ruler of Singapore and had him murdered. This incident angered the King of Siam [Thailand] who was related by marriage to the deceased ruler of Singapore which put him on the run again. This time, he proceeded to Muar, in Johor. He settled in Muar for six years before sailed north of the Muar River to Malacca. To protect his newly established kingdom from the threat of the King of Siam, Parameswara eventually accepted and later established a friendship with a King from the dynasty Ming in China. This friendship had seen the visit of Admiral Cheng Ho from China in 1409 and the official visit by Parameswara, altogether with 450 people [Purcell, 1967] to Peking in 1411. Based on a Chinese Muslim account brought by Cheng Ho in one of his trips to Malacca, there was no Chinese settlement during such Cheng Ho's voyages [Purcell, 1967, p.18]. The height of the relationship was the marriage between Sultan Iskandar Shah [the second king of Malacca] to the daughter of 'the king of the China's Captain' [Purcell, 1967]. This 'daughter of 'the king of the China's Captain' was Puteri [Princess] Hang Li Poh who was brought to Malacca together with several other Chinese. The descendents of this small Chinese community still exist till today and is known as the baba community who has adopted the Malay culture which was very much different from the later immigrants.

⁵² Low must be referring to the mining industry in Perak since at the time he wrote this, he was the Resident of Perak between 1877-1889.

⁵³ Unmistakable, Low used the magic word 'imported' which is explanatory in itself. See, [Purcell, 1967:114].

In the Federated Malay States, similar imbalances existed. In 1891 the Malays constituted 55.69 per cent compared to 39.10 per cent Chinese and 4.74 per cent Indians. In 1911, the Malay proportion dropped to 40.82 per cent and the Chinese increased to 41.68 per cent. By 1941, the Malays ratio dropped further to 32.67 per cent, the Chinese increased to 44.74 per cent and the Indians 21.07 per cent.

Table 4.1
POPULATION BY ETHNIC GROUP, 1833-1931.
[Total in Thousands]

	MALAYS ^a		CHINESE		INDIANS		OTHERS ^b		TOTAL POPULATION
	Total	%	Total	%	Total	%	Total	%	
Straits Settlement									
1833-4	89	64.96	24	17.52	15	10.95	8	5.84	137
1850-2	135	60.54	63	28.25	17	7.62	8	3.59	223
1871	161	52.27	104	33.77	34	11.04	10	3.25	308
1891	211	41.45	227	44.60	54	10.61	17	3.33	509
1901	214	37.61	282	49.56	55	9.67	18	3.16	569
1911	232	32.77	370	52.26	81	11.44	23	3.25	708
1921	249	28.33	501	57.00	102	11.60	28	3.19	879
1931	274	24.95	659	60.02	129	11.75	36	3.28	1,098
1941	310	21.75	924	64.73	147	10.42	44	3.10	1,427
Federated Malay States									
1891	235	55.69	165	39.10	20	4.74	2	0.47	422
1901	315	46.12	302	44.22	58	8.49	5	0.73	683
1911	427	40.82	436	41.68	174	16.63	11	1.05	1,046
1921	516	38.59	498	37.25	309	23.11	14	1.05	1,337
1931	601	34.68	719	41.49	385	22.22	28	1.62	1,733
1941	723	32.67	990	44.74	466	21.07	34	1.53	2,212
Un-federated Malay States									
1911	758	84.22	112	12.44	13	1.44	17	1.89	900
1921	862	76.62	181	16.09	62	5.51	21	1.87	1,125
1931	1,056	69.16	331	21.68	111	7.27	29	1.90	1,527
1941	1,246	66.53	466	24.88	130	6.92	31	1.67	1,872
Peninsular Malaysia [Malaya]									
1911	1,373	58.63	695	29.68	240	10.25	35	1.49	2,342
1921	1,569	53.92	857	29.45	440	15.12	43	1.48	2,910
1931	1,863	49.17	1,285	33.91	573	15.12	67	1.80	3,789
1941	2,279	41.34	2,379	43.17	744	13.50	109	1.98	5,511

Sources: Adjusted for this purpose from Table 2.1, D. R. Snodgrass [1980] page 24. [Original sources cited was M.V. del Tufo [1949]; R. Chander [1971] except for figure for 1941 which is taken from Appendix II, V. Purcell [1967].

note: a. The data for Malays included a term 'Other Malaysians', a category uses in the census from 1871 to 1947 comprises immigrants of Malays stocks (presumably from the neighbouring Indonesia) and 'orang asli' [aborigines]

b. Other races to be found in Malaysia include Punjabi, Sikh, Bengali, European, Eurasian as well as Siamese.

Unlike the Straits Settlements and the Federated Malay States, the comparative percentages were in favour of Malays in the Un-federated Malay States, probably due to the absence of the mining industry. In 1911, for example, the Malays in the Un-federated Malay States were 84.22 per cent and the Chinese were 12.44 per cent; and in 1931 the Malays were 69.16 per cent whereas the Chinese were 21.68

per cent. In 1941, the Malays were 66.53, the Chinese 24.88 and the Indians 6.92 per cent.

In Malaya as a whole, the Chinese population has increased tremendously since 1931. By 1941, as shown in Table 4.1 above, the Chinese population had increased to 43.17 per cent compared to 41.34 per cent Malays and 13.50 per cent Indian whereas thirty years earlier in 1911, the proportion was 58.63 per cent, 29.68 per cent and 10.25 per cent for Malays, Chinese and Indians respectively. In some states, for example Singapore and Penang Island⁵⁴, the percentage of the Chinese population was even bigger - 77.96 percent and 67.48 per cent respectively.

Table 4.2 below shows the racial composition for five different periods - in 1931, in 1941 [i.e. prior to the Japanese occupation in 1942], at the time of independence in 1957, after the formation of Malaysia in 1964 - when Singapore, Sabah and Sarawak joined the Federation, and in 1970. The latter is significant in explaining the racial composition after the May 13, 1969 incident.

Table 4.2
Malaya and Malaysia: Composition Of Population 1931-1970

Races/Year	1931	1941	1957 ^a	1964	1970
Malays and Indigenous Group ^b	49.17 %	41.34 %	46.5 %	46.1 %	53.18 %
Chinese	33.91 %	43.17 %	42.0 %	42.2 %	35.45 %
Indian	15.12 %	13.50 %	9.3 %	9.4 %	10.59 %
Others	1.80 %	1.98 %	2.2 %	2.3 %	0.59 %

Sources: Adjusted for this purpose from Table 2.1 [Snodgrass, 1978] and Table 2.3 [Means, 1976]

note: a. Figures for 1957 includes Singapore even though Singapore joined Malaysian in 1963.

b. Malays and Indigenous include both Muslim and non-Muslim tribal people, mostly from Sabah and Sarawak.

Table 4.2 above clearly shows the development of the Chinese population in both Malaya and Malaysia from the period 1931-1970. The expulsion of Singapore on August 9, 1965 helped to increase the percentage of Malays in Malaysia in 1970 as shown by Table 4.2 above. With its [Singapore] 76.2 per cent Chinese population in 1970, the expulsion swung the number of Malays in Malaysia to 53.18 per cent compared to 35.45 per cent Chinese and 10.59 per cent Indians. This was an increase from 46.1 per cent in 1964 and a decrease from 42.2 per

⁵⁴ This figure includes only the Penang island, thus, excluding the population of Province Wellesley which is part of Penang.

cent for the Chinese population and a rise from 9.4 per cent for the Indians population.

For illustration, Table 4.3 shows the population mix in Singapore in 1970 [five years after the expulsion]. On this ground, the expulsion helped to improve the Malays proportion and in itself helped to improve the racial imbalance in Malaysia in favour of the Malays.

Table 4.3
Population of Singapore: 1970

	Numbers	%
Malays	311,379	15.1
Chinese	1,579,866	76.2
Indians	145,169	6.9
Others	38,093	1.8
TOTAL	2,074,507	100.0

Sources: P. Arumainathan, *Census of Population, 1970, Singapore, Interim Release, Table 1*

4.3.2 Invincible Hand

Strangely enough, the Chinese, in their search for livelihood landed in huge numbers in Malaya despite the fact that Indochina and Thailand are much closer to China; nor did they sail to the Philippines and Indonesia. Chan [1967] explained this by acknowledging that unlike the French [in Indochina], the Spanish [in Philippines] and the Dutch [in Indonesia], the British did not persecute the Chinese. This probably explains the reason for the Chinese to flock into Malaya. This line of argument however, neglects the similar fact about the British presence in Malaya and China.

This conducive environment coupled with the prospect of better monetary rewards produced its own chain effect. Despite facing various problems during their initial period in Malaya, having to work for nothing to reimburse their travel costs, they later managed to free themselves and started to enjoy a better livelihood. This good news reached home and hence, encouraged others to follow their footsteps. For those already in Malaya, having survived the initial hardship, they started to bring their families from China. This contributed to a huge migration of Chinese into Malaya in the beginning of the 20th century.

The same applied to the Indians [Chan, 1967] who came first as labourer in the coffee plantations and later in the rubber estates.

Many writers have argued that most of the Chinese who migrated to Malaya initially had no intention of settling down there [see for example Snodgrass, 1980; Purcell, 1967; Chan, 1967; Kennedy 1967]. However, later, realising the opportunities ahead of them, the idea of settling down in Malaya emerged.

Though tin mining had been operating for a long time, few, during the nineteenth and early twentieth century, realised the productive nature of Malaysian soils, hence, its potential. The Malays, as peasant farmers, embarked only on small scale agricultural activities. These activities were limited to the production of rice, as staple food, and vegetables, without any commercial and large-scale activities⁵⁵. The first attempt to introduce commercial agricultural activities was a failure. The British, after a successful experiment in Ceylon and India introduced coffee into Malaya which was met with failure. Both the planters, which were mostly Europeans [English] as well as the Indian labours left home. Only after rubber was introduced into Malaya, were larger numbers of Indian labourers required and hence, brought in from India⁵⁶. This marked the beginning of an active flow of immigrants from India.

Apparently, the British themselves played an active role in encouraging the emigrants to come. Not only did the policy which they embraced helped the emigrants but also the measures they took assisted the emigrants to flock into Malaysia. To this, Chan [1967] wrote: "...the growth of modern Malaya stemmed from the symbiotic relationship between the British administrators and the Chinese immigrants" [p. 104]. Further, as pointed also by Chan [1967:3], "Chinese enterprise in the tin mines in the Larut district of Perak and Kuala Lumpur was largely financed by Straits traders" who were Europeans.

⁵⁵ Malaya today is a strong agricultural based economy. Commercial agricultural activities includes rubber, palm oil, cocoa, pineapples and bananas.

⁵⁶ Prior to this, Indians who arrived into Malaya were mostly entrepreneurs and these people settled mostly in the Straits Settlements particularly in Penang and Singapore. Nevertheless, some were brought to work as domestic servants.

Three separate measures were taken by the British to help the new Chinese emigrants. In 1877, to assist the Chinese emigrants, the Chinese Protectorate was established headed by W.A. Pickering⁵⁷. The Protectorate's task was to "register labour contracts and generally to protect the *Sin-Khehs* [new emigrants] from injustice and exploitation" [Chan, 1967:109]. In addition, an Ordinance was passed to penalise anyone who induced the emigrants to leave either by force or by fraud. In 1880, a legislation was passed to prevent the brokers from charging excessive levies on the *Shin-Khehs*. Later, in 1889 an ordinance was drafted to protect Chinese labourers in agricultural estates, though it was never introduced.

By 1883, Perak, as the first Malay State to have a British resident, itself had a Chinese Department. The Chinese Agricultural Labourers' Protection Ordinance was passed in 1891. The ordinance regulated working hours and working days, holidays, accommodation and medical assistance for the Chinese workers in Malaya. On top of all these, in 1904, a convention was signed between Britain and China to regulate emigration to British colonies. Undoubtedly, this was aimed at Chinese emigrants to Malaya⁵⁸.

Indian emigration started with the opening of Penang. Prior to 1867, i.e. before the colonies were transferred from the administration of the Indian Office to the Colonial Office, convict labour was used by the Public Work Department in Singapore⁵⁹ [Chan, 1967]. This arose as a result of the Indian Government Act 1864, which made it illegal to employ Indians overseas. However, this was later relaxed and in 1884 migration to Malaya was legalised. A further move in assisting the Indian emigrants was the subsidy given to cover the steamship journey from India⁶⁰ operated by the British India Steam Navigation Company⁶¹. A Bill introduced in 1897, among others set the minimum wage and duration of contract of an Indian labour. Another Bill in 1898 empowered the

⁵⁷ Among the *Shin-Kheh*, the directorate was better known as *Pickeling* from the name Pickering [Chan, 1967].

⁵⁸ The closest colony was undoubtedly Malaysia. Others within the area were Burma and India [which then included the present day Pakistan and Bangladesh].

⁵⁹ One such example was the building of St. Andrew's Cathedral and Government House.

⁶⁰ Perak, Selangor, Negeri Sembilan and Johor contributed \$30,000 for this purpose [N.Jegathesan, Migration Of Indian Labour Into Malaya, unpublished thesis for the degree of B.A.Hons., University of Malaya p.20].

⁶¹ Major port involved in this process was between Penang and Negapatam and Madras in India.

authorities in Malaya to punish emigrants who failed to fulfill contracts signed in India. In 1901, it was suggested by the Protectorate of Labour that the government should provide grain for labourers engaged in big public works. Also, in 1901, subsidies were extended to cover not only immigration but also mail steamship services. Further in 1904, Sir John Anderson, the Governor General provided 6,000 free passage tickets on the steamships.

Needless to say, in both profitable ventures, i.e. in the tin mining and the rubber plantation, the Malays were left-out. It is difficult to reason why the Malays were left-out. Most likely, the social set-up contributed a lot to it. A few historians have tried to give some insight to this issue. Chan [1967:145], for example, argued that 'aversion of organised labour' was one of the reason for them to be left-out. Nevertheless we could argue that the Malays possessed their own plot of land or at least they could easily rent a piece of land for agriculture activities; to produce the grains and vegetables needed for their self-consumptions. For that, they could see no reason to participate in such activities. It is indeed true that the 'Malays were living without the strain and stress of a more materialistic life' [Chan, 1967:110]. It must also be recognised that the Malays who were 'integrated into a tightly-knit political, economic, social and religious system, could not easily break away from the accustomed pattern of living, nor was there any real desire to do so' [Heussler, 1981:145]. As a tightly-knit society, they would view the British method [of farming] and culture introduced, if not imposed on them, as either alien or interference in their way of life, or both. This could also explain the reception given by the vast majority the Malays towards the British presence in Malaya.

On the other hand, Alatas [1965] blamed the cultural tenets of the Malays which resulted in them being neglected. He argued that the Malays were beset by the belief that they were helpless because the universe is run by the powerful animistic and demonic forces that regulate their life. Among the Malays, there was the belief and practice of assigning 'spirits' to many single thing, hence the tree-spirit, the rice-spirit, the sea-spirit, etcetera, was so strong that every single occurrence was assigned to certain spirits [Parkinson, 1967]. Among the religious

Malays, there occurred also the misconception of the Islamic concept of *rezki*⁶² [Swift, 1965] - the divine provision by the Almighty. In line with this argument, it can be observed that among the traditional Malays, there was the belief that *rezeki secupak tak akan jadi segantang*, which is hard to translate but can be explained as follows: if the *rezeki* [i.e. the divinely provision] is a pot [of grain, rice, or what so ever], nothing can be done to change it to a barrel.

Ungku Aziz [1964] has argued otherwise, that the system that operated was designed not to benefit the interest of the Malays but to advance the interests of the big commercial concerns especially the immigrant Chinese and Indian workers. We must not forget that the presence of the colonial powers in Malaya had always been rejected and opposed by the Malays. It can be seen from the struggle against the colonial powers throughout the countries⁶³. Lack of co-operation from the local Malay community forced the colonial power to *import* workers from other part of its colony. In describing the presence of poverty among the rural Malays, Lim [1973: 60] argued that [*italics are mine*]:

Amidst the neglect and the paternalism, the Chinese businessmen prospered. The British import and export houses *needed* an intermediary to trade with the rural population and the commercially minded Chinese migrants were quick to seize the opportunity. *They were helped by the agency houses which gave them sole distribution facilities and the government also helped by giving them exclusive transport licenses and other rights.* In time these traders were able to charge monopolistic prices and to buy at monopsonistic prices. Hemmed in on all sides, the rural Malays were left on their own and slowly but steadily poverty became their lot.

4.4 THE 1957 BARGAIN

Prior to *merdeka* [independence], a national election was held in 1955 to elect 52 Legislative Council under the term provided by the *Federation of*

⁶² *Rezki*, in Islam means the divine provision by Almighty onto human beings. This one was often being misunderstood by ordinary people. Though *rezki* is the divine provision, it nevertheless does not mean that one should not strive hard to better one's own life. It can only be used when one has put the best effort possible yet cannot attain better than what one has managed to gain. In other words, it is more as a way to console oneself.

⁶³ Throughout Malaya, separate groups emerged to wage resistance onto the colonial powers. For example, Tok Janggut in Kelantan, Abdul Rahman Limbong in Terengganu, Mat Kilau and Dato' Bahaman Orang Tua Semantan in Pahang, and the religious revivalist cum political group *Hisbul Muslimin* which was later disbanded.

Malaya Agreement signed in 1948. 51 seats were won by the Alliance Party comprising UMNO [United Malay National Organisation], MCA [Malaysian Chinese Association] and MIC [Malaysian Indian Congress]. This sort of cooperation between the Malays and the Chinese had started earlier during the Kuala Lumpur Municipal Council election in 1952. With this spirit, the Alliance entered into pre-independence negotiations with the British. These negotiations were held at two levels. The first was between the British and a delegation of the Alliance Party including representatives of the nine Sultans. The second was between the Alliance itself mainly to resolve the ethnic issues, especially issues related to the problem of citizenship of non-Malays viz. the Chinese and the Indians who form the majority of the non-Malays.

The '1957 Bargain' as it is known, produced a set of compromises between the various ethnic groups by which the Malays would make some concession on the question of the non-Malays citizenship and the non-Malays would recognise the special position of the Malays. On the issue of citizenship, the 1957 Constitution accorded citizenship on two categories. First, citizenship was accorded *jus soli* for those born after *Merdeka* Day [31 August 1957]. Second, citizenship for those that [a] had resided in the federation during five of the past seven years prior to *Merdeka* Day, [b] intended to do so permanently, [c] were of good character, and [d] had elementary knowledge of Malay language.

On the part of the Malays, this concession was both generous and substantial. It was generous because, as a result of it, a million non-Malays became the Federation citizens during the two years registration after the *Merdeka* day. It was very generous considering that the Malayan Union⁶⁴ proposal, opposed earlier by UMNO and the sultans mainly on

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In January 1946, the British Government produced a White paper proposing to unite the Federated Malay States, Un-federated Malay States as well as Penang and Malacca into the Malayan Union. This followed the setting up of the Malayan Planning Unit in 1943. It recommended: [i] a Malayan Union of the whole Peninsula plus Penang island, [ii] a separate government for the Colony of Singapore, [iii] a Governor-general over the Malayan Union and the Colony of Singapore and [iv] a common citizenship for the Malayan Union and the Colony of Singapore. The Sultan was to remain but with limited power, covering mainly the affairs of the Muslims. Everything had to be subjected to the approval by the Governor. The most controversial part was the problem of citizenship. The British suggested that all persons who were born in Malaya or Singapore, irrespective of race and immigrants who had been in residence in the two territories for ten of the past fifteen years before February 15, 1942 would automatically get their citizenship thus being eligible to be a member of the Malayan Union Legislative Council and the State and Settlement Councils as well as in the public services. Opposition to this idea of the Malayan Union became apparent. Dato' Onn Jaafar, the district Officer in Batu Pahat, Johor, established a United Malays Organisation. At a meeting with the other 41 Malay Organisation held in Kuala Lumpur in March 1946, an all-Malay political party, United Malays National Organisation [UMNO] was formed with a slogan 'We want protection, not annexation'. Apparently, some modification was

the issue of citizenship to the non-Malays proposed that citizenship would be accorded to those non-Malays resided in the Federation in ten of the past fifteen years prior to February 15, 1942. In return to the generosity of the Malays leader [in the negotiations], the non-Malays accepted Malay as the national language, Islam as the official religion and a few other special rights accorded to the Malays [for example, the position of the *Sultans* and Malay Reserved Land].

When the racial conflict of May 13, 1969 broke out, the Government realised that the racial segregation inherited from the colonial period had refused to die out. The official report of the National Operation Council, 1969, p.1 stated:

The present multi-racial character of the country is the direct result of British economic policy before the war which encouraged mass non-Malay immigration Malaya's vast economic potential and the liberal, tolerant attitude of the Malays, exploited by the colonial government, caused an influx of Chinese and Indian immigrants, and mass migration continued until the thirties.

A striking features of the Malaysian society at the time [which continues today, slightly abated] was the voluntary cultural segregation - while the Malays lived in a cultural milieu that institutionally continued in a local context, there was no effort made by the colonial authorities to orientate the increasing number of immigrants races towards local institutions. For the most part, the immigrants races were administered independently and lead an independent existence. This partly explains some current attitudes among certain sections of the non-Malay communities, and some difficulties experienced today in the nation-building.

4.5 POLITICO-ECONOMIC ENVIRONMENT

4.5.1 Political situation

Two years after independence in 1959, Malayan went into election. The Alliance [UMNO, MCA and MIC] won 74 of the 104 seats contested at national levels⁶⁵. Malays constituted only 57 per cent of the electorate⁶⁶. Compared to the pre-independence election in 1955, the popular vote

introduced to the Malayan Union charter later but to the dissatisfaction of the Malays. Meantime, Sir Edward Gent was installed as the Malayan Union's first Governor. Some former British civil servants in Malaya, namely Gammans, Rees-William, Winstedt and Swettenham voiced the Malays grievances in London as well as objecting to the idea of the Malayan Union. In view of all of these objections, a meeting was held between the Rulers and Gent in July 1946 in Kuala Lumpur which then was followed by several other meetings. On 24 December, 1946, it was made public that the Malayan Union, will be replaced by 'The Federation of Malaya'.

⁶⁵ Like Britain, Malaysia has two levels of House - House of Representatives [Dewan Rakyat] and the Senate [Dewan Negara]. Members of the house of representative were elected in the general election. The constitution required that the election must be held every five years. Members for the Senate [Dewan Negara] are appointed by the government

⁶⁶ 84 per cent in 1955

obtained by the Alliance dropped from 79.6 percent to 51.8 percent [Snodgrass, 1980]. In Kelantan and Trengganu where the Malays constituted the vast percentage of the electorate, the Alliance lost the State Assembly to the Pan-Islamic Party, better known by its Malay acronym, PAS, and won only two of the sixteen parliamentary seats in the two states.

On 16 September 1963, the two Borneo States of Sabah and Sarawak together with Singapore joined the federation. As required by the constitution, another election was held in 1964. This election portrayed three main features. First, the Alliance⁶⁷ had a landslide win - 89 out of 104 seats in the parliament and the popular vote was 58.5 per cent. Second, it still failed to take over Kelantan from PAS⁶⁸. Third, and most importantly in the context of the present discussion, the People's Action Party [PAP] headed by Lee Kuan Yew made its mark in Malaysian politics.

Lee Kuan Yew's PAP campaign theme was 'A Malaysian Malaysia' which was regarded by UMNO and its alliance as an attack on the special status of the Malays. Due to this, they managed to attract the sympathy of the Chinese voters. When Singapore was expelled from Malaysia in 1965, PAP automatically ceased to participate in Malaysian politics. However, its sister party, the Democratic Action Party [DAP] was formed in March 1966 as its replacement.

Between the 1964 and 1969 elections, the political climate was tense. Among the Chinese, the issue of the special rights of the Malays as accorded by the constitution was a major grievance. In November 1967, the Chinese were rioting in Penang following the loss suffered as a result of the pound sterling devaluation. The Democratic Action Party [DAP] was calling for the abolition of the Malays right - an extension of 'Malaysian Malaysia' campaign championed by PAP. On the other side, the Malay rightists, intensified their "fight" for a wider usage of *Bahasa Melayu* - Malay Language. The Pan-Malaysian Islamic Party [PAS] were increasingly becoming vocal on the issue of Malay and Muslim rights. In

⁶⁷ The Alliance now included several political parties from both Sabah and Sarawak.

⁶⁸ A few months after the 1959 election, the Alliance took control of Trengganu when some members of the State Assembly from PAS elected in that election switched camps and joined UMNO.

this kind of situation, UMNO, as a Malay partner in the Alliance and the government were forced to address the Malays issues leaving both the MCA and MIC to handle the Chinese and Indian respectively which proved to be 'unworthy of the task' [Bedlington, 1978:144].

With these highly sensitive political issues looming around, Malaysian went into the election on May 10, 1969. The result was a direct blow to the Alliance. Out of 104 seats, the Alliance managed to win only 66 seats in Peninsula Malaya; UMNO won 51 seats, MCA retained 13 of its 27 seats and MIC retained 2 of its 3 seats. Overall, the popular vote achieved by the Alliance was only 49.1 per cent. At the state levels, Kelantan, for the third successive time, was retained by PAS. In Perak, opposition parties, People Progressive Party [PPP]⁶⁹ together with *Parti Gerakan Rakyat* [Gerakan]⁷⁰ won 21 out of 40 state seats. Penang, with its huge Chinese population fell under the control of Gerakan. In Selangor, no one was a winner when the seats were evenly distributed with both side winning fourteen seats. This success induced the Chinese - supporters of DAP and Gerakan - in Kuala Lumpur to pour on to the streets to celebrate their achievement [Faaland, Parkinson and Saniman, 1990], "parading also through the predominantly Malay area of Kampung Baru in Kuala Lumpur" [p: 13] while "hurling epithets at Malays, contributed to a mounting atmosphere of fear and hatred" [Bedlington, 1978:146]. This was followed by "victory-procession" and henceforth, "counter-demonstration" by the Malays [Hua, 1983:148]. This was enough to spark the clash between the two groups⁷¹, leaving 196 people dead on May 13, 1969.

In order to prevent the situation from spreading to other parts of the country, the *Yang Dipertuan Agung*, under the power bestowed by the constitution, declared a state of emergency on May 14, 1969. Parliament was suspended, elections in Sabah and Sarawak were postponed⁷² and the country was put under the rule of the National

⁶⁹ Formed in 1955 founded by S.P.Seenivasagam. At parliamentary level, PPP fielded six candidates; three each for the Chinese and Indians.

⁷⁰ At Parliamentary levels, Gerakan fielded fourteen candidates - seven Chinese, four Indians and three Malays.

⁷¹ Nevertheless, it was accepted that the Malays who were gathering at the Menteri Besar's [Chief Minister] residence', under 'extreme provocation' [Bedlington, 1978:146], turned violent and began to attack Chinese passers-by' [Snodgrass, 1980:55].

⁷² Sabah and Sarawak were scheduled to go for election on May 25 and June 7, respectively.

Operation Councils headed by Tun Abdul Razak [then, the Deputy Prime Minister] with eight other members⁷³. In January 1970, a National Consultative Council was set-up⁷⁴. Not long after this, in September 1970, Tunku Abdul Rahman handed over UMNO leadership and the government to Tun Abdul Razak.

In June 1970, though still under the declared state of emergency, the suspended election for Sabah and Sarawak was held⁷⁵. The National Operation Council was dissolved in February 1971. A new and broader alliance - the National Front - was formed in 1972, which combined together PAS, PPP and Gerakan with UMNO, MCA and MIC⁷⁶. By January 1973, the National Front had 122 seats in the 144-seat Parliament and managed to obtain the two-third majority it required in the Parliament to make an amendment to the constitutions⁷⁷.

4.5.2 Economic Condition

Undoubtedly, the immediate aftermath of the May 13, 1969 incident was the formulation of the New Economic Policy. Nevertheless, the policy itself, contained in the Second Malaysia Plan [1970-1975], remained vague until it was specified in the Mid-term Review of the [Second Malaysia] Plan in 1973 [see Box 3.1 in Chapter 3].

The major theme of NEP was, as mentioned earlier, the eradication of poverty regardless of race, and the re-structuring of society to promote economic equality among the [three main] races. The second objective, by the nature of it, requires the modernisation of rural life where the majority of Malays live and the creation of Malay entrepreneurs. Both of these policies required active government participation in the economy.

⁷³ Both MCA and MIC were given representation in the council.

⁷⁴ DAP refused to participate.

⁷⁵ Unlike other states, the state election to elect members of the State Legislative Assembly in Sabah and Sarawak was not held together with the general election to elect members of Parliament.

⁷⁶ Gerakan joined the Front on January 1972, PPP joined in April 1972 and PAS in January 1973.

⁷⁷ Following the resumption of the parliament, some amendments were made to the Federal Constitution and the Sedition Act. These include forbiddance on 'anyone to question the position of the Malay rulers, the use of Malay language, the special position of the Malays and the rights of the non-Malay citizens to their citizenship' [Snodgrass, 1980, p. 56]

Table 4.4 below shows the income disparity between the three major ethnic groups in Malaysia. In 1970, total personal income of the Malays was \$1,954 million compared to \$2,426 million for the Chinese and \$673 million for the Indians. In percentage terms, the Malays proportion was only 38.67 per cent of the total personal income in 1970 compared to 48.01 per cent for the Chinese and 13.32 per cent for the Indians.

Table 4.4
Distribution And percentage Share Of Personal
Income Between Races : 1957/58 and 1970.

	Total personal income [\$ million/year]		Increase	% increase	Per cent share of increase
	In 1957/8	in 1970			
Malays	1,008	1,954[38.67]	946	93.85	41
Chinese	1,299	2,426[48.01]	1,127	86.76	49
Indians	358	673[13.32]	315	87.99	14
Total	2,665	5,053[100.00]	2,388		100

source Snodgrass, 1980, Table 4.12, p. 83
Figures in parenthesis refers to the percentage of the total

The mean and median income - Table 4.5 below - provide a much better picture of the disparity between the races. The mean income for the Malays in 1957-1958 was the lowest at \$139 compared to \$300 and \$237 for the Chinese and Indian respectively. \$139 was indeed very much lower than the nation's mean income. This improved slightly in 1967-1968 to \$163 compared to \$349 and \$260 respectively for the Chinese and Indian. Still, the Malays mean income was lower than the nation's figure. On the other hand, Malays median income was also the lowest at \$120 in 1967-1968 compared to \$261 and \$191 for the Chinese and Indian respectively. And, again still, it was lower than the nation's median income at \$154.

Table 4.5
Mean and Median Income: 1957-58 and 1967-68

	1957-58		1967-68	
	Mean Income	Median Income	Mean Income	Median Income
Malays	139	112	163	120
China	300	223	349	261
Indian	237	188	260	191
Total Sample	215	156	240	154

source adapted for this purpose from Snodgrass, 1980, Table 4.3, p.71 and Table 4.6, p.75

Based on the data from Table 4.5 above and Table 4.6 below, it is clear that prior to the May 13, 1969 incident, the bulk of the Malays were poor. Likewise, the bulk of the poor were Malays - 49.3 per cent in 1970, a small decrease from 55.7 per cent at independence. [Cash] income of \$120 per month was used as the yardstick for the calculating the incidence of poverty in Malaysia during the period of the Second Malaysia Plan⁷⁸.

Table 4.6
Percentage of Household With Income Less Than \$120 per month

	1957-58	1970
Malays	55.7	49.3
Chinese	13.1	13.9
Indian	19.8	20.2
All rural household	44.2	41.7
All urban household	16.8	15.2
All	34.9	34.9

source: adapted for this purpose from Snodgrass, 1980, Table 4.9, p. 80

Table 4.7
Employment By Industry Among The Ethnic Groups: 1957 and 1967

	Percentage distribution						Total	
	Malays		Chinese		Indians		[thousand]	
	1957	1967	1957	1967	1957	1967	1957	1967
Agriculture	61	62	25	25	14	12	1,223	1,394
Industry	22	25	62	65	14	9	288	396
Commerce	17	26	66	65	16	9	195	312
Public Administration & Defence	57	67	11	16	14	15	167	210
Others activities	29	35	47	46	20	17	277	415
Total	48	48	36	37	15	12	2,149	2,727

Sources: Adapted from Snodgrass, 1980, Table 4.14, pp. 86-87.

note: Percentage does not round up to 100 per cent because of the existence of other races.

The direction set by the Mid-Term Review of the Second Malaysia Plan in correcting economic imbalances was aimed at eliminating the identification of race with economic function. During the colonial period, the Malays were either left to concentrate on their agricultural activities or to work in the public sector, the Chinese in the mining and commercial sectors and the Indian, by the nature they were brought into the country to work in the plantation. As Table 4.7 above shows, in 1967, 62 per cent of the workforce in the agricultural sector was Malays compared to 25 per cent and 12 per cent Chinese and Indian respectively. The same trend existed in the public administrative and

⁷⁸ By using cash income as yardstick in determining the poverty line, it overestimated the Malays-poverty and under-estimated the Chinese and Indian poverty [Onn, 1988]. This arose because the Malays, the majority of whom were in the rural area, ploughing their own piece of land, obtained some non-cash income compared to the Chinese and Indians. Having said this, the usage, 'nevertheless, showed results that were largely consistent with empirical observations' [p. 103].

defence sector where 67 per cent of the workforce was Malays with only 16 per cent Chinese and 15 per cent Indians.

On the other hand, the opposite trend existed in both the industrial and commercial sector. In the industrial sector, Malays constituted only 25 per cent of the workforce compared to 65 per cent Chinese and 9 per cent Indians in 1967. In the commercial sector, 65 percent were Chinese, 26 per cent Malays and 9 per cent Indians. This trend was almost identical to the composition that existed a decade earlier at the time of independence - a trend inherited from the colonial period where 'the Chinese have been largely confined to business and trade, the Indians to technical services and plantations with the majority of the Bumiputras⁷⁹ essentially remaining on the land as traditional farmers' [Onn, 1988, p. iii].

Prior to the NEP, in the sixties, government economic strategy was geared towards import substitution. With NEP, the governments' focus was to provide incentives for the Malays to compete on the entrepreneurial level beside providing a supportive infrastructure for the economy as a whole.

The decade of the seventies saw a remarkable improvement in agricultural activities. Realising that agriculture was the backbone of the Malaysian economy, agricultural activities have been expanded not only with the opening of several new land development schemes but also with the extension of the existing agricultural area with the development of various irrigation projects⁸⁰. On the other hand, crops have been diversified especially with the introduction and plantation of palm oil into the various new land development schemes.

In 1982, another turn in strategy was adopted. The government launched its Industrialisation Policy aimed at turning the

⁷⁹ Bumiputras literally means 'sons of the soil'. This includes Malays, orang asli [aborigines of Peninsula Malaysia] and natives of both Sabah and Sarawak. The latter is also known as peribumi which also means 'sons of the soil' and is used to differentiate between the Malays and other natives of Sabah and Sarawak which include such tribes as Iban and Kedayan in Sarawak and Kadazan, Dusun, Bajau in Sabah. The Malays and particularly Bruneian [the descendant of Brunei Malays] are also present in Sabah and Sarawak.

⁸⁰ Most important are the Muda Agricultural Development Authority [MADA] in Kedah and Kemubu Agricultural Development Authority [KADA] in Kelantan. Both irrigation projects were developed to water paddy fields in the two states to make possible double-cropping a year.

country on the track of becoming an industrialised country. Since small-scale industries have flourished especially towards the late seventies, in 1982 the government launched the heavy-industry policy. To facilitate this, the Heavy Industry Corporation [HICOM] was set up. Towards the end of the eighties, as part of the next 20 year economic strategy [1990-2010], medium-scale industries were promoted to help sustain the excellent growth rate of the eighties⁸¹.

4.6 SUMMARY

We mentioned in Chapter One that one of the purposes of the present study is to test for the Peacock-Wiseman Hypothesis of the effect of social upheaval on the level of government expenditure. In this aspect, we treat the May 13, 1969 racial conflict as a form of social upheaval in the sense of Peacock-Wiseman Hypothesis. In this chapter, we presented the historical background to this incident by first describing the history of the British presence in Malaysia. Following this, we argued that as a consequence of the British colonial policy, Malaysia became a plural society - a delicacy which remained to haunt the future of Malaysian society as it did on May 13, 1969. Having identified that the source of the incident rested on the economic inequality inherent in the Malaysian society, the government launched the New Economic Policy in 1970.

Following the launch of the NEP, as shown earlier in Chapter Three, the level of government expenditure grew tremendously. So did the level of economic development measured by way of GNP. This formed the main focus of the present study i.e. to test for the presence of Wagner's Law of increasing expansion of government expenditure as well as to test for the Keynesian relation to understand the effect of government expenditure on the economic development.

The events that lead to the May 13, 1969 incident may serve as a basis to understand and incorporate the incident as a form of a social upheaval as suggested by Peacock and Wiseman. This is analysed in Chapter 8.

⁸¹ From 1987-1994, the average growth rate of the economy was more than 8%.

CHAPTER FIVE

TESTING FOR THE RELATIONSHIP BETWEEN ECONOMIC VARIABLES - A REVIEW OF THE ECONOMETRIC METHODOLOGIES

For as long as we are unable to put our arguments into figures, the voice of our sciences, although occasionally it may help to dispel gross errors, will never be heard by practical men. They are, by instinct, econometricians all of them, in their distrust of anything not amenable to exact proof.

Joseph A. Schumpeter
Econometrica 1, 1933: 12.

5.1 INTRODUCTION

We have mentioned as early as Chapter One that the present study will adopt a Granger-causality test to examine the causal relationship between the variables. The choice of Granger-causality is made to allow us to explain any causal relationship between the various measures of government expenditures and economic development.

Within the framework of Granger-causality analysis Ram [1989: 140] maintained that the "growth of government is a natural consequences of economic development and that economic development 'leads to' or 'causes' a secular enlargement of the public sector".

Following Mehra [1994], testing for Granger-causality involves a three-step procedure - testing for the stationarity in the time-series, co-integration test and lastly Granger-causality test. The chapter is constructed to follow this sequence.

The organisation of this chapter is as follows. Section 5.2 give a brief review of the development in the econometric methodologies in

the past two and half decades. Section 5.3 addresses the question of stationarity in the macroeconomics time-series. It deals with the data-generating process - the problem of trend versus differenced stationary - and the unit root test. In Section 5.4, we discuss the co-integration test and the Error Correction Model [ECM]. In Section 5.5, we discuss the Granger-causality analysis. In Section 5.6, we discuss the procedure to select the lag length. We sum up this discussion in Section 5.7.

5.2 AN OVERVIEW

For the past two and half decades, econometric analysis has undergone major and significant development. Notably, this development followed the development of time-series analysis. In turn, this has had a major and significant impact in the analysis of economics relationship which is basically a time-series analysis. We dedicate this chapter towards the theoretical and methodological review of these major developments. Hence, the application of these apparatuses are discussed in the following chapters.

Among these major developments is the Granger-causality test following the pioneer work by C.W.Granger [1969]. The test developed by Granger allows us, economists especially, to test the causal behaviour between economic variables. Prior to that, as argued by Wold [1954], causality is only assumed to be “explicit in any economic model” [p.171].

In analysing econometrics time-series, econometricians have always felt comfortable working with a high R^2 . However, the question one should ask is: “How good and reliable is this $[R^2]$ ” [Madalla, 1992: 550]. Granger and Newbold [1974] has cautioned about accepting a model with high R^2 which might produce what they termed as a “spurious regression” that arises because “the usual significance tests on the coefficients are invalid” [p. 111]. They proceed to suggest that most the plausible method is to compare the result of both the “levels and also the changes” [p: 118] of the series.

Granger and Newbold's caution has indeed triggered some new developments in the analysis of stationary variables whose means and variance do not converge to their true values. The unit root test for stationarity emerged as a result of this. A series is said to be integrated of order one or contains one unit root if it has to be differenced once to obtain stationary. Co-integration, on the other hand is a method to model non-stationary economic series in order to establish the long-run relationship between these series. Two series, say, x and y , each of which are integrated of order one, are said to be co-integrated if the linear combination of them is stationary.

We would like to note that the econometric methodologies outlined in this chapter are used in analysing the Wagner's Law and the Keynesian relation as mentioned in Chapter One. Following Diamond's [1976] formulation of the 'Displacement Effect' of Peacock and Wiseman Hypothesis as a theory of structural change, we employed a different test, that is Perron's [1988] test for structural change to test for the Peacock and Wiseman Hypothesis. This is discussed in Chapter Eight.

We turn now to the review of this development in the analysis of the time-series data.

5.3 THE UNIT ROOT TEST

Standard inference procedures in a time series analysis requires the variables to be stationary. The regression analysis of econometric time-series using the ordinary least squares [OLS] methods normally assumes that the variables are stationary [Dolado, Jenkinson and Sosvilla-Rivero, 1990].

A time series is said to be stationary if its means, variance and autocovariances are constant and independent of time [for some of important review in this area, see for example, Engle and Granger, 1987; Granger, 1986; Rao, 1994 and the various papers in the edition; Madalla, 1992; Dolado, Jenkinson and Sosvilla-Rivero, 1990]. Over the years, this assumption is assumed to be correct, that all econometrics

time series are assumed to be stationary. Or, if non-stationary, it moves around a deterministic trend [Dolado, Jenkinson and Sosvilla-Rivero, 1990], in one direction, up or down, [Madalla, 1992]. Davidson and MacKinnon [1993] and Perman [1991] believe that many economic time-series are, or at least appear to be integrated of order one i.e. non-stationary in levels.

There are two problems with non-stationary time-series. First, OLS regression on a non-stationary series might still produce a high R^2 and significant t -statistics and hence will be biased towards accepting the stationary hypothesis. However, as we mentioned earlier, a high R^2 and significant t -statistics does not necessarily means that the regression is correct - the problem of 'spurious regression' as discussed by Granger and Newbold [1974] or 'nonsense regression' [Yule, 1926]. Second, the mean and variance of a regression analysis on a non-stationary time-series will not portray its true and expected value ($0, \sigma^2$). Mean and variance will be dependent i.e. change over time. From an econometric view-point, this may lead to a serious economic implication in that a shock to the system will be permanent and not transitory. It also strikes to the core of equilibrium analysis which assume that a shock to the system will be transitory and in the long-run all these shocks and fluctuations will be dampened i.e. temporary and transitory.

Pindyck [1981: 498] showed that if a series y_t is stationary, the mean, variance and covariance of the series must also be stationary such that:

- i. the mean

$$\mu_y = E(y_t) = E(y_{t+m})$$

- ii. the variance

$$\sigma_y^2 = E[(y_t - \mu_y)^2] = E[(y_{t+m} - \mu_y)^2]$$

- iii. the covariance

$$\begin{aligned}\gamma_k &= Cov(y_t, y_{t+k}) = E[(y_t - \mu_y)(y_{t+k} - \mu_y)] \\ &= E[(y_{t+m} - \mu_y)(y_{t+k+m} - \mu_y)]\end{aligned}$$

5.3.1 Trend Vs. Differenced Stationary

Two methods can be used to obtain stationarity - de-trending and differencing. The choice between the two depends on the data generating process of the time-series. This lead us to the process of identifying the data-generating process.

Nelson and Plosser [1982] raised the concern of the nature of the data-generating process. It was normally assumed that fluctuations or shocks are transitory around a deterministic trend path and that in the long-run, shocks or fluctuations will return to a constant trend path. They, however, found the opposite i.e. that shocks are permanent departures from the trend path. In dealing with the first, modelling the relationship will include a time trend. However, with Nelson and Plosser's conclusion, differencing has to be carried out on the variables.

Time-series data are generated by two main processes. Suppose we have the following two models:

$$w_t = \alpha + \beta t + \rho w_{t-1} + \mu_t \quad \dots \quad 5.1$$

$$w_t - w_{t-1} = \beta + \eta_t \quad \dots \quad 5.2$$

Nelson and Plosser call model 5.1 a *trend-stationary* process and the model 5.2 the *differenced-stationary* process of a random walk with drift. This different data generating process have some implications in econometric time-series analysis. This implication is as follows: a trend-stationary process needs to include a trend term to obtain stationarity; on the other hand, [successive] differencing will help to generate stationary in the difference-stationary time-series.

Nelson and Plosser suggested performing the Dickey-Fuller test to test the trend stationary [5.1] against difference stationary process [5.2]. This is carried out by testing the null hypothesis that $\beta = 0$ and $\rho = 1$ in 5.1. To do this, we compute the *F*-ratio and compare

it with the Φ_3 -statistics given by Dickey-Fuller [1981: Table IV p.1063]¹.

The F -ratio is computed as follows:

$$\Phi_3 = \frac{[(RSS_{5,2} - RSS_{5,1}) / 2]}{RSS_{5,1} / (n - 3)} \quad \dots \quad 5.3$$

where RSS_i is the residual sum of squares, and n is the sample size. Failing to reject the null hypothesis that $\beta = 0$ and $\rho = 1$, means that the process is differenced stationary and not trend stationary.

5.3.2 Unit Root Analysis

If, after identifying the data-generating process, we found that the time series was trend-stationary, then a linear time trend must be included in the regression equation. On the other hand, if it is a differenced stationary process, we proceed by differencing the data to obtain stationarity. Nevertheless, Nelson and Plosser's [1982] main conclusion was that most economic time-series resemble 5.2, a random walk with drift. In other words, they argued that most macroeconomics time-series are differenced-stationary.

The process of differencing is also known as unit root analysis. A series is said to possess one-root or a unit-root if it has to be differenced once to obtain stationarity. In Dickey, Bell and Miller [1986], it was shown that some macroeconomics time-series data have to be differenced twice to obtain stationarity. In other words, these data contains two-unit roots.

Dickey and Fuller [1979, 1981] performed a Monte Carlo simulation on non-stationary variables. This provide a procedure to test for stationarity in time-series analysis. Dickey and Fuller used three regression equations to test for unit root:

$$\Delta y_t = \gamma_{t-1} + \varepsilon_t \quad \dots \quad 5.4a$$

$$\Delta y_t = \alpha + \gamma_{t-1} + \varepsilon_t \quad \dots \quad 5.4b$$

$$\Delta y_t = \alpha + \beta t + \gamma_{t-1} + \varepsilon_t \quad \dots \quad 5.4c$$

¹ Ordinary student- t or F -statistics are not used because the Φ_3 ratios do not have the t or F distribution.

where Δ is the differenced process. In the above equations, [5.4a] is a pure random walk process; [5.4b] adds a drift or intercept term and [5.4c] add a drift and time trend. Testing for unit root in the above equations, involves testing for $\gamma = 0$ using OLS procedure and compare the estimated value of γ with the statistics provided by Fuller [1976].

Another method to test for unit root is an extension of Dickey and Fuller test and is known as Augmented Dickey-Fuller Test [ADF]. The Augmented Dickey-Fuller or ADF test will allow for testing a higher-order equations [Enders, 1995] i.e. beyond the first-order autoregression process given by $\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \varepsilon_t$ in 5.4c above. An example of such process is as follows:

$$\Delta y_t = \alpha + \gamma y_{t-1} + \sum_{i=1}^p \beta_i \Delta y_{t-i} + \varepsilon_t \quad \dots \quad 5.5$$

to test the null hypothesis of $\gamma = 0$. If $\gamma = 0$, the process contains unit roots.

So far, we have shown that the regression of non-stationary time series will create the problem of spurious regression. As such, regression on the level of the variables make sense if and only if these variables are cointegrated [Banerjee, et.al. 1993: 138]. Hence, to avoid this problem of spurious regression, Engle and Granger [1987] suggested the application of co-integration analysis on time series containing a unit root. Engle and Granger [1987] introduced the definition of integration as follows: *A variable y_t is said to be integrated of order d denoted by $y_t \sim I(d)$ if it achieved stationarity after differencing d -times* [Engle and Granger, 1987: 252].

Therefore, an $I(0)$ i.e. integrated of order zero is stationary in levels; an $I(1)$, i.e. integrated of order one, the first difference is stationary; an $I(2)$, i.e. integrated of order two, the second difference is stationary, and so on so forth. An $I(1)$ is said to contain one unit root, and an $I(2)$ is said to contain two unit roots. In other words, applying unit root analysis to test stationarity will allow us to determine the level of integration of each of the variables. Enders [1995] argued that most economic time-series need not be differenced more than twice.

For reason stated later in Section 6.5.2, we opted not for Dickey-Fuller or Augmented Dickey-Fuller test to test for unit root. Instead, we carried out the Dickey-Pantula test for levels of unit root(s). This choice has nothing to do with the power of these two tests but rather for its simplicity and convenience.

5.4 CO-INTEGRATION TESTS

If, after carrying out a unit root test, we find that some of the variables indeed contain unit root[s], we proceed to test for the co-integration between the variables following Engle and Granger [1987]. The concept of co-integration was first introduced by Granger [1981] to investigate short-run and long-run or equilibrium relationship between macroeconomics time-series [Ghosh and Gilmore, 1997].

Engle and Granger [1987: 253] defined co-integration as follows: *The component of vector x_t are said to be co-integrated of order d, b , denoted as $x_t \sim CI(d, b)$ if (i) all components of x_t are $I(d)$; (ii) there exists a vector $\alpha (\neq 0)$ so that $z_t = \alpha' x_t \sim I(d - b), b > 0$. The vector α is called the co-integrating vector.*

In other words, what this means is that if y_t and x_t are both integrated of order 1, denoted as $y_t \sim I(1)$ and $x_t \sim I(1)$ respectively, then y_t and x_t are said to be co-integrated if the linear combination of it, $y_t - \alpha x_t$, is $I(0)$ [Granger, 1986, 1988]. α is called the co-integrating vector. As discussed by Madalla [1992: 588], this means that the regression equation $y_t = \beta x_t + \mu_t$ makes sense because y_t and x_t do not drift too far apart from each other over time.

5.4.1 Engle-Granger residual-based Co-integration test.

Engle and Granger [1987] shows that if x_t and y_t are co-integrated there is then a long-run relationship between them. This long-run relationship exists when the error term u_t is $I(0)$. The Engle-Granger [EG] test for co-integration involves a two-step estimation procedures. First, after discovering that the time-series are non-stationary in levels,

run the OLS regression of the co-integrating variables, in their levels. Second, the residuals from this OLS regression are retained to test for the presence of unit root in the residual [see for example, Engle and Granger (1987), Hall (1986) and Davidson and MacKinnon (1993)]. EG test is therefore an extension of unit root test [Davidson and MacKinnon, 1993].

Engle and Granger suggested seven methods for testing the co-integration of non-stationary time-series. We will not discuss nor will we use all these approaches, though. However, Engle and Granger suggested that their test 3 that is the 'Augmented Dickey-Fuller' [ADF] test "is therefore the recommended approach" [p: 269].

As shown in Section 5.3. above, if the time series is generated by a differenced-stationary process, then the time-series need to be differenced to achieve stationarity. However, as Banerjee *et.al.* [1993] argued, differencing is not without cost. In particular, differencing omits some information pertaining to long-run adjustment inherent in the data. The same concern was raised by Davidson *et.al.* [1978] and Hendry and Mizon [1978]. On this, Granger and Newbold [1988: 206] argued that it, [i.e. differencing] is better than doing nothing.

In summary, co-integration analysis allows us to model the equilibrium relationship² among two or more time-series, each of which is non-stationary but some linear combination of it is stationary [Banerjee *et.al.* 1993: 136]. Co-integration, therefore, becomes the platform for "discerning the nonsense correlation and the sensible long-run relationship" [Hatanaka, 1996].

Engle-Granger [EG] procedure involves running an OLS regression of the variable y_t on x_t . The residuals from this regression is retained to test for the presence of unit roots in the residuals. This procedure is also known as a *two-step Engle-Granger co-integration test* or *residual-based co-integration test*.

2

Equilibrium is taken to mean long-run and stationary.

A pre-condition for conducting Engle-Granger co-integration test is that both the variables concerned must be integrated with the same level of integration [Enders, 1995]. Finally, Granger [1988] pointed out that if there is co-integration between two variables, then there must be Granger-causality in at least one direction.

5.4.2 Error-Correction Mechanism

Engle and Granger proceed to show that if y_t and x_t are integrated of order one, $I(1)$ and their residuals are $I(0)$, then y_t and x_t maybe generated by the error-correction mechanism [ECM] model. ECM exist in the following form:

$$\Delta w_t = \alpha + \xi \hat{e}_{t-1} + \sum_{i=1} \gamma \Delta w_{t-i} + \sum_{i=1} \vartheta \Delta z_{t-i} + \varepsilon_{wt} \quad \dots \quad 5.6$$

$$\Delta z_t = \beta + \zeta \hat{e}_{t-1} + \sum_{i=1} \phi \Delta w_{t-i} + \sum_{i=1} \rho \Delta z_{t-i} + \varepsilon_{zt} \quad \dots \quad 5.7$$

The ECM will allow us to establish the long-run dynamics and the short-run relationship between the levels of the dependent and independent variables [Davidson and MacKinnon, 1993: 723]. This relationship is established via the residual \hat{e}_{t-1} . The residual \hat{e}_{t-1} is indeed the saved residual from testing the unit roots performed in the co-integration test. ECM provide a channel through which Granger-causality can be traced [Mehra, 1994 and Miller and Russek, 1990]. Therefore, the ECM model combines the advantage of both the level and the change [difference] of the time-series.

Banerjee, Dolado, Hendry and Smith [1986], referred to as BDHS, provide some useful discussion on the mechanic of the ECM. They argued that spurious regression could arise if we disregard the fact that most macroeconomics time-series are non-stationary. The normal procedure is to compare the R^2 and dw statistics. Following Granger and Newbold [1974], the basic rule to check for spurious regression is $R^2 \succ dw$.

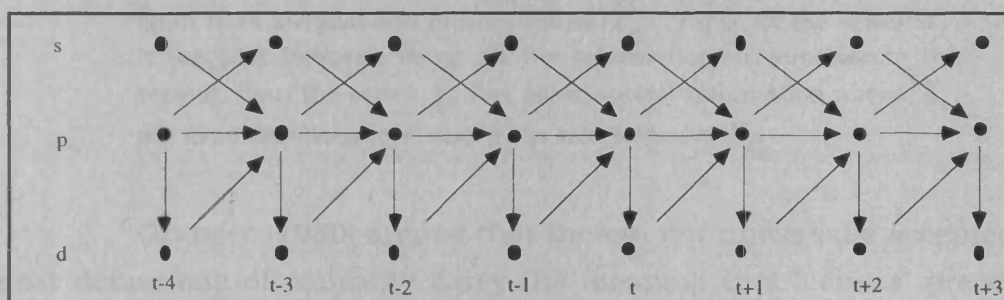
Traditionally, they argued that econometricians disregard this issue and run the regression analysis on the level instead which

consequently leads to spurious regression. However, the Box-Jenkins approach advocated regressing the changes [growth], i.e. by way of differencing. This posed the problem of choice between the short-run [changes] and the long-run [levels]. In view of this, BDHS suggested performing the Error-Correction Mechanism Model [ECM] whereby the dynamics of short-run and long-run are modelled simultaneously.

5.5 GRANGER CAUSALITY

Proper testing for causal relationship in economic was pioneered by Granger [1969]. Before that, causality is only assumed to be "explicit in any economic relationship" [Wold, 1954: 171]³. The importance of establishing causal relationships has long been recognised. In economic theory, relationships are often been described in 'causal' form - the relationship between quantity and price, money and income, government expenditure and national income and others. On this basis, Pierce and Haugh [1977] argued that causality is indeed "one of the major goals of empirical research".

Figure 5.1
Wold causal model



Source: Wold [1954] *Causality and Econometrics*. Econometrica Vol.22

Prior to Wold, J.Tinbergen [1939] also attempted to formalise causal relationships in economics. Tinbergen work used an arrow scheme to show the order and flow of the causal relation between price and demand and price and supply in what Tinbergen termed model sequence analysis. Wold used the same methodology and termed the

³ Various philosophers at different stages have tried to explain causal relationship. Hume, for example, in *Treatise of Human Nature* have argued that in causal relationships, cause must precede effect, "priority in time in the cause before the effect" and that "what ever has a beginning has also a cause". Mills added to this by arguing that "the invariable antecedent is termed the cause and the invariable consequent, the effect".

same arrow scheme as *recursive model*⁴. Tinbergen and Wold's arrow scheme indicate the causal connection between the variables, in this case, between price and supply and price and demand.

Major applications of Granger causality started with the work of Sim [1972] on testing money-income causality. On the same scale, this was followed by Sargent [1977] in formulating 'A Classical Macroeconometrics Models of the United States'.

Granger [1969] defined U_t as all the information in the universe since $t-1$. Causality in the Granger sense proceeds by assuming that "the future cannot cause the past" [Granger, 1969: 428]. It follows that "strict causality can only occur with the past causing the present or future" [Granger, 1986: 220]. In a two variables model, Y is said to cause X , denoted by $Y_t \Rightarrow X_t$, if knowledge of past Y help to forecast X better than using past X only. For an extended definition of Granger-causality, Ashley, Granger and Schmalensee [1980: 1151] defined Granger-causality as:

Let Ω_n represent all information available in the universe at time n . Suppose that at time n , optimum forecasts are made of X_{n+1} using all of the information in Ω_n and also using all of this information apart from the past and present values $Y_{n-j}, j \geq 0$, of the series Y_t . If the first forecast, using all the information, is superior to the second, than the series Y_t has some special information about X_t , not available elsewhere, and Y_t is said to cause X_t .

Granger [1980] argued that though not universally accepted⁵, most definitions of causality carry the meaning that 'causes' precede 'effect'⁶. This is known as *deterministic causality* which simply implies that the cause determines the effect. Departing from this, the main foundation of Granger causality proceed on the assumption that the past and present may cause the future but the future cannot cause the past. Deterministic causality can either be *necessity causality* whereby if A

⁴ *Recursive model* was the term used by Wold himself. This is a slight modification of the *model sequence analysis* or *process analysis* initially adopted by Tinbergen [1939]. Both exhibit arrow schemes to show the causal flow; in which case, in Wold's application the causal flow was from price to supply and price to demand.

⁵ Among the fierce and earlier critics of Granger [1969] is Zellner [1978]. Zellner's critics of Granger-causality centered and was based on the arguments put forth by Feigl [1953].

⁶ Hume (1886) has argued on the "priority in time in the cause before the effect"[p.378]. See footnote 3 above.

occurs, then B must occur, or, *sufficiency causality* which means that if B did occur, then it means that A must have occurred.

Granger acknowledged a great deal of problems with deterministic causality because it simply means that both events, A and B , must definitely have occurred without fail. In social and, to some extent, even in experimental sciences, there is still some probability that event B may not occur even though event A have occurred.

This gives rise to the second type or definition of causality that is 'probabilistic causality' which can be defined following Suppes [1970] as: an event $B_{t'}$ is a *prima facie* cause of the event A_t if and only if [i] $t' < t$ [ii] $\text{Prob}(B_{t'}) > 0$ and [iii] $\text{Prob}(A_t|B_{t'}) > P(A_t)$.

Granger causality evolves around three axioms:

- i. The past and present may cause the future but the future cannot cause the past
- ii. Ω_n contains no redundant information, so that if some variable Z_n is functionally related to one or more other variables [in $\Omega_n - Z_n$], in a deterministic fashion, then Z_n should be excluded from Ω_n .
- iii. All causal relationships remain constant in direction throughout time.

Departing from this, Granger shows four types of causality relationship:

- a. Uni-directional causality, denoted by $(X \rightarrow Y)$. Uni-directional causality can exist either as:
 - i. a *simple causality* if $\sigma^2(X|\bar{U}) < \sigma^2(X|\bar{U}-\bar{Y})$ that is, Y is causing X if X can be predicted by using all available information than if information apart from Y is used.
 - ii. an *instantaneous causality* if $\sigma^2(X|\bar{U}, \bar{Y}) < \sigma^2(X|\bar{U})$ that is the present value of X is better predicted if the present value of Y is included in the prediction than if it is not.
 - iii. a *causality lag* if $\sigma^2(X|\bar{U}-Y(k)) < \sigma^2(X|\bar{U}-Y(k+1))$.

- b. Bi-directional causality, denoted as $(X \Leftrightarrow Y)$ to detect joint dependence among the economic variables. Bi-directional causality is also known as feed-back. Feed-back occurs if:
- iv. $\sigma^2(X|\bar{U}) < \sigma^2(X|\bar{U}-\bar{Y})$ and/or $\sigma^2(Y|\bar{U}) < \sigma^2(Y|\bar{U}-\bar{X})$
i.e. X is causing Y and Y is causing X , denoted as $(X \Leftrightarrow Y)$.

whereby:

- Y and X are two *stationary* stochastic variables⁷.
- \bar{U} stands for all relevant knowledge in the universe available up to that time.
- $\bar{U}-\bar{X}$ stands for \bar{U} except for the past value of X .
- $\bar{\bar{X}}$ is the present value of X .
- $\sigma^2(X|\bar{U})$ and $\sigma^2(Y|\bar{U})$ are the variance of the prediction errors in X and Y [using all the relevant information] respectively.
- $X(k) = X_{t-j}, j = 1 \dots k, k+1, \dots, m$

By estimating the regression of all current and past values of Y and X will help identify the pattern of causality that exists within the parameters. This exercise can be done by utilising the following regression model:

$$Y_t = \alpha_0 + \sum_{j=1}^m a_j X_{t-j} + \sum_{i=1}^n b_i Y_{t-i} + u_t \quad \dots \quad 5.8$$

$$X_t = \beta_0 + \sum_{i=1}^n c_i X_{t-i} + \sum_{j=1}^m d_j Y_{t-j} + v_t \quad \dots \quad 5.9$$

The next step in the exercise is to test the null hypothesis against the alternative hypothesis:

$$\begin{aligned} H_0: a_j = d_j = 0 \quad \text{for all } j(j = 0, 1, \dots, m) & \quad \text{against} \\ H_a: a_j \neq 0, d_j \neq 0 \quad \text{for at least some } j(j = 0, 1, \dots, m) \end{aligned}$$

Accepting $H_0: a_j = d_j = 0$ implies lack of causal relationship between X and Y that is:

- i. accepting $a_j = 0$ implies X does not cause Y , and
- ii. accepting $d_j = 0$ implies Y does not cause X .

⁷

Italics are mine. Nevertheless, the word *stationary* is used by Granger as a condition for the stochastic variable. We have discussed stationary earlier when we discussed unit root analysis.

Running the above two regressions simultaneously will allow us to test for bi-directional causality between X and Y . However, for reasons stated later in Chapter Six [Section 6.5.3], we are interested and have therefore tested for uni-directional causality only. The same is applicable in testing Keynesian relation in Chapter Seven.

5.6 LAG LENGTH SELECTION

One problem in testing the error-correction model [equation 5.6 and 5.7] and Granger-causality [equation 5.8 and 5.9] is the lag length selection. Mehra [1994], Enders [1995] as well as Engle and Granger [1987] assigned the lag length arbitrarily. In calculating ECM, Enders [1995] compared the result of 0 and 4 lag; Engle and Granger in their seminal paper arbitrarily assigned a 4 lag. Nevertheless, there are several methods to choose the lag length. Enders, in a personal communication, suggested using Akaike's [1973] Information Criteria or Schwarz [1978] Bayesian Criteria. Attempting to specify the lag length on this two basis, we discovered that the lag chosen using either of these methods is too high. On that basis and following Oxley [1994] and Erenburg and Wohar [1995] we assigned the lag using Akaike's [1969, 1970] Final Prediction Error [FPE].

The advantage of FPE is that it reduces the possibility of fitting too high an order [Judge *et.al.* 1985]. Hsiao [1981] also argued that FPE balances the risk due to increased variance when selecting a longer lag against the risk due to bias when shorter lag is selected. It is beneficial to note that higher lag reduces the power of the regression.

Following Erenburg and Wohar [1995], the following procedure was taken to calculate Akaike's Final Prediction Error [FPE]:

- a. regress each variables, say y , in the form of

$$y_t = a + b^p(L)y_t + \mu_t \quad \dots \quad 5.10$$

where a is the intercept, $b(L)$ is the distributed lag polynomial of order p , and μ is the associated stochastic error term.

- b. Set p to some higher value, chosen arbitrarily and reduce the value of p one at a time. In this exercise, we set the initial p to 5.

- c. Calculate the FPE as follows

$$FPE = \left(\frac{n + p + 1}{n - p - 1} \right) \cdot \left(\frac{RSS}{n} \right)$$

where n is the number of observation, p is the number of the designated lag and RSS is the residual sum of square in running equation 5.10 above.

- d. The lag length is chosen which minimise the FPE - see Appendix 5.

5.7 SUMMARY

We presented in this Chapter the sequential process in identifying the Granger causality in econometrics analysis which involves testing for stationary or unit root, co-integration and finally the Granger-causality. As we mentioned in the introduction, these procedures are used in analysing the relationship within the framework of Wagner's Law and the Keynesian relationship between government expenditure and economic development.

We also mentioned that testing for the Displacement Effect will be performed using Perron's [1988] test for structural break. Perron's procedure will allow us to test for the structural break in time series with unit root. The theoretical discussion and the procedure for testing Perron's test is discussed in Chapter Eight.

The process of testing for unit root also involves testing for the data-generating process to identify whether the data are trend-stationary or differenced stationary. A major breakthrough from the cointegration analysis is the development of the Error-Correction Mechanism model. Error-correction model allow us to combine the short-run dynamic and the long-run relationship between the variables. Econometricians relate the short-run dynamics to the changes or the growth of a particular variable or time-series. On the other hand, long-

run refers to the level of the variables. Since co-integration implies that there is Granger-causality in one direction or another, error-correction models will allow us to detect the direction in which Granger-causality flows.

CHAPTER SIX

GOVERNMENT GROWTH IN MALAYSIA 1: TESTING FOR WAGNER'S LAW

*Neglects by theorists evokes malpractice by
empiricists.*

A.S.Goldberger[1972]
Econometrica Vol. 40 No.6.

6.1 INTRODUCTION

We have, at several places mentioned that the existing evidence either in supporting or rejecting Wagner's Law, at best, is puzzling [Musgrave, 1969]. There seems to be no universal acceptance on the validity of Wagner's Law. As we argued in Section 2.3 earlier, when we discussed the theoretical aspect of Wagner's Law, we said that Wagner himself seemed to imply that his 'law' of "increasing expansion of public, and particularly, state activities" is most relevant to developing countries in the quest for, or in the process of, development.

Departing from this, we extend our analysis in the context of Malaysia to see the relationship between government expenditure and economic development. It is hoped that our finding will cast some light in explaining the government expenditure growth experienced by Malaysia in the period 1961-1990 within the framework of Wagner's Law.

The outline of this chapter shall be as follows. Following this, in Section 6.2, we present some results from past studies on Wagner's Law. In Section 6.3 we present six different interpretations of Wagner's Law which lead to six different ways of formulating the law. In Section 6.4, we present the choice of parameters in defining Wagner's Law for

the purpose of our present analysis. This is followed in Section 6.5 with the choice of model in formulating Wagner's Law. In Section 6.6, we present the practical aspect of the econometrics methodology adopted in this chapter which comprises the test on the data generating process, the unit root test, the cointegration analysis, the Granger-causality test and finally the error-correction mechanism test. We interpret the results of Section 6.6 in Section 6.7. In Section 6.8, we provide some general discussion of the findings. Finally, we sum up this chapter in Section 6.9.

6.2 SOME EMPIRICAL RESULTS ON THE TEST OF WAGNER'S LAW.

Wagner argued that public expenditure growth was a natural consequence of the growth of the economy. This has lead most research on Wagner's law to associate the growth of the government expenditure with the level of economic growth and development.

Yet, the results of these various studies can best be summarised as inconclusive. Musgrave cautioned on accepting or rejecting any finding arguing that "evidence on Wagner's Law remains puzzling" [Musgrave, 1969, p.124]. Obviously, contrasting results on several of these studies prompted Musgrave's conclusion. Carr [1989] also cautioned on accepting a positive relationship between government size and economic growth. However, on another scale, Nagarajan and Spears [1989] argued that most time-series studies validate Wagner's law but when cross-section studies were employed, the results were conflicting, depending largely on the 'grouping' of the countries.

In studying data for US, UK and Germany, Musgrave [1969, p.85] concluded that the "Wagner's Law well met the test of western economic development during the last three-quarters of a century" with a parallel rise in defence and civilian ratios due to the increased need for the expansion on defence expenditure. On Canada, Bird [1970], concludes that Wagner's law cannot be disproved, with empirical evidence 'mildly favourable' for its acceptance. Yet, he acknowledges

that "on balance..... the evidence, imperfect and scanty as it is, appears more to support than to controvert Wagner's law" [ibid., p.81]. This renders the result as insufficient to be used as a tool for the prediction of future relationship between growth of government and economic growth nor it a sufficient tool to formulate development programmes [Afrentiou, 1982].

Both Musgrave and Bird's caution on accepting the validity of Wagner's Law is supported by Landau [1983] who found that the correlation between government size and economic growth has contrasting results when applied to different countries. The correlation is positive among the lower income [measured on the basis of per capita GDP] countries of developed countries. Yet, among the lower income countries of the less-developed countries, the relationship is negative.

In testing a cross-section studies of 53 countries on the validity of Wagner's law, Gupta [1969] found that there exists a curvilinear relationship reflecting a diminishing rate of increase of government expenditure with respect to GNP as the economy progresses. This, he argued, was due to the "international demonstration effect" becoming less important as countries managed to set their own standards. Cross-section studies, especially on less-developed countries, have been criticised on its differences in history, size and structure [Landau, 1986].

In comparing between time series and cross-section data in measuring the elasticity of the ratio of government expenditure to GDP with respect to GDP per capita, Ram [1987] concluded that cross section results refute Wagner's Law but the time series data supported it in 60% of the 115 countries covered in his sample¹. Problem in the data forced Ram [1987] to analyse the data in two periods 1950-1980 and 1960-1980. In this study, he found out that in the period 1950-1980, when using shares of government to the national income, the elasticity is positive in 36 of the 63 countries. And, for the period 1960-

¹ Ram [1987] noted some problems in conducting cross-section analysis particularly related to variation in the relative price of goods and services across countries which renders ordinary exchange rate do not reflect accurately the relative worth of different currencies and even shares based on domestic prices lack cross-country compatibility.

1980, the elasticity is positive in 70 of the 115 countries. When he tested the elasticity in the absolute terms, he discovered that the elasticity is positive in all 63 countries for the period 1950-1980 and in 113 out of 115 countries between 1960-1980.

Some studies have also found a negative relationship between the size of government and economic growth. Landau [1983], for example, concluded that correlation between government consumption shares and GDP growth rates is negative for a group of 20 developed and developing countries covered in his study for the period 1970-1979. When he tested for it separately, he found out that the relationship was slightly weaker in the case of developing countries. Landau's conclusion differs with Lall [1969] in that in Lall's sample of 46 developing countries, he concluded that there does not exist any relationship between E/GNP and GNP/P .

In separate cross section studies by Hinrichs [1965], Musgrave [1969] and Gandhi [1971], the general conclusion derived by them was that when developed and less developed countries were grouped together, the result supported Wagner's Law. However, when tested only for less developed countries, the result does not hold. Using UK's data, Veverka [1963: 117] concludes that "either government expenditure in the aggregate is not a superior good, or the relationship is more complex".

Even in cases where there exists some evidence in support of Wagner's Law, there remains, however, the question of the degree as well as the significance of this acceptance. Some contended that government has grown little [Beck 1981; Pechman et.al., 1981]. On the other hand, Ganti and Kolluri [1979] believed that all the empirical evidence strongly supported Wagner's Law. This was supported by Meltzer and Richard [1978] in the case of the United States when he concluded that the government has grown greatly.

In concluding that the various tests of Wagner's Law remains puzzling, Musgrave [1969] suggested that there is a need to disaggregate the data. Bird [1970] tested the relationship between government

expenditure and economic growth by dis-aggregating the expenditure. From this exercise, he concluded that Wagner's Law is not disproved. Government expenditure with respect to social expenditure [health, education and welfare] has increased rapidly. However, the general government expenditure, protection and public production is relatively constant as a proportion of GNP.

As mentioned earlier, some researchers believed that Wagner's Law is applicable only for countries in the developing stages of development. Among those in favour of this argument are Abizadeh and Gray [1985]. In their study, they found out that Wagner's Law is proven only for developing countries and not for poor and developed countries. This result however, differs from Bird [1971] when he concluded that Wagner's Law is proven in every advanced country in the world. This was also the conclusion derived by Musgrave [1969].

Employing real data, Pluta [1981] found that government size increased in thirteen but fell in seven developing countries in his sample. This obviously differed from the result using nominal figures cited above. Astonishingly, contrary to general belief, the level of transfer expenditure fell in countries with growing public sectors, for example, countries like Cyprus, Honduras, Turkey and Singapore. On the other hand, for Brazil and Argentina, where the size of the public sector fell, the level of transfer payments increased. These results contradicted Beck [1967] hypothesis that the growth of government is the result of an increase in the transfer payments.

Employing a causal relationship i.e. Granger-causality approach - instead of a correlation relationship, - Ram [1986b] focused on studying the impact of government size on economic growth as perceived from a Keynesian perspective. He discovered that the size of government has a positive impact on economic growth. This is indeed, a reverse of Wagner's Law.

The usage of causal relationship is intended to explain whether the level of economic development and growth is the result of the growth in government expenditure. A positive causal relationship

implies that growth of government has a positive impact on economic growth and development and a negative causal relationship implies the opposite. However, Nagarajan and Spears [1989] argued that "the lack of causation does not necessarily imply absence of any functional relationship between these two variables especially when they can be formulated within a theoretical framework".

Major studies adopting causal relationship were carried out by Singh and Sahni [1984], Afxentiou and Serletis [1991] and Ram [1986c]. In general, the three studies found out that there is no evidence to support Wagner's Law that national income causes the growth of government expenditure.

Much have been said on the argument pertaining to the proper treatment of the transfer payments, whether to include it in calculating the government expenditure or to exclude it. Pluta [1981], Saunders and Klau [1985] found out that inclusion or exclusion of transfer payments will not have a great impact on the elasticity of government expenditure with respect to per capita GNP.

6.3 VARIOUS DEFINITIONS OF WAGNER'S LAW

Wagner envisaged an 'increasing expansion of public, and particularly state, activities'. This increasing expansion arose because of the growth of state's requirements as a result of the desire for social progress. Nevertheless, Wagner himself did not provide a precise and definite interpretation and/or definition of his so called 'law'. This ambiguity has given rise to different interpretations of the law.

Gandhi [1971] provided a useful comparison of the different interpretations of the Wagner's Law. Based on earlier studies, he proceeded to devise five different formulations of the law. We present these different formulations below. In what follows, *GOV* is government expenditure, *GNP* is the Gross National Product, *Y* is national income, *C* is government consumption expenditure and *POP* is the population.

- a. Following Peacock and Wiseman [1967], Wagner's Law is taken to mean "that government expenditure must increase at an even faster rate than output" [p.17]. This interpretation have lead to the following formulation:

$$GOV = f(GNP)$$

- b. Owing to Pryor [1968], it was argued that "Wagner asserted that in growing economies the share of public consumption expenditures in the national income increase" [p.51]. This can be formulated as:

$$C = f(Y)$$

- c. Goffman [1968] on the other hand argued that: "Essentially, Wagner argued that as a nation experiences economic development and growth, an increase must occur in the activities of the public sector and that the ratio of increase, when converted into expenditure terms, would exceed the rate of increase in output per capita". On this basis, Wagner's Law is viewed as:

$$GOV = f\left[\frac{GNP}{POP}\right]$$

- d. Musgrave [1969] had a different interpretation. He argued that, "the proposition of expanding scale, obviously, must be interpreted as postulating a rising share of the public sector or ratio of public expenditure to GNP" [p. 290]. Musgrave's formulation takes the form of:

$$\frac{GOV}{GNP} = f\left[\frac{GNP}{POP}\right]$$

- e. Another form was presented by Gupta [1967]. Gupta's definition is based on the functional relationship between per capita government expenditure and GNP per capita. Note that Gupta's formulation differs with Peacock and Wiseman's definition in the sense that the former used per capita figure and the latter used total government expenditure and GNP.

$$\frac{GOV}{POP} = f\left[\frac{GNP}{POP}\right]$$

To this list, Mann [1980] added a sixth formulation. We will refer this as Mann's definition:

- f. The share of government expenditure in GNP is a function of GNP and is presented as:

$$\frac{GOV}{GNP} = f[GNP]$$

In the course of the present chapter, we use four strands of the above formulations. First, we test Wagner's Law as defined by and formulated in line with Musgrave's definitions, that is, $\frac{GOV}{GNP} = f\left[\frac{GNP}{POP}\right]$. This same definition is used by several others in testing for the causality relationship between government expenditure and economic development. These include Ram [1986b], Oxley [1994], Nagarajan and Spears [1989], Murthy [1993, 1994], Ashworth [1994] and Lin [1995].

Second, we test Wagner's Law based on Goffman's [1968] definition, that is government expenditure is a function of GNP per capita, or simply $GOV = f\left[\frac{GNP}{POP}\right]$.

Third, we define Wagner's Law in line with Gupta's definition where government expenditure per capita is the function of GNP per capita i.e. $\frac{GOV}{POP} = f\left[\frac{GNP}{POP}\right]$. The reverse of this definition was used later [in Chapter Seven] in defining the Keynesian relation which we formulate as $\frac{GNP}{POP} = f\left[\frac{GOV}{POP}\right]$.

Finally, we follow Mann's definition by formulating the relationship as $\frac{GOV}{GNP} = f[GNP]$.

Peacock and Wiseman's definition is almost similar to Gupta's formulation. The former formulation is in absolute terms where as the

latter is in per capita. Considering this, we therefore opted not for the former. We ignored Pryor's definition for two reasons; first, Pryor's analysis was made in the context of a centrally-planned i.e. communist economy and second, the data sources used throughout this study do not contain any information on consumption expenditure.

6.4 FORMULATING WAGNER'S LAW

Throughout this section, we set the course for appropriately defining the properties adopted in formulating Wagner's Law as outlined in Section 6.3 above.

The following are some considerations taken in formulating Wagner's Law.

- a. Following Musgrave [1981] and Musgrave and Musgrave [1989], we use nominal values instead of real values. Musgrave [1981: 149] argued that this "gives better picture of the public sector share". This is supported by Lewis-Beck and Rice [1985] on the basis that nominal values are less troublesome in conducting regression analysis [refer to Chapter 2 Section 2.5.1 for detail discussion].
- b. We have chosen also to use GNP as a measure of national income instead of GDP or NNP [refer to Chapter 2 Section 2.5.3 for detail discussion].
- c. We noted that some previous studies excluded transfer payments in calculating government expenditure. Musgrave [1969], for example, included transfer expenditure in his calculation. Beck [1979] associated the expansion of government expenditure to the expansion of transfer payments - the so-called *Beck Hypothesis*. On the other hand, Pluta [1981] and Saunders and Klau [1985], found out that the inclusion

or exclusion of transfer payment does not differ much². Taking into account these contrasting views, we also tested for Beck's hypothesis.

Nevertheless, we apply this in the context of Musgrave's definition only. In other words, in formulating Musgrave's definition we first include transfer payment in the nominal government expenditure figures - the Musgrave definition. Then, we exclude transfer payments and call it the modified-Musgrave definition. In doing this, we define transfer payment following the item "transfer payment" in the government expenditure account [refer to Chapter 3, Box 3.2 and Appendix 1]³. We include also the expenditure on pensions in calculating the transfer payments. From this exercise we are able to know the effect of transfer payments onto the level of government expenditures. This allows us to test for the significance of the Beck hypothesis [refer to Chapter 2 Section 2.5].

- d. As mentioned in Chapter 2, government expenditure is defined in terms of the total federal government expenditure which excludes the state and local governments' expenditures. It also excludes expenditure committed by the Non-Financial Public Enterprises, known also as the Off-Budget Agencies (OBA's).

6.5 MODEL SPECIFICATION

Our model for testing Wagner's Law is carried out as follows:

- a. To repeat, we defined Wagner's Law in line with Musgrave, Goffman, Gupta and Mann's definitions.

² This finding contradicts Beck hypothesis that the government growth is the consequence of the growth of transfer payments.

³ Transfer payment in the government expenditure account of the Bank Negara Malaysia consist of four types of expenditure. These are contributions to the statutory bodies, subscription fees to international bodies, grants to state governments and miscellaneous account. Refer also to Box 3.2 earlier.

- d. We extend Musgrave's definition by defining government expenditure as Total Government Expenditure less transfer payment and term it as modified-Musgrave definition.

The following paragraphs specify the formulation used in this analysis. Throughout this and the following section, the following notations are used⁴.

- a. *nominal*
- i. GNP : Gross National Product [nominal]
 - ii. GOV : Total Government Expenditure [nominal]
 - iii. GOV1 : Total Government Expenditure less transfer payments [nominal]
 - iv. POP : Population
- b. *log form*
- v. N : Log[GNP]
 - vi. GX : Log[GOV]
 - vii. GT : Log[GOV1]
 - viii. P : Log[POP]
- c. *transformation - based on log form*
- ix. y : GNP per capita [i.e. $Y=N/P$].
 - x. g : Total Government Expenditure per capita [GX/P]
 - xi. h : Ratio of Total Government Expenditure to GNP [i.e. $H=GX/N$].
 - xii. k : Ratio of Total Government Expenditure less transfer payment to GNP [$K=GT/N$].

6.5.1. On Musgrave's definition.

Musgrave defined Wagner's Law as a share of government expenditure to GNP against GNP per capita. This test is performed in two ways. First by defining government expenditure as Total Government Expenditure

⁴ The *Microfit* package reads and treat capitals and small letters as the same though the *Microfit* output file presents the variables in capital letters. Therefore, Y and y carry the same meaning.

[GX] and second, government expenditure is calculated as Total Government Expenditure less transfer payment [GT].

a. *Total Government Expenditure - Musgrave definition*

Musgrave's definition is:

$$\frac{GOV}{GNP} = f\left[\frac{GNP}{POP}\right]$$

the log of it is $\frac{GX}{N} = f\left[\frac{N}{P}\right]$ 6.1a

Following earlier notation, 6.1a can be written as:

$$h = f[y] \quad \text{..... 6.1b}$$

Transforming 6.1b as a regression equation, we arrive at

$$h = \psi + \alpha y + \varepsilon \quad \text{..... 6.1c}$$

b. *Total Government Expenditure less Transfer Payments - modified Musgrave definition.*

Taking into account the Beck hypothesis that the growth of government expenditure is a result of the growth of transfer payment, Musgrave definition can be re-formulated as follow:

$$\frac{GOV1}{GNP} = f\left[\frac{GNP}{POP}\right]$$

the log is $\frac{GT}{N} = f\left[\frac{N}{P}\right]$ 6.2a

which can be re-written as:

$$k = f[y] \quad \text{..... 6.2b}$$

Transforming 6.2b into a regression equation, we have:

$$k = \varphi + \beta y + \omega \quad \text{..... 6.2c}$$

6.5.2. Gupta's definition

The above procedure can be repeated for Gupta's formulation of Wagner's Law,

$$\frac{GOV}{POP} = f\left[\frac{GNP}{POP}\right]$$

taking its log as $\frac{GX}{P} = f\left[\frac{N}{P}\right]$ 6.3a

which can again be re-written as

$$g = f[y] \quad \text{..... 6.3b}$$

transforming this into a regression equation as:

$$g = \phi + \lambda y + \mu \quad \text{..... 6.3c}$$

6.5.3. Goffman's formulation

Goffman defined Wagner's Law as

$$GOV = f\left[\frac{GNP}{POP}\right]$$

taking its log $GX = f\left[\frac{N}{P}\right] \quad \text{..... 6.4a}$

Similarly, we can re-write equation 6.4a as:

$$gx = f[y] \quad \text{..... 6.4b}$$

and re-write this in a regression equation form as

$$gx = \xi + \delta y + \eta \quad \text{..... 6.4c}$$

6.5.4 Mann's Definition

Following Mann, we tested Wagner's Law as

$$\frac{GOV}{GNP} = f[GNP]$$

the log is $\frac{GX}{N} = f[N] \quad \text{..... 6.5a}$

We re-write equation 6.5a as

$$h = f[n] \quad \text{..... 6.5b}$$

To facilitate regression analysis, equation 6.5b is transformed as

$$h = \tau + \gamma n + \vartheta \quad \text{..... 6.5c}$$

Throughout 6.1c, 6.2c, 6.3c, 6.4c and 6.5c, $\psi, \phi, \phi, \xi, \tau$ are the intercept terms, the $\varepsilon, \omega, \mu, \eta, \vartheta$ are the error-terms and $\alpha, \beta, \lambda, \delta, \gamma$ are the coefficients for the independent variable in each of the equation respectively.

With the above specification, we are able to show:

- i. the validity of the Wagner's Law as defined by Musgrave, Gupta, Goffman and Mann.
- ii. the validity of the Beck hypothesis [that the growth of government expenditure is a result of the growth of transfer payment].

6.6 ANALYSIS⁵

To facilitate discussion, we present below the summary of the regression model used in analysing Wagner's Law as outlined in Section 6.4 above, and re-number the equations. All variables are in natural log. Explanation of the variables are as Section 6.4. above.

Musgrave's definition	$h = \psi + \alpha y + \varepsilon$	.....	6.6
Modified-Musgrave's definition	$k = \phi + \beta y + \omega$	.....	6.7
Gupta's definition	$g = \phi + \lambda y + \mu$	.....	6.8
Goffman's definition	$gx = \xi + \delta y + \eta$	.....	6.9
Mann's definition	$h = \tau + \gamma m + \vartheta$	.....	6.10

The variables outlined by equations 6.6 to 6.10 above are first subjected to a stationary test to test for the unit root. Subject to the result of the test, we perform co-integration test if the variables are integrated of the same orders. Following this, and if the variables are integrated of different orders, we perform the Granger-causality test. Lastly, we conducted the Error Correction Mechanism test.

6.6.1 Stationarity Test

We test for stationarity or unit root on all the variables identified through equation 6.6 to 6.10 above. This involves testing for the data generating process to identify whether the variables are trend or differenced stationary. Following this, we performed the unit root test.

a. Trend Vs. Differenced Stationary

Following Nelson and Plosser's [1982] discovery that most macroeconomics time-series are generated by a differenced stationary process, we undertake to test for the trend versus differenced stationary process. To test for the trend versus differenced stationary

⁵ We are indebted to Dr. Bahram Pesaran, Economic Division, Bank of England for answering some questions on the application of *Microfit* software and Professor Walter Enders of Iowa State University for clarifying some points from his book, "*Applied Econometric Time Series*" [1995], especially on the application of unit root analysis. Communication to both are made through email.

process in the time series used in this study, we performed the Dickey-Fuller test.

This test is performed by regressing equations 5.1 and 5.2 [see Chapter Five]. From this regressions, we compute the F -ratio and compare the resulting Φ_3 -statistics as given by Dickey Fuller [1981: Table IV p. 1063]. The F -ratio of the Φ_3 -statistics is calculated as follows⁶:

$$\Phi_3 = \frac{[(RSS_{DS} - RSS_{TS}) / 2]}{RSS_{TS} / (n - 3)} \quad \dots 6.11$$

The computed Φ_3 -statistics for running the Dickey-Fuller test is reported in Table 6.1 below.

Table 6.1
 Φ_3 -statistics for Trend Vs. Differenced Stationary process

y	$\Phi_3 = \frac{[(0.019592 - 0.018952) / 2]}{0.018952 / 27} = 0.4559$
g	$\Phi_3 = \frac{[(0.043793 - 0.043771) / 2]}{0.043771 / 27} = 0.0068$
gx	$\Phi_3 = \frac{[(0.322390 - 0.317880) / 2]}{0.317880 / 27} = 0.1915$
h	$\Phi_3 = \frac{[(0.002425 - 0.002500) / 2]}{0.002425 / 27} = 0.4169$
k	$\Phi_3 = \frac{[(0.002760 - 0.002967) / 2]}{0.002760 / 27} = 1.0125$
n	$\Phi_3 = \frac{[(0.132280 - 0.117390) / 2]}{0.0117390 / 27} = 1.7124$

For 5% level of significance with $n=50$, the Φ_3 -statistics is 6.73 [for $n=25$, it is 7.24]. In our sample, $n=30$. We, therefore fail to reject the null hypothesis that $\beta = 0$ and $\rho = 1$ which shows that the data generating process in the time-series used in this study is a difference stationary process which exhibit a random walk with drift. This conclusion is in line with Nelson and Plosser [1982] main conclusion.

⁶ TS and DS refers to trend and differenced stationary process respectively. The model specification for the TS and DS is given by equation 5.1 and 5.2 in Chapter 5.

b Unit Roots Test

One can check stationarity by checking the plot of the relevant time-series. Figure 6.1. below plot the first-differenced of each of the variables. From this, it is almost clear that some of the variables do not have zero means. In other words they are not stationary. We then plot the second-differenced as given in Figure 6.2. To check for the behaviour of these variables, we further plot the third-differenced as given in Figure 6.3. On the basis of all these plots, we suspect that some of the variables might have more than one unit root.

To check for this possibility, we resorted to Dickey and Pantula [1985] test of the levels of unit roots in the time-series data. Dickey and Pantula formulated a test procedure to test for the levels of unit root, especially if it is suspected that the variables contain more than one unit root. This test is also known as sequential unit roots test. We have shown in Chapter 5 that Dickey, Bell and Miller [1986] found out that several time-series in their study contain two unit roots. At least one variables in Oxley [1994] analysis of Wagner's Law is $I(2)$.

Following Dickey-Pantula procedure, we performed the test on the variables specified in equations 6.6 to 6.10 above.

To test for the number of roots, Dickey and Pantula suggested running an OLS regression on the following regression equations. The procedure is to test for the highest possible unit roots. Enders [1995] suggested that "[A]s a rule of thumb, economic series do not need to be differenced more than two times" [p.228]. In DP3, we began by testing the possibility of three unit roots, though.

$$\text{DP3} \quad \Delta^3 y_t = \alpha_3 + \gamma_3 \Delta^2 y_{t-1} + \varepsilon_3 \quad \dots \quad 6.12$$

$$\text{DP2} \quad \Delta^3 y_t = \alpha_2 + \gamma_3 \Delta^2 y_{t-1} + \gamma_2 \Delta y_{t-1} + \varepsilon_2 \quad \dots \quad 6.13$$

$$\text{DP1} \quad \Delta^3 y_t = \alpha_1 + \gamma_3 \Delta^2 y_{t-1} + \gamma_2 \Delta y_{t-1} + \gamma_1 y_{t-1} + \varepsilon_1 \quad \dots \quad 6.14$$

Figure 6.1
Trends for the first-differenced of variables

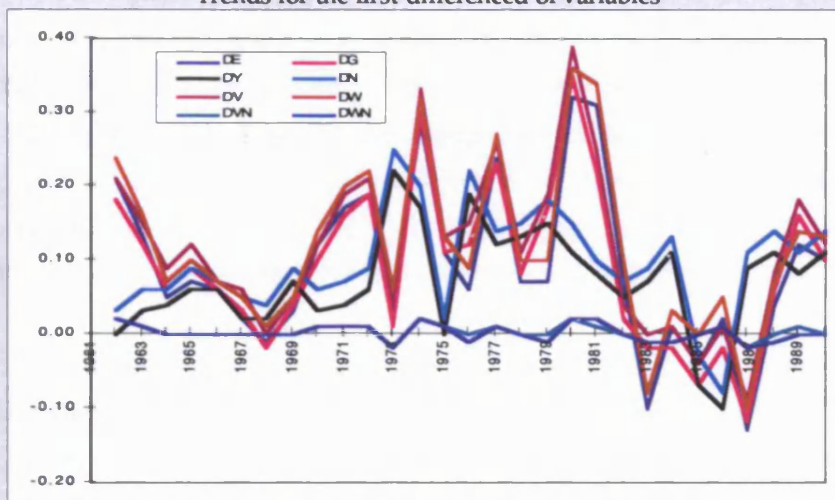


Figure 6.2
Trends for second-difference of variables

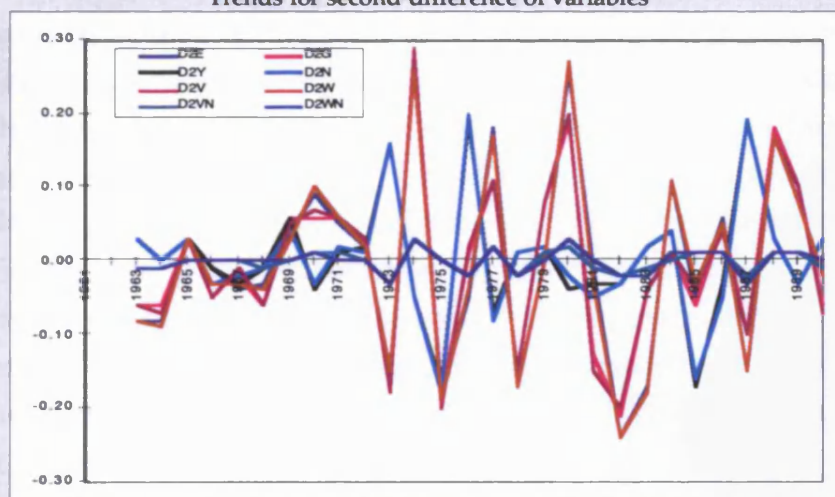
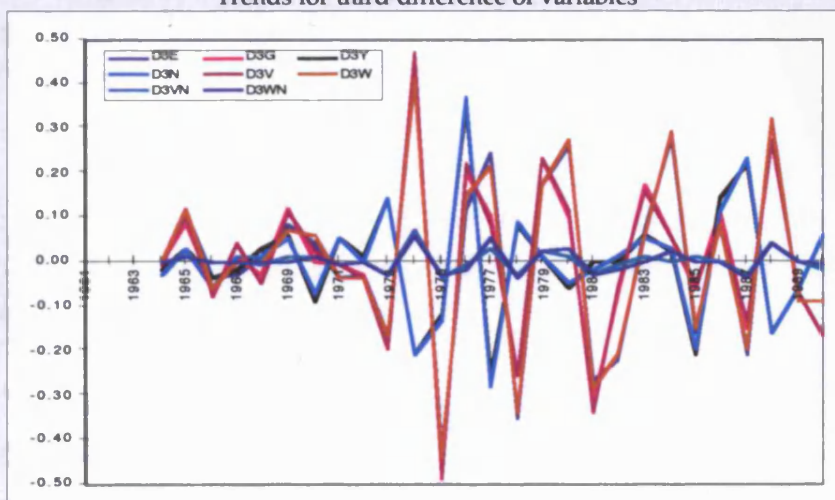


Figure 6.3
Trends for third-difference of variables



In equations 6.12, 6.13 and 6.14, Δ 's are the difference operator; the power after Δ 's refers to the level of differencing. DP3, DP2 and DP1 test for three, two and one unit root respectively. In short, DP3, DP2, DP1 test for the significance of the τ -statistics for the third-differenced, second-differenced and first-differenced variable respectively. As such, in DP1 for example, the concern is the τ -statistics for $\gamma_1 y_{t-1}$, and not on the other two regressors or the intercept.

We first run equation 6.12 and compare the τ -statistics for the third-differenced variables [the τ_3] with the $\hat{\tau}_\mu$ provided by Fuller [1976]. If, we fail to reject the null hypothesis that $\gamma_3=0$, we conclude that the series contain three unit roots. Having established that the series contains three unit roots, we check for the possibility of less than three unit root, that is, two unit root. This allows us to proceed to run the regression equation 6.13 which include the second-differenced variable to test for two unit roots hypothesis. If we again fail to reject the null hypothesis that the τ -statistics for the third-differenced variables, $\gamma_2=0$, after running regression 6.13, we conclude that second differencing have produced stationarity and have two unit root. Then, again we proceed to regress equation 6.14 to test whether the series contain one unit root. At any stage, the test should stop once we reject the null hypothesis without even proceeding to the next step to avoid getting a misleading results [Dickey-Pantula, 1987:459].

In performing this test, Dickey-Pantula suggested that the intercept term be included in the equation. Consequently, as a result of this, we use the $\hat{\tau}_\mu$ statistics in Fuller [1976].

Although Dickey-Pantula suggested that we regressed beginning from DP3 and stop immediately after we accept the null hypothesis, but, for simplicity, we regressed equations 6.12, through to equation 6.14 for all the variables.

Given below are the co-efficients for running the above procedure for equations 6.12 to 6.14 for each of the main variables concerned N [GNP], GX [Government Expenditure], Y [GNP per capita], G [Government Expenditure, GX , per capita], H [Ratio of Government

Expenditure to GNP i.e. GX/N] and K [Ratio of Government Expenditure less transfer payment to GNP].

i.	N	
	DP3	: $0.0036199 - 1.2926\Delta^2 N_{t-1} + e$
	DP2	: $0.077063 - 0.91742\Delta^2 N_{t-1} - 0.76564\Delta N_{t-1} + e$
	DP1	: $0.087697 - 0.91910\Delta^2 N_{t-1} - 0.76345\Delta N_{t-1} - 0.0010651N_{t-1} + e$
ii.	GX	
	DP3	: $-0.0015265 - 1.3182\Delta^2 GX_{t-1} + e$
	DP2	: $0.063424 - 1.0386\Delta^2 GX_{t-1} - 0.56594\Delta GX_{t-1} + e$
	DP1	: $0.17469 - 1.0280\Delta^2 GX_{t-1} - 0.57944\Delta GX_{t-1} - 0.012161GX_{t-1} + e$
iii.	Y	
	DP3	: $0.0020495 - 1.2138\Delta^2 Y_{t-1} + e$
	DP2	: $-0.0013535 - 0.79888\Delta^2 Y_{t-1} - 0.87667\Delta Y_{t-1} + e$
	DP1	: $0.76004 - 0.90592\Delta^2 Y_{t-1} - 0.71319\Delta Y_{t-1} - 0.18772Y_{t-1} + e$
iv.	G	
	DP3	: $-0.0005689 - 1.3711\Delta^2 G_{t-1} + e$
	DP2	: $0.0048504 - 1.0952\Delta^2 G_{t-1} - 0.56113\Delta G_{t-1} + e$
	DP1	: $0.23480 - 1.1160\Delta^2 G_{t-1} - 0.53891\Delta G_{t-1} - 0.064259G_{t-1} + e$
v.	H	
	DP3	: $-0.0006217 - 1.3754\Delta^2 H_{t-1} + e$
	DP2	: $0.0030578 - 0.83036\Delta^2 H_{t-1} - 1.1541\Delta H_{t-1} + e$
	DP1	: $0.085752 - 0.80213\Delta^2 H_{t-1} - 1.1792\Delta H_{t-1} - 0.093475H_{t-1} + e$
vi.	K	
	DP3	: $-0.0006581 - 1.3035\Delta^2 K_{t-1} + e$
	DP2	: $0.0034923 - 0.70864\Delta^2 K_{t-1} - 1.2772\Delta K_{t-1} + e$
	DP1	: $0.093450 - 0.68900\Delta^2 K_{t-1} - 1.2851\Delta K_{t-1} - 0.10316K_{t-1} + e$

Table 6.2 below provide the τ -statistics of the above result. Since we are interested only in the τ -statistics of each of the regressors [i.e. the independent variables], the summary below report the τ -statistics of each of the regressors excluding the intercept.

In Table 6.2 below, variable N, for example, for DP3, τ_{α_3} is the τ statistics for $\Delta^2 N_{t-1}$. For DP2, τ_{α_3} is the τ statistics for $\Delta^2 N_{t-1}$, and the τ_{α_2} is the τ statistics for ΔN_{t-1} . For DP1, τ_{α_3} is the τ statistics for

$\Delta^2 N_{t-1}$, the $\tau_{\alpha 2}$ is the τ statistics for ΔN_{t-1} , and the $\tau_{\alpha 1}$ the τ statistics for N_{t-1} . The same applies for all other variables.

TABLE 6.2
Dickey-Pantula Test For the Level of Unit Roots

Regressors/Variables	τ	DP3	DP2	DP1
N	$\tau_{\alpha 3}$	-6.7557	-4.5563	-4.4357
	$\tau_{\alpha 2}$		-3.1948	-3.0910
	$\tau_{\alpha 1}$			-0.066402*
GX	$\tau_{\alpha 3}$	-6.9453	-5.1219	-4.9863
	$\tau_{\alpha 2}$		-2.5805*§	-2.5952
	$\tau_{\alpha 1}$			-0.61688
Y	$\tau_{\alpha 3}$	-6.2214	-4.1606	-4.6236
	$\tau_{\alpha 2}$		-3.7801	-2.9218
	$\tau_{\alpha 1}$			-1.6731*
G	$\tau_{\alpha 3}$	-7.3997	-5.4429	-5.6018
	$\tau_{\alpha 2}$		-2.5045*§	-2.4301
	$\tau_{\alpha 1}$			-1.2831
H	$\tau_{\alpha 3}$	-7.4374	-4.4028	-4.3368
	$\tau_{\alpha 2}$		-4.3542	-4.5509
	$\tau_{\alpha 1}$			-1.4896*
K	$\tau_{\alpha 3}$	-6.9126	-3.9489	-3.9414
	$\tau_{\alpha 2}$		-5.0103	-5.1873
	$\tau_{\alpha 1}$			-1.5569*

Note:

* Shows significant at 5% level of significance

§ We should have stopped the regression after finding DP2 significance, yet we proceed just for illustration. For GX, for example, we should have stopped the regression without proceeding to regress DP1 since $\tau_{\alpha 2} -2.5805$ is less than $\hat{\tau}_{\mu} -2.93$.

At 5% level of significance, with $n=50$, the $\hat{\tau}_{\mu}$ -statistics given by Fuller [1976: Table 8.5.2, p. 373] is -2.93 [for $n=25$, $\hat{\tau}_{\mu}$ is -3.00]. The τ -statistics above give the following result [all of it are significant at 5% level of significance]:

N, Y, H, K - have one unit root each, i.e. an $I(1)$ process and,
GX and G - have two unit root each, i.e. an $I(2)$ process.

The above result has some implications for testing Wagner's Law as defined through equations 6.6 to 6.10 above.

Enders [1995] shows that co-integration analysis requires that all the variables must be integrated of the same order [p. 374]. Enders also show that if the variables are integrated of different orders, then there is no co-integration between them [pp. 359 and 374].

Consequently, this implies that there is no [long-run] equilibrium among the variables⁷. It therefore affects Gupta's and Goffman's definition whereby the dependent variables are log of government expenditure per capita [g] and log of government expenditure [gx] respectively.

6.6.2 Cointegration Test

Having established the level of unit roots in the variable, we proceed to test for co-integration following Engle and Granger [EG] procedure. As stated earlier, co-integration test is valid when the variables is integrated by the same level of integration. Therefore, if the level of integration is different, it can be concluded that there is no-cointegration between them [Enders, 1995] and any cointegration test on this would be statistically invalid [Oxley, 1994].

Based on the unit root test performed earlier and on the basis that the level of integration differs, we can conclude that there is no co-integration between:

- i. gx [log of Government Expenditure] and y [log of GNP per capita] which is Goffman's formulation
- ii. g [log of Government Expenditure per capita] and y [log of GNP per capita] which is Gupta's formulation.

On this account, this section will test the co-integration relationship between:

- i. h and y - the Musgrave definition
- ii. k and y - Modified-Musgrave's definition
- iii. h and n - Mann's definition

⁷ The term 'equilibrium' have different meaning between economic theorist and econometricians. The former refers the word equilibrium to the equality between the desired and the actual outcome. The latter, used it to explain the long-run relationship among the non-stationary variables [Enders, 1995: 359].

Engle-Granger [EG] cointegration test involves running an OLS regression of the form:

$$w_t = \alpha + \beta z_t + e_t \quad \dots 6.15$$

where w_t and z_t are the two variables concerned, α is the intercept term and e_t is the error-term. Note that, in equation 6.15, the regression is run on the levels of the variables. The residual from this regression, i.e. e_t , is retained to test for the presence of unit root in the residual.

Co-integration is a procedure to test for the long-run or equilibrium relationship between variables containing unit root. If two variables, x and y are both $I[1]$, then there exists a long-run [equilibrium relationship] i.e. co-integration, between the variables if the residual from this regression is stationary, i.e. $I[0]$.

To check for this, we performed the Augmented Dickey-Fuller test for unit root on the residuals from running the regression 6.15 above. On this basis, Engle-Granger co-integration is also known as 'residual-based co-integration test'. This test is performed by running the regression of the residual from equation 6.15 in the following form:

$$\Delta e_t = \phi e_{t-1} + \sum_{i=1}^m \rho \Delta e_{t-i} + v_t \quad \dots 6.16$$

where $\Delta e_t = e_t - e_{t-1}$. Table 6.3 below shows the result of running the above procedures with five augmentation⁸.

Table 6.3
Engle-Granger test for Cointegration in the Residual

	Musgrave H on Y	Modified-Musgrave K on Y	Mann H on N	5%
ADF(1)	-1.8207	-1.7114	-2.1945	-3.5622
ADF(2)	-1.5809	-1.5006	-1.2873	-3.5709
ADF(3)	-1.0878	-1.1026	-1.2898	-3.5804
ADF(4)	-0.9134	-0.9295	-0.9417	-3.5907
ADF(5)	-0.5827	-0.6954	-1.3494	-3.6018

Note: The last column gives the 5% critical value.

⁸ Number of lag length i.e. augmentation will not affect the t-value in the unit root tests for residuals. For example, ADF(1) for running 7 augmentation of H on Y is still -1.8207. We will get the same t-value for ADF(1) for 2 lag length.

Results from the co-integration test performed above shows that we fail to reject the null of no-cointegration for all the variables. Therefore, we can conclude that all the variables tested above are not co-integrated, that is, there is no long-run or equilibrium relationship between the variables.

6.6.3 Granger-causality Test

Before we report the result of testing the Granger causality test, we present below an excerpt from Christiano and Ljungqvist [1988: 217-27]:

When we tested the null hypothesis that money fails to Granger-cause output in a bivariate money-output relation using data in log levels, the resulting F -statistic was 3.19 with significance level 0.0027. When instead we used first differences of the logged data, the resulting F -statistic was 1.38, with significance level 0.22.⁹ Which of these two results is the most plausible - the first difference result, which suggests that money fails to Granger-cause output, or the level result, which suggests that money strongly Granger-causes output?

.... the most likely explanation of the puzzle is that the small F -statistic based on the difference data reflects not the data's lack of Granger-causality from money to output, but rather the test's lack of power to detect it. The large F -statistic on the level data appears to reflect the greater power of this test to detect the Granger-causality that is in fact there.

.... recall that *power* is defined as the probability of rejecting a false null hypothesis given a fixed probability of rejecting the null hypothesis when it is true.

In carrying out Granger-causality test, we face the same sort of problem as Christiano and Ljungqvist. The F -statistics for the test of joint-significance on the level of the variables give a significance result in support of Granger-causality. On the other hand, using first differenced data, the F -statistics are not significant hence, not supporting Granger-causality. As we mentioned in Chapter 5, differencing is not without cost [see for example, Banerjee *et.al.* (1993)]. In particular, differencing omits some information pertaining to long-run adjustment inherent in the data [Davidson *et.al.* (1978) and Hendry and Mizon (1978)].

⁹ The significance level of the test is the area under the F -distribution to the right of the computed test statistic - refer to footnote 1, Christiano and Ljungqvist, p. 217.

From the co-integration test performed above, we have shown that the variables specified from the Musgrave, Modified-Musgrave and Mann's definition are not co-integrated.

The Granger-causality test is carried out by regressing the following regression equations:

$$Y_t = b_0 + \sum_{j=1}^m a_j X_{t-j} + \sum_{i=1}^n b_i Y_{t-i} + u_t \quad \dots 6.17$$

$$X_t = c_0 + \sum_{i=1}^n c_i X_{t-i} + \sum_{j=1}^m d_j Y_{t-j} + v_t \quad \dots 6.18$$

However, running the above regression equations implies that we are testing for the causality from x to y and from y to x . This seems to be contradicting the Wagner's Law. A valid test for Wagner's Law therefore is carried out by testing the effect of 'some measures of the level of economic development [on]to [the] scale of government activity [Sahni and Singh, 1986]. For this reason we performed a uni-directional causality test from the level of economic development, in this case GNP, on the level of government activity, measured by way of government expenditures. Therefore, the relationship tested takes the following form:

$$Y_t = \alpha_i + \sum_{j=1}^m \phi_j X_{t-j} + \sum_{i=1}^n \gamma_i Y_{t-i} + \mu_t \quad \dots 6.19$$

The null hypothesis that y does not Granger-cause x is rejected if the coefficients γ_i are jointly significant, based on a standard F -test [Miller and Russek, 1990]. The lag length is specified by Akaike's Final Prediction Error [FPE] - refer to Appendix 5.

In performing the co-integration test earlier, we restricted our test to the definition provided by Musgrave, Modified-Musgrave and Mann only. The reason was that, in those definitions, each variables are $I(1)$. We mentioned then that, Enders [1995] argued that if the variables are integrated of different order, then it can be concluded that they are not co-integrated. On this reason we do not perform co-integration test on Goffman and Gupta's definition in Section 6.5.2 above.

In carrying out the Granger-causality test, a normal procedure is to run the test on the stationary variables only. One important issue arises here - what if the level of integration differs. Mehra [1994], for example, performed the test by including only the stationary variables in the regression equation. In a tri-variate regression equation with price, wages and output gap, price and wage are $I(2)$ and output gap is $I(1)$. Mehra includes the second difference of price and wage and the first difference of output gap. Miller and Russek [1990] used the first difference in performing Granger-causality because "undifferenced data are not stationary" [p: 226]¹⁰. Oxley [1994] argued that valid Granger-causality test can be performed using the stationary variables. Manage and Marlow [1986] differenced the series to obtain stationarity without performing the unit root test. The same procedure was adopted by Serletis [1992] and Oxley [1993], among others.

Following this, we regressed the Granger-causality test on Goffman and Gupta's definition by also including the stationary variables. In Goffman and Gupta's definition, variables gx and g respectively are $I(2)$, denoted in the following as Δ^2 . For the other variables, the first difference was used. We present the result of this test in Table 6.4 below.

Using differenced data, as shown in Table 6.4 below, all the F -statistics, except Mann's definition of Wagner's Law are not significant¹¹. In other words, by using differenced data, Granger-causality cannot be established for all the definitions of Wagner's Law. As for Mann's definition, the F -statistics is significant at 5% level of significance which signifies that there is Granger causality from some measures of national income to some measures of government expenditure. This confirmed the hypothesis of Wagner's Law. However, for Mann's definition, this hypothesis cannot be established at 1% level of significance.

¹⁰ It is not clear whether Miller and Russek perform the unit root test to test for stationarity or whether the stationarity is assumed not to exist in the level and hence the first differenced is used. No indication is made on the issue of unit root test. The nearest it comes is the footnote 1, page 222: "First differences are used when variables are not stationary in their undifferenced [level] form, because causality tests require stationary if its moments [eg., its mean and variance] are constant over time - a requirement for many statistical tests. If a variable is not stationary in its level form, it usually can be made stationary through first differencing".

¹¹ The significance level of the test is the area under F -distribution to the right of the computed value.

Table 6.4
F-statistics for the Test of Granger-Causality on Wagner's Law - using differenced data.

	Model	F statistics	d.f	1%	5%
Musgrave	$\Delta h = \alpha_1 + \sum_{i=1}^4 \phi_i \Delta y_{t-i} + \sum_{j=1}^1 \gamma_j \Delta h_{t-j} + e_{1t}$	1.6455	5,19	4.17	2.74
MM	$\Delta k = \alpha_2 + \sum_{i=1}^4 \phi_2 \Delta y_{t-i} + \sum_{j=1}^3 \gamma_2 \Delta k_{t-j} + e_{2t}$	1.2633	7,17	3.93	2.61
Gupta	$\Delta^2 g = \alpha_3 + \sum_{i=1}^4 \phi_3 \Delta y_{t-i} + \sum_{j=1}^2 \gamma_3 \Delta^2 g_{t-j} + e_{3t}$	2.1715	6,18	4.01	2.66
Goffman	$\Delta^2 gx = \alpha_4 + \sum_{i=1}^4 \phi_4 \Delta y_{t-i} + \sum_{j=1}^2 \gamma_4 \Delta^2 gx_{t-j} + e_{4t}$	1.7252	6,18	4.01	2.66
Mann	$\Delta h = \alpha_5 + \sum_{i=1}^2 \phi_5 \Delta n_{t-i} + \sum_{j=1}^1 \gamma_5 \Delta h_{t-j} + e_{5t}$	3.3659**	3,23	4.76	3.03

Note: 1. Δ is the difference operator.
2. d.f. is the degree of freedom
3. Regression are run on the lag of the independent variables. The lag length are determined using Akaike's Final Prediction Error.
4. MM stand for Modified-Musgrave definition.
5. ** significance at 5%.

Taking the cue from Christiano and Ljungqvist [1988], we report in Table 6.5 below the result of performing the Granger-causality test on the levels of the variables.

Table 6.5
F-statistics for the Test of Granger-Causality on Wagner's Law - using the level of the variables.

	Model	F statistics	d.f	1%	5%
Musgrave	$h = \alpha_1 + \sum_{i=1}^4 \phi_1 y_{t-i} + \sum_{j=1}^1 \gamma_1 h_{t-j} + e_{1t}$	48.9458**	5,20	4.10	2.71
MM	$k = \alpha_2 + \sum_{i=1}^4 \phi_2 y_{t-i} + \sum_{j=1}^3 \gamma_2 k_{t-j} + e_{2t}$	26.8216**	7,18	3.84	2.58
Gupta	$g = \alpha_3 + \sum_{i=1}^4 \phi_3 y_{t-i} + \sum_{j=1}^2 \gamma_3 g_{t-j} + e_{3t}$	76.3702**	6,19	3.94	2.63
Goffman	$gx = \alpha_4 + \sum_{i=1}^4 \phi_4 y_{t-i} + \sum_{j=1}^2 \gamma_4 gx_{t-j} + e_{4t}$	430.888**	6,18	4.01	2.66
Mann	$\Delta h = \alpha_5 + \sum_{i=1}^2 \phi_5 \Delta n_{t-i} + \sum_{j=1}^1 \gamma_5 \Delta h_{t-j} + e_{5t}$	122.199**	3,23	4.76	3.03

Note: 1. d.f. is the degree of freedom
2. Regression are run on the lag of the independent variables. The lag length are determined using Akaike's Final Prediction Error.
3. MM stand for Modified-Musgrave definition.
5. ** significance at 5% and 1%.

The above result shows that the problem faced by Christiano and Ljungqvist is evident even at 1% level of significance. All the *F*-statistics are significant. From this result, we can conclude that [some measures of] economic development Granger-caused [some measure of] government expenditure for all definition of Wagner's Law used.

6.6.4 Error-Correction Model

Another significant development from Engle and Granger [1987] is that if two variables are co-integrated, then there is an error-correction representation between them. The error-correction mechanism [ECM] model can also trace the direction of the Granger-causality [Mehra, 1974; Miller and Russek, 1990]. This ECM can be tested by running the following regression equation:

$$\Delta w_t = \alpha + \xi \hat{e}_{t-1} + \sum_{i=1}^m \gamma_i \Delta w_{t-i} + \sum_{j=1}^n \psi_j \Delta z_{t-j} + \mu_t \quad \dots 6.20$$

The \hat{e}_{t-1} is the retained residuals in running the co-integration test performed by equation 6.15 earlier. Note that in 6.15, we regressed z on w . Therefore, \hat{e}_{t-1} , is the residual in the regression of z on w [$w_t = \alpha + \beta z_t + e_t$]. We utilised error-correction model to trace the Granger-causality in Musgrave, Modified-Musgrave and Mann definition of Wagner's Law. The Granger-causality can be detected when $\xi \neq 0$.

So far, the above procedure shows only the method for testing ECM model in Musgrave, Modified-Musgrave and Mann definition of Wagner's Law which are all consist of an $I(1)$ series. ECM model however, can also be used in a higher-order regression, $I(2)$ or by combining $I(1)$ and $I(2)$ variables in the regression analysis [see Mehra, 1994]. In this case, ECM are modelled by using the stationary variables as follows:

Gupta' definition:

$$\Delta^2 g_t = \alpha + \xi \hat{v}_{t-1} + \sum_{i=1}^m \gamma_i \Delta^2 g_{t-i} + \sum_{j=1}^n \psi_j \Delta y_{t-j} + \mu_t \quad \dots 6.21$$

Goffman's definition:

$$\Delta^2 g x_t = \alpha + \xi \hat{u}_{t-1} + \sum_{i=1}^m \gamma_i \Delta^2 g x_{t-i} + \sum_{j=1}^n \psi_j \Delta y_{t-j} + \mu_t \quad \dots 6.22$$

As usual, $\xi \hat{v}_t$ and $\xi \hat{u}_t$ are the residuals from the following regression:

$$\Delta g_t = \alpha + \beta y_t + \xi v_t \quad \dots 6.23$$

$$\Delta g x_t = \alpha + \delta y_t + \xi u_t \quad \dots 6.24$$

$\xi \hat{v}_t$ and $\xi \hat{u}_t$ are the error-correction coefficients. In other words, the ECM model is "based on the significance of the error-correction terms" [Miller and Russek, 1990]. In such case as 6.21 and 6.22, Mehra [1994] argued that even if second difference of g and gx does not enter the regression equation [6.21 and 6.22], the first difference will via the residual. From here on, the same procedure follows that is to test for $\xi \neq 0$.

Although the procedure for testing ECM model on Gupta and Goffman's definition was used by Mehra, we shall caution on accepting its result. The ECM model on Gupta and Goffman are based on the error term from cointegration equations 6.23 and 6.24. The fact is that these two equations are regressed on variables with different level of integration. Logically, there is no cointegration between the variables [Enders, 1995] and hence the model itself is statistically invalid [Oxley, 1994].

The result of testing for $\xi \neq 0$ from equation 6.20 - 6.22 is presented in Table 6.5 below.

Table 6.6
Error Correction Mechanism Model

Definition	Where $\xi \hat{e}_{t-1}$ is the residual from the Cointegration Regression	ξ	t -statistics
Musgrave $\Delta h_t = \alpha + \xi \hat{e}_{t-1} + \sum_{i=1}^1 \gamma_i \Delta h_{t-i} + \sum_{j=1}^1 \psi_j \Delta y_{t-j} + \mu_{1t}$	$h_t = \alpha + \phi y_t + e_t$	-0.11328	-1.4127
MM $\Delta k_t = \alpha + \xi \hat{e}_{t-1} + \sum_{i=1}^3 \gamma_i \Delta k_{t-i} + \sum_{j=1}^4 \psi_j \Delta y_{t-j} + \mu_{2t}$	$k_t = \alpha + \phi y_t + e_t$	-0.13021	-1.5410
Mann $\Delta h_t = \alpha + \xi \hat{e}_{t-1} + \sum_{i=1}^1 \gamma_i \Delta h_{t-i} + \sum_{j=1}^2 \psi_j \Delta n_{t-j} + \mu_{3t}$	$h_t = \alpha + \psi n_t + \xi e_t$	-0.35270	-2.2241*
Gupta $\Delta^2 g_t = \alpha + \xi \hat{e}_{t-1} + \sum_{i=1}^2 \gamma_i \Delta^2 g_{t-i} + \sum_{j=1}^4 \psi_j \Delta y_{t-j} + \mu_{4t}$	$\Delta g_t = \alpha + \beta y_t + \xi e_t$	-0.55710	-1.3995
Goffman $\Delta^2 g x_t = \alpha + \xi \hat{e}_{t-1} + \sum_{i=1}^2 \gamma_i \Delta^2 g x_{t-i} + \sum_{j=1}^4 \psi_j \Delta y_{t-j} + \mu_{5t}$	$\Delta g x_t = \alpha + \delta y_t + \xi e_t$	-0.75708	-1.9347**

* significance at 5%

** significance at 10%

The t -statistics from the above regression of the ECM measures the significance of the coefficient of the error-term, ξ . From

Table 6.6 above, it can be shown that none of the coefficient ξ is statistically significant at 1% level of significance. However, at the conventional 5% level of significance, the t -statistics for the ξ coefficient of Mann definition is significant. Since significant t -statistics signifies the presence of Granger causality [Miller and Russek, 1990; McClain, and Nichols, 1993; Chaudhuri, 1997], the result from the ECM test performed above confirmed our earlier finding¹² that there is no causality between some measures of economic development on some measures of government expenditures.

The result for Mann's definition which proves the existence of Granger causality is in line with our result on differenced variables as shown by Table 6.4 earlier.

6.7 THE FINDINGS

Our quest is meant to find a causal relationship between some measure of government expenditure and some measure of national income. Applying Granger-causality to the Wagner's Law theory boils down to testing whether economic development, measured by way of national income Granger-caused the growth of the government expenditure.

Since there are different interpretations of Wagner's Law, we opted to test this relationship by applying various definitions of it. Specifically, these are the Musgrave definition, the modified-Musgrave definition which excludes transfer payments from calculating government expenditure, the Mann definition, Gupta's definition which is a modified form of Peacock and Wiseman formulation of Wagner's Law¹³ and finally Goffman's definition.

Our finding does not allow us to arrive at a specific conclusion. Importantly, it must be viewed from the type of econometric

¹² Refer to result for the test of Granger causality performed in Section 6.6.3 [Table 6.4] using difference data.

¹³ In Gupta's definition the functional relationship is in the form of per capita national income or GNP and per capita government expenditure. Peacock and Wiseman definition however is in the form of total GNP and government expenditure.

methodology used. In this study, particularly in the present chapter, two routes were taken. The first considered the unit root hypothesis following Nelson and Plosser [1982] that most macroeconomics time-series can best be modelled as a differenced stationary process. Here, the process involves three different steps. We began by testing the relationship within the framework of cointegration analysis. We then proceeded to test the Granger-causality using differenced variables. Following this, we used Error Correction Mechanism model to test for the direction of Granger causality. The second route ignored the unit root hypothesis by using the original test of Granger-causality which does not incorporate the unit root hypothesis.

In the first route, prior to and as a pre-condition for carrying out all the three tests, we conducted a unit root test on all the variables concerned. This test shows that none of the relevant variables are stationary in levels. Following Nelson and Plosser [1982] we differenced the series and tested the unit root hypothesis using the Dickey-Pantula method. We discovered that two of the variables that is, g , the government expenditure per capita and gx , government expenditure less transfer payments per capita are $I(2)$ i.e. integrated of order two or in other words have two unit roots whereas the other variables are $I(1)$. An $I(2)$ variable needs to be differenced twice to obtain stationarity whereas an $I(1)$ variable need to be differenced only once to obtain stationarity.

The following finding emerges from this exercise:

- i. Since g and gx are $I(2)$, we tested cointegration only for Musgrave, modified-Musgrave and Mann's definition because all the variables for testing this three definitions are $I(1)$. This test shows that **there is no cointegration between the variables formulated through this three definitions**. In other words, we found no proof of Wagner's Law using cointegration analysis.
- ii. In line with Christiano and Ljungqvist [1988], we ignored the result from the unit-root test and the cointegration analysis and tested the Granger-causality analysis for all the five definitions of Wagners Law. Using this procedure allowed us to arrive at the following conclusions:

- a. **Using the stationary variables, we found that there is no Granger-causality from some measures of economic development to some measures of government expenditure, except for Mann's definition where there is Granger-causality.** Proof of no Granger-causality implies that Wagner's Law is rejected.
 - b. **Using the level of the variables, i.e. the undifferenced variables for all the definitions of Wagner's Law, we found that there is Granger-causality between some measures of economic development and some measures of government expenditure.** Proof of Granger-causality implies that the Wagners' Law is proven.
- iii. We extended the analysis of [ii.a] by using the Error-Correction Mechanism model. We have shown that ECM can detect the direction of causality between cointegrated variables. We discovered that there is no Granger-causality from some measures of economic development onto some measures of government expenditure as perceived by the Wagner's Law except for Mann's definition [at 5% level of significance] and Goffman's definition [at 10% level of significance]. However, we cautioned on the acceptance of the presence of Granger-causality on Goffman's definition because the residuals are derived from the cointegration regression which is integrated of different order. This result is in line with [ii.b] above because the ECM is based on the residual from the cointegration test using differenced variables.

6.8 DISCUSSION

The task outlined in this Chapter should be a straight forward test on the relationship between government expenditure and economic growth as understood from the Wagner's Law. However, after applying the various econometric tests, the outcome remains puzzling. Specifically,

the results contradicts each other. The contradiction arises mainly through the application of unit root hypothesis.

In applying the cointegration analysis, we reject the hypothesis of cointegration. In other words, government expenditures and GNP are not cointegrated which allows us to reject the Wagner's Law. This is proven when we proceed to test the Granger causality for the Musgrave and the modified Musgrave definitions using the stationary variables. The same conclusion is derived when we used ECM.

On the other hand, ignoring the unit root hypothesis, and analysing Wagner's Law using the level of the variables, the support of Wagner's Law is overwhelming for all the definitions.

Considering that the process of differencing omits some information in a particular time-series [Davidson *et.al.*, 1987 and Hendry and Mizon, 1987], the discovery of no cointegration and no Granger-causality using differenced variables could be a result of this. Following this, further attempts at analysing Wagner's Law in Malaysia could be made in the following area. First, to extend the time span, following suggestion by Cheung and Chin [1997] to cover also the period of 1990 until recently. Second, to alter the time or sample period as suggested by Stock and Watson [1987], probably by eliminating the period of the 1960s or to include the period of 1990s as far as possible.

This consideration is worth pursuing because, from 1970 onwards i.e. after the introduction of the New Economic Policy, the degree of government intervention in the economy increased significantly [Chee, 1990]. This was an attempt by the government mainly to correct the market failure which resulted in the huge inequality between the various ethnic groups as well as among the well off and the poor within a particular ethnic groups.

Evidently, from 1970 onwards, not only the number of public enterprises created by the governments increased tremendously but also the number of government employment in 1990 was more than double the 1970 figure. The rate of growth of government employment

in the period 1970-1990 was well above the rate of growth of total employment [see Chapter 7, Table 7.6].

Also in line with this, an attempt could be made to examine Wagner's Law by eliminating the period of the 1980s. There are two reasons for this. During the period of the 1980s, especially throughout the second half of 1980s, the economy has grown substantially. Wagner's Law postulates that the growth of government expenditure is a consequence of the growth of the economy in the quest for progress. This must not be interpreted as suggesting that Malaysia is no longer a developing country. Nevertheless, being in a higher income category among the developing countries does count. Secondly, as Musgrave [1969] argued, Wagner envisaged that during the quest for social progress, expenditure will be diverted into the traditional public economy namely defence and security, health and education. The last two categories are indeed social expenditures. However, in the case of Malaysia, throughout the period of 1980s, government emphasis and government expenditure was directed more towards industrialisation.

As we mentioned in Chapter Two when we reviewed Wagner's Law, Wagner seemed to believe that the pressure for social progress and the desire for development will overcome the financial difficulties on the government which eventually allows the government to finance its expansion. Wagner argued that "[F]inancial stringency may hamper the expansion of state activities, causing their extent to be conditioned by revenue rather the other way round". However, we have observed that in the case of Malaysia, two main factors contributed to the growth of GNP. These are the revenues generated from petroleum [discovered in early 1970s] which is owned by the government, and corporation tax [refer to Appendix 7] which can be safely assumed as a result of industrialisation together with the expansion of business activities. This shows that there is no financial stringency to hamper state activities. In addition, echoing the concern of the public choice school, and evidently true in the case of Malaysia, is the ability of the government to finance its expansion by running a deficit budget financed by tax increase, debt and money creation. As we show in Appendix 7, throughout the period

under study, the budget have always been in deficit. Partly, this deficit is financed by borrowing from both local and foreign sources.

6.9 SUMMARY

Throughout this Chapter, we undertook the three-step procedures, following Mehra 1994, to test for the presence of Wagner's Law in the context of Malaysia for the period 1961-1990. We carried out these tests within the definitions provided by Musgrave, Modified-Musgrave, Goffman, Gupta and Mann. This procedures involved testing for stationarity or unit roots, cointegration analysis and the Granger-causality analysis. We undertook to use an Error Correction Mechanism model as an alternative test for the Granger-causality. Since an Error-Correction Mechanism model allowed us to use stationary variables [see Mehra 1994], we tested the ECM for all the definition of Wagner's Law mentioned in Section 6.3 and 6.5.

In performing the Granger-causality test, we faced the same problem as experienced by Christiano and Ljungqvist [1988]. The problem is that the test of Granger-causality using differenced or stationary variables discovered a non-Granger causality relationship. On the other hand when using the level or specifically the log level of the variables, the hypothesis of Granger-causality cannot be rejected.

We must note that a few discussions have emerged following Christiano and Ljungqvist [1988]. We shall discuss this contradictory result or puzzle in much more detail in Chapter 7 because the problem we faced there is similar to the one we faced here.

CHAPTER SEVEN

GOVERNMENT GROWTH IN MALAYSIA 2: GOVERNMENT GROWTH AND KEYNESIAN EXPLANATION

.... you haven't, I suppose, ever mixed with politicians at close quarter they're awful their stupidity is inhuman.

*J.M. Keynes, 1911,
in a letter to Duncan Grant,
quoted by R.Skidelsky
Spectator, 1 May, 1976, p. 15.*

Now it seems that the bastard Keynesian era is coming to an end in general disillusionment; ... The Keynesian revolution still remains to be made both in teaching economic theory and in forming economic policy.

*J.Robinson, 1973:168-77
Collected Economic Papers V,
Oxford: Blackwell.*

7.1 INTRODUCTION

In Chapter Six, we have presented the results from testing the Wagner's Law in explaining the growth of government expenditure in Malaysia for the period under study. We proceed in this chapter to look at an alternative explanation to the growth of government expenditure - the Keynesian explanation or what we called the Keynesian relation.

Keynesian economics places an important role on the level of government expenditure in managing the economy. Government expenditure from the Keynesian perspective forms what is known as the stabilisation package. In the context of Keynesian stabilisation package, government expenditure is used to lessen the impact of inflationary pressure on one hand and on the other hand, to boost the economy during the recession via the aggregate demand management.

Within the framework the IS-LM model¹, the Keynesian stabilisation policy shows the importance and effectiveness of the aggregate demand management by the government during such periods. The liquidity trap, one of the basic tools in understanding Keynesian economics, proves the ineffectiveness of the monetary policy to overcome the volatility of the business cycle which underline the basic Keynesian stabilisation policy. This however, does not means that Keynesian economic considers monetary policy as not important. Having said so, it must be recognised that in Keynesian economics, strong emphasis is given on the effectiveness of fiscal policy in combating the ups and downs of the economic cycle. This places an important role on the government expenditure as a stabilisation factor.

On the basis of this philosophical underpinning of the Keynesian economics, we are interested to study the effect the government expenditure have on the level of economic development. In other words, we are interested to study whether the level of government expenditure has any relationship with the level of economic development measured in term of Gross National Product. Utilising and within the framework of Granger-causality analysis, we are interested to see whether the level of government expenditure Granger-cause the level of economic development. This relationship is in fact a reverse of the Wagner's Law as analysed in Chapter Six.

This Chapter shall proceed as follows. Section 7.2. specified the Keynesian relation used in this study. Section 7.3 presents the model used in defining the Keynesian relation. In Section 7.4, we review some past studies on this issue. In Section 7.5 we discuss the econometric methodology used in the analysis that follows in Section 7.6. In Section 7.7 we provide some discussion of the result achieved from the analysis of Section 7.6. In Section 7.8 we offer some discussion on some Keynesian thought on the relationship between government expenditure and income. In Section 7.9, we discuss the problem arising from using stationary or differenced variables in the Granger-causality analysis. As we have stated in Chapter 6, when we

¹ It is important to note that the IS-LM model was the invention of Hicks. Keynes himself put forward the idea underlying the IS-LM model but nevertheless could not manage to "give it a lucid analytical expression" [Niehans, 1990: 352].

used differenced variables, we found no Granger-causality between the variables. However, when we used log of the level of the variables, the evident of Granger-causality is significant. Finally, in Section 7.10, we present the summary of this present chapter.

7.2 THE KEYNESIAN RELATION

Before we proceed, it is worth noting that there are only a handful of studies that have tested the causality between government expenditure and national income or, as we termed it, the Keynesian relation. Ram [1986b] and Sahni and Singh [1986] carried out a Granger-causality analysis of government expenditure growth to test for Wagner's Law and the Keynesian relation. In it, Ram modelled the Keynesian relation as a reverse of Wagner's Law. Following this, using the same data set as we used in analysing the Wagner's Law in Chapter Six, we proceed to test for the Keynesian relation to establish whether the growth of government expenditure causes, in Granger sense, the economic growth measured by way of GNP.

For the sake of clarification, what we mean by Keynesian relation in this context is the role of government expenditure in economic development. In Keynesian stabilisation policy, fiscal measures always plays an important role. In other words, Keynesian economics has always placed an important role on the government expenditure as a major component of the aggregate demand. Our task here is therefore to see whether the government expenditure has any significant effect on the level of economic development, as perceived within that limited scope.

Standard Keynesian economics is modelled as $AD=f(C,I,G,X)$ where AD is the aggregate demand, C is consumption expenditure, I is investment expenditure, G is government expenditure and X is the net export i.e. export less import. Government's demand management in the period of inflation or recession, involves managing the level of G , i.e. the government expenditure. In the period of up-cycle when AD is high which increases the inflationary pressure on the economy, Keynesian

economics postulates that the government should reduce its expenditure, to reduce the level of *AD*. On the other hand, during the down-cycle, to reduce the risk of recession (and depression) government should increase its expenditure to increase the level of *AD*.

As we have argued in Chapter Two, the development theories which flourished in the period of the fifties and sixties have placed an important role on the government expenditure to stimulate the growth of the economy. The so-called 'trickle-down' theory postulated that the extra expenditure by the government will trickle-down through the Keynesian multiplier effect onto the economy. This in turn will stimulate the economy. Obviously this understanding works within the framework of the effectiveness of the aggregate demand management as postulated by the Keynesian economics. Since other components of the aggregate demand are insufficient to stimulate the economy especially for developing countries in the early stages of development, as is the case with Malaysia, the only alternative available to push the economy forward is for the government to increase the level of government expenditure. This is referred to in basic economic textbooks as an injection to the income flow.

7.3 THE MODEL

From the various definitions of Wagner's Law as mentioned in Chapter Six, only Gupta's [1967] definition is suitable for testing the relationship outlined by and understood in the context of the Keynesian relation. The reason is obvious because in Gupta's definition, the test is performed by measuring the effect of government expenditure per capita on GNP per capita. Another possible method is the Peacock-Wisemen definition as shown in Chapter 6 [Section 6.3]. Nonetheless, the two model specifications differ only in their measurement of the government expenditure and national income. The former used per capita nominal government expenditure and GNP whereas the later used total government expenditure and GNP².

² This is not surprising though, because Gupta's work was part of the Ph.D thesis undertaken under the supervision of Professor Alan Peacock.

Following the relationship outlined in Chapter Six, Section 6.2, we attempt to test whether government expenditure alone is sufficient to influence the behaviour of the Aggregate Demand (*AD*) in the economy. We therefore modelled the Keynesian relation as:

$$\frac{GNP}{P} = f\left[\frac{G}{P}\right]. \quad \dots 7.1$$

Note that this model is the reverse of Gupta's formulation of Wagner's Law, that is $\frac{G}{P} = f\left[\frac{GNP}{P}\right]$. This way, we can show whether there exist a bi-directional causality, in Granger-sense, between the Keynesian relation and Gupta's formulation of Wagner's Law. Bi-directional causality in Granger-sense exist when x causes y ($x \rightarrow y$) and, y causes x ($y \rightarrow x$). We opted for this model because of the convenience it posed when making comparison since the variables are identical between the two models³, i.e. Gupta's formulation of Wagner's Law and the Keynesian relation.

If we let $y = \frac{GNP}{P}$ and $g = \frac{G}{P}$, we will have

$$y = f[g] \quad \dots 7.2$$

We transformed this in the form of a regression equation as follows, taking the variables in its natural logarithm form:

$$\ln y = \xi + \delta \ln g + \vartheta \quad \dots 7.3$$

7.4 REVIEW OF PAST STUDIES

Ram [1986b] in performing a cross-section study on 63 countries raised doubt of the applicability of the Keynesian relation [as well as the Wagner's Law]. In the study, only one-fourth to one-third of countries supported the hypothesis of the Keynesian relation [the same proportion also supported the Wagner's law hypothesis with some countries failed either to verify any of the relation or proves the two theories]. Ram's is an example of a few studies that have been conducted to reverse the relationship modelled within the theoretical framework of Wagner's Law to test for the Keynesian relation.

³

See also footnote 2 of Ram [1986b] for detail and further discussion on this issue.

Ram's nevertheless is inconsistent. The test was performed to trace the direction of causality between government expenditure and national income. It concluded that there existed a bi-directional causality which means that government expenditure caused national income to grow and vice-versa. Nonetheless, in so doing, the specification for Wagner's Law differs from the specification used for testing the Keynesian relation. Therefore, the conclusion reached can be questioned. Ram measured government expenditure by total government expenditure per capita and the level of economic development by GDP per capita in formulating the Keynesian relation $\left[\frac{GDP}{POP} = f\left(\frac{GOV}{POP} \right) \right]$.

However, in formulating Wagner's Law, Ram used a different interpretation by using share of general government in GDP as a measure of the level of government expenditure and GDP per capita, $\left[\frac{GOV}{GDP} = f\left(\frac{GDP}{POP} \right) \right]$. On this basis and to overcome the weakness of Ram's, we reversed the relationship outlined by Gupta's formulation of Wagner's Law to test for the Keynesian relation. By doing this, we shall have similar variables between Keynesian relation and Wagner's Law. This will allow us to make proper comparison and to establish whether there exist a bi-directional causality or feed-back between government expenditure per capita and GNP per capita. Note that our definition of Keynesian relation is similar to that used by Ram [1986b] which is the reverse of Gupta's definition of Wagner's Law. However, instead of using GDP per capita as used by Ram, we used GNP per capita.

Sahni and Singh [1984] tested for the causality between gross national expenditure [GNE] as a measure of national income and government expenditure [GE] for Canada. The study concluded that there exists a bi-directional causality between the two series. Bi-directional causality also known as feed-back implies that GNE causes GE, and GE causes GNE. Since the later is indeed a test of Keynesian relation, their result shows that the Keynesian relation is proven in the case of Canada.

Singh and Sahni [1984] performed the test on India for the period 1950-1981 and concluded that "public expenditure and national

income are related by a feedback causal mechanism" [p. 638]. They used dis-aggregated data and in so doing found that the Keynesian [and the Wagnerian] relations prevail together. In other words, there are feedback or bi-directional causality. Singh and Sahni [1986] then proceeded to test for the relationship between government expenditure and GNP in the United States for the period 1929-1980. The same conclusion of the presence of bi-directional causality was obtained.

On the basis that three studies conducted by them revealed a bi-directional causality, Singh and Sahni [1984, 1986] suggested that government expenditure and GNP should be treated as jointly dependent variables.

7.5 THE ECONOMETRIC METHODOLOGY

In testing the relationship within the Keynesian framework, we followed the three steps procedure as outlined earlier in Chapter 6. This involves testing for the stationarity or unit root properties of the variables concern, the cointegration analysis and finally the Granger causality analysis. Testing for the unit root involves also a test to analyse the data generating process inherent in the time-series to see whether the data can be modelled as a trend stationary process which require the inclusion of a trend variable in the regression equation or a differenced stationary process whereby differencing will produce stationarity. Following this, we extend the analysis by using the Error Correction Mechanism model.

We have shown earlier that cointegration implies the existence of Granger-causality, in one direction or the other. This direction can be detected when we applied the Granger-causality test to the model itself.

In the course of testing for the Keynesian relation and in line with the model formulation as outlined earlier, i.e. $\left[\frac{GNP}{POP} = f\left(\frac{GOV}{POP} \right) \right]$, only two variables are of interest to us. These are the Government Expenditure per capita, (g) where $g = \frac{GOV}{P}$, and the Gross National

Product per capita, (y) where $y = \frac{GNP}{P}$. All variables are modelled in natural-log.

7.6 THE ANALYSIS

The outcome of carrying out the three procedures as specified in Section 7.5 above is reported below.

7.6.1 Unit Root Test

Testing for unit roots involves a two-steps procedure. Prior to testing for the level of unit roots following Dickey and Pantula [1985], we carried out a test on the data-generation process to see whether the time-series used is trend stationary or differenced stationary. This is followed by the Dickey-Pantula test for levels of unit roots. We report the result of these two tests in Table 7.1 and 7.2 respectively. This result has been reported earlier in Chapter Six.

a. *Trend vs. Differenced Stationary*

Table 6.1 in Chapter Six reports the result for testing the data generating process of the time-series used in this study. As shown by equation 7.3 above, two variables are of interest in the context of testing for the Keynesian relation. Those are y and g .

As we mentioned in Chapter Five, following Nelson and Plosser [1982], the test involves computing the F -ratio of the regression 7.1 and 7.2 representing the trend and differenced stationary respectively in the form of

$$w_t = \alpha + \beta t + \rho w_{t-1} + \mu_t \quad \dots \quad 7.4$$

$$w_t - w_{t-1} = \beta + \eta_t \quad \dots \quad 7.5$$

The F -ratio is computed as follows:

$$\Phi_3 = \frac{[(RSS_{DS} - RSS_{TS}) / 2]}{RSS_{TS} / (n - 3)} \quad \dots \quad 7.6$$

We report the result for testing the trend and differenced stationary process on both variables in Table 7.1 [extracted from Table 6.1]. The process involves testing the null hypothesis that $\beta = 0$ and $\rho = 1$. Failure to reject the hypothesis $\beta = 0$ and $\rho = 1$ shows that the process is generated by the differenced stationary process.

Table 7.1
 Φ_3 -statistics for Trend Vs. Differenced Stationary process

y	$\Phi_3 = \frac{[(0.019592 - 0.018952) / 2]}{0.018952 / 27} = 0.4559$
g	$\Phi_3 = \frac{[(0.043793 - 0.043771) / 2]}{0.043771 / 27} = 0.0068$

At 5% level of significance, the Dickey and Fuller Φ_3 -statistics [1981: Table IV, p.1063] is 6.73 for $n=50$ [7.24 for $n=25$]. On this basis we fail to reject the hypothesis that the data is generated by a differenced stationary process. In other words, both y and g is a differenced-stationary process which means that both variables need to be differenced to attain stationarity.

After carrying out differencing, we performed the Dickey-Pantula test for the level of unit roots on both variables y and g to test for the unit root hypothesis.

b. Unit Root Test

The Dickey-Pantula test for the levels of unit root for all the variables have also been performed earlier in Chapter 6. We have also mentioned then that this test is chosen because of its simplicity in accessing whether the variables contains one or more unit roots. The test started with DP3 to test whether third-differenced produced stationarity. This is done by comparing the τ -statistics for the third-differenced variables with the $\hat{\tau}_\mu$ -ratio provided by Fuller [1976]. If third-differenced produced stationarity, we proceed to test for DP2 to see whether second-differenced produce stationarity. If second-differenced managed

to produce stationarity, we proceed further to test whether first-differenced is stationary. If at any stage, we discover that there is stationarity, we stop the procedure without proceeding further.

We report in Table 7.2 below the result for running these procedures on both variables used in testing for the Keynesian relation, y and g .

Table 7.2 Dickey-Pantula Test For Level of Unit Roots		
y	DP3	: $0.0020495 - 1.2138\Delta^2 y_{t-1} + e$ (-6.2214)
	DP2	: $-0.0013535 - 0.79888\Delta^2 y_{t-1} - 0.87667\Delta y_{t-1} + e$ (-4.1906) (-3.7801)
	DP1	: $0.76004 - 0.90592\Delta^2 y_{t-1} - 0.71319\Delta y_{t-1} - 0.18772y_{t-1} + e$ (-4.6236) (-2.9218) <u>(-1.6731)</u>
g	DP3	: $-0.0005689 - 1.3711\Delta^2 g_{t-1} + e$ (-7.3997)
	DP2	: $0.0048504 - 1.0952\Delta^2 g_{t-1} - 0.56113\Delta g_{t-1} + e$ (-5.4429) <u>(-2.5045)</u>

note: Figures in parenthesis refers to t -statistics

For $n=50$, the $\hat{\tau}_\mu$ -statistics given by Fuller [1976: Table 8.5.2, p. 373] is -2.93. We can conclude from the result presented in Table 7.2 above that:

- i. y have one unit root, i.e. an $I(1)$ process; the first differenced produced stationary. Note that the t -statistics for y_{t-1} is -1.6731 which is less than the $\hat{\tau}_\mu$ -statistics -2.93.
- ii. g have two unit roots, i.e. an $I(2)$ process; the second differenced produce stationary. Note that the t -statistics for Δg_{t-1} is -2.5045 which is less than the $\hat{\tau}_\mu$ -statistics -2.93.

In this exercise, we stopped the test after DP2 for variable g because the t -statistics for Δg_{t-1} is already significant.

7.6.2 Cointegration Analysis

We have established the level of integration for each of the variables, y and g in Section 7.6.1b above. Enders [1995: 374] reminded that cointegration requires that the variables are integrated of the same order. Based on the result of the unit root test performed in Section 7.6.1b. and reported in Table 7.2 above, both y and g are integrated of different orders, i.e. $I(1)$ and $I(2)$ respectively.

The result of the unit root test above allow us to conclude that there is no cointegration between y and g . In other words, there is no long-run or equilibrium relationship between the variables. However, this does not mean that there is no causality between the two variables.

7.6.3 Granger-Causality Analysis

Following Granger [1969] we tested for causality between y and g . Granger causality is tested by regressing the following equations:

$$\Delta y_t = \alpha + \sum_{j=1}^4 \gamma_j \Delta y_{t-j} + \sum_{i=1}^2 \phi_i \Delta^2 g_{t-i} + u_t \quad \dots \quad 7.7$$

where α is the intercept, y_t is the GNP per capita, g_t is total government expenditure per capita, u_t is the intercept term, γ_j, ϕ_i are the coefficients and Δ is the differenced operator. Miller and Russek [1990] showed that we reject the hypothesis that g_t does not Granger-cause y_t if the coefficient ϕ_i are jointly significant based on a standard F -test. The level of augmentation or lag was chosen based on Akaike's Final Prediction Error mentioned earlier in Chapter 5 and has also been used in Chapter 6 [for calculation see Appendix 5]. Note also that, following Mehra [1994] and Oxley [1994], we used only the stationary variables in this regression equation.

Table 7.3 below gives the computed F -statistics in running the regression equation 7.7 above.

Table 7.3
F-statistics for Granger-causality test: using the stationary variables

F-statistics	d.f.	5%	1%
0.91907	6,18	2.66	4.01

From Table 7.3 above, the F -statistics is definitely not significant even at 5% level of significance. This shows that g_t does not Granger-cause y_t . Or, within the framework of Keynesian relation, the result shows that Total Government Expenditure per capita does not Granger-cause GNP per capita.

We recall that when we tested the Granger-causality on the Wagner's Law in Chapter Six, we discovered that y , GNP per capita, does not Granger-cause g , government expenditure per capita. Here, in this Chapter, g does-not Granger-cause y . This means that there is no Granger-causality in any direction. This is explained by the cointegration theory. We have shown earlier that cointegration implies the existence of Granger-causality, one way or the other. Since the variables concerned, y and g , are integrated with different levels of integration, there is therefore no cointegration between them.

The above result was derived when using stationary variables - the first-differenced of y and the second-differenced of g . We have mentioned the problem faced by Christiano and Ljungqvist [1988] in Chapter Six. In that, against all theoretical explanation, Christiano and Ljungqvist discovered that using the differenced or stationary variables, the Granger-causality cannot be established between money and output. Christiano and Ljungqvist procedure was similar to ours by tracing the data generating process and performing the unit root test. Discovering the presence of the unit root, the Granger-causality test was performed. However, when they tested the relationship using non-differenced or non-stationary variables or in other words the levels of the variables, the Granger-causality hypothesis cannot be rejected.

In line with this, we extend our analysis by using the level of the variables. We report the result of this in Table 7.4 below. This is the result of the regression equation 7.5 below which used the level of the

variables. The lag length, as usual, is chosen using Akaike's Final Predictions Error.

$$y_t = \alpha + \sum_{j=1}^4 \gamma_j y_{t-j} + \sum_{i=1}^2 \phi_i g_{t-i} + u_t \quad \dots 7.5$$

Table 7.4
F-statistics for Granger-causality test: using the level data

F-statistics	d.f	5%	1%
14.5738	6, 19	2.63	3.94

From the above result, we can show that the computed F-statistics is highly significant. What this means is that g Granger-cause y . In other words, the government expenditure per capita Granger-cause GNP per capita. This is in contrast with the result of Table 7.3 earlier.

The above results [Table 7.3 and 7.4] imply that there is Granger-causality from g to y using the level of variables. However, using differenced variables, the Granger-causality hypothesis is rejected.

7.6.4 Error-Correction Mechanism Model.

As we have shown in Chapter Six, Section 6.6.4, the short-run and long-run relationship between the variables can be shown using the Error-Correction Mechanism [ECM] Model. ECM between government expenditure per capita and GNP per capita can be modelled as follows:

$$\Delta y_t = \alpha + \xi \hat{v}_{t-1} + \sum_{i=1}^m \gamma_i \Delta^2 g_{t-i} + \sum_{j=1}^n \psi_j \Delta y_{t-j} + \mu_t \quad \dots 7.6$$

where $\xi \hat{v}_t$ is the residuals from the following regression:

$$\Delta y_t = \alpha + \beta g_t + \xi v_t \quad \dots 7.7$$

Performing the above procedure, we obtained the following result:

Table 7.5
Error Correction Mechanism Model

Definition		Where ξ_{t-1} is the residual from the Cointegration Regression	ξ	t-statistics
Keynesian	$\Delta y_t = \alpha + \xi_{t-1} + \sum_{i=1}^m \gamma_i \Delta^i g_{t-1} + \sum_{j=1}^n \psi_j \Delta y_{t-j} + \mu_t$	$\Delta y_t = \alpha + \beta g_t + \xi_{t-1}$	-0.29661	-2.0959*

* significance at 5% level of significance

The above result shows the presence of Granger-causality from g to y , ($g \rightarrow y$), which proves the Keynesian relation hypothesis, that is government expenditure per capita Granger-cause GNP per capita. In applying the ECM model on the Wagner's Law test earlier in Chapter Six which is the reverse of this regression equation, we discovered that there is no Granger-causality from y , GNP per capita to g , government expenditure per capita. In other word, the Granger-causality relationship between g and y is uni-directional from g to y , ($g \rightarrow y$) and not the other way round.

However, as we said in Chapter Six, we shall caution on accepting the ECM model in this particular case because regression 7.6 is based on the residual of regression 7.7. In 7.7, the regression is performed on variables with different order of integration. As we showed in Chapter Six, if the variables are integrated with different order of integration, then there is no cointegration [Enders, 1995] and that the cointegration regression itself is statistically invalid [Oxley, 1994].

7.7 DISCUSSION

We set forth in this chapter to analyse the relationship between government expenditure and national income measured by the Gross National Product [GNP]. Within the framework of Granger-causality and cointegration analysis, the task is to establish whether there exists a Granger-causality from government expenditure to GNP. We termed this relationship as a Keynesian relation following notation from earlier studies by Ram [1986b], Singh and Sahni [1984] and Sahni and Singh [1984]. The same notation and theme was used recently by Ansari, Gordon and Akuamoah [1997].

Our finding suggests two opposite result though. Using growth rate model i.e. stationary or difference data within the framework of unit root analysis, there is no Granger-causality relationship from government expenditure onto GNP. However, using the level of the variables, there is Granger-causality from government expenditure onto GNP.

In this section we refrain from discussing the issue surrounding the use of difference model or unit root analysis in econometric analysis. Aspect of this are discussed in Section 7.9 below.

From one perspective, our analysis shows that the [growth of] government expenditure as an aggregate does not Granger-cause the [growth of] national income or GNP. From this point of view, the growth of GNP cannot be attributed or cannot be caused by the growth of the government expenditure within the specified period. This suggests that the Keynesian relation as outlined is therefore rejected.

A contradiction arises when we look at this result from another perspective. Utilising the original Granger-causality model developed by Granger [1969], we discover that the government expenditure Granger-cause the growth of the GNP. In other words, we discovered the presence of the Keynesian relation.

Putting aside the contradiction, a closer look at the level of government expenditure and GNP over the period covered by this study reveals that both variables grew at a tremendous rate. This growth may or may not be captured by the econometrics analysis adopted here. Some qualifications are therefore indispensable.

First, the present analysis focused only on the aggregate level of the government expenditure. This procedure is adopted to fit into the Granger-causality test as a way of testing the causality between one variable, say x , on the other variable, y . As we mentioned earlier in Chapter Five, Granger-causality test is the only available testable method to test for causality between [two] variables.

Attempts to establish the relationship between government expenditure by disaggregating the data must discard the Granger causality analysis. Or, one can use the Granger-causality test to test the [Granger-causality] relationship between each of the disaggregated data and GNP. However, this procedure raises doubt as to the relevance of Keynesian relation as outlined in this Chapter.

Second, the non-Granger causality finding might arise due to the problem of omitted variables highlighted earlier by Nagarajan and Spears [1989] and Lutkepohl (1982). The analysis only concentrated on the [Granger causal] relationship between government expenditure and GNP⁴. Various other determinants, such as the level of technology, the quality and quantity of labour force, incentives provided by the government to promote investment, domestic or foreign, can all cause the growth of GNP over the periods. All these factors has not been taken into considerations in this present analysis. The reason for this neglect is due to the fact that it falls outside the scope for analysing the Keynesian relation [and the Wagner's Law] as outlined here

Third, one important aspect that we have neglected in the present study is expenditures committed by the various public enterprises [PE]. In meeting the target set by the New Economic Policy [NEP], among the strategies adopted by the government was the creation of various PEs. Table 1.4 earlier shows the growth of PEs throughout the period. The aggregate government expenditure figure used in this study does not include the expenditure committed by these various PE's⁵ for the reason that they are self-financing. However, it would be naive to think that these various PE's do not bear any significance in raising the level of GNP. They not only contribute to growth and

⁴ It would be interesting to analyse the Granger-causality relationship between the percentage change or the rate of growth of government expenditure and the percentage change or rate of growth of GNP over the whole period. In other word, the test is to concentrate on the growth and NOT on the nominal value of government expenditure and GNP. This procedure involves calculating the change in government expenditure [s] and GNP [t] from 1961-1990 and test the Granger-causality $S \xrightarrow{GC} t$, where GC refers to Granger-cause.

⁵ However it includes the government contribution to these PE's. Nevertheless, PE's expenditure is financed not only by the grants or contribution by the government. Indeed, much of the country's external debts are debts arised from the PE's external borrowing.

development of an economy⁶, but also to the level of national income and employment⁷.

Fourth, in the 1970's, the expansion or specifically the creation of new land development schemes mentioned earlier in Chapter Three could explain the increase in government expenditure. These various land development schemes, developed mainly by FELDA [Federal Land Development Scheme] helped to expand the commercial agricultural activities. The creation of land development schemes thus constitute an increase in government expenditure and the production of commercial crops have contributed to the expansion of GNP.

7.8 SOME KEYNESIAN THOUGHT ON THE RELATIONSHIP BETWEEN GOVERNMENT EXPENDITURE AND INCOME.

In Section 7.6 and 7.7, we presented the results from testing the Keynesian relation and some discussion of the results respectively. As we have already mentioned on several occasions, the task set forth follows earlier works on the same line of thought which contrast or reverse the relationship outlined by the Wagner's Law - the so-called Keynesian relation.

We have termed the Granger-causality test of the effect of government expenditure on the level of GNP as a Keynesian relation. This is rather contentious. What does Keynesian economics have to do with this? If anything, what does Keynesian economics say about this so-called relationship? Above all, since we are working on time-series data that runs for thirty years, does not this relationship contradict Keynes' famous dictum that 'in the long-run, we are all dead'?

⁶ Without growth there cannot be development [Hall, 1983] but growth itself is not development.

⁷ Lysy [1980] in studying the relationship between investment and employment in Malaysia by assuming that the country has excess labour came to the following conclusion [p. 565]: "Though the immediate cause for the extremely poor employment growth in developing economies may have been a lack of demand, this does not necessarily mean that all such economies should immediately begin a policy of demand expansion. There have probably been other factors which limit the use of such a policy, such as the state of balance of payments. But it is still important to recognise the immediate cause of the problem lies in demand, and that it may be the balance of payments which limits what the nation can do about the level of demand. If so, more attention should be given to the promotion of exports or the limitation of imports, even if the current trade statistics reveal a balance of payments in 'equilibrium'.

This section is therefore dedicated towards this end.

Keynesian economics is concerned basically with demand management and fine tuning so that "when the economy is operating below full employment level of output, higher public expenditure will, through the multiplier process, generate higher output" [Heald, 1983: 33-39]. This means that the emphasis is given on the role of government or specifically government expenditure in managing the aggregate demand. Within this framework, Keynesian policy suggested that during the period of recession when aggregate demand is insufficient to effectively clear the product and labour market, government should increase government expenditures. On the other hand, when aggregate demand is too high, government should reduce their expenditure to ensure that the economy is not overheating thus inviting inflation. This means that within the Keynesian economic thought, aggregate demand management is meant to reduce the volatility of the business cycle. Fiscal policy is used to fine-tune the up-cycle and down-cycle. Keynesian economics argued that only the state can carry out this task by managing the level of government expenditure.

This seems to be the correct explanation for the growth of public sector enterprises in Malaysia from 1960 onwards as shown by Table 1.4 earlier. Consequently this also contributed to the rise of the public sector employment as shown by Table 7.6 below. Throughout the period 1970-1990, except for the period 1985-1990, the rate of growth of government employment exceeded the rate of growth of total employment in the country. Two factors explain the changes during the period 1985-1990. First, the economy was in recession in the years 1985-1987. Secondly, the drive of privatisation has intensified such that the rate of growth of government employment was negligible.

Table 7.6
Public Sector Employment, 1970-1990 ('000)

Year	Total Employment	Government Employment	% to Total Employment	% annual change	
				total emp	gov. emp
1970	3340	398	11.9	-	-
1975	4020	520	12.9	3.39	5.11
1980	4817	692	14.4	3.97	6.62
1985	5625	820	14.6	3.35	3.70
1990	6603	850	12.9	3.47	0.73

Source: Adjusted from Rugayah Muhamed [1995]

It is worth while to mention at this stage a brief insight into some of the growth theory. Since the whole of the exercise is to explain government expenditure growth, we avoid going into detail on the discussions surrounding the literature on economic growth which is beyond our scope. What we do in the next paragraph or so is to highlight some important aspects of these growth theories.

Postwar economic growth theories was dominated by three major works⁸ by Roy Harrod [1948], Evsey Domar [1947]⁹ as well as Robert Solow [1956]¹⁰. In the famous Harrod-Domar model, briefly stated $\frac{\Delta Y}{Y} = \frac{s}{k}$, investment¹¹, is the prime mover of the economy [Ghatak, 1995] since s is the proportion of income saved¹². Income is therefore a function of private investment¹³, spending and government spending allowing growth to be entirely determined by capital formation [Peacock and Shaw, 1971: Ch. IV]¹⁴. Likewise, in Solow [1956] growth theory $Y = Ae^{\mu} K^{\alpha} L^{1-\alpha}$, capital $[K]$ is again the main determinant of the growth of the economy¹⁵. The fact that K and L [labour] substitute each other¹⁶ by the power of α ; the higher the value of α , the bigger is the

⁸ Solow [1994] identified three waves of interest in growth theory. First was the work of Harrod [1948] and Domar [1947]; second was the neo-classical model [Solow, 1956] and the third "began as a reaction to omissions and deficiencies in the neoclassical model, but now generates its own alternation" [p: 45] in the theme of endogenous growth theory [Romer, 1986] and Lucas [1988].

⁹ As noted by Hache [1979: 3], both Harrod and Domar "was one of the earliest by-products of Keynes's [1936] *General Theory* aimed to extend Keynes's analysis into the 'long period'". It becomes "an important extension of the Keynesian model" [Peacock and Shaw, 1971]. Chapter One of Hache provides better overview of the relationship between Harrod and Domar analysis and Keynes's analysis.

¹⁰ Robert Solow himself claimed to be an unrepentant Keynesian and at one instance proudly question, 'If you take your hands off the wheel, do you believe the car will find the middle of the road before it finds the verge?'

¹¹ HD model, $[\Delta Y / Y = s / k]$ where Y is the national income, s is the saving ratio $[s = S/Y]$ and k is the capital-output ratio $[\Delta K / \Delta Y]$. If we let $g = \Delta Y / Y$, we have, $g = s(1/k) = (S/Y)(\Delta Y / \Delta K)$. This shows that "the rate of growth of GNP is determined jointly by the savings ratio, s , and the capital-output ratio, k . More specifically, positively related to saving ratio [i.e., the more the economy is able to save-and invest the greater will be the growth of GNP] and inversely or negatively related to capital-output ratio" [Todaro, 1995: 72].

¹² Hache [1979] argued that critics of Harrod-Domar model, especially from Tobin [1955] and Solow [1956] pointed out to the fact that the model made an "unrealistically rigid assumption of a fixed-coefficients technology" [p. 34] which give way to the neo-classical model of Solow on the basis that "the real world production coefficients are variable" [p.34].

¹³ Within the Keynesian framework, savings is income less consumption. It is assumed that savings is equal to investment $[S=I]$.

¹⁴ Peacock and Shaw [1971] also pointed out that one main concern is not entirely the full employment of capital stock but, of greater importance also is the full employment of labour force.

¹⁵ where Y is income, A is the technological starting point of the society, e^{μ} is the exogenous rate at which technology evolves, μ is the rate of growth of income per capita and α is the percentage increase in GDP resulting from a one percent increase in capital.

¹⁶ One critics of Solow growth theory is that given the state of the technology with the assumption that "entrepreneurs react to changes in comparative factor prices, the employment of greater capital-intensive method of production will be accompanied by a decline in the marginal product of capital " and hence, "in the long-run growth rate of the economy is determined uniquely by the growth rate of population" [Peacock and Shaw, 1971: 101-102].

share of capital in determining the level of income since α is the share of capital in national income account [Pack, 1994; 55].

This means that the rate of capital formation must be huge enough to boost the economy. Capital formation can take the form of investment by the public or private sector [Musgrave and Musgrave, 1989]. However, in the early stage of development, private capital formation is limited which leaves the government to invest more in the economy. This investment is necessary to improve human and physical infrastructure needed for growth and development. Unfortunately, this investment is normally insufficient [Begg, Fischer and Dornbusch, 1997]. As shown in Appendix 1, a huge portion of government expenditure was channelled onto the development or investment expenditure. Within the framework of Keynesian economics, these expenditures can be viewed as an attempt to stimulate the effective demand in the economy. In the words of Heald [1983] the government or state can therefore be regarded as 'a Keynesian social democratic state'. The term is used "to embrace commitment to full employment, a willingness to use industrial intervention, and support for the public services characteristic of welfare state" [p. 5]. Therefore, along this line of argument, we term the relationship outlined in this chapter as a Keynesian relation. This is not to deny that Keynesian stabilisation policy is indeed a comparative static analysis with little, if any, long-run equilibrium application¹⁷.

Thus in the quest for growth, realising the insufficient private capital formation and the limited resources for the government to expand its investment, various incentives were provided by the government to encourage foreign direct investment into the country. In 1968, the government enacted the Investment Incentives Act, 1968 to provide incentives for foreign investors to invest in the country. In addition to the Investment Incentive Act, various Free Trade Zones¹⁸

¹⁷ To the Keynesians like A.P. Thirlwall, Keynes concerned not only the short-run as portrayed by his famous dictum "in the long-run, we are all dead". Thirlwall [1987] argued that "Keynes addressed himself to several development issues and clearly had a vision of the long-run development process" [p. 8]. He further argued that "[I]t is clear from many of his essays and memoranda that Keynes did have a vision of the mainsprings of long-run economic progress at a time when very few, if any, economists were writing about growth and development," [p. 14]. All this "gave Roy Harrod, Joan Robinson, Nicholas Kaldor and others to provide a framework for the analysis of long-run growth in both developed and developing countries" [p. 14].

¹⁸ As at January 1, 1989, 538.32 ha of land was developed for the Free Trade Zone with 100 firms operating, employing 68,877 workers and with a fixed assets of \$1,429.2 million [Jomo, 1993, Table 4.1].

and Industrial Estates¹⁹ were also established. This is in addition to the expansion of the Off-Budget Agencies [OBA's] known nowadays as Non-Financial Public Enterprises [NFPE's], mentioned earlier. Throughout the period of the study, government has always run a deficit budget financed mainly by borrowing, domestic or foreign [see Appendix 7]. The incentives provided by the Investment Incentives Act were extended by the Promotion of Investment Act, 1986.

The New Straits Times, August 22, 1992 reported that out of \$26,168.13 million investment approved by MIDA [Malaysian Industrial Development Authority] for the year 1990, 62.6% or \$17,629.14 million was awarded to foreign investors with only 37.4% or \$10,538.99 million were taken up by domestic investors. Of the total \$17,629 million, Taiwanese investment accounted for \$6,339 million followed by Japanese investment at \$4,213 million. Others include United States, Singapore, United Kingdom, South Korea and Australia. Table 7.7 below shows the trend of direct foreign investment [1971-1988] which is becoming more importance towards the end of the 1980s.

Table 7.7
Trend of Direct Foreign Investment in industrial projects granted approval, 1971-88.

Year	No. of projects approved	Foreign Equity [\$m]	Total Equity [\$m]	% of foreign equity
1971	304	96.4	563.4	17.1
1972	355	149.0	359.3	41.5
1973	473	254.1	544.9	46.6
1974	525	264.1	759.1	34.8
1975	461	155.3	564.5	27.5
1976	425	114.1	458.5	24.9
1977	400	107.9	357.9	30.1
1978	428	177.8	480.2	37.0
1979	484	495.6	1254.7	39.5
1980	460	248.2	752.9	33.0
1981	613	495.3	1709.1	29.0
1982	481	527.6	1921.5	27.5
1983	498	296.3	1022.4	29.0
1984	749	275.4	1213.4	22.7
1985	625	324.9	1823.7	17.8
1986	447	524.5	1878.8	27.9
1987	332	750.7	1529.3	49.1
1988 [Jan-May]	193	614.3	1056.2	58.2

Source: Adapted from Table 3.1. Jomo, K.S. [1993]

Finally, it is justifiable to say a bit on the revenue side of the government budget. As a percentage of total revenues, tax revenue still remained important although non-tax revenues made slight gains

¹⁹ Number of Industrial estates as at 1 January 1992 was 166. 55 new proposals were also put forward. [New Straits Times, August 22, 1992].

throughout the end of the period. Within the tax revenue categories, direct taxes are becoming stronger than indirect tax with the latter constituting 49% of tax revenues in 1990, a fall from 74% in 1964. Nevertheless, this was not the result of an increase in income tax but rather an increase in other direct taxes which includes corporate income taxes - with the expansion of business activities, and petroleum income tax [see Appendix 7a].

7.9 GRANGER-CAUSALITY AND GRANGER NON-CAUSALITY - THE PUZZLE : A GENERAL DISCUSSION.

In Section 7.6 above, we have shown the problem of establishing a causality relationship between the variables; the same problem that has puzzled Christiano and Ljungqvist [1988]. In short the problem was as follows: in establishing the Granger-causality relationship between the variables, using the original Granger-causality test, Granger-causality cannot be established when using differenced variables but when using the level of the variables, the result supported the Granger-causality hypothesis overwhelmingly. In Christiano and Ljungqvist, Granger-causality cannot be established between money and output using differenced variables. In Christiano and Singleton [1986], the same conclusion was drawn with respect to money and income. In another Granger-causality test on money and income, Eichenbaum and Singleton [1980] found sharp reductions in the importance of money when the tests were performed using log difference of the variables rather than using the log levels with a time trend.

The question to ask is where does the problem lies. Since using the levels of the variables, Granger-causality cannot be rejected and using the differenced variables, Granger non-causality cannot be established, the answer seems to point towards the usage of differenced variables. In other words, one may ask whether differencing gives rise to this problem. If differencing contributes towards this [Granger causality and non-causality] puzzle, two main implications arise. First, it questions the unit root hypothesis itself because the main argument underlying the unit root hypothesis is that the mean [of a variable] is not

stationary. Hence, there is a need to difference the data to obtain stationarity. Second, it poses a most serious challenge to Nelson and Plosser [1982] that most macroeconomics time-series can best be modelled as a differenced stationary rather than a trend stationary process. In fact Nelson and Plosser's finding can be regarded as the foundation for the development of the unit root hypothesis itself.

This controversy has triggered some new theoretical discussion. The issue is: does the unit root hypothesis make sense, after all? And following Christiano-Ljungqvist money does not Granger cause output, few suggestions have been put forward on the question of differenced and trend stationary. This section is dedicated towards the discussion of this issue.

The first argument is that the present test procedure, mainly the Dickey-Fuller test as suggested by Nelson and Plosser [1982] does not discriminate between the trend and stationary process [Christiano and Eichenbaum, 1990]. The power of this test is extremely poor [Christiano and Ljungqvist, 1988; De Jond, Nankervis, Sawin and Whiteman, 1992 and Schwert 1989] which lead to the failure to distinguish the data generating process itself. De Jond, Nankervis, Sawin and Whiteman [1992] suggested that "it is premature to accept the integration hypothesis as a stylised fact of macroeconomics time series" [p. 423]. No doubt this view challenged the conclusion drawn by Nelson and Plosser [1982].

Christiano and Eichenbaum [1990] believed that the difference between trend and differenced stationary is concerned with what happens in the infinite future. Therefore, they argued that we actually do not know whether the variable [GNP in their case] has a unit root or not, i.e. whether the variable is differenced stationary or trend stationary. In discussing this paper, Stock [1990] pointed out that the present test procedure cannot differentiate between trend and differenced stationary when the unit root is close to one. Stock argued that "hypothesis tests cannot reject alternative models that are 'close to' the null model" [p. 63].

Secondly, Stock and Watson [1987] argued that the Granger non-causality conclusion is sensitive to the sample period. It seems that some inherent feature of the sample period contributes to this problem. In analysing Granger-causality between money and income, Christiano and Singleton [1986] discovered a significant contrast on the inclusion and exclusion of the 1980's period. Nevertheless, no suggestion was made as to why this happened.

Third, Cheung and Chinn [1997] concluded that with a larger span of data one can obtain strong evidence of trend stationary. Again this conclusion seems to challenge Nelson and Plosser [1982] contention that most economic time series can best be modelled as a differenced stationary process. If our finding of Granger non-causality in the present study is related to this, in future, we ought to extend the time period further.

Fourth, another aspect of the challenge to Nelson and Plosser conclusion come from Perron [1989]. Perron argued that the unit root hypothesis can be rejected if one takes into account the presence of structural break in the time-series used. On this account, Perron model the break in his analysis by assuming that the researcher knows the break-point. Zivot and Andrews [1992] extended Perron's hypothesis of structural break by assuming that the researcher does not know the break-point. We used Perron's technique in the present study when we analyse the Peacock and Wiseman Hypothesis in Chapter Eight.

Fifth, a few recent studies revolves around the following theme: unit root - do we know and do we care? [Christiano and Eichenbaum, 1990]. Part of the series of "*Carnegie-Rochester Conference Series on Public Policy Vol. 32*" was devoted towards this discussion. These studies established that in reality, we do not know the presence of unit root in time series, at least the present procedures have not allow us to establish the present of unit root. Secondly, even if we know that unit root exists, we really do not care about it.

It is beyond the scope of the present study to discuss the relevance or irrelevance of unit root hypothesis in econometrics time-

series. Even though Christiano and Eichenbaum [1990] suggested that we cannot differentiate between the differenced and trend stationary, the conclusion itself needs further investigation. On this basis, we adopted this [unit root] approach in the present study. The consideration behind this is that the debate has yet to reach its maturity. On the other hand, Nelson and Plosser's conclusion seems strong enough to be neglected. We therefore tested for the unit root whereby we discovered that the series are not stationary in level. It is worth noting that Christiano and Ljungqvist pointed to the work of Eichenbaum and Singleton [1986] and Stock and Watson [1987] which suggested that the source of misspecification in their model is the exclusion of a time trend. Nevertheless, the exclusion of a time trend is in line with Nelson and Plosser conclusion regarding the differenced stationary hypothesis.

In our view, one main point that has to be noted regarding this puzzle is that the unit root hypothesis is a new invention applied to the Granger-causality analysis. The Granger-causality analysis was developed earlier than the unit root hypothesis. The application of unit root hypothesis to the Granger-causality analysis follows mainly Granger and Newbold [1974] fear of spurious regression.

In applying the unit root hypothesis and in line with Nelson and Plosser [1982], differencing has to be done on the level of the variables to obtain stationary. However, differencing itself is not without cost [Banerjee *et.al.*, 1993]. The process of differencing omits some information pertaining to long-run adjustment inherent in the data [Davidson *et.al.*, 1978 and Hendry and Mizon, 1978]. Nevertheless, in view of Nelson and Plosser's conclusion, differencing is considered the only way to attain stationarity. As argued by Granger and Newbold [1977: 206] differencing is better than doing nothing.

Earlier studies utilising Granger-causality test on the relationship between government expenditure and income were performed on the level of the variables. For, example, in applying the Granger-causality test on Wagner's Law and Keynesian relation, Ram [1986b], Sahni and Singh [1984] and Singh and Sahni [1984, 1986], the test was conducted on the log of the level of the variables. However, we

must acknowledge that a few recent studies on Wagner's Law on Mexico [Ashworth, 1994; Hayo, 1994; Lin, 1995; Murthy, 1993, 1994] applied the unit root hypothesis. These studies, however, did not face the same differenced-level problems as we faced here. Nevertheless these studies were limited to the cointegration analysis only without analysing the Granger-causality.

Nagarajan and Spears [1989] have discussed the problem of Granger non-causality between government expenditure and national income. They argued that Granger non-causality arises because of the omission of certain variables in the regression process. In other words, non-causality is due to omitted variables. Nevertheless, this analysis does not take into account the unit root hypothesis and thus has not faced the problem of differenced versus trend stationary. On the other hand, this conclusion itself does not take into account that a researcher is constrained to test the relationship within a specified theoretical framework. In the case of Wagner's Law and Keynesian relation, for example, the theoretical framework is to establish the causal flow from the government expenditure to the national income, and vice-versa, which does not involve any other extra variables.

7.10 SUMMARY

We embarked in this Chapter to test whether the relationship between Total Government Expenditure per capita and GNP per capita can be tested within the framework of Keynesian relation. We utilised Granger-causality to test whether Total Government Expenditure per capita Granger-cause GNP per capita.

Since the relevant variables g_t and y_t are integrated of different order, $I(2)$ and $I(1)$ respectively, we concluded that there is no cointegration between the two time-series. This means that there is no long run relationship between them.

We performed the Granger-causality test on the Total Government Expenditure per capita, g_t and GNP per capita, y_t . Two

opposing results were obtained. First, when we used the differenced variables, the results indicated that there is no Granger-causality from Total Government Expenditure per capita to GNP per capita. However, when we used the level of the variables, the results indicated that there is Granger-causality between Total Government Expenditure per capita and GNP per capita.

This result is similar to the result on the test of Wagner's Law in Chapter Six, the so-called differenced-level paradox with respect to the usage of Granger-causality test. On this account, we discussed the differenced-level paradox in this Chapter to shed some light on this puzzling problem. We presented some views especially from those who have dealt with this issue in the past.

We extended our analysis by using the Error Correction Mechanism [ECM] model. This is done following Mehra [1994] who performed the ECM model using only the stationary variables though the variables are integrated with different order of integration. Employing an ECM, we can trace the direction of Granger-causality from g , government expenditure per capita to y , GNP per capita. However, as we argued earlier, we cautioned on the acceptance of this finding.

CHAPTER EIGHT

GOVERNMENT GROWTH IN MALAYSIA 3: PEACOCK AND WISEMAN HYPOTHESIS

Director's Law of Public Expenditure:

Public Expenditure are made for the benefit primarily of the middle classes, and financed by taxes which are borne in considerable part by the poor and the rich.

Stigler, 1970:1

Journal of Law and Economic Vol. 13.

8.1 INTRODUCTION

The main thesis of Peacock-Wiseman Hypothesis, hereinafter called *PWH*, is that, as a result of a social upheaval befallen a country at a given time, the government is forced to channel extra, and to some extent, a very large amount of expenditure towards that purposes. From here, two things can happened. First, expenditure mix of public spending may alter and second, extra revenue is required to meet the increased budget and hence the need to increase tax revenue. In the context of Peacock-Wiseman [1961, 1967], the social upheaval was the two world wars fought by Britain. During this period of social upheaval, they observed an increase in military expenditure relative to civilian expenditure, i.e. a change in expenditure mix. They also observed an increase in governmental spending.

On the other hand, in view of this social upheaval, the public's perception of 'a tolerable burden of taxation' will also change. The public is willing to contribute to higher taxes to finance these extra expenditures. The 'tolerable burden of taxation' is basically the rate of taxes at which the public is willing to pay.

The changes in expenditure mix coupled with an increase in the total government expenditure made possible by a change in the public willingness to pay higher taxes resulted in the displacement from a normal growth pattern of government expenditure. Within this conceptual framework, *PWH* can then be viewed as either a theory of government spending or a theory of government revenue. Peacock and Wiseman make several references to both in discussing the desirable burden of public expenditure and the desirable burden of taxation.

The displacement theory [of the growth pattern of government expenditure] has been extended further to include the great depression in the early thirties [see for example Gupta (1967), Bonin *et.al.* (1969), Diamond (1977)].

Mainly due to the insufficiency of the data, we are unable to model the two world wars to show the displacement effect in Malaysia. Above that, one must not forget that though a victim of the Japanese invasion during the second world war, Malaysia in itself was not a party in that conflict¹. We have mentioned in Chapter Four that Japanese invasion of South-East Asia - Malaysia, Indonesia and Philippines, but not Thailand which was left intact² - was in fact a Japanese-waged war against the Western interest in the Asia's affair in line with 'Asia for Asians' theme. Insufficiency of data is also the reason why we could not model the Great Crash or Great Depression within this theoretical framework of *PWH* for Malaysia. Nonetheless, Malaysia itself had yet to gain independence at that time. Furthermore, it does not falls within the time-period chosen for the purpose of our study.

On this basis, we modelled *PWH* as a social upheaval in the form of social unrest following the May 13, 1969 incident, as discussed in Chapter Four. The purpose is to see whether, the May 13, 1969 incident resulted in a displacement of government expenditure beginning from 1970. It may be recalled that the May 13, 1969 gave birth to the New Economic Policy [NEP]. Following the introduction of NEP, we saw a

¹ Gatak [1991] discovered that the Second World War cannot be interpreted as a social upheaval in the context of India since Indian participation in the war was minimal.

² This could explain the reason why Thailand was left alone because Thailand has never fallen under any colonial power throughout her history.

huge leap in both the absolute level of government expenditure and the GNP as well as the ratio of government expenditure to GNP³.

This Chapter proceeds as follows. Following this in Section 8.2, we discuss some theoretical issues together with two versions of interpreting the *PWH*. In Section 8.3, we present the econometric methodologies used in previous studies of *PWH*. In Section 8.4, we present the *PWH* model adopted in this study. In Section 8.5, we discussed Perron test for structural break, being the methodology adopted in this study. The analysis is presented in Section 8.6. In Section 8.7, we present some general discussion of the *PWH* and the result of the test that we performed. We end this Chapter with a summary in Section 8.8.

8.2 PEACOCK AND WISEMAN HYPOTHESIS - THE THEORY

8.2.1 A Brief Note On Earlier Studies

Bird [1970] provided a very critical note of the displacement hypothesis as put forward by Peacock and Wiseman [1961]. In highlighting the 'changed' tone as shown in Peacock and Wiseman [1967], Bird believed that Peacock and Wiseman "thus appears to have shifted from a hypothesis relating to total public expenditure to one concerned with the changed 'character of public expenditure' that even Peacock and Wiseman cannot sustain the original displacement hypothesis" [p. 460].

Bird also cited Gupta [1967]. The latter argued that the displacement was not the result of the increase in the tolerable burden of taxation but by "a shift in people's ideas about the desirable level of public expenditures" [Gupta, 1967: 445-446]. This prompted Bird to argue that this type of changes produced a 'ratchet' in the growth trend of government expenditure. Bird believed that the ratchet effect is more plausible because of the relative frequency of the crises. Bird argued that "in normal conditions, the government expenditure ratio $[G/Y]$ rises

³ As shown by Figure 1.3 [Chapter One], from 1980 onwards, the ratio of government expenditure to GNP showed a downward trend. A close look at Figure 1.3 reveals that this is the result of a huge increase in GNP from 1980 and especially from 1986 onwards.

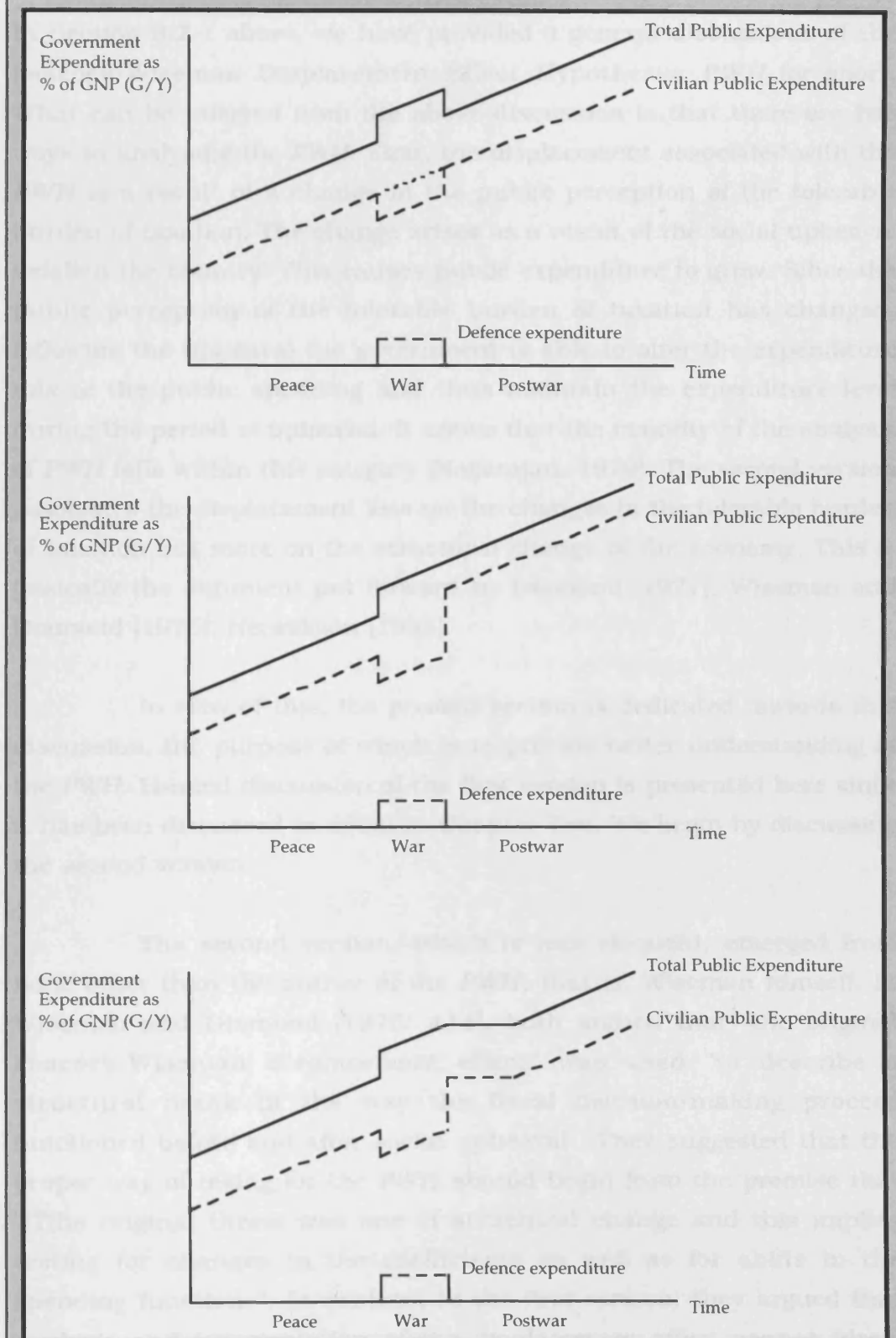
as per capita income rises If there is a crisis, however, and, say, per capita income declines, as in a depression, then G declines also but less rapidly, so that G/Y rises ..." [p.461]. The ratchet effect as forcefully argued by Bird shifted the focus from a supply side approach of the 'tolerable burden of taxation' to the demand side approach of 'the desirable level of public expenditure' as put forward by Gupta. Yet, Bird offered no empirical test.

Diamond [1977] put Bird's 'ratchet effect' to empirical testing. In doing that, Diamond specified the model as $G_t = a + b_1(Y_t) + b_2(Y_t)Z_t + u_t$ and found that the R^2 is not impressive. The model was tested for three different periods to account for the world wars. Diamond concluded that "[T]hese results present strong evidence against attaching any importance to a ratchet effect" [p. 394].

Either it is a 'ratchet' or a mere 'displacement' which runs for a longer period until the next social upheaval takes place [if any], the structure of the government expenditure has indeed been disturbed. Yet, what will happen as a result of this structural disturbance? There are three interpretations to this. This is shown in Figure 8.1 below. The first seems to suggest that the government expenditure will leap during crisis period but following the crisis period, will immediately drop to follow the original growth path.

The second interpretation, as Holcombe [1993: 35] puts it, believes that "government expenditures leap during crisis times and remain above their old trend growth paths". That seems to be the view originally put forward by Peacock and Wiseman. They argued that this will allow government to switch from highly military-expenditure composition during crisis period [assuming crisis in the form of war as they formulated it] to a highly civilian mix, post social upheaval. The third interpretation, associated with Musgrave [1969] and Bird [1970] argued that the government expenditure will leap during crises but slowly will fall down to follow the original growth pattern.

Figure 8.1
Graphical Interpretation of Peacock-Wiseman Hypothesis



8.2.2 The *PWH* - Two Methods of Analysis

In Section 8.2.1 above, we have provided a general discussions of the Peacock-Wiseman Displacement Effect Hypothesis, *PWH* for short. What can be inferred from the above discussion is that there are two ways in analysing the *PWH*. First, the displacement associated with the *PWH* is a result of a change in the public perception of the tolerable burden of taxation. The change arises as a result of the social upheaval befallen the country. This causes public expenditure to grow. Since the public perception of the tolerable burden of taxation has changed, following the upheaval the government is able to alter the expenditure mix of the public spending and thus maintain the expenditure level during the period of upheaval. It seems that the majority of the analysis of *PWH* falls within this category [Nagarajan, 1979]. The second version associates the displacement less on the changes in the tolerable burden of taxation but more on the structural change of the economy. This is basically the argument put forward by Diamond [1977], Wiseman and Diamond [1975], Henrekson [1993].

In view of this, the present section is dedicated towards this discussion, the purpose of which is to provide better understanding of the *PWH*. Limited discussion of the first version is presented here since it has been discussed in detail in Chapter Two. We begin by discussing the second version.

The second version, which is less eloquent, emerged from none other than the author of the *PWH*, that is, Wiseman himself. In Wiseman and Diamond [1975: 414], both argued that “the original Peacock-Wiseman displacement effect” was used “to describe a structural break in the way the fiscal decision-making process functioned before and after social upheaval”. They suggested that the proper way of testing for the *PWH* should begin from the premise that “[T]he original thesis was one of structural change and this implies testing for changes in the coefficients as well as for shifts in the spending functions”. In contrast to the first version, they argued that analysis and interpretation of the displacement effect cannot “draw comfort from the displacement observed in the tax function”. The

structural break thus explained the changes in the expenditure mix of government spending post-upheaval. Peacock and Wiseman [1961: xxiii] acknowledged this by arguing that “if there are generalisations to be made about the relationship between public expenditure and GNP, they should be concerned with the *characteristics of social and economic change* that require examination and not the ‘inevitable’ results of such change”⁴.

Being an associate of both Alan T. Peacock and Jack Wiseman, Diamond developed the concept further. Diamond [1977: 396-397] argued that “.... the Peacock-Wiseman analysis of displacement can be interpreted as a theory of ‘structural break’”. He rejected the notion that “the *ceteris paribus* assumption of tastes, preferences, and institutions remain constant”. The structural break emerged because of the changes in the tastes, preferences and institutions as a result of the social upheaval. Therefore, during this period of social upheaval, “these factors can safely be assumed to change” which give rise to the public expenditure growth. Therefore, *PWH* is an “.... attempt to construct a model to explain why these shifts occurred. Ultimately, that model describes institutional changes within and outside the public sector - or in other words, variation in parameters which are normally assumed constant in empirical research”.

If this line of interpretation is considered, the *PWH* is but purely a theory of public expenditure [Tussing and Henning, 1974] and not of taxation. It will be wrong to associate the changes in the level of taxation in interpreting the *PWH*. The growth of public expenditure after the period of social upheaval is made possible by the changes in the public perception of the tolerable burden of taxation but not necessarily on the actual level of taxation. It does not necessarily imply that the tax rates and tax revenues increase. As any student of economics knows, government can finance their expenditures by several means, issuing bonds, printing money, borrowing as well as taxes. Therefore, when such needs arise, for example in the period of social disturbances, these options are readily available as well.

⁴ Italics are mine.

Therefore, Wiseman and Diamond [1975] and Diamond [1977] interpretation of *PWH* differs from the rest in the basic assumption underlying the *PWH*. Their stress is not on the changes in the tolerable burden of taxation but on the changes in the tastes, preferences and institutions that affect the public perceptions of the desirable level of public expenditure.

On the part of the general public, the first effect of the social upheaval is the change in their perception of the desirable level of public expenditure. This is followed by the change in their perception of the desirable level of taxation. What is needed by the government is the change in the public perception of the desirable level of public expenditure which can allow the government to increase the level of government spending, to be financed not necessarily by an increase in taxes. As Tussing and Hemming [1974: 217] argued, the displacement effect hypothesis "is a hypothesis dealing with public expenditure but based on *assumed* resistance to taxes". This assumed resistance to taxes becomes the core of the first version of interpretations of the *PWH*.

According to the first version, the level of public expenditure is a constant function of GNP. The public resisted any effort to change i.e. to increase the level of taxation to finance public expenditure growth. However, with the advent of a serious social upheaval, the public's perception of the tolerable burden of taxation changes to allow the government to finance this upheaval.

However, in neither issue of their major work do Peacock and Wisemen [1961,1967] elaborate on the precept of the changes in the desirable burden of taxation. The only discussion of the desirable level of taxation was in the introduction⁵.

After explaining the consequence the social upheaval may bring in "shifting public revenues and expenditures to new levels", Peacock and Wiseman [1967: xxxiv] proceed to explain that "[A]fter the

⁵ It is worth noting that the only change to the later edition [1967] was the introduction, the main contents of the book remain the same, even the data was not updated to take into account the gap between the first edition and the second edition.

disturbances is over *new ideas of tolerable tax levels emerge*". The foundation for this is provided by Peacock and Wiseman [1961: xxiii-xxiv] when they argued that "our sole 'political' propositions are that governments like to spend more money, that citizens do not like to pay taxes, and that government need to pay some attention to the wishes of their citizens". Furthermore, they also argued that, "[W]hen societies are not being subjected to unusual pressures, people's ideas about tolerable burdens of taxation, translated into ideas of reasonable tax rates, tend also to be fairly stable". This changes with the advent of a major social disturbances, "shifting public revenues and expenditures to new level". Resulting from this, "[A]fter the disturbances is over new ideas of tolerable tax levels emerge, and a new plateau of expenditures may be reached, with public expenditures again taking a broadly constant share of gross national product, though a different share from the former one".

On this understanding, we modelled the bloody racial conflict of May 13, 1969 [discussed in Chapter 4] as a social upheaval which undermined both the political and economic stability of the country. Economically, as we have shown in Chapter 4, the conflict produced the New Economic Policy. In order to achieve its target, NEP requires greater government involvement in a wider economic activities. Following Diamond [1977], we therefore model this social upheaval as a theory of structural change that affect the growth pattern of government expenditure [see also Watt (1978), Nomura (1991, 1995)].

Going through our data, we can ask whether there exists a structural break in the Gross National Product per capita and Total Government Expenditure per capita⁶. As shown in Figure 1.3 earlier [Chapter 1], it is clear that the GNP and Total Government Expenditures show a dramatic growth after 1972, i.e. two years after the launch of the New Economic Policy [NEP] in 1970. Logically, the dramatic growth can be explained from two perspectives. First, the lag-length process before the effect of the policy become obvious. Second, the policy itself, as stated in Chapter Three, although launched in 1970, took shape only after the Mid-term Review of the Second Malaysia Plan in 1973. The

⁶ Perron's test for structural break was criticised on the assumption that the date of the structural break is known *a priori* [see Madalla, 1992].

next question is whether this jump can significantly affect the behaviour of the time-series in question.

8.3 THE ECONOMETRIC METHODOLOGY FROM EARLIER STUDIES

Nomura [1991] estimated the regression $Y = a + bX$, where Y is the per capita government expenditure and X is per capita GDP for three periods - the whole sample size, to account for the first oil crisis [1973] and the second oil crisis [1978]. To check for the stability of the estimators, Nomura performed a modified Wald and Chow test. Nomura's study followed Diamond [1977] in interpreting displacement effect as a theory of structural change. A conventional econometric test to check for structural break is the Chow test and Wald test.

In Section 8.2, we have shown Diamond's [1977] formulation for Bird's ratchet effect. In the test, Diamond compared the significance of the R^2 and on that basis Diamond tried to explain the *PWH* as a theory of structural change. Diamond's approach was to reconcile Gupta [1967] and Pryor's [1968] method which separated the data into different periods to account for the break with the method used by Bonin, Finch and Waters [1969] which used dummy variables to represent the displacement. This latter approach was rejected by Watt [1978] on the ground that the procedure used by Bonin, Finch and Waters assumed that the variance of the error term is the same before and after the break.

Holcombe [1993] rigorously tested the effect of the various social upheavals by using several dummy variables to represent these social upheavals. The LM test was then used to correct for serial correlation in the regression equations. Similar to Henrekson [1993], Holcombe's regression 2 includes a time trend. Henrekson argued that, "[B]ecause the original hypothesis focuses on the development of government expenditures over time, time is the vital component of any model for testing it" [p. 63]. By dividing the data into sub-periods, Holcombe also analysed the growth rate of real per capita non-military

and non-interest Federal Spending. On the basis of this later test, while admitting that the ratchet [due to the frequency of the displacement] hypothesis was present, Holcombe warned that the result must be analysed carefully. The reason was that the “ratchet are not the main story. More significant is the substantial increase in the growth rate of public spending in the 20th century, and the ratchets that can be clearly identified are best seen as part of that change. This suggest that something specific to that period in history that altered the characteristics of government growth rather than the crisis in general” [p. 44].

Henrekson [1993], followed later by Kim [1997] checked the significance of the R^2 in the following ARMA model $y_t = \theta_0 + \tau T + \phi_1 y_{t-1} + \phi_2 y_{t-2} + \varepsilon_t$. To test for the displacement effect, i.e. an upward displacement in the trend of the variables for the measures of government expenditure, a dummy variable was included together with another variable to account for the war. Henrekson admitted that the model does not allow any inference about structural stability [p. 68].

Whereas this later method has a similarity with Perron's procedure to be discussed later, i.e. with respect to the treatment of the dummy variables, there are indeed some alarming concerns of other aspects of the model. Henrekson argued that “the displacement hypothesis concerns the development of the *level* of aggregate government spending” [p: 63]. The word *level* is italicized by Henrekson to highlight its emphasis. As we mentioned at several places earlier, the time series analysis may turn out to be spurious if there arises the problem of stationarity. Henrekson's procedure does not even test for the stationarity of the variables used, the total government expenditure per capita and the total nominal government expenditures as a share of nominal GDP. Further to this, Henrekson contended that “[H]ence we assume the dependent variable is stationary” [p: 64] which ignores the unit root hypothesis.

For this reason and in the light of the unit root hypothesis which was considered in the entire of the present study we tested for the structural break using Perron [1989] procedure.

8.4 THE MODEL

As stated in Chapter 6, Peacock and Wiseman [1961] interpreted Wagner's Law as a form of a functional relationship between government expenditure and national income as:

$$GOV=f(GNP) \quad \dots \quad 8.1$$

where *GOV* is the Total Government Expenditure and *GNP* is the Gross National Product [see also Nagarajan (1979, 1983), Nomura (1991), Gupta (1967)7].

However, as we stated, 8.1. is Peacock-Wiseman's interpretation of Wagner's Law and not their model of displacement effect. Peacock-Wiseman argued that the changing size of government expenditure is associated by the public's perceptions of the role of government. This perception is exerted through the political influence, not least the ballot-box. In addition to the economic influences, this political influence will also determine the way government expenditure is conducted. Government have to abide to the wishes of the society if they are to survive. The political influence of the general public on the level of government expenditure is translated through the desirable burden of public expenditure and taxation. However, there comes a time when this desirable burden of public expenditure and taxation can change. This arises because of the "social disturbances that destroy established conceptions and produce a displacement effect" [1961: 27]. Since this social disturbances itself is unpredictable, Peacock-Wiseman argued that there should not be a general hypothesis regarding the government expenditure growth. This seems to be the main difference between Peacock-Wiseman Hypothesis and Wagner's Law. Peacock-Wiseman's main interest is the historical pattern or time trend of the government expenditure growth as an explanation for the growth of government expenditure.

Difficult and unambiguous it may be, but one question remains though: what is the appropriate model to formulate Peacock-

⁷ Gupta's formulation is almost similar to this but by using the per capita figures for the Total Government Expenditure and GNP.

Wiseman Hypothesis. Peacock-Wiseman [1961, 1967] itself is not an econometric study. The closest to both of them is Gupta [1967] who presented 8.1 in the form of a per capita analysis of government expenditure and GNP and tested the relationship for Western Germany, Canada, United Kingdom and USA. Yet, like Peacock and Wiseman, Gupta's work is also a reinterpretation of Wagner's Law relationship.

We have shown in Section 8.3 above that Diamond argued that Peacock-Wiseman Hypothesis is in fact a theory of structural change. Peacock-Wiseman's concentration on the time-pattern of government expenditure change is indeed an observation into the structural pattern of the relevant time series. Hence, following Diamond, we shall proceed by analysing Peacock-Wiseman as a theory of structural change. Two recent studies on this subject by Henrekson [1993] and followed similarly by Kim [1997]⁸ check the existence of any displacement by analysing the upward shift in the two main time-series, namely the total government expenditure and GNP.

Furthermore, one cannot help but to observe that Peacock-Wiseman also make regular references to the share of government expenditure in GNP or the rate of growth of government expenditure with respect to GNP.

Our model, therefore, will follow this line of analysis. We check for the structural change on the total government expenditure and GNP. On account that Peacock-Wiseman make several references to the ratio of total government expenditure to GNP, we also include the ratio of government expenditure to GNP in our analysis.

To maintain consistency with our usage in Chapter 6, we let G_X to be the log of GOV , N as the log of GNP and h represent the ratio of total government expenditure to GNP such that $h = \frac{G_X}{N}$.

8

The former is on Sweden and UK and the latter is on Korea.

8.5 PERRON TEST FOR STRUCTURAL BREAK

Taking the cue from Diamond [1977] we tested *PWH* as a theory of structural break. Though first to interpret *PWH* as a theory of structural break, Diamond's study nevertheless analysed the structural break on the basis of the significance of R^2 and Chow test by comparing them for different time-periods. This procedure, however, does not check the structural properties of the individual time-series which formed the *PWH* especially when we consider the new development of time-series analysis in particular the unit root hypothesis.

As we mentioned several times earlier, Nelson and Plosser [1982] argued that many economic time-series are generated by a differenced stationary process as against a trend stationary process. This means that these time-series contain unit root. However, this wisdom has been questioned. Notably among this is Perron [1989].

In contrast to Nelson and Plosser [1982], Perron argued that a unit root test on economic time-series is invalid if the series contain a structural break. The presence of break[s] will greatly reduce the power of ADF test to reject the null hypothesis of a unit root against the alternative of a trend stationary process [Smith and Otero, 1995]. On this basis, Perron formulated a test to check for the structural break. Enders [1995] argued that in normal practice, one possible method to test for unit roots in the presence of a structural break in the model is to divide the series into two parts, prior to and after the breaking point. This was the way Diamond carried out his test. However, it was done at the expense of the degree of freedom which diminish due to small sample size. Perron's procedure performed a single test on the full sample size.

In analysing the US data, Perron accounted two shocks to the system that is the Great Crash of 1929 and the oil price shock of 1973. Perron's main assumption is the treatment that both shocks are exogenous. Perron showed that his two shocks have different effects. The Great Crash created a dramatic drop in the mean of most aggregate variables which lasted for several years. The oil shock, on the other

hand, was followed by a change in the slope of the trend which implied a slowdown in the growth rate. Within this framework, Perron's aim was to show that most macroeconomics variables are indeed trend stationary and not differenced stationary as put forth by Nelson and Plosser. Using the same variables as Nelson and Plosser, Perron found that out of thirteen time series used by the former, "eleven were potentially well-characterised by a trend function with a constant slope but with a major change in their level occurring right after the year 1929" - the Great Crash [Perron, 1989: 1382].

In applying the Perron's procedure, Duck [1992] and followed by Ghatak [1997] suggested running the following regression to examine the presence of structural break:

$$y_t = \alpha + \phi B_L + \psi t + \gamma B_B + \delta B_P + \varphi y_{t-1} + \sum_{i=1}^k \theta_i \Delta y_{t-i} + \varepsilon_t \quad \dots 8.5$$

where $B_P = \tau + 1 = 1$, zero otherwise; τ is the break year, which in our case is 1969. Therefore B_P is set at 1970.

$B_L = 1$ for all t beginning in 1970 and zero otherwise.

$B_B = t$ if $t > \tau$, zero otherwise; where the value of t are 1 for 1961 to 30 for 1990.

Under the null hypothesis of a difference stationary or a unit root process, we check for $\phi = 1$, $\gamma = 0$ and $\psi = 0$. The alternative hypothesis of a break in a trend stationary can be traced if $\phi < 1$, $\gamma \neq 0$ and $\psi \neq 0$. In other words if we fail to reject the null hypothesis $\phi = 1$, $\gamma = 0$ and $\psi = 0$, the data is a differenced stationary process. On the other hand, if we accept the alternative hypothesis, the data is generated by a trend stationary process.

Within the framework of Peacock and Wiseman Hypothesis the variable that is of interest to examine the possibility of a structural change is gx - the total government expenditure and n - the GNP. In addition we also tested the ratio of government expenditure to GNP $[h]$. Perron's procedure will allow us to test for the structural break in each of the series mentioned.

It must also be mentioned that Perron's findings have since been re-evaluated by Zivot and Andrews [1992]. Zivot and Andrews argued that Perron's procedure involves 'data pinching' or 'data mining' by assuming that the date of the break is known *a priori*. On this basis, Zivot and Andrews proposed a new set of formula to search for the break points.

However, we consider Zivot and Andrews method as irrelevant in the context of the *PWH*. The reason is that in *PWH*, the main assumption is that the break took place. In other word, the break i.e. the social upheaval is known. As such the break date is known, for example, the world war as in the case of Peacock-Wiseman [1961]. Therefore, there is a reason for data pinching or mining to determine the break date. When applied in the context of our analysis, the break date is the May 13, 1969 incident. Our task is therefore to test whether this break is significant or not in influencing the behaviour of the relevant time-series.

Unlike Henrekson [1993] and Kim [1997], the inclusion of three dummy variables in Perron's test will allow us to check whether the break resulted in a one-period jump in the trend function or a changing slope of the time trend⁹.

8.6 THE ANALYSIS

We begin by testing the unit root hypothesis for the three variables, *gx*, *n* and *h*. To do this, we performed the Augmented Dickey Fuller [ADF] test for lag of up to 12. The ADF test is performed as follows:

$$\Delta y = \alpha + \beta y_{t-1} + \delta t + \sum_{i=1}^{12} \gamma_i \Delta y_{t-i} + e_t \quad \dots \quad 8.6$$

The result of this ADF test is presented in Table 8.1 below.

⁹ In its original setting, Perron associate the former to the World War and the latter to the Great Depression and the Oil Crash.

Table 8.1
T-Statistics for ADF test on
GX [Government Expenditure] and N[GNP]

$$\Delta y = \alpha + \beta y_{t-1} + \delta t + \sum_{i=1}^{12} \gamma_i \Delta y_{t-i} + e_t$$

	1	2	3	4	5	6	7	8	9	10	11	12
gx	-1.738	-2.073	-2.998	-2.594	-2.748	-2.453	-1.888	-1.779	-2.684	-3.263	-2.591	-5.158**
n	-1.975	-1.866	-2.492	-2.984	-3.292*	-3.039	-2.765	-2.980	-2.159	-1.883	-2.262	-1.479
h	-1.473	-0.792	-1.135	-0.748	-1.584	-1.471	-1.062	-0.8071	-1.333	-1.491	-1.827	-2.000

* significant at 10%

** significant at 1%

From Table 8.1, for lag value of 1 to 12, the critical value for $n=50$ at 10%, 5% and 1% are -3.18, -3.50 and -4.15 respectively. Using various and longer lag length allow for the robustness of the ADF test [Duck, 1992 and Gatak, 1997]. The above result shows that the unit root hypothesis cannot be rejected for all the variables, except for lag 12 in the case of the variable *gx* and lag 5 for the variable *n*. For the time series *h*, unit root hypothesis cannot be rejected for all level of significance.

The above result shows that based on standard Augmented Dickey-Fuller test, the unit root hypothesis cannot be rejected for all the three variables, *gx*, *n* and *h*. Therefore, based on ADF procedure, our data support Nelson and Plosser [1982] conclusion that most macroeconomics time-series can best be modelled as a differenced stationary process¹⁰. This procedure allows us to test for the unit root hypothesis without allowing for the presence of structural break. Our interest is to see whether this conclusion can hold using Perron's procedure. We therefore proceed by running Perron's test on *PWH* model as outlined in equation 8.5 above.

In performing the Perron's test as specified through equation 8.5 earlier, the test boils down to testing the significance of the parameter ϕ , which will verify the significance of the series y_{t-1} after allowing for the break to occur. Perron provides the critical value for t_ϕ which we present in Table 8.2 below [only a part of it; for the full schedule, see Table VI.B of Perron, 1989: 1377].

¹⁰ We mentioned in Chapter Seven that several critics have pointed out that the present test for unit root, in particular the ADF test, seem to accept the unit root hypothesis too often. In our case, the ADF confirmed the unit root hypothesis.

It is clear from Perron's table of critical value that the test depends on the significance of the coefficient ϕ . Finding the significance of the parameter ϕ signifies the presence of a structural break which will allow us to conclude in favour of the PWH.

Table 8.2
From Table VI.B [Perron 1989: 1377]
Percentage Points of the Asymptotic Distribution of t_ϕ .
Time of Break Relative of Sample Size: λ

λ	0.2	0.3	0.4	0.5
1%	-4.65	-4.78	-4.81	-4.90
5%	-3.99	-4.17	-4.22	-4.24
10%	-3.66	-3.87	-3.95	-3.96

The critical value provided by Perron is sensitive to the value of λ - the break fraction i.e. the ratio of the period before the break to the whole period or sample size¹¹. In our case, since the break took place in 1969, $\lambda = 9/30 = 0.3$.

Table 8.3 below presents the regression results for running Perron's procedure to check for structural break in the relevant time-series. We report the various coefficients and the t -statistics for running the regression $y_t = \alpha + \phi B_L + \psi t + \gamma B_B + \delta B_p + \phi y_{t-1} + \sum_{i=1}^k \theta_i \Delta y_{t-i} + \varepsilon_t$ as outlined in equation 8.5 above. The dummy variables used have been explained in Section 8.5. We run this regression for all the three variables concerned - gx , n and h .

Table 8.3
Perron's Test for Structural Break in Time-Series for $k=3$

$$y_t = \alpha + \phi B_L + \psi t + \gamma B_B + \delta B_p + \phi y_{t-1} + \sum_{i=1}^k \theta_i \Delta y_{t-i} + \varepsilon_t$$

	ϕ	ψ	γ	δ	ϕ
gx	-0.0385 (-0.1512)	0.0266 (0.7144)	0.0138 (0.4187)	-0.0176 (-0.1409)	0.6861 (4.9827)
n	-0.1336 (-0.6963)	0.0147 (0.6431)	0.0194 (0.8411)	-0.0601 (-0.7604)	0.6876 (4.6775)
h	0.0052 (0.2016)	-0.0014 (-0.3456)	0.0013 (0.3688)	-0.0078 (-0.6269)	0.7871 (3.3899)

note: t -statistics are in parenthesis

As shown by Table 8.3 above, the parameters for ϕ are well below unity and not significant in all cases. From the results presented

¹¹ The limiting distribution for λ is therefore between 0 to 1.

in Table 8.3, we can also see that the t -statistics for φ , have a different sign [positive instead of negative]. On this basis, we fail to reject the null hypothesis of unit root. This allow us to conclude that the series gx , n and h is not a trend stationary process. Accepting a unit root process means that there is no break in the relevant time series. Consequently, our assumption that the May 13, 1969 created a displacement in the log of Total Government Expenditure, GNP and the ratio of government expenditure in GNP is rejected. We have shown earlier that Diamond [1977] argued that *PWH* can be treated a structural break. Testing for structural break using Perron [1989] test, we fail to verify the hypothesis of a structural break. This, therefore allows us to conclude that there is no displacement effect as suggested by the *PWH* in Malaysia as a result of the introduction of the New Economic Policy following the racial conflict of May 13, 1969.

From another perspective, this finding also suggests that the three variables, total government expenditure, GNP and the ratio of total government expenditure to GNP follows Nelson and Plosser's result that macroeconomics time-series can best be modelled as a differenced stationary process and not a trend stationary process.

Any further and future test of these variables for Malaysia for the period 1961-1990 must take into account this finding. As we mentioned in Chapter Seven, there have been several studies which tries to test the relevance of the unit root hypothesis on many macroeconomics time-series in particular the GNP.

However, this conclusion must not be viewed as conclusive. What we did in this Chapter is to analyse these variables within the framework of Perron test. As we mentioned, Zivot and Andrew have pointed out that Perron's procedure involves 'data mining' or 'data pinching' to determine the break date. We have argued earlier in favour of this procedure.

Our present study will not extend beyond Perron procedure for the reason that this Chapter is meant to check for the displacement effect of Peacock-Wiseman Hypothesis where, as we argued, the break

date is known. Verifying Nelson and Plosser conclusion is only a side-result of the test of displacement effect.

8.7 DISCUSSION

As we argued in Section 8.2.2., the present study adopts the second version of the *PWH* which considers the *PWH* displacement effect hypothesis as a theory of structural break following Wiseman and Diamond [1975], Diamond [1977] and Henrekson [1993]. The test that we undertook, i.e. Perron test for structural break is used to examine the presence of a structural break in the relevant time series.

Consequently, this approach also means that our treatment of the *PWH* is NOT within the context of a change in the tolerable burden of taxation. To be precise, the test that we performed in this chapter does not conform to the first version of the *PWH* which relates the displacement to the changes in the desirable burden of taxation. Nonetheless, there has been no study thus far that has modelled the changes in the desirable level for taxation.

In the case of Malaysia, we *a priori* believe that the New Economic Policy launched in 1970 following the social disturbance of 1969 would produce a sort of displacement in the level of government expenditure. The reason for such a belief is that the New Economic Policy requires a huge amount of expenditure on the part of the government to finance various economic activities outlined by the New Economic Policy and the First Outlined Perspective Plan [1970-1990]. Having tested for the structural break, following Perron [1989], we failed to establish the presence of a structural break in the relevant time series, the total government expenditure, GNP and the ratio of government expenditure to GNP.

However, our failure to establish a structural break and the test that we performed was done on the total government expenditure. Structural break, as can be inferred from *PWH*, significantly relates to the changes in the expenditure mix of the government expenditure.

Total government expenditure may rise gradually as a proportion of GNP and may not exhibit a structural break, but, the expenditure mix of government expenditure may alter.

The main thesis of *PWH* is related to the displacement in government expenditure following the period of social upheaval. The displacement is not only related to the total government expenditures but also the expenditure mix of government expenditures. The changes in the expenditure mix are necessary to allow government to divert or channel resources to finance such expenditures related to the upheaval.

Peacock and Wiseman believe that post upheaval, not only have total expenditures increased to new heights but remain so until the next upheaval to shift the total expenditure upwards once again. Furthermore, the new level of total government expenditure attained during the period of upheaval allows the government to change the expenditure mix of government expenditure post-upheaval. Diagrammatically, this is shown in the middle diagram of Figure 8.1.

In line with the second version of *PWH* interpretation, this means that the structural break occurs not only in the total government expenditure but also in the composition of government expenditure or the expenditure mix of government expenditures.

The test that we performed thus far only tested for the structural break in the total government expenditure [and GNP and ratio of government expenditure to GNP]. We do not proceed to test the presence of structural break in the composition of government expenditure.

On account of this test alone, we failed to find support for the structural break. This could be for several reasons. First, the support for structural break might not be forthcoming from the total government expenditure, GNP or ratio of government expenditure to GNP. However, this does not mean that there is no structural break in the composition of the government expenditure. We ignored this aspect on the ground

that the Peacock and Wiseman study concentrates only on the total government expenditure and GNP.

Second and most importantly, the targets set by the New Economic Policy launched as the result of the May 13, 1969 social disturbance were to be achieved in the period of 20 years [1970-1990]. The increase in both the government expenditures and the GNP from 1970 onward - refer to Figure 1.3 earlier - was a gradual increase and not a one shot increase in both variables. This gradual increase is totally different from a one-shot increase, like war expenditure.

8.8 SUMMARY

In this Chapter, we performed Perron's procedure to test for the structural break in the time series gx , n and h , that is the Total Government Expenditure, GNP and the ratio of total government expenditure to GNP respectively, for the period under study. The Perron procedure is chosen because it allows us to test the hypothesis that a break occurs in the series. This represents a test for a structural break following the line of argument put forward by Diamond [1977] that the *PWH* can be interpreted as a theory of structural break.

Performing the Perron procedure on the time series gx , n and h in our sample for a possible break in the series in 1969 following the racial conflict, we found that the hypothesis of a break is rejected. This implies that the *PWH* as being interpreted as a structural break can be rejected in the case of Malaysia. In other words, the racial conflict which resulted in the introduction of the New Economic Policy in 1970 cannot be accounted for the growth in Total Government Expenditure and GNP for the period 1961-1990 for Malaysia. However, we cannot infer from this result that the New Economic Policy launched following the racial conflict does not contribute to the growth of Total Government Expenditure and GNP [as a measure of economic growth]. The test we performed tested only for the presence of structural break to see whether there is a displacement in the two series, Total Government Expenditure and GNP.

CHAPTER NINE

CONCLUSIONS AND RECOMMENDATIONS

In economics, you can never establish a truth once and for all, but have always to conceive every generations anew.

*Frederick E. Hayek
in The Foundation of Economic Thinking:
A Collected Work of Frederick E. Hayek,
Vol. III, edited by
W.W.Bartley and S. Kresge, 1991:38
London: Routledge.*

9.1 INTRODUCTION

The vast amount of literature on the subject of government expenditure growth has raised the concern that government expenditure has grown substantially. Various interpretations and suggestions have been put forward to curb this 'uncontrollable' growth. The public choice school, in particular, is in the fore-front in suggesting ways and means to curb this growth, not least, by constitutional constraint. Others have tried to reason why this growth has ever took place. Yet, a third category is trying to prove whether the growth actually occurred.

Sharing the general concern that the government expenditure has grown substantially, we embark on this study to analyse the reasons for this growth. In this sense, ours therefore falls in the third category i.e. to prove whether the growth actually occurred. On this basis, we embarked on this study to test for the growth of government expenditure in Malaysia for the period 1961-1990.

In doing this, we resort only to three explanations of such growth, namely, Wagner's Law, the Keynesian relation and Peacock and Wiseman Hypothesis.

9.2 GOVERNMENT EXPENDITURE GROWTH IN MALAYSIA - A SUMMARY.

We have shown in our Introductory Chapter the remarkable growth of Malaysian Economy since independence in 1970. We can divide the phase of this development into three periods. In the first period, from independence until 1970, the emphasis of the government was more on rural development and the provision of infrastructure, economic as well as social. Industrialisation was promoted to a lesser degree with a focus mainly on the import-substitution strategy¹ to reduce the reliance on imported goods. The main focus of this period is growth, and the growth objective was achieved [Snodgrass, 1980]. Yet, as we have shown in Chapter Four, inequality is widespread, not only inter-race but also intra-race.

Inequality that existed then, signifies the failure of the growth strategy. It also signalled the failure of the government's economic strategies in promoting nation-building through economic prosperity. First, it produced an elite wealthy class among the society - "the rich [countries] get richer; the poor [countries] get children" [Thirlwall, 1985]. Secondly, it neglects the inherent nature of the Malaysian society with its plurality of races and religion. Inequality [of income], either inter-ethnic or intra-ethnic prevailed to a large extent in the society. Eventually, this apparent neglect lead, according to official government report, to the May 13, 1969 racial conflict.

With the introduction of the New Economic Policy in 1970 which followed the May 13 incident, a second phase took over. Emphasis was directed more towards correcting the imbalances in the society and eliminating the mass poverty that existed in those period [49.3% in 1970]². In so doing, huge government expenditure was directed to achieve the target set by the New Economic Policy. This saw a serious effort taken towards the development of the agricultural sector which took two forms. First, is the creation of the various new land development schemes mainly for the production of palm oil. Second and

¹ This strategy was promoted again in the period 1980-1985 [see Rokiah Alavi, 1997].

² This dropped to 29.0% in 1980, 17.3% in 1987 and 13.5% in 1993.

most importantly was the assistance provided to small-scale farmers. This included the provision of improved rubber seedling, rubber replantation scheme, the extension of facilities accessible to the farmers and land rehabilitation and reclamation schemes. The last two was achieved through the development of various irrigation projects to facilitate double cropping of rice. This venture had increased the area available for rice production that significantly helped to reduce the dependence on imported rice. A shift was also apparent in the industrial strategy. By early 1970s, with the introduction of the Investment Incentives Act, 1968, industrialisation has taken a new approach towards export-oriented strategy [Rokiah, 1997].

By 1981, when Dr. Mahathir was appointed as the Prime Minister, and remains so until today [and for the unforeseeable future], a new direction was taken. The drive for industrialisation was intensified. By the end of the 1980s, the government propagated the Vision 2020 to put Malaysia in the category of developed countries by the year 2020 setting Japan and South Korea as a model example [sadly though, by 1997, the South Korean economy had to be bailed out by the International Monetary Fund]. In 1998, Malaysia, though for different reasons than South Korea, borrowed heavily from the World Bank to face the financial crisis that reversed the success of late 1980s and early 1990s.

The apparent characteristic of the second and third phase was the huge amount of government expenditure needed, first to meet the target set by NEP and second to finance the industrialisation plan beside its reliance on foreign investment as a main source of capital [Jomo, 1993]. In an effort to promote industrialisation, foreign investment was highly encouraged [Anuwar Ali and Kam, 1993]. In 1986, foreign direct investment stood at \$614.3 million.

All these have contributed to the huge growth of government expenditure throughout the period under study and especially since early 1970s.

As a matter of record, since mid-1997 until this stage, Malaysia is facing a serious economic problem because of the exchange rate depreciation. This arises as a result of capital flight by foreign investors. The Malaysian Ringgit depreciated heavily against other major currencies. As an illustration, we provide Appendix 6 to show the depreciation of Malaysian Ringgit against pound sterling, US dollar, Japanese Yen and Deutsch Mark. On Sept., 2, 1998, the Deputy Prime Minister who was also the Minister of Finance was sacked from his post as a result of the differences with the Prime Minister in their approach in handling the economic crisis. On Sept., 1, 1998, to prevent further worsening of the Ringgit, the government adopted a fixed exchange rate regime. The Ringgit was pegged at RM3.80 against one US dollar.

9.3 A REVIEW OF THE PRESENT STUDY

In Chapter One, the Introduction, we outlined the general framework of the present study. We have shown the tremendous growth of government expenditure in Malaysia since independence, in particular in the period 1961-1990 or more specifically in the period after the introduction of the New Economic Policy in 1970. We briefly discussed some aspects of the public expenditure growth theory. In addition, we provide a brief outlook of the Malaysian economy.

To review the existing literature on the area as vast as this, we presented in Chapter Two, the literature review. We have tried to present various theoretical aspects of the government expenditure growth as can be found in the public economic literature. This includes the public choice approach as well as the public finance approach. However, in conducting our analysis, we have to limit ourselves. More specifically, we limit our discussion and analysis to three aspect of this, namely the Wagner's Law, the Keynesian relation and the Peacock-Wiseman Hypothesis. This decision is taken on the basis that the public choice approach is so vast. Justice will not be done to the analysis if partial or superficial treatment is undertaken. Rent-seeking, fiscal illusion, political participation, political business cycle, etceteras, all deserve better treatment and are all worth a PhD research on its own.

In trying to come to term with government expenditure growth, we noted that the orthodox view of the growth theory - the trickle-down theory - is that government expenditure leads to economic growth. Hence the more money spent by the government, the better will be the economic growth. This is probably the case with Malaysia especially after the introduction of the New Economic Policy. During this period, we can see a huge growth of government expenditure. The discussion on this aspect is presented in Chapter Three when we presented the Government Expenditure Growth Profile.

We, *a priori*, believe that part of the explanation for the growth of government expenditure cannot be explained economically. However, this does not mean that attempts have not been made to give an economic perspective to this. The public choice school in particular is trying to explain this phenomenon by giving an economic explanations to political behaviour. Our study here focused only on economic conditions that contributed to the growth of government expenditure. On the basis of this, the task that we undertook to analyse the government expenditure growth can be divided into three.

First, we modelled the growth of government expenditure from the Wagner's Law perspectives which argued that the government expenditure growth is a direct consequence of the economic growth. In other words, economic growth leads to the growth of government expenditure. We used five definitions of Wagner's Law for this purpose that is the Musgrave, Gupta, Goffman, Mann and the modified-Musgrave definition. Second, we modelled the relationship between government expenditure and GNP from the Keynesian perspectives. This allows us to test whether the government expenditure growth leads to the growth of the economy. We have shown in Chapter One, the growth pattern of both the government expenditure and the Gross National Product [GNP] as a measure of economic growth.

Third and finally, we also observed that after the introduction of the New Economic Policy [NEP] in 1970, the growth of government expenditure has accelerated, as did GNP. Taking into consideration that NEP was introduced as a direct consequence of the bloody racial conflict

on May 13, 1969 - the May 13 incident - we proceeded to model this incident from the perspective of the social upheaval as proposed by Peacock and Wiseman [1961] Hypothesis. Following brief remarks by Wiseman and Diamond [1975] and its extension by Diamond [1977], we modelled Peacock and Wiseman Hypothesis as a theory of structural change.

The outcome of analysing task one and two above, that is Wagner's Law and Keynesian relation, is presented in Chapter Six and Seven. The econometrics methodologies used to analyse this are presented in Chapter Five. In Chapter Eight, we presented the methodologies [including the econometrics methodology] and the analysis of Peacock and Wiseman Hypothesis.

9.4 SUMMARY

This section provides a summary of the three tasks undertaken as outlined in Section 9.3 above. This summary covers the econometric methodologies, the findings and a general discussion of the result.

9.4.1 The Econometrics Methodologies

Two different econometrics method were adopted throughout this study.

a. Wagner's Law and Keynesian relation

Both Wagner's Law and Keynesian relation were tested using the Granger-causality test. In carrying out Granger-causality, we chose to follow two different routes. First, by acknowledging Nelson and Plosser's [1982] breakthrough discovery, we conducted unit root hypothesis to test for stationarity of the variables used. Unit root hypothesis allow us to test for the stationarity in the means and variance of the relevant variables or time-series. A time-series is said to possesses one-root or a unit-root if it has to be differenced once to obtain stationarity. Unit root hypothesis also allow us to test for cointegration. Proof of cointegration means that there is Granger-causality in one direction or the other.

From there, we proceeded to test for Granger-causality using the stationary variables. We also used the Error Correction Method to test for the Granger-causality. The second route is to ignore the unit root hypothesis by proceeding straight to test the Granger-causality, or the original Granger-causality test as we termed here using the level of the variables³.

There are two reasons for choosing Granger-causality. First, Wagner's Law postulates that the growth of government expenditure is a *result of* the growth of the economy. This implies that the growth of the economy *causes* the growth of government expenditure. Likewise, the Keynesian relation as we defined in Section 7.2 and 7.8, implies a causal relationship from government expenditure to [national] income. Both cases implies a causal relationship between government expenditure and [national] income. As we have mentioned in Chapter Five, despite its numerous critics, Granger-causality is the only testable method to test for causal relationship which has been used and accepted widely.

Secondly, the choice of Granger-causality is made to conform to some of the earlier studies that applied the same set of tools to test the Wagner's Law together with the few studies that reverse the Wagner's Law to test for the Keynesian relation.

b. Peacock and Wiseman Hypothesis

In testing the Peacock and Wiseman Hypothesis, we used the Perron's [1989] test for structural break. This follows, as we defined in Section 8.2 [8.2.1 and especially 8.2.2], the various interpretations of Peacock and Wiseman Hypothesis as a theory of structural break. By taking this version of interpreting *PWH*, we are interested in testing for the presence of structural break in the relevant time-series. This test is performed using Perron's procedure to test for the structural break in

³ It must be said that the use of two different routes is NOT an attempt to prove that the hypothesis of Wagner's Law holds for Malaysia. It could be convenient to report that Wagner's Law is disproven when tested for Malaysia data using the first procedure and proceed to suggest ways and means to explain the growth of government expenditures. Yet, we choose to use two different routes, to show the discrepancies, if not the weakness, in the econometrics analysis.

government expenditures, GNP and ratio of government expenditures to GNP.

9.4.2 The Findings

The outcome of applying the various econometrics analysis to test for the Wagner's Law, Keynesian relation and Peacock and Wiseman Hypothesis mentioned in 9.4.1. above can be summarised as follows.

a. Wagner's Law and Keynesian Relation.

Because of the nature of the test result and the similarity of the econometrics method adopted, it is possible to report the conclusion for Wagner's Law and Keynesian relation under one single heading.

In applying the two different routes mentioned earlier to test the Granger causality for Wagner's Law and the Keynesian relation, our finding is inconclusive. Taking into consideration the unit root hypothesis, i.e. by modelling the relationship using the differenced data, the relationship between government expenditure and GNP is non-Wagnerian and non-Keynesian.

On the other hand, by neglecting the unit root hypothesis and instead modelling the relationship using the level of the variables, the relationship between government expenditures and GNP is both Wagnerian as well as Keynesian.

b. Peacock and Wiseman Hypothesis

In applying Perron's test for structural break, we discovered that the relevant time-series, government expenditure [g], GNP [y] and ratio of government expenditure to GNP [h] does not exhibit a structural break. Since there is no structural break, there is therefore, no displacement in the growth pattern of the time-series mentioned above. Following the hypothesis set out in Chapter Eight, the May 13, 1969 social disturbance does not lead to a [structural] break in the growth pattern of government expenditure, GNP and ratio of government expenditure to

GNP. This also implies that the incident cannot be treated as a social upheaval in the context of Peacock and Wiseman hypothesis.

9.4.3 General Discussion

a. Wagner's Law and Keynesian Relation

We have mentioned earlier that a general conclusion in testing the Wagner's Law and Keynesian relation is difficult to make. However, we do believe that throughout the period under review, the government expenditure have indeed grown. Having said that, two qualifications need to be made. First, the relationship between government expenditure and GNP may or may not be captured by the econometrics methodology used. Although the objective is to test for the Granger-causality, there are however two ways of doing this, that is by either applying the unit root hypothesis or by neglecting the unit root hypothesis.

By following this two routes, the conclusion contradicts each other. This problem stemmed from the fact that on theoretical grounds, the test for unit root itself is either inconclusive because of the difficulties in arriving at an exact conclusion of unit root [Evans and Savin, 1981] or irrelevant [Hendry and Richards, 1983]. The latter argued that there is little relevance in applying growth theories, i.e. unit root hypothesis, to the economics analysis regardless of the need to difference data to achieve stationarity. There is also the possibility that the present procedure might lead to 'over-differencing' [Robinson, 1994]. Gil-Alana and Robinson [1996] provide some useful insights into the former i.e. the difficulties in establishing a unit root conclusion.

In this aspect, the problems do not lie in the modelling of the relationship for both Wagner's Law or Keynesian relation but rather in the apparatus used in analysing this relationship. In other words, the problem will remain so, until and unless some further development emerges in the analysis of nonstationary hypothesis of macroeconomics time-series. In their final comments, Gil-Alana and Robinson [1996] mentioned that a few attempts have already been made recently to

develop new ways of testing unit root hypothesis in macroeconomics time-series. This, in itself, is only applicable if the unit root hypothesis itself make sense or has any applicability in analysing macroeconomics behaviour. Hendry and Richard [1983] think otherwise. As we have already mentioned in several places, the development of unit root hypothesis basically follows earlier study by Nelson and Plosser [1982]. Nonetheless, by using the same data set as Nelson and Plosser, Gil-Alana and Robinson [1996] discovered that the number of unit root hypothesis is less smaller than the former finding. Nelson and Plosser's conclusion has also been challenged by Perron [1988], also by using the same data set. Therefore, we must stress that, the problem does not lie in the modelling of the Wagner's Law and Keynesian relation but rather in the non-stationary analysis of macroeconomics time series. On this basis, we leave the conclusion of Wagner's Law and Keynesian relation as it is.

Secondly, if we take the view that the Wagner's Law and Keynesian relation failed to explain the growth of government expenditure in Malaysia, the conclusion may not rest on the econometrics methodology alone. The simple Wagner's Law and Keynesian relation itself may not be sufficient to explain and to capture the growth of government expenditure. It is quite dubious to say that government expenditure in Malaysia has not grown throughout the period.

Wagner formulated his so-called law based on the situation in Germany and Western European of his time. The same situation may not exists today. Neither the economic nor the social and political aspects of the present society resembles the period Wagner formulated his law. As Musgrave [1969] have pointed out, the developing countries today operates in a different set-up when compared to the present developed countries when they were at the same stage of development. For example, when the latter were developing, they only competed with each other. However, the developing countries today not only have to compete among themselves but worst still, they have to compete with the developed countries who are keen to ensure that their share of the

market remain intact. Without doubt, Malaysia do not escape this competition.

On this basis we can say that the growth of government expenditure may not be a simple function of national income as perceived by Wagner. Likewise, from the perspective of the Keynesian relation used in this study, the growth of GNP may not be a simple function of government expenditure. The complicated and often intertwined factors that influence an economy could well operate in the same way as to influence the growth of government expenditure. As our review of the literatures of the growth of government expenditure have suggested, several factors could lead to the growth of government expenditures. This includes among others, the international factors, fiscal illusion, the behaviour of bureaucrats, politicians and the interest groups. Wagner's Law is only one reason for such growth.

On the other hand, as we have argued in Chapter Two, Wagner seems to believe that his law is applicable for developing countries in the process of development. Therefore, if we take the view that government expenditure has grown in Malaysia and is proven by both the Wagner's Law and Keynesian relation, then this view is within the general understanding of Wagner's Law. Obviously Malaysia itself is a developing country, struggling as other developing countries struggle, to become a developed country. Within the framework of Wagner's Law, the increase in national income⁴ lead to the expansion of state requirements and activities so much so that the desire for progress or development managed to overcome the financial difficulties it face. This is obviously true for Malaysia since throughout the period under review, the budget were always in deficits. Earlier on in Chapter Three, we have shown the expansion of various state activities. In addition, both the public enterprises [Table 1.4] and public employment [Table 7.6] have also grown throughout the period. In line with Wagner's Law, this constitute "the expansion of state requirements to meet the pressure for social progress and the resulting changes in the relative spheres of private and public economy, especially compulsory public economy".

⁴

Wagner himself do not give any suggestion or to explain why and how national income increases.

b. Peacock and Wiseman Hypothesis

The interpretation of the Peacock and Wiseman Hypothesis used in this study is that of a structural change following Wiseman and Diamond [1975], Diamond, [1977] and Henrekson [1983]. This interpretation argues that a displacement occurs in the government expenditure following a period of social upheaval. This displacement creates the structural change in the government expenditure growth pattern. On this basis, we tested the hypothesis of a structural break using Perron's test on the total government expenditure. In addition, we also tested the structural break in GNP and ratio of government expenditure to GNP. From this test, the hypothesis of structural break is rejected.

Therefore, the interpretation of *PWH* taken in this study does not conform to another interpretation of the hypothesis which relates the displacement to the changes in the tolerable burden of taxation. Nonetheless, as we noted in Chapter Eight, none of the studies of *PWH* thus far have ever modelled the changes in the tolerable burden of taxation. It is only assumed [Tussing and Henning, 1974] that the tolerable burden of taxation changes during the period of upheaval thus allowing the government to increase the level of government expenditure. Following the period of social upheaval, the government managed to alter the expenditure mix of government expenditure.

9.5 SUGGESTIONS AND RECOMMENDATIONS

We divide this Section into two. First we put forward some suggestions and recommendations for future study in relation to the present one. Secondly, we suggest some considerations for further study on the theme of the growth of government in Malaysia, other than Wagner's Law, Keynesian relation and *PWH*.

9.5.1 In Relation To The Present Study

The present study has its own limitations and shortcomings. First and foremost, the analysis concentrates only on the aggregate government

expenditure. Due attention is not given to the analysis of the role and relation of each category of government expenditure on economic growth, be it from Wagner's Law or Keynesian perspectives. By analysing the role of each category of government expenditure, a more specific conclusion can be made on the significance [or otherwise] of each category of government expenditure and its influence on the GNP. Specifically, in term of the Keynesian relation outlined in this study, a more interesting aspect is to see the effect of government investment [or development] and consumption [or current] expenditure on the GNP growth over the period.

Second, there is of course some concern over the definition of the Keynesian relation as used, not only in this analysis but from previous studies [Ram, 1986; Singh and Sahni, 1984 and Sahni and Singh, 1984]. Our discussion on the definition of this relationship could be helpful in understanding the basis of testing such relationship.

Third, the definition or interpretation of the Peacock and Wiseman Hypothesis taken in the present study is not within the general understanding of *PWH* with respect to the changes in the tolerable burden of taxation that allows the government to increase the level of government expenditures. Nonetheless, it follows a less elegant interpretation that the *PWH* is basically a theory of structural break. Therefore, the econometrics analysis that has been performed, i.e. Perron's test for structural break is meant to investigate the presence of any structural break in the growth pattern of government expenditure and GNP in Malaysia for the period under study. This method is employed to take into consideration the unit root hypothesis. On this basis, this study differs with Henrekson [1993] and Kim [1997] which assumed that the variables are stationary.

Notwithstanding the above limitations and shortcomings of the present study, future interest in analysing the government expenditure growth in Malaysia can take into consideration the following recommendations.

a. On Wagner's Law

The present analysis on Wagner's Law can be extended in several ways. First, as we mentioned earlier, there is a need to attempt to disaggregate the data to see the relationship of some categories of government expenditure and GNP.

Second, to see whether GNP contributes directly to the growth of a particular expenditure category. At least in the case of Canada, Bird [1970] discovered the effect of GNP growth on the expansion of transfer expenditure. As we understood from Wagner's Law, Wagner envisaged an increase in defence and security, health and education.

b. Keynesian Relation

Similar to the Wagner's Law, there is a need to disaggregate the data to see the effect of government expenditure on GNP. However, in this particular case, a most plausible approach is to classify the government expenditure into consumption [or current] and investment [or development] expenditures.

c. Peacock and Wiseman Hypothesis

First, our assumption in testing the structural break assumes that the May 13, 1969 constitutes a social upheaval in the context of *PWH*. Therefore, in testing Perron's test for structural break, we took 1969 as the break year and discovered that there is no structural break in the growth pattern of government expenditure, GNP and ratio of government expenditure to GNP. The test can be extended by taking 1970 instead as the break year on the ground that as a result of the May 13, 1969, the New Economic Policy [NEP] was launched in 1970. Mere observation of the growth pattern of government expenditure and GNP, as shown in Figure 1.3 shows that a dramatic increase in those two variables started from 1970 i.e. after the introduction of NEP.

Second, the Perron's test for structural break can be extended by applying the Zivot and Andrews [1992] version of Perron's test. Unlike Perron's test, Zivot and Andrews's version assumes that the break-date is not known. However, caution has to be taken in relating this to *PWH* because the basis of the *PWH* is that a social upheaval befalling a country allows the government to increase the level of government expenditures. This social upheaval is known and therefore the date of such upheaval is also known.

Third, the Perron test can also be extended to analyse the growth pattern of government revenue particularly the tax revenue. We could test for the structural change in the growth pattern of tax revenues. This allows us to put a test on the interpretation that the change in the tolerable burden of taxation allows the government to increase the level of government expenditure.

9.5.2 Considerations For Future Study

The present effort to explain government expenditure growth in Malaysia concentrates only on the public finance aspect of the literature, namely Wagner's Law, the Keynesian explanations and the Peacock and Wiseman Hypothesis. Even then, a few other explanations from the public finance perspectives have been left out. In addition, as we have shown in Chapter Two, beside the public finance perspectives, there are various other explanations as to why government expenditure grow. On this consideration, we believe that the analysis can be extended further. In the rest of this Section, we put forward some suggestions for future research in explaining the government expenditure growth in Malaysia.

First, the increasing importance and dominance of industrial activities⁵ have reduced the importance and dominance of traditional *vis-a-vis* agricultural sector. Considering that most of the industrial estates are located in the urban areas, we can assume that the expansion of industrial activities could result in mass migration of rural populations into the urban areas. This exerted a pressure on the government to

⁵ Composition of manufacturing output in the total export of the country have increased from 6% in 1966 to 70% in 1994 [World Bank Development Report].

increase the services needed by the urban population. In line with this, analysis can be extended to analyse the effect of the so-called Baumol's disease on the level of government expenditure. According to Baumol's thesis, mass migration of rural population exerted a pressure on the government to provide services to the "relatively non-progressive sector of the economy" [Baumol, 1967: 423] thus contributing to the increase of government expenditures.

Secondly, without doubt, the process of urbanisation has intensified ever since independence. A recent United Nations figure⁶ for 1995 shows that 54% of the Malaysian population live in urban area. In line with earlier analysis by Bird [1970] and Thorn [1967], an attempt can be made to model urbanisation as a factor that contributes to the growth of public expenditure. Bird [1970] and Thorn [1967] argued that urbanisation which requires higher provision and better quality of goods and services forced the government to increase the level of government expenditures.

Third, an examination of the nature and causes of the growth of government expenditure in Malaysia can also be analysed from the international pressure on the government which leads to the increase in government expenditure. Owing to Cameron [1978], this pressure takes the form of effort made by the government to protect domestic markets from international fluctuation in prices. This owes itself to the degree of openness of the economy. An examination can be made between the degree of openness and government expenditure and GNP. The latter could follow Afxentious and Serletis [1992b] who argued that openness in the Canadian economy Granger-cause GDP growth.

A few aspects of the public choice theory could be pursued to analyse the reason and cause of the growth of government expenditure in Malaysia. The remainder of this section offers some alternative explanations from the public choice perspective of the growth of government expenditure in Malaysia.

⁶ Indicators of Human Settlements, United Nation Statistical Department at the United Nation homepage [<http://www.un.org/Depts/unsd/social/hm.set.htm>]

Fourth, in view of the huge amount spent on the current or operating expenditure throughout the period, it is worth analysing Niskanen's bureaucratic expansion theory. As we have shown in Table 7.6, government employment in 1990 has more than doubled the 1970 figure. Taking either the current expenditure or the government employment figure or both as a proxy for bureaucratic expansion, we can infer later the effect of such expansion on the level of government expenditure.

Fifth, one interesting aspect of the public choice explanation of the growth of government expenditure is the interest group theory. Two major and surely important players in the case of Malaysia are the "coalition" between bureaucrats and politicians [Chee, 1990] which pushed public expenditure spiralling upwards. In the context of Malaysia, this coalition take the form of 'spending-rush' behaviour. At the end of each Malaysian Plan, bureaucrats rushed to spend all the money allocated for their respective department to make sure that the next plan allocation is higher than the current plan allocation [Jomo, 1990]. An analysis can be made to study whether the coalition of these self-interested politicians and bureaucrats have indeed lead to the expansion of government expenditure in Malaysia.

Sixth, the Leviathan government theory of the growth of government argued that the power to tax, issuing debt and printing money could lead to government expenditure growth by allowing government to run a budget deficit [Brennan and Buchanan, 1980]. As we have already shown, throughout the period under study, the budget has always been in deficit which shows that government has always spent more than its revenues. Logically, this deficit is financed by either of the three methods above. Hence, we could proceed to model government expenditure growth by analysing the relationship between the power to tax, issuing debts and printing money on the level of government expenditures.

Seventh, following suggestion by Alan Blinder [1997], an effort could be made to analyse whether government expansion arises because the process of governing has become too political. This is mainly due to

the fact that too much political considerations is given before any decision could be made as a result of the interference or pressure from self-interest politicians in any decision making process. Consequently, elected officials are seems to be “playing games rather than solving problems” [Blinder, 1997: 115]. Edwards [see Jomo, 1993] observed that the bureaucracy in Malaysia has indeed devised an inefficient industrial policy which explains why public expenditure has grown so much.

Eighth, in line with Stock and Watson [1997] and Cheung and Chinn [1997], we can vary the time period of the analysis to see whether the Granger causality test on Wagner’s Law and Keynesian relation hold. In their analysis, Stock and Watson conclude that the Granger-causality test is sensitive to the sample period and that some inherent features of their sample period contributed to the discovery of non Granger-causality. Cheung and Chinn suggested a longer time period to allow the relationship outlined by the Granger-causality to surface. Especially when testing the Keynesian relation, we could vary the time period by excluding the 1960s. The basis for this is that prior to the introduction of *NEP*, the growth rate of both government expenditure and GNP is relatively small. In addition, since the *NEP* requires huge government expenditure it is interesting to see whether within this period of *NEP* [1970-1990], government expenditure has lead to the increase in GNP.

9.6 CONCLUSION

In reviewing the enormous evidence either to support or reject the Wagner’s Law, Musgrave [1969] rightly concluded that the evidence remains puzzling. The same can be said about our present study even though the reason for such a puzzle is different. In our present study on Malaysia, the puzzle is more on the interpretation of the results either to accept or reject the Wagner’s Law. The evidence supports Wagner’s Law if we use standard or original Granger-causality analysis. However, it rejects the Wagner’s Law if the unit root hypothesis is considered.

The former method appears to support our interpretation that Wagner seemed to believe that his law is applicable in the context of developing countries, like Malaysia. In other words, it implies that as the quest for economic development intensifies, pressure is put on the government to provide the “compulsory public economy”. Musgrave [1969] defined this in terms of expenditures on defence and security, health and education which increase the level of government expenditures. As Wagner put it, the pressure appears in the form of a pressure for social progress and a desire for development.

Therefore, we suggest that the interpretation of our finding must be taken as it is. In other words, it must be considered within the econometrics framework in which the conclusion is derived. If we say that the Wagner's Law hold for Malaysia, it must be acknowledged that the result ignores the unit root hypothesis. The same thing applies otherwise. For the Keynesian relation modelled in this study, the same caution should to be taken in interpreting the evidence. As such, if we say that the Keynesian relation holds, the fact that it ignores the unit root hypothesis must also be mentioned.

In testing the structural change in line with the Peacock and Wiseman Hypothesis, our test suggested that there is no structural change in the growth of government expenditure, GNP and ratio of government expenditure to GNP. This allows us to conclude that the displacement effect or structural change as argued by Peacock and Wiseman is irrelevant in the case of Malaysia. In this context it is relevant to highlight Bird's [1972] conclusion in testing the Peacock-Wiseman Hypothesis. Bird [1972: 463] argued that “the final verdict of ‘displacement effect’ cannot yet be handed down because an appropriate hypothesis has not yet been rigorously formulated and tested”. This has also been highlighted by Henrekson [1993]. In assessing the previous test of Peacock-Wiseman Hypothesis, Henrekson argued that Peacock and Wiseman's original formulation does not have any exact formulation. The first attempt to formulate the Peacock-Wiseman Hypothesis was done by Gupta [1967] followed later by Diamond [1977], both of whom are Peacock and Wiseman associates [Gupta was indeed Peacock's student].

In the final analysis, we do believe that the government expenditure in Malaysia has indeed grown. However, as we said earlier, the simple Wagner's Law, Keynesian relation and Peacock-Wiseman Hypothesis may or may not be enough to explain the causes of this growth. This has also been argued by Wagner and Weber [1977: 67]. Specifically on Wagner's Law, they argued that "there is no universal Wagnerian Law of public spending the preceding analysis has suggested that Wagner's Law is not a law".

To model and explain the growth of government expenditure in Malaysia, a more comprehensive approach is needed. We presented in Section 9.5 some considerations to be taken in this aspect. Only then, a final verdict can be handed down.

One final note on the post-1990 government expenditure. The general concern among the general public toward the Malaysian government this day is the passion and zeal for grand white-elephant projects - the Kuala Lumpur twin tower, the highest building in the world [\$3.8 billion]; the new Kuala Lumpur International Airport, KLIA [estimated cost of \$3.8 billion]; the new administrative centre, Putrajaya [\$8.7 billion], the Bakun dam project, the biggest dam in South-East Asia to supply 2400 Megawatts of electricity [\$6.1 billion]; a sea reclamation project in Kedah, the Prime Minister's home-state [\$2.2 billion]; the Multimedia Super Corridor [\$15 billion]. All these projects are partly financed by private investment but still with government backing. Except for the twin towers and the KLIA, others have been put on hold following the recent financial *vis-a-vis* foreign exchange crisis that is facing the region. This does not include other proposals, among others, the second Penang Bridge [\$2 billion] and Malaysia-Indonesia Bridge, a proposed project with Siti Hediati Harijadi Suharto, Indonesia's former President Suharto's second daughter [\$2.3 billion]⁷. Fears are mounting that after the 1998 Commonwealth Games, the country will be gasping for air to breath. Kuala Lumpur will host the XVI Games from 10-20 Sept. 1998⁸.

⁷ All figures are taken from Asiaweek, 5 Sept. 1997.

⁸ The organising committee is headed by Gen. (Rtd.) Tan Sri Hashim Md. Ali, the brother-in-law of the Prime Minister.

All these require huge government investment and thus huge government expenditure, whereby the economic and financial return from these projects is either doubtful or minimal. Further to this, with huge external debt, it is doubtful that the benefit of these projects will trickle down to the not-well-off among the society. In 1970, public and publicly guaranteed long-term debt was US\$370 million. This increased to US\$5,256 million in 1980 and US\$18,753 million in 1990. The short term debt was US\$2,692 million in 1990 compared to US\$1,355 million in 1980. In total, the public and publicly guaranteed external debt stood at US\$21,445 million in 1990 compared to US\$6,611 million in 1980⁹.

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Figures taken from World Economic Report, World Bank, various edition.

APPENDIX 1

MALAYSIA: GNP, TOTAL GOVERNMENT EXPENDITURE AND VARIOUS LEVEL OF GOVERNMENT EXPENDITURES, 1961-1990 (million).

Year	GNP at current market price	Total Government Expenditure (GE)	Population	Total Current Expenditure	Total Development Expenditure	Economic and Social Services			General Administration			Defence and Security			Public Debts Charge	Transfer Payments						
						Total	Current	Development	Total	Current	Development	Total	Current	Development		Total Transfer Payments (inc. Pensions)	Division of Transfer Payments					Total Transfer Payments (exc. Pensions)
																	Pensions	Grants To States Gov.	Contribut. To Statutory Funds	Fees To Internat. Bodies	Others	
1961	6681.00	1203.00	8.37	939.00	264.00	524.00	385.00	139.00	263.00	134.00	102.00	190.00	167.00	23.00	112.00	141.00	72.00	69.00	na	0.00	na	69.00
1962	6916.00	1487.00	8.64	1072.00	415.00	667.00	437.00	230.00	361.00	205.00	156.00	201.00	172.00	29.00	121.00	137.00	65.00	72.00	na	0.00	na	72.00
1963	7354.00	1732.00	8.91	1277.00	455.00	713.00	467.00	246.00	481.00	334.00	147.00	258.00	196.00	62.00	129.00	151.00	63.00	88.00	na	0.00	na	88.00
1964	7822.00	1886.50	9.15	1387.10	499.40	980.80	567.90	412.90	224.60	210.00	14.60	399.00	327.10	71.90	95.40	186.70	61.30	89.00	36.30	0.10	na	125.40
1965	8593.00	2120.70	9.42	1538.70	582.00	1091.30	639.80	451.50	189.10	179.00	10.10	494.10	373.70	120.40	109.30	236.90	63.90	137.70	16.00	19.30	na	173.00
1966	9177.00	2270.70	9.52	1619.60	651.10	1126.10	678.90	447.20	212.30	187.10	25.20	556.30	377.60	178.70	133.60	242.40	64.90	148.70	0.50	28.30	na	177.50
1967	9652.00	2414.40	9.78	1789.20	625.20	1209.80	731.70	478.10	242.50	229.70	12.80	522.30	388.00	134.30	151.60	288.20	65.80	160.70	33.40	28.30	na	222.40
1968	10068.00	2417.50	10.02	1798.80	618.70	1257.10	744.80	512.30	239.20	231.70	7.50	483.00	384.10	98.90	172.80	265.40	69.30	176.40	8.00	11.70	na	196.10
1969	10973.00	2548.70	10.15	1933.40	615.30	1267.40	779.30	488.10	265.50	243.30	22.20	522.90	417.90	105.00	196.00	296.90	100.50	183.50	1.20	11.70	na	196.40
1970	11617.00	2888.00	10.39	2163.00	725.00	1396.60	864.70	531.90	290.30	269.60	20.70	667.90	495.50	172.40	238.40	294.80	89.50	167.00	30.70	7.60	na	205.30
1971	12501.00	3483.40	10.70	2398.00	1085.40	1820.00	969.90	850.10	257.40	238.80	18.60	796.60	579.90	216.70	282.00	327.40	87.30	196.00	44.10	0.00	na	240.10
1972	13641.00	4310.00	11.00	3067.90	1242.10	2311.10	1303.70	1007.40	297.00	273.10	23.90	985.10	774.30	210.80	323.60	393.20	124.50	169.10	98.60	1.00	na	268.70
1973	17443.00	4469.60	11.31	3341.50	1128.10	2301.10	1314.90	986.20	441.50	410.00	31.50	1014.10	903.70	110.40	413.80	299.10	118.60	170.20	7.10	3.20	na	180.50
1974	21244.00	6194.40	11.65	4318.00	1876.40	3426.50	1835.50	1591.00	480.60	437.00	43.60	1344.90	1103.10	241.80	492.60	449.80	176.80	257.60	13.10	2.30	na	273.00
1975	21684.00	7051.40	11.90	4900.20	2151.20	3827.00	2002.90	1824.10	578.30	479.90	98.40	1542.40	1313.70	228.70	619.10	484.60	168.60	272.40	28.80	14.80	na	316.00
1976	26988.00	8206.20	12.30	5828.50	2377.70	4096.20	2230.30	1865.90	615.80	538.30	77.50	1653.60	1219.30	434.30	836.60	1004.00	201.90	250.20	518.90	18.20	14.80	802.10
1977	31064.00	10615.10	12.60	7398.30	3216.80	5540.50	2959.00	2581.50	909.00	743.50	165.50	1987.20	1517.40	469.80	959.70	1218.70	185.10	274.40	723.60	15.90	19.70	1033.60
1978	36170.00	11822.40	12.91	8040.80	3781.60	6367.20	3149.90	3217.30	660.90	588.10	72.80	2183.00	1691.50	491.50	1133.90	1477.40	341.80	321.00	690.90	79.10	44.60	1135.60
1979	43092.00	14321.60	13.25	10040.20	4281.40	6758.10	3276.60	3481.50	804.40	717.80	86.60	2547.40	1834.10	713.30	1271.10	2940.60	346.90	348.10	2162.00	19.10	64.50	2593.70
1980	50124.00	21162.50	13.76	13692.50	7470.00	10036.90	4008.20	6028.70	1383.70	1164.00	219.70	3389.00	2167.40	1221.60	1547.20	4805.70	516.00	349.90	3413.00	5.60	521.20	4289.70
1981	55602.00	27044.00	14.10	15686.00	11358.00	14522.80	5178.30	9344.50	1618.20	1443.90	174.30	4693.30	2854.10	1839.20	2046.60	4163.10	585.20	407.90	2449.00	4.00	717.00	3577.90
1982	59690.00	28156.80	14.46	16671.50	11485.30	15480.80	6287.20	9193.60	1923.70	1696.50	227.20	5140.00	3075.50	2064.50	2723.50	2888.80	587.20	561.30	808.30	8.30	923.70	2301.60
1983	65154.00	28044.30	14.75	18374.40	9669.90	13507.20	5738.00	7769.20	1691.50	1513.10	178.40	4712.10	2989.80	1722.30	3453.20	4680.30	628.90	778.00	2476.00	14.80	782.60	4051.40
1984	74182.00	28213.10	15.09	19805.60	8407.50	13658.90	6374.90	7284.00	1754.60	1636.00	118.60	4331.30	3326.40	1004.90	4430.00	4038.30	681.10	703.50	2448.10	20.40	185.20	3357.20
1985	72039.00	27208.10	15.68	20066.20	7141.90	13050.10	6659.90	6390.20	2160.00	2035.20	124.80	3905.80	3278.90	626.90	5041.60	3050.60	776.50	803.60	1456.50	14.00	na	2274.10
1986	66814.00	27364.20	16.11	19804.90	7559.40	14034.30	6979.70	7054.60	2276.80	2147.00	129.80	3787.70	3412.70	375.00	5238.80	2026.70	826.60	1060.00	110.00	30.10	na	1200.10
1987	74679.00	24925.90	16.53	20185.20	4740.70	11155.40	6958.10	4197.30	2395.40	2185.10	210.30	3573.60	3240.50	333.10	5763.80	2037.70	951.40	881.60	190.50	14.20	na	1086.30
1988	85777.00	27043.80	16.94	21812.40	5231.40	12291.30	7537.80	4753.50	2299.20	2179.80	119.40	3699.80	3341.30	358.50	6177.80	2575.70	976.20	989.00	600.00	10.50	na	1599.50
1989	95560.00	32527.50	17.35	24831.70	7695.80	14663.80	8053.10	6610.70	2451.00	2207.80	243.20	4381.30	3539.40	841.90	6742.80	4288.60	1087.50	1031.90	2152.70	16.50	na	3201.10
1990	109663.00	36670.50	17.76	26596.30	10074.20	17999.10	9123.10	8876.00	2484.40	2338.10	146.30	4795.40	3743.50	1051.90	6800.00	4590.80	1076.90	1178.80	2326.10	9.00	na	3513.90

note:

na: not available

APPENDIX 2
MALAYSIA: FUNCTIONAL GOVERNMENT ACTIVITIES, 1961-1990.

Year	Total Government Expenditure	Functional Government Activities						Total Current Expenditure	Share In Total Current Expenditures						Total Development Expenditure	Share in Total Development Expenditures (\$)		
		Economic and Social Services	General Admin	Defence and Security	Public Debts Charge	Transfer Payments	Pensions		Economic and Social Services	General Admin.	Defence and Security	Public Debts Charges	Transfer Payments	Pensions		Economic and Social Services	General Admin.	Defence/Security
1961	1203.00	524.00	236.00	190.00	112.00	69.00	72.00	939.00	385.00	134.00	167.00	112.00	69.00	72.00	264.00	139.00	102.00	23.00
1962	1487.00	667.00	361.00	201.00	121.00	72.00	65.00	1072.00	437.00	205.00	172.00	121.00	72.00	65.00	415.00	230.00	156.00	29.00
1963	1732.00	713.00	481.00	258.00	129.00	88.00	63.00	1277.00	467.00	334.00	196.00	129.00	88.00	63.00	455.00	246.00	147.00	62.00
1964	1886.50	980.80	224.60	399.00	95.40	125.40	61.30	1387.10	567.90	210.00	327.10	95.40	125.40	61.30	499.40	412.90	14.60	71.90
1965	2120.70	1091.30	189.10	494.10	109.30	173.00	63.90	1538.70	639.80	179.00	373.70	109.30	173.00	63.90	582.00	451.50	10.10	120.40
1966	2270.70	1126.10	212.30	556.30	133.60	177.50	64.90	1619.60	678.90	187.10	377.60	133.60	177.50	64.90	651.10	447.20	25.20	178.70
1967	2414.40	1209.80	242.50	522.30	151.60	222.40	65.80	1789.20	731.70	229.70	388.00	151.60	222.40	65.80	625.20	478.10	12.80	134.30
1968	2417.50	1257.10	239.20	483.00	172.80	196.10	69.30	1798.80	744.80	231.70	384.10	172.80	196.10	69.30	618.70	512.30	7.50	98.90
1969	2548.70	1267.40	265.50	522.90	196.00	196.40	100.50	1933.40	779.30	243.30	417.90	196.00	196.40	100.50	615.30	488.10	22.20	105.00
1970	2888.00	1396.60	290.30	667.90	238.40	205.30	89.50	2163.00	864.70	269.60	495.50	238.40	205.30	89.50	725.00	531.90	20.70	172.40
1971	3483.40	1820.00	257.40	796.60	282.00	240.10	87.30	2398.00	969.90	238.80	579.90	282.00	240.10	87.30	1085.40	850.10	18.60	216.70
1972	4310.00	2311.10	297.00	985.10	323.60	268.70	124.50	3067.90	1303.70	273.10	774.30	323.60	268.70	124.50	1242.10	1007.40	23.90	210.80
1973	4469.60	2301.10	441.50	1014.10	413.80	180.50	118.60	3341.50	1314.90	410.00	903.70	413.80	180.50	118.60	1128.10	986.20	31.50	110.40
1974	6194.40	3426.50	480.60	1344.90	492.60	273.00	176.80	4318.00	1835.50	437.00	1103.10	492.60	273.00	176.80	1876.40	1591.00	43.60	241.80
1975	7051.40	3827.00	578.30	1542.40	619.10	316.00	168.60	4900.20	2002.90	479.90	1313.70	619.10	316.00	168.60	2151.20	1824.10	98.40	228.70
1976	8206.20	4096.20	615.80	1653.60	836.60	802.10	201.90	5828.50	2230.30	538.30	1219.30	836.60	802.10	201.90	2377.70	1865.90	77.50	434.30
1977	10615.10	5540.50	909.00	1987.20	959.70	1033.60	185.10	7398.30	2959.00	743.50	1517.40	959.70	1033.60	185.10	3216.80	2581.50	165.50	469.80
1978	11822.40	6367.20	660.90	2183.00	1133.90	1135.60	341.80	8040.80	3149.90	588.10	1691.50	1133.90	1135.60	341.80	3781.60	3217.30	72.80	491.50
1979	14321.60	6758.10	804.40	2547.40	1271.10	2593.70	346.90	10040.20	3276.60	717.80	1834.10	1271.10	2593.70	346.90	4281.40	3481.50	86.60	713.30
1980	21162.50	10036.90	1383.70	3389.00	1547.20	4289.70	516.00	13692.50	4008.20	1164.00	2167.40	1547.20	4289.70	516.00	7470.00	6028.70	219.70	1221.60
1981	27044.00	14522.80	1618.20	4693.30	2046.60	3577.90	585.20	15686.00	5178.30	1443.90	2854.10	2046.60	3577.90	585.20	11358.00	9344.50	174.30	1839.20
1982	28156.80	15480.80	1923.70	5140.00	2723.50	2301.60	587.20	16671.50	6287.20	1696.50	3075.50	2723.50	2301.60	587.20	11485.30	9193.60	227.20	2064.50
1983	28044.30	13507.20	1691.50	4712.10	3453.20	4051.40	628.90	18374.40	5738.00	1513.10	2989.80	3453.20	4051.40	628.90	9669.90	7769.20	178.40	1722.30
1984	28213.10	13658.90	1754.60	4331.30	4430.00	3357.20	681.10	19805.60	6374.90	1636.00	3326.40	4430.00	3357.20	681.10	8407.50	7284.00	118.60	1004.90
1985	27208.10	13050.10	2160.00	3905.80	5041.60	2274.10	776.50	20066.20	6659.90	2035.20	3278.90	5041.60	2274.10	776.50	7141.90	6390.20	124.80	626.90
1986	27364.30	14034.30	2276.80	3787.70	5238.80	1200.10	826.60	19804.90	6979.70	2147.00	3412.70	5238.80	1200.10	826.50	7559.40	7054.60	129.80	375.00
1987	24925.90	11155.40	2395.40	3573.60	5763.80	1086.30	951.40	20185.20	6958.10	2185.10	3240.50	5763.80	1086.30	951.40	4740.70	4197.30	210.30	333.10
1988	27043.80	12291.30	2299.20	3699.80	6177.80	1599.50	976.20	21812.40	7537.80	2179.80	3341.30	6177.80	1599.50	976.20	5231.40	4753.50	119.40	358.50
1989	32527.50	14663.80	2451.00	4381.30	6742.80	3201.10	1087.50	24831.70	8053.10	2207.80	3539.40	6742.80	3201.10	1087.50	7695.80	6610.70	243.20	841.90
1990	36670.50	17999.10	2484.40	4795.40	6800.80	3513.90	1076.90	26596.30	9123.10	2338.10	3743.50	6800.80	3513.90	1076.90	10074.20	8876.00	146.30	1051.90

APPENDIX 3

PROCEDURE FOR TESTING ELASTICITY OF GOVERNMENT EXPENDITURE

Examining earlier studies, Gandhi [1971] presented five ways in which testing for elasticity of government expenditure have been carried out. These are

- i. The first type use the absolute figure on both government expenditure and national income; that government expenditure is a function of GNP. This will test the elasticity of government expenditure to GNP; $e_{E,GNP} > 1$. This test set to establish that the rate of growth of government expenditure is faster than the rate of growth of output [Peacock and Wiseman, 1967, and J.M.Buchanan, 1965].
- ii. This test category was used by Pryor [1968, p.451]. He used government consumption expenditure as a measure of the level of government spending; $C = f(Y)$. Again this measures used absolute figure of both government expenditure and income. The objective is to prove "that in growing economies, the share of public consumption expenditure in national income increases" [Pryor, 1968, p.451]. This was done by testing whether the elasticity of government expenditure to national income is greater than unity; $e_{C,Y} > 1$.
- iii. The third category accepted that the appropriate measure of [economic] development is not the absolute level of national income but the level of national income per capita $E = f\left(\frac{GNP}{P}\right)$. This is to test that the elasticity of government expenditure to per capita income is greater than unity $e_{E,\frac{GNP}{P}} > 1$. This approach was adopted by Goffman [1968] by arguing that "an increase must occur in the activities of the public sector and that the ratio of increase, when converted into expenditure terms, would exceed the rate of increase in output per capita".

- iv. Musgrave [1969] measure and test the rate of growth of government expenditure to GNP against the GNP per capita; $\frac{E}{GNP} = f\left(\frac{GNP}{P}\right)$ to prove that the elasticity is greater than unity $\frac{e_{E, GNP}}{\frac{GNP}{P} \cdot \frac{GNP}{P}} > 1$.
- v. This approach was used by Gupta [1967] by measuring the elasticity of government expenditure per capita in relation to GNP per capita; $\frac{E}{P} = f\left(\frac{GNP}{P}\right)$. Again, this formulation involves testing whether the elasticity of government expenditure per capita to GNP per capita is bigger than unity, $\frac{e_{E, GNP}}{\frac{P}{P} \cdot \frac{GNP}{P}} > 1$.

APPENDIX 4

CHRONOLOGY OF EVENTS UP TO MAY 13, 1969.

1400/3	Malacca was opened by Parameswara, a prince from Sumatra, Indonesia.
1498	Vasco da Gamma [Portugese admiral] discovered India.
1511	The fall of Malacca to the Portugese following Alfonso de Albuquerque attack.
1641	Malacca fall into the hand of the Dutch.
1711	Tin was discovered in Malaya.
1786	Francis Light opened Penang.
1795	The Dutch who were occupied with French invasion, handed Malacca and other of her territories to the British as a war-time measure to prevent these territories from falling into the hand of the French who were present in Indochina.
1800	Francis Light bought Province Wellesley from Sultan of Kedah.
1818	As the Dutch-French war folded, Malacca was handed back to the Dutch by the British.
1819 [Jan., 19]	Stanford Raffles landed in Singapore.
1819 [Jan., 30]	Stanford Raffles agreed to build a factory and pay the Temenggong of Johor 3000 dollars; in return Singapore was given under the protection of Raffles.
1824 [March]	Anglo-Dutch treaty whereby Malacca was handed to the British in exchange for Bengkulin, Sumatra [which fall to the British in 1685].
1832	The term Straits Settlements was first used in reference to Malacca, Penang and Singapore.
1842	As a punishment for giving Penang to the British, the King of Siam reduced the territory of Sultan Tajuddin (of Kedah) to what is presently known as Perlis.
1864	Indian introduced an Act prohibiting the employment of Indians overseas.
1871	Sultan Ali died; Raja Ismail was appointed Sultan of Perak for the failure of Raja Abdullah, the heir, to attend the funeral.
1872	Dissatisfied with the appointment of Raja Ismail, Raja Abdullah appointed himself as the Sultan.
1873	Raja Abdullah visited Singapore to meet Sir Andrew Clark.
1874 [January]	Pangkor Agreement; Raja Abdullah was recognised as Sultan of Perak; start of British intervention in Malay States.
1874 [February]	Clark met Sultan Abdul Samad; British helped Tengku Kudin [Selangor] in the feud with Wan Ahmad; start of Residency in Selangor.
1874 [April]	Treaty with Dato Kelana [Negeri Sembilan]; started the residency in Negeri Sembilan.
1874 [November]	J.G.Davidson was appointed as the first resident in Selangor.
1874 [Nov., 17]	J.W.W. Birch was appointed as the Resident in Perak.
1875 [Nov., 2]	Birch was assassinated at while bathing in a river in Pasir Salak, Perak.
1877	Chinese Protectorate was established to regulate the importation of the Chinese from China.
1877	Rubber was introduced to Malaya via Sri Lanka and Singapore, and was planted in Taiping, Perak.
1880	Legislation to prevent brokers from charging excessive levy on new immigrants.

1883		Boundary dispute between Pahang and Negeri Sembilan, F.Swettenam was sent to settle the dispute.
1883		Perak set-up a Chinese Department, due to the huge number of Chinese emigrants arriving to the state.
1884		Indian migration to Malaya was legalised.
1885		First railway line between Port Weld and Taiping.
1888		A British Chinese Shopkeeper was murdered in Pekan, Pahang which eventually led Pahang to accept a British Residency system in Pahang.
1891		Chinese Labourers Protection Ordinance to regulate working hours and working days.
1893		Frank Swettenham proposed a federation of four states with British Resident [Perak, Selangor, Negeri Sembilan and Pahang].
1896	[July, 1]	The federated Malay States was formed and Kuala Lumpur was chosen as its headquarters.
1897		A Bill was introduced to set minimum wage and duration of contract for Indian labours.
1901		Subsidy was given not only for steamship journey of Indian labours but also mail steamship.
1904		Sino-British agreement to regulate the Chinese emigration to British colonies.
1904		Sir John Anderson, the Governor General provided 6,000 free tickets for Indians to travel to Malaya.
1909		Anglo-Siam treaty; Siam ceded its claim on Kelantan, Terengganu, Kedah and Perlis, in return the British agreed to loan Siam four million pounds to build its railway network.
1941	[Dec., 7]	Japanese army landed in Pengkalan Chepa, Kelantan.
1942	[Feb., 14]	Japanese army reached Singapore.
1946	[March]	UMNO was formed by Dato' Onn Jaafar.
1946	[Jan., 22]	White Paper to establish Malayan Union.
1948	[June 18]	Emergency Rule was declared as a result of the communist Bintang Tiga insurgency following the departure [surrender] of Japanese.
1951		Dato' Onn left UMNO; UMNO's presidency was taken over by Tengku Abdul Rahman.
1957	[Aug., 31]	Independence for Persekutuan Tanah Melayu.
1959		First Malaya election; Alliance won 74 out of 104 seats
1962	[Sept., 1]	Singapore referendum to join Malaysia.
1963	[Sept., 16]	Malaysia came into existence.
1964		Second election; Alliance won 89 of 109 seats.
1965	[Aug., 9]	Singapore was expelled.
1966	[March]	DAP was formed to replace Lee Kuan Yew's PAP in Malaysia following the expulsion of Singapore.
1969	[May 10]	Third general election; Alliance won 66 of 104 seats.
1969	[May 13]	The bloody racial clash.
1969	[May 14]	Parliament was suspended, National Operation Council was established.

APPENDIX 5 AKAIKIE'S FINAL PREDICTION ERROR FOR LAG LENGTH SELECTION.

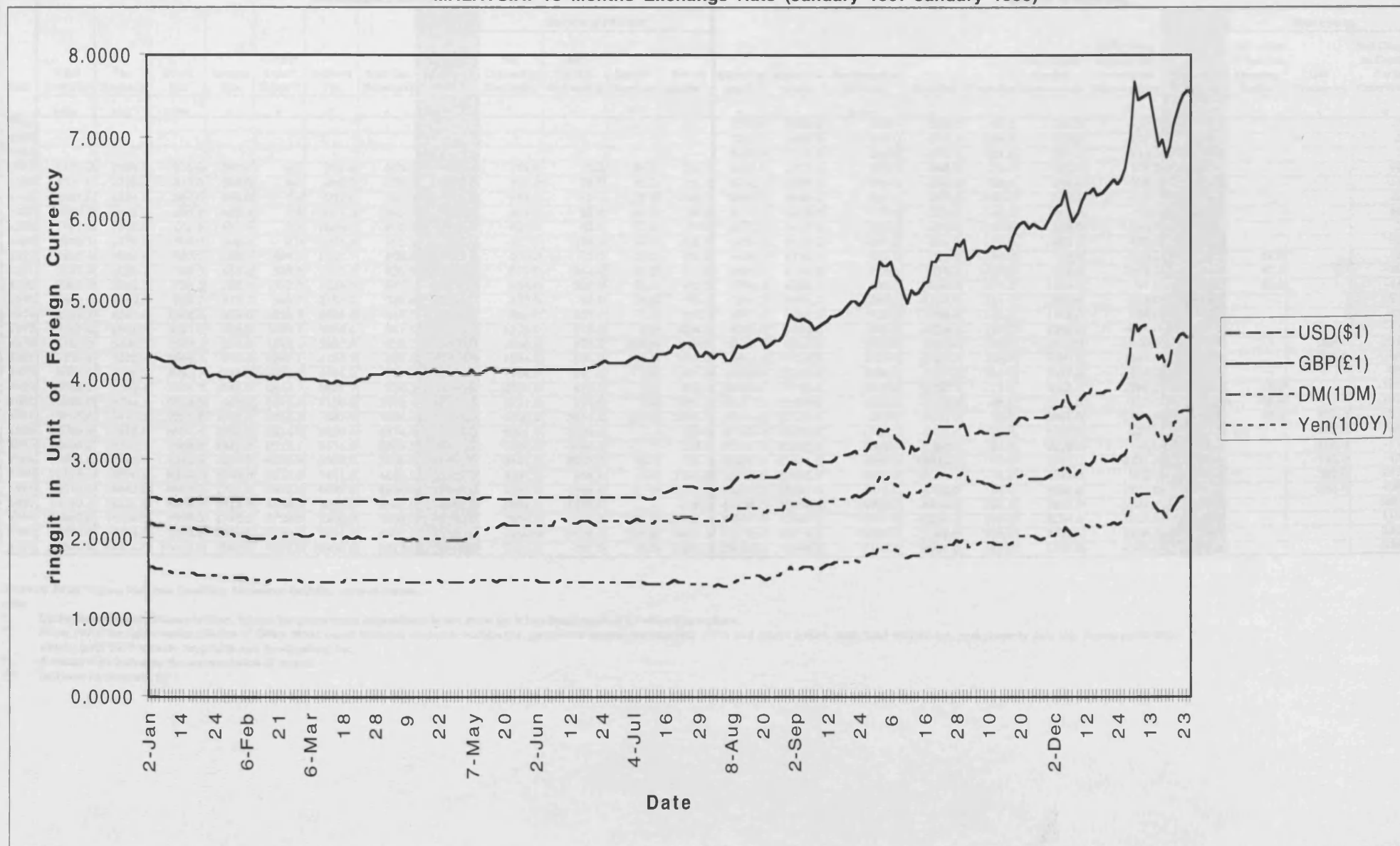
Akaike's Final Prediction Error:

minimising $FPE = \left(\frac{v+p+1}{v-p-1} \right) \left(\frac{RSS}{v} \right)$ based on $y_t = a + b^p(L)y_t + \mu_t$

where, v=number of years in the sample, p=number of lag, RSS=Residual sum of squared.
v=30 (1961-1990), and we performed the regression for up to 5 lags

p (lag length)	RSS for	$\left(\frac{v+p+1}{v-p-1} \right)$	$\left(\frac{RSS}{v} \right)$	$FPE = \left(\frac{v+p+1}{v-p-1} \right) \left(\frac{RSS}{v} \right)$
h				
5	0.002155	1.500	0.0000718	0.000108
4	0.002245	1.400	0.0000748	0.000105
3	0.002280	1.308	0.0000760	0.000099
2	0.002404	1.222	0.0000801	0.000098
1	0.002500	1.143	0.0000833	0.000095
y				
5	0.013089	1.500	0.0004363	0.000654
4	0.013345	1.400	0.0004448	0.000623
3	0.015899	1.308	0.0005300	0.000693
2	0.016067	1.222	0.0005356	0.000655
1	0.019592	1.143	0.0006531	0.000746
k				
5	0.002405	1.500	0.0000802	0.000120
4	0.002470	1.400	0.0000823	0.000115
3	0.002473	1.308	0.0000824	0.000108
2	0.002827	1.222	0.0000942	0.000115
1	0.002967	1.143	0.0000989	0.000113
n				
5	0.106080	1.500	0.0035360	0.005304
4	0.106410	1.400	0.0035470	0.004966
3	0.115930	1.308	0.0038643	0.005053
2	0.117150	1.222	0.0039050	0.004773
1	0.132280	1.143	0.0044093	0.005039
g				
5	0.030381	1.500	0.0010127	0.001519
4	0.033434	1.400	0.0011145	0.001560
3	0.035765	1.308	0.0011922	0.001559
2	0.036477	1.222	0.0012159	0.001486
1	0.043793	1.143	0.0014598	0.001668
gx				
5	0.240960	1.500	0.0080320	0.012048
4	0.257340	1.400	0.0085780	0.012009
3	0.264820	1.308	0.0088273	0.011543
2	0.265420	1.222	0.0088473	0.010813
1	0.322390	1.143	0.0107463	0.012282

Appendix 6
MALAYSIA: 13 Months Exchange Rate (January 1997-January 1998)



APPENDIX 7
GOVERNMENT FINANCE, 1961-1990

Year	Government Finance*												Balance of Payments											
								Budget Surplus/Deficit	Sources of Finance				Export of goods	Import of goods	Merchandise balance	Services	Transfer	Long-term Capital Movements	Short Term Capital and Unrecorded Transactions	Overall Balance	Financed by			
									Net Domestic Borrowing	Net Foreign Borrowing	Special Receipts	Use of assets ^									Allocation of Special Drawing Rights	IMF Resources	Net Change in Central Bank Reserves ^^	
	Total Revenue	Tax Revenue	Direct Tax	Income Tax	Others Direct Taxes**	Indirect Tax	Non-Tax Revenues	i	j	k	l	m	n	p=m+n	q	r	s	t	u	v	w			
a+b+c	b+c+d	c+d+e	d	e	f	g	h	i	j	k	l	m	n	p=m+n	q	r	s	t	u+v+w+x	u	v	w		
1961												3208.0	2669.0	539.0	-336.0	-193.0	195.0	-127.0	78.0			-78.0		
1962												3232.0	2892.0	340.0	-307.0	-194.0	282.0	-101.0	20.0			-20.0		
1963												3296.0	3010.0	286.0	-321.0	-181.0	357.0	-215.0	-74.0			74.0		
1964	1469.0	1034.0	270.0	262.0	8.0	764.0	435.0	-418.0	199.0	-6.0	57.0	168.0	3346.0	3071.0	275.0	-365.0	-74.0	192.0	-168.0	-140.0			140.0	
1965	1591.0	1192.0	310.0	302.0	8.0	882.0	399.0	-532.0	383.0	72.0	49.0	28.0	3752.0	3226.0	526.0	-380.0	-58.0	250.0	-201.0	137.0			-137.0	
1966	1667.0	1324.0	367.0	360.0	7.0	957.0	343.0	-595.0	281.0	-10.0	78.0	246.0	3808.0	3246.0	562.0	-407.0	-106.0	192.0	-405.0	-164.0			164.0	
1967	1839.0	1446.7	435.7	425.9	9.8	1011.0	392.9	-567.0	351.0	83.0	44.0	89.0	3676.0	3202.0	474.0	-351.0	-142.0	241.0	-708.0	-486.0			486.0	
1968	1891.0	1518.8	459.5	451.9	7.6	1059.3	372.2	-515.0	425.0	63.0	37.0	-10.0	4070.0	3427.0	643.0	-400.0	-143.0	156.0	-283.0	-27.0			27.0	
1969	2092.7	1710.4	509.0	500.0	9.0	1201.4	382.3	-438.0	377.0	155.0	24.0	-118.0	4986.0	3505.0	1481.0	-601.0	-179.0	299.0	-472.0	528.0			528.0	
1970	2400.4	1994.6	667.5	168.0	499.5	1327.1	405.8	-475.0	306.0	-2.0	17.0	154.0	5106.0	4123.0	983.0	-623.0	-183.0	155.0	-275.0	57.0	64.0		-121.0	
1971	2417.9	2082.1	706.3	168.0	538.3	1375.8	335.8	-1050.0	677.0	344.0	40.0	-11.0	4884.0	4179.0	705.0	-878.0	-137.0	714.0	-201.0	203.0	61.0		-264.0	
1972	2920.3	2394.2	799.3	182.0	617.3	1594.9	526.1	-1371.0	836.0	306.0	66.0	163.0	4736.0	4356.0	380.0	-906.0	-157.0	1169.0	-97.0	389.0	60.0		-449.0	
1973	3399.3	3042.5	883.7	218.0	665.7	2158.8	356.8	-1049.0	876.0	69.0	28.0	76.0	7263.0	5664.0	1599.0	-1197.0	-151.0	600.0	-275.0	576.0			-576.0	
1974	4791.2	4342.9	1384.3	355.0	1029.3	2958.6	448.7	-1379.0	828.0	227.0	8.0	316.0	9991.0	9265.0	726.0	-1365.0	-140.0	1109.0	122.0	452.0			-452.0	
1975	5117.0	4575.2	2021.2	438.0	1583.2	2554.0	541.8	-1896.0	1209.0	912.0	9.0	-234.0	9042.0	8096.0	946.0	-1225.0	-125.0	1380.0	-805.0	171.0			-171.0	
1976	6157.0	5490.7	2167.1	574.0	1593.1	3323.6	635.7	-2005.0	1636.0	373.0	273.0	-227.0	13330.0	9608.0	3722.0	-2148.0	-100.0	1619.0	-1039.0	2054.0		265.0	-2319.0	
1977	7759.6	7070.4	2946.1	679.0	2267.1	4124.3	659.8	-2776.0	1884.0	534.0	-255.0	613.0	14854.0	11116.0	3738.0	-2586.0	-78.0	1569.0	-1888.0	755.0		-265.0	-490.0	
1978	8840.7	8006.7	3322.7	771.0	2551.7	4684.0	797.0	-2899.0	1164.0	541.0	3.0	1191.0	16932.0	13242.0	3690.0	-3337.0	-104.0	1587.0	-1211.0	625.0			-625.0	
1979	10505.2	9509.4	3881.7	1041.0	2840.7	5627.7	939.3	-3685.0	2508.0	679.0	2.0	496.0	24060.0	17152.0	6908.0	-4858.0	-17.0	2055.0	-2299.0	1789.0	74.0		-1863.0	
1980	13926.0	12794.5	5658.3	983.0	4675.3	7136.2	1090.4	-7104.0	2311.0	310.0	1.0	4482.0	28013.0	22775.0	5238.0	-5813.0	-45.0	2215.0	-593.0	1002.0	76.0		-1078.0	
1981	15805.6	13419.2	6321.8	1087.0	5234.8	7097.4	2386.4	-11015.0	4106.0	3419.0	235.0	3255.0	26900.0	27143.0	-243.0	-5312.0	-78.0	5931.0	-1391.0	-1093.0	73.0	510.0	510.0	
1982	16689.9	13475.0	6574.6	1366.0	5214.6	6900.4	3214.9	-11171.0	6081.0	4894.0		196.0	27946.0	29704.0	-1758.0	-6576.0	-75.0	8432.0	-637.0	-614.0		152.0	462.0	
1983	18608.2	16298.7	7864.7	1841.0	6023.7	8434.0	2309.5	-9183.0	4436.0	4569.0		178.0	31762.0	30760.0	1002.0	-9098.0	-21.0	9210.0	-1148.0	-55.0		166.0	-111.0	
1984	20804.6	17648.6	8645.6	1975.0	6670.6	9003.0	3156.0	-7075.0	3191.0	3093.0	46.0	745.0	38452.0	31466.0	6986.0	-10813.0	-90.0	6560.0	-2331.0	312.0		-125.0	-187.0	
1985	21115.0	16700.0	9259.0	1749.0	7510.0	7441.0	4415.0	-5707.0	3591.0	956.0	12.0	1148.0	37576.0	28693.0	8883.0	-10391.0	-14.0	4229.0	502.0	3209.0		-382.0	-2827.0	
1986	19518.0	14682.0	8653.0	1761.0	6892.0	6029.0	4836.0	-7506.0	4930.0	1348.0	111.0	1117.0	34970.0	26592.0	8378.0	-8790.0	96.0	3386.0	1275.0	4345.0		-263.0	-4082.0	
1987	18143.0	12474.0	6466.0	1812.0	4656.0	6006.0	5669.0	-6153.0	8693.0	-2438.0		-102.0	44733.0	30030.0	14703.0	-8409.0	348.0	-1405.0	-2344.0	2893.0			-2893.0	
1988	21967.0	14708.0	7508.0	1779.0	5729.0	7200.0	7259.0	-3890.0	7854.0	-3095.0	291.0	-1160.0	54607.0	40083.0	14524.0	-10180.0	395.0	-3218.0	-2625.0	-1104.0			1104.0	
1989	25273.0	16674.0	7793.0	2043.0	5750.0	8881.0	8599.0	-5260.0	2459.0	-1038.0	238.0	3601.0	66818.0	56219.0	10599.0	-11392.0	219.0	2702.0	1204.0	3332.0			-3332.0	
1990	29521.0	21244.0	10402.0	2506.0	7896.0	10482.0	8277.0	-5516.0	3816.0	-787.0	52.0	2435.0	78110.0	72944.0	5166.0	-9723.0	147.0	5467.0	4308.0	5365.0			-5365.0	

Sources: Bank Negara Malaysia Quarterly Economic Bulletin, various issues.

note:

* Under Government Finance section, figures for government expenditure is not given for it has been reported by other Appendixes.

** From 1970, the figure under column 'e' (other direct taxes) includes corporate income tax, petroleum income tax (starting 1971) and others (estate duty, land specific tax, real property gain tax, excess profit tax), which, until 1970 include tin profits and development tax.

^ A minus sign indicates the accumulation of assets.

^^ Increase (-)/decrease (+)

GNP, REVENUES, BUDGETARY POLICY, IMPORTS AND EXPORTS, 1961-1990

Year	GNP at current market price	Gross Domestic Product																Budget Surplus/Deficit	Domestic Credit				Foreign Credit				Current Account				Balance of Payments				
		Total Revenue		Tax Revenue				Direct Tax		Income Tax		Other Direct Tax		Indirect Tax		Non-Tax Revenues			Net Domestic Borrowing		Net Foreign Borrowing		Special Receipts		Use of assets		Export of goods		Import of goods						
a	b	c=b/a	d	e=d/a	f=d/b	g	h=g/d	i	j=i/d	k=i/g	l	m=l/d	n=l/g	o	p=o/d	q=o/g	r	s=r/a	t=r/c	u	v	w=v/a	x=w/c	y	z=y/a	aa=aa/u	ab	ac=ab/a	ad	ae=ad/u	af	ag=% of GNP at basic prices	ah	ai=% of GNP at basic prices	
1961	6681.0																															3208.0	48.0	2669.0	39.9
1962	6916.0																															3232.0	46.7	2892.0	41.8
1963	7354.0																															3296.0	44.8	3010.0	40.9
1964	7822.0	1469.0	18.8	1034.0	13.2	70.4	270.0	26.1	262.0	25.3	97.0	8.0	0.8	3.0	764.0	73.9	435.0	5.6	29.6	-418.0	199.0	2.5	47.61	-6.0	-0.1	1.44	57.0	13.04	168.0	40.15	3346.0	42.8	3071.0	39.3	
1965	8593.0	1591.0	18.5	1192.0	13.9	74.9	310.0	26.0	302.0	25.3	97.4	8.0	0.7	2.6	882.0	74.0	399.0	4.6	25.1	-532.0	383.0	4.5	71.99	72.0	0.8	13.53	49.0	9.21	28.0	5.26	3752.0	43.7	3226.0	37.5	
1966	9177.0	1667.0	18.2	1324.0	14.4	79.4	367.0	27.7	360.0	27.2	98.1	7.0	0.5	1.9	957.0	72.3	343.0	3.7	20.6	-595.0	281.0	3.1	47.23	-10.0	-0.1	1.68	78.0	13.11	246.0	41.34	3808.0	41.5	3246.0	35.4	
1967	9652.0	1839.0	19.1	1446.7	15.0	78.7	435.7	30.1	425.9	29.4	97.8	9.8	0.7	2.2	1011.0	69.9	392.9	4.1	21.4	-567.0	351.0	3.6	61.80	83.0	0.9	14.64	44.0	7.76	89.0	15.70	3676.0	38.1	3202.0	33.2	
1968	10068.0	1891.0	18.8	1518.8	15.1	80.3	459.5	30.3	451.9	29.8	98.3	7.6	0.5	1.7	1059.3	69.7	372.2	3.7	19.7	-515.0	425.0	4.2	82.52	63.0	0.6	12.23	37.0	7.18	-10.0	-1.94	4070.0	40.4	3427.0	34.0	
1969	10973.0	2092.7	19.1	1710.4	15.6	81.7	509.0	29.8	500.0	29.2	98.2	9.0	0.5	1.8	1201.4	70.2	382.3	3.5	18.3	-438.0	377.0	3.4	86.07	155.0	1.4	35.39	24.0	5.46	-118.0	-28.94	4986.0	45.4	3505.0	31.9	
1970	11617.0	2400.4	20.7	1994.6	17.2	83.1	667.5	33.5	168.0	8.4	25.2	499.5	25.0	74.8	1327.1	66.5	405.8	3.5	16.9	-475.0	306.0	2.6	64.42	-2.0	0.0	0.42	17.0	3.58	154.0	32.42	5106.0	44.0	4123.0	35.5	
1971	12501.0	2417.9	19.3	2082.1	16.7	86.1	706.3	33.9	168.0	8.1	23.8	538.3	25.9	76.2	1375.8	66.1	335.8	2.7	13.9	-1050.0	677.0	5.4	64.48	344.0	2.8	32.76	40.0	3.81	-11.0	-1.05	4884.0	39.1	4179.0	33.4	
1972	13641.0	2920.3	21.4	2394.2	17.6	82.0	799.3	33.4	182.0	7.6	22.8	617.3	25.8	77.2	1594.9	66.6	526.1	3.9	18.0	-1371.0	836.0	6.1	60.98	306.0	2.2	22.32	66.0	4.81	163.0	11.89	4736.0	34.7	4356.0	31.9	
1973	17443.0	3399.3	19.5	3042.5	17.4	89.5	883.7	29.0	218.0	7.2	24.7	665.7	21.9	75.3	2158.8	71.0	356.8	2.0	10.5	-1040.0	876.0	5.0	83.51	69.0	0.4	6.58	28.0	2.67	76.0	7.24	7263.0	41.6	5664.0	32.5	
1974	21244.0	4791.2	22.6	4342.9	20.4	90.6	1384.3	31.9	355.0	8.2	25.6	1029.3	23.7	74.4	2958.6	68.1	448.7	2.1	9.4	-1379.0	828.0	3.9	60.04	227.0	1.1	16.46	8.0	0.58	316.0	22.92	9991.0	47.0	9265.0	43.6	
1975	21684.0	5117.0	23.6	4575.2	21.1	89.4	2021.2	44.2	438.0	9.6	21.7	1583.2	34.6	78.3	2554.0	55.8	541.8	2.5	10.6	-1896.0	1209.0	5.6	63.77	912.0	4.2	48.10	9.0	0.47	-234.0	-12.34	9042.0	41.7	8096.0	37.3	
1976	26988.0	6157.0	22.8	5490.7	20.3	89.3	2167.1	39.5	574.0	10.5	26.5	1593.1	29.0	73.5	3323.8	60.5	635.7	2.4	10.5	-2005.0	1636.0	6.1	81.60	373.0	1.4	18.60	273.0	15.62	-22.07	-11.32	13330.0	49.4	9608.0	35.6	
1977	31064.0	7758.6	25.0	7070.4	22.8	91.1	2946.1	41.7	679.0	9.6	23.0	2267.1	32.1	77.6	4124.3	58.3	659.8	2.1	8.5	-2776.0	1884.0	6.1	67.87	534.0	1.7	19.24	-255.0	-9.19	613.0	22.08	14854.0	47.8	11116.0	35.8	
1978	36170.0	8840.7	24.4	8006.7	22.1	90.6	3322.7	41.5	771.0	9.6	23.2	2551.7	31.9	76.8	4884.0	58.5	797.0	2.2	9.0	-2899.0	1164.0	3.2	40.15	541.0	1.5	18.66	3.0	0.10	1191.0	41.08	16932.0	46.8	13242.0	36.6	
1979	43092.0	10505.2	24.4	9509.4	22.1	90.5	3881.7	40.8	1041.0	10.9	26.6	2840.7	29.9	73.2	5627.7	59.2	939.3	2.2	8.9	-3685.0	2508.0	5.8	68.06	679.0	1.6	18.43	2.0	0.05	4908.0	13.46	24060.0	55.8	17152.0	39.8	
1980	50124.0	13926.0	27.8	12794.5	25.5	91.9	5658.3	44.2	983.0	7.7	17.4	4675.3	36.5	82.6	7136.2	55.8	1090.4	2.2	7.8	-7104.0	2311.0	4.6	32.53	310.0	0.6	4.36	1.0	0.01	4482.0	63.05	28013.0	55.9	22775.0	45.4	
1981	55602.0	15005.6	28.4	13419.2	24.1	84.9	6321.8	47.1	1087.9	8.1	17.2	5234.8	39.0	82.8	7097.4	52.9	2386.4	4.3	15.1	-11015.0	4106.0	7.4	37.28	3419.0	0.6	31.04	235.0	0.13	3255.0	29.55	26900.0	48.4	27143.0	48.8	
1982	56960.0	16689.9	28.0	13475.0	22.6	80.7	6574.6	48.8	1360.0	10.1	20.7	5214.6	38.7	79.3	8800.4	51.2	3214.9	5.4	10.3	-11171.0	6081.0	10.2	54.44	4894.0	8.2	43.81			196.0	1.75	27946.0	48.8	29704.0	49.8	
1983	65154.0	18908.2	28.6	16298.7	25.0	87.6	7864.7	48.3	1841.0	11.3	23.4	6023.7	37.0	76.6	8434.0	51.7	2309.5	3.5	12.4	-18183.0	4438.0	6.8	48.31	4569.0	7.0	49.75			178.0	1.94	31762.0	46.7	30760.0	47.2	
1984	74182.0	20804.8	28.0	17648.8	23.8	84.8	8645.9	49.0	1975.0	11.2	22.8	8670.8	37.8	77.2	9993.0	51.0	3156.0	4.3	15.2	-7075.0	3191.0	4.3	45.10	3093.0	4.2	43.72	46.0	0.65	745.0	10.53	38452.0	51.8	31466.0	42.4	
1985	72039.0	21115.0	29.3	18700.0	23.2	79.1	9259.0	55.4	1749.0	10.5	18.9	7510.0	45.0	81.1	7441.0	44.6	4415.0	6.1	20.9	-5707.0	3591.0	5.0	62.92	966.0	1.3	16.75	12.0	0.21	1148.0	20.12	37576.0	52.2	28693.0	39.8	
1986	86814.0	19518.0	29.2	14682.0	22.0	75.2	8653.0	58.9	1761.0	12.0	20.4	6892.0	46.9	79.6	6029.0	41.1	4838.0	7.2	24.8	-7506.0	4930.0	7.4	85.88	1348.0	2.0	17.96	111.0	1.48	1117.0	14.88	34970.0	52.3	26592.0	39.8	
1987	74679.0	18143.0	24.3	12474.0	16.7	68.8	6468.0	51.9	1812.0	14.5	28.0	4656.0	37.3	72.0	6006.0	48.1	5669.0	7.8	31.2	-6153.0	8693.0	11.6	141.28	-2438.0	-3.3	39.62			-102.0	-1.00	44733.0	59.9	30030.0	40.2	
1988	85777.0	21967.0	25.6	14708.0	17.1	67.0	7508.0	51.0	1779.0	12.1	23.7	5729.0	39.0	76.3	7200.0	49.0	7259.0	8.5	33.0	-3890.0	7854.0	9.2	201.90	-3095.0	-3.6	79.56	291.0	7.48	-1160.0	-29.82	54607.0	63.7	40083.0	46.7	
1989	95560.0	25273.0	26.4	16674.0	17.4	66.0	7793.0	46.7	2043.0	12.3	26.2	5750.0	34.5	73.8	8881.0	53.3	8599.0	9.0	34.0	-5260.0	2458.0	2.6	46.75	-1008.0	-1.1	19.73	238.0	4.52	3601.0	68.46	66818.0	69.9	56219.0	58.8	
1990	109663.0	29521.0	26.9	21444.0	19.4	72.0	10402.0	49.0	2506.0	11.8	24.1	7886.0	37.2	75.9	10482.0	49.3	8277.0	7.5	28.0	-5516.0	3816.0	3.5	68.18	-787.0	-0.7	14.27	52.0	0.94	2435.0	44.14	78110.0	71.2	72944.0	66.5	

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