

**THE FAILURE OF THE PURCHASING POWER PARITY THEORY IN
THE MALAYSIAN ECONOMY (1970-1990)**

by

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Thesis

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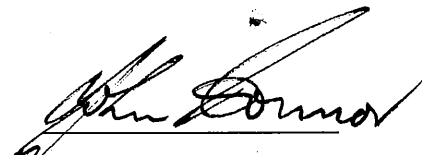
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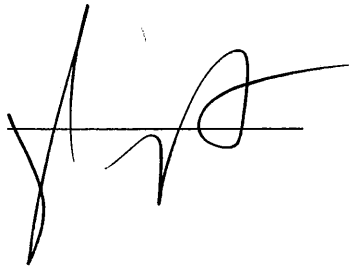
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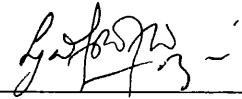
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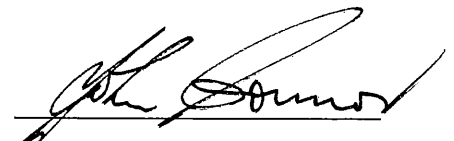


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Abstract

The aim of this thesis is to examine the applicability of Purchasing Power Parity Theory (PPP) to the Malaysian economy from 1970 to 1990. A sketch of the Malaysian economy during the period provides the background. It has been concluded that PPP does not explain the Malaysian exchange rate experience during the decades of 1970 - 1990.

A variety of statistical tests were used in the examination including regression analysis and Granger - causality. It would appear that the massive inflows of international investments into Malaysia since the early 1980's have had an overwhelming impact on all other determinants of the Ringgit's exchange rate with other major currencies.

CHAPTER 1

INTRODUCTION

“ The price level in a small open economy depends in the longer run on the world price trend and on the exchange rate. When there is widespread inflation abroad, and when there are no autonomous internal inflationary pressures, a country can opt between adjusting its internal price level upwards through inflation and adjusting the exchange rate by up-valuing.”¹

These words reveal the gist of the Purchasing Power Parity Theory (PPP) with special reference to a small open economy. In his writings entitled *An Exchange Rate Policy To Protect Price-Level Stability*, Kasper [1972] strongly suggests that the PPP theory should apply particularly to countries like Malaysia for two reasons:

i) Malaysia is a small economy with respect to the rest of the world.

The economy is small because even though it is a major supplier of rubber, tin, and palm oil, these commodities have to compete with various close substitutes. Even in its major crops, Malaysia is a *price taker*.²

¹ *An Exchange-Rate Policy To Protect Price-Level Stability*, Wolfgang Kasper, Readings on Malaysian Economic Development, ed. David Lim, Oxford University Press, Kuala Lumpur, 1975, p. 376.

² The term *price taker* means that Malaysia has no influence over the world price.

- ii) The Malaysian economy is open due to the fact that exports make up more than 30 percent of total demand, imports 30 percent of total supply. The structure of the economy is geared to the export market; the business cycle is determined by the fluctuations in industrial countries.³

However, Kasper's work was written in the early 1970's. The question now is whether the PPP theory still applies to the Malaysian economy. Several economists have demonstrated its breakdown since the 1970's. For example, the theory worked relatively well in the US economy in the 1920's but collapsed during the 1970's.⁴ The assumptions of being a small and open economy still hold reasonably well in Malaysia, but the conclusion reached by Kasper twenty-five years ago is questionable because Malaysia has experienced significant changes in its economy since the 1970's.

This thesis will answer the question of the applicability of the PPP theory in Malaysia for the years 1970 to 1990. Before undertaking the analysis, it is essential to look at the history, background, and the general

³ *An Exchange-Rate Policy To Protect Price-Level Stability*, Wolfgang Kasper, Readings on Malaysian Economic Development, ed. David Lim, Oxford University Press, Kuala Lumpur, 1975, p. 376.

⁴ "The Collapse of Purchasing Power Parities During the 1970's", Frenkel Jacob A., Working Paper #569, NBER Working Paper Series, Cambridge, 1980.

structure of the Malaysian economy as well as its recent economic experiences. This enables one to understand the nature of the economy and, more importantly, helps to answer the question of applicability of PPP theory to Malaysia.

This thesis is divided into five chapters. Chapter two presents Malaysia's economic background. Topics such as recent economic history, economic performance, and historic economic policy are outlined. The chapter will also refer to the issue of wealth redistribution in Malaysia since the early 1970's. In addition, section 2.3 of the chapter will touch on the role of the Malaysian government in the pursuit of political stability and economic progress.

In chapter three, Malaysia's economic experiences are dealt with from the period 1970 to 1990. Inflation in Malaysia will be discussed in section 3.2; as well, the experiences of the Malaysian balance of payments for the twenty-year period will be outlined. A detailed discussion on the Current Account will be presented in section 3.3.

Chapter four deals with the PPP theory itself along with its developments, limitations, and criticisms. Some recent observations of the theory will be presented in section 4.4 where PPP theory is used by *The*

*Economist*⁵ to develop a Big Mac index to compare prices for a standard product in several economies. Section 4.5 tests the application of PPP theory to Malaysia. Two statistical methods will be used to test the PPP theory, namely regression and Granger-Causality.

⁵ The Economist, April, 1993, p. 79.

CHAPTER 2

MALAYSIA'S ECONOMIC BACKGROUND

2.1 Background and Recent History.

Malaysia achieved her independence in 1957, and since then the Malaysian government has played an active role in the development and growth of the country. The country is unique because even though it is a small country comprising Peninsular Malaysia and East Malaysia, it has a complex multi-racial society. With a population of roughly 18 million in 1991, Malaysia has a demographic mix of Malays (53%), Chinese (31%), Indian (8%) and other indigenous peoples (8%). Through active government interventions, Malaysia has achieved a level of economic success which is the envy of many other developing countries.

This chapter deals with Malaysia's economic background from its independence to the present. Topics such as income and wealth redistribution and government policies are the core ideas of this chapter. While this section reveals the background and recent history, section 2.2 presents Malaysian economic performance.

The Malays have been traditionally associated with the agricultural sector. The Chinese, on the other hand, have dominated the commercial

sector. Because of government intervention and political influence, Malays have become more significant in the public services, public enterprises and statutory bodies.

Following independence, relations between ethnic groups deteriorated; discord reached its peak in 1969 when the May 13th riot occurred. The incident was a result of Chinese attempts to increase their political influence and the resultant anger exploded among the Malays in a series of race riots. On the economic front, different endowments of wealth, experience, aptitude and opportunity have heightened income and wealth differences between racial groups. It is not surprising that economic competition has been the core of the inter-ethnic disharmony since there appears to be significant differences in education, culture, and residential location⁶ among ethnic groups.

Following the riots, the government introduced the New Economic Policy (NEP) in 1970 to promote a fairer distribution of the country's economic wealth. The NEP tried to ensure that the Bumiputras (the indigenous Malays) enjoyed a greater share of the country's wealth. In 1969, the Malays owned just 1.5 percent of the country's corporate assets,

⁶ The Chinese appear to reside in the urban areas mostly while apparently, the Malays live in the rural areas.

and the NEP set a target of redistributing 30 percent of the nation's corporate assets to the Bumiputras by 1990.

2.2 Economic performance

After independence in 1957, and especially during the 1960s, the Malaysian economy diversified from the twin pillars of the colonial economy which were rubber and tin. Malaysia has extended its colonial pre-eminence in rubber and tin to palm oil, pepper and tropical hardwoods. Even though industrialisation has been increasingly important, primary commodity production continues to dominate the economy. Since the late 1960's, about three-fifths of Malaysia's national product was exported, with a similar proportion of total expenditure spent on imports with the country's new industries being largely export-oriented. Petroleum exports have grown since the mid-1970's and petroleum gas production has become increasingly significant since the early 1980's. Petroleum exports soared to RM6.7bn in 1980 from RM0.9bn in 1975 as the price more than doubled to RM598 per tonne in 1980 from RM227 in 1975.⁷

⁷ Growth and Structure in the Malaysian Economy, Jomo K.S., Basingstoke Macmillan, 1990, p. 59.

In the 1980's, Malaysia started to reduce its dependence on primary resources. The country began to develop basic manufacturing and processing industries, which were expected to expand in order for Malaysia to direct its economy towards more capital-intensive industries and require more highly-skilled labour. The government plays an important role in planning, implementing, financing, and supervising these heavy industries since the private sector is not able to face the high entry costs. Furthermore, many of these industries offer a prospective return only after years of operation (the infant industries argument for government support).

The share of GDP taken by the manufacturing sector expanded from 19.7% in 1985 to 27.0% in 1990; and it is projected to rise to 32.4% in 1995. On the other hand, the agricultural sector declined from 20.8% of GDP in 1985 to 18.7% in 1990; and is estimated to decline further to 15.5% in 1995. Although the relative importance of agriculture is declining in terms of its proportion of GDP, the sector has registered continuing overall growth, with the output of most products rising.⁸ Table 2.1 below summarises the GDP contribution by sector in 1985 to 1995:

⁸ Malaysia 1993, Business Monitor International Ltd., London, June 1993, p. 79.

Table 2.1

GDP Contribution by Sector, 1985-1995

	1985	1990	1995*
	%	%	%
Agriculture, forestry	20.80	18.70	15.50
Mining & quarrying	10.40	9.70	7.30
Manufacturing	19.70	27.00	32.30
Construction	4.80	3.50	3.60
Electricity, gas & water	1.70	1.90	2.10
Transport, storage & communication	6.40	6.90	8.00
Wholesale & retail trade, hotels & restaurants	12.10	11.00	11.80
Finance, insurance, real estate & business services	9.00	9.70	10.60
Government services	12.22	10.70	9.20
Other services	2.30	2.10	2.10
Less: imputed bank service charges	3.20	5.10	6.40
Plus: import duties	3.90	3.80	3.80
 Total	 100.00	 100.00	 100.00
 Primary sector	 31.40	 28.10	 22.30
Secondary sector	24.70	30.20	35.00
Tertiary sector	43.90	41.70	42.70
 Total	 100.00	 100.00	 100.00

*Sixth Plan Target

Source: Ministry of Finance

The Malaysian government is now targeting the country to achieve the status of a developed country by the year 2020. The plan is known as Vision 2020. Given the fact that Malaysia's economic growth has averaged 6.4 percent in real terms over the last two decades, the target seems to be realistic. The pursuit of sound economic policies, prudent macroeconomic management, a high rate of domestic savings and political stability are all factors that will contribute to achieving the target.

There are a few problems that can be classified as constraints on Malaysia's economic growth and thus act as barriers to the achievement of Vision 2020. The main constraints on growth are labour shortages, particularly of skilled workers, and infrastructural bottlenecks, including an overburdened transport and power supply system.⁹ Malaysia, as far as its manufacturers are concerned, has an abundant supply of cheap labour and land. However, the World Bank estimated Malaysia's unemployment rate to be 3.5 percent in 1992 and, according to this estimate, the economy is already operating at a full employment level. This phenomena leads to upward pressure on wages and consequently affects investment.

The skills of the labour force in Malaysia are still very low. Recognising this problem, the government changed its strategy with

⁹ Malaysia 1993, Business Monitor International Ltd., London, June 1993, p. 29.

respect to foreign investment. The government has become more selective so as to ensure that industries requiring higher skills and technology are brought into the country, instead of labour-intensive industries. The quotation below has been obtained from *Malaysia 1993* which highlights the government's policy on capital-intensive industry:

"Malaysian Industrial Development Authority (MIDA) reported that in the previous 18 months it had rejected applications from around 30 potential investors because the projects did not meet the nation's new requirements. The investments were valued at around US\$25m. MIDA's director-general said that the decision "was unprecedented and underlined Malaysia's seriousness in encouraging hi-tech and capital intensive industries". The rejected applications were for the establishment of low-tech, labour-intensive, low value-added projects." (p. 53.)

This strategy is particularly important in order to compete with low technology and labour-dependent economies such as Indonesia, Vietnam, Thailand and China. While wages in Malaysia are relatively high compared to those countries, higher levels of skill and technology are essential to maintain the country's international competitiveness.

The problem of infrastructural bottlenecks has become a great concern, especially to foreign investors. Traffic congestion has been increasingly common and is an obstacle to efficiency. Congestion at

airport and container ports is also a barrier to economic growth since it causes many goods destined for export to be delayed, while also encouraging a diversion of business to Singapore. Another major problem is power interruptions. In September 1992, the nation's biggest power blackout hit the whole of Peninsular Malaysia, costing industry a loss of tens of millions of dollars in production.

The Malaysian government has taken major steps to solve these problems. One of the biggest projects is the construction of the new Kuala Lumpur International Airport (KLIA) to replace Subang International Airport. The airport is projected to be in full operation by 1997 when Malaysia will be hosting the Commonwealth Games. To deal with traffic congestion in Kuala Lumpur, a monorail system, Light Rail Transit (LRT), was built and started operating in 1995. The government has also been concerned with the problem of power supply shortages. In response, more licenses are to be given to independent power producers and that will help to increase the capacity for power generation in the country.

2.3 Economic Policy Background.

The New Economic Policy (NEP) was introduced in 1970. The NEP was intended to create the socio-economic conditions deemed necessary

for achieving 'national unity'; that is, improved inter-ethnic relations through the eradication of poverty regardless of race, and the restructuring of Malaysian society to eliminate the identification of race with economic function.¹⁰

Since the government launched the policy, poverty has been lessened particularly among the Malays. By 1990, the number of households living below the poverty line in rural areas had fallen below the 20 percent mark, while the number in urban areas had fallen to under 5 percent. By contrast in 1973, the figures were 44.8 percent and 21.8 percent respectively.¹¹ Table 2.2 below shows the progress in ownership of share capital held by Bumiputras before and after the NEP. It can be seen that the Bumiputra and trust agencies' share rose from 1.5% in 1969 to 19.4% in 1988. It should be noted that although the government had set a target of 30% share ownership by the Bumiputra, it only reached 20.3% by 1990.

¹⁰ Growth and Structure in the Malaysian Economy, Jomo K.S., Basingstoke Macmillan, 1990, p. 144.

¹¹ Malaysia 1993, Business Monitor International Ltd., London; June 1993, p. 25.

Table 2.2

Bumiputra and Trust Agencies ownership of Share Capital (at par value) of limited companies, 1969-88

Ownership	1969 %	1970 %	1975 %	1980 %	1982 %	1983 %	1985 %	1988 %
Malaysian residents	37.9	36.6	46.7	57.1	65.3	66.4	74.0	75.4
Bumiputra individuals and trust agencies	1.5	2.4	9.2	12.5	15.6	18.7	19.1	19.4
Bumiputra individuals	1.0	1.6	3.6	5.8	7.5	7.6	11.7	13.0
Trust agencies	0.5	0.5	5.6	6.7	8.1	11.1	7.4	6.4

Source: Growth and Structure in Malaysian Economy, Jomo K.S., Basingstoke Macmillan, 1990, p.158.

In addition to the NEP, Malaysia's prime minister, Dato' Sri Dr. Mahathir Mohamad, has pursued several of his own policies following his election in 1981. Among these were a 'look-East' policy, a seventy million population target, a national agricultural policy, and a programme of privatisation, all of which shall be explained in due course. The policies were designed not only as parts of a plan to improve Malaysia's growth and development, but also as serious efforts to transform Malaysia into a Newly Industrialising Country (NIC). At that time, there were only four

NIC's in South East Asia, namely Taiwan, Hong Kong, Singapore and Korea.

Look-East policy

The following quotation, taken from *Growth and Structure in the Malaysian Economy*, explains the look-East policy:

"The 'look-East' policy, which originally appeared - to many people - as a campaign to boost productivity, by inducing hard work and promoting more effective modes of labour discipline associated with the Japanese, was subsequently seen as a fairly wide-ranging series of initiatives to become a newly industrialising country (NIC) by emulating the Japanese and South Korean 'economic miracles'." (p. 203.)

There has been, however, some confusion as to what is really intended by the 'Look-East' policy. Some believed that the policy was to favour Japanese and South Korean investors and companies bidding for Malaysian government tenders. Some believed also that the policy was one of the government's ways of expressing anti-Western sentiment. Despite various interpretations, the overriding objective of the policy is to increase productivity through hard work and greater commitment to the national economic objectives.

Seventy Million Population Target

According to *Economic Report 1993/94*, published by the Ministry of Finance Malaysia, the Malaysian population in 1991 was 18.2 million with a growth rate of 2.3 percent. This figure of 18.2 million is insufficient if Malaysia was to reach the Prime Minister's target of seventy million¹² population by the year 2100. This target is based on the assumption that Malaysia needs a stronger domestic market as the country moves towards industrialisation. The seventy million population plan recommends that an ideal family consists of five children.

There were, however, some criticisms regarding this target. One of them was that population growth, by itself, cannot ensure a corresponding expansion of the domestic market. The size of the local market is determined by the pattern and level of effective demand, which is in turn influenced by the distribution income, and hence, consumption or purchasing capacity.¹³ As an alternative to increasing population, the government is advised to pay more attention to increasing domestic purchasing power.

¹² The reason as to why "seventy million" was chosen is not known.

¹³ Growth and Structure in the Malaysian Economy, Jomo K.S., Basingstoke Macmillan, 1990, p. 206.

National Agricultural Policy

The National Agricultural Policy (NAP) was designed by the Prime Minister himself and was released in January 1984. The NAP policies responded to World Bank criticisms of Malaysia's declining agricultural sector. In 1983, *Considerations for a National Agricultural Policy* criticised Malaysia's over-investment in rice, slow progress in amalgamating smallholdings¹⁴, bureaucratic duplication and policy confusion.¹⁵ The NAP recognises that the Malaysian agricultural sector has suffered from lack of organisation, insufficient technology, and management inefficiency. The following quotation is taken from *Economic Report 1993/1994*:

"The fishery sector is hindered by the lack of skilled manpower, fishing technology, and marketing facilities. While the growth potential in the fruit and vegetable industry appears encouraging, the problems of marketing and the irregularity of supply (due to the lack of large-scale commercial cultivation) are yet to be solved." (p. 94.)

The NAP's main objective is to raise the incomes of people who work in the agricultural sector, particularly paddy-farmers and rubber-tappers. The NAP planned to implement the so called large-scale mini-

¹⁴ It should be noted that the current World Bank policies are to support smallholding operations.

¹⁵ *Growth and Structure in the Malaysian Economy*, Jomo K.S., Basingstoke Macmillan, 1990, p. 207.

estate operations. It is an operation to group the paddy-farmers and rubber smallholders into large-scale mini-estates. The agricultural sector will benefit from operational economies of scale and, eventually, production output and incomes will increase. In addition, public agencies such as the Federal Land Development Authority (FELDA) and the Rubber Industry Smallholders Development Authority (RISDA) have been entrusted by the government to ensure both productivity and management efficiency in the agricultural sector.

Privatisation

Privatisation, the transfer of state ownership of industry, services or business to private ownership, is another important policy under the administration of Dr. Mahathir. Through this policy, the Malaysian government could relieve itself of some of its public sector financial and administration burden. Since the public sector in Malaysia has long been associated with management inefficiency, waste and even corruption, an objective of privatisation is to wipe out these undesirable elements while increasing productivity.

The privatisation policy, as far as the government is concerned, parallels the NEP's objective of raising the proportion of share capital held

by the Bumiputra. As a result of privatisation, along with NEP, share capital held by Bumiputra individuals increased from a mere 7.6% in 1983 to 11.7% in 1985 (see table 2.2 above). In practice, privatisation in Malaysia has included:¹⁶

- The sale or divestment of state concerns. The public service concerned usually has to be first established as a public company to facilitate such a sale; e.g. the establishment of Syarikat Telekom Malaysia Berhad on 1 January 1987 to take over the activities of the Telecoms Department.
- Public issue of a minority or even a majority of shares in a state-owned public company; e.g. Malaysian Airline System (MAS) in 1985 and Malaysian International Shipping Corporation (MISC) in 1987.
- Placement of shares with institutional investors; e.g. the sale of about 5 percent of MAS stock to the Brunei government in 1986.
- Sale or lease of physical assets; e.g. the lease of the Lady Templer Hospital to Rampai Muda in 1984.
- Joint public-private-sector ventures; e.g. the establishment of Perbadanan Otomobil Nasional (Proton) in 1983 with 70 percent held by HICOM, the Heavy Industries Corporation of Malaysia, and 30 percent by two Mitsubishi companies.
- Schemes to draw private financing into construction projects; e.g. the North Port Kelang toll road bypass and the Jalan Kuching toll fly-over.

¹⁶ Growth and Structure in the Malaysian Economy, Jomo K.S., Basingstoke Macmillan, 1990, p. 207.

- 'Contracting-out' public services by enabling private contractors to provide services previously provided within the public sector; e.g. the contracting-out of various local government authorities' activities such as parking services and garbage disposal, Telecoms' RM2.5bn telecommunications development projects, Port Kelang's container terminal services.
- Allowing private competition where the public sector previously enjoyed a monopoly; e.g. the launching of a third television channel (TV3) in 1984 owned by Sistem Televisyen Malaysia Berhad, now controlled by New Straits Times Press Berhad, and controlled in turn by the UMNO-owned Fleet Group.

The privatisation policy is seen as one of the ways to promote economic growth in Malaysia and, thus, contribute to the Prime Minister's aim of transforming Malaysia into a Newly Industrialising Country. Malaysia became an NIC in the early 1990's and confirmation of this statement is evidenced in a 1994 article, *The East Asian Miracle: Building a Basis for Growth*, where John Page states, "... the three newly industrializing economies (NIEs) of Southeast Asia [are] Indonesia, Malaysia, and Thailand ".¹⁷

By the end of 1980's, the Malaysian government recognised that achieving the original objectives was fast approaching. The need for income and wealth redistribution became less demanding as higher living standards were evident. A new set of policies was established and

¹⁷ *Finance & Development*, John Page, March 1994, p. 2.

launched in 1991 to supersede the old NEP. The policy was called the New Development Policy (NDP) and had less emphasis on wealth redistribution. It stressed that the development of human capital for industrial employment was critical if Malaysia were to become a developed economy by 2020.

2.4 Conclusion

Malaysia started off with an unbalanced distribution of wealth among ethnic groups which eventually resulted to a series of race riots in 1969. Following these incidents, there was a sharp turning point in Malaysian economic policies when the government introduced the NEP which emphasised restructuring Malaysian society to ensure a more equitable distribution of wealth and more balanced economic participation by members of the various ethnic communities. The NEP was a government planning effort designed to direct Malaysia to become a more politically stable and wealthier country. Malaysia has managed to achieve the status of NIC through several focused policies.

CHAPTER 3

MALAYSIA'S ECONOMIC EXPERIENCES: FROM 1970 TO 1990

3.1 Introduction

This chapter focuses on the Malaysian balance of payments over the period 1970-1990. Particular attention is paid to the country's inflation experience, recognising that a small open economy can be susceptible to external inflationary pressures. The general overview of the balance of payments components - the Current Account and the Capital Account - will be discussed in section 3.3 along with a more detailed discussion of the Current Account.

Malaysia has maintained an economic growth rate averaging 6.4 percent per annum over the last two decades. From a protracted recession and threatened emergence of a debt problem in the mid-1980's, Malaysia has achieved sustained rapid growth with low inflation, a strong external position, and a sharp decline in external debt in recent years.¹⁸ Besides the government's macroeconomic policies, one of the main contributors to this success is the shift of dependency from primary commodities to

¹⁸ *Pursuit of Sound Economic Policies Restores Rapid Growth in Malaysia*, IMF Survey, August 26, 1991, p. 258.

manufactured products. There has been a diversification of Malaysian export commodities, especially the combination of rubber, palm oil, wood and wood products, and textiles, along with manufactured products such as electronic equipment, petroleum, and petroleum products. These commodities are imported by countries such as Japan, the US, Singapore, the UK, and Germany. These countries, plus Taiwan, constitute the major sources of Malaysia's import requirements.

Malaysia's economic performance is also, in a way, affected by the establishment of Association of South East Asian Nations (ASEAN). This pact is intended to provide a basis for mutual benefits of economic relationships, trade liberalisation, and investment among the member countries. ASEAN has contributed to the development of promising export markets for Malaysian products within the region. The favourable economic conditions in the South East Asian region provides an attractive inflow of foreign investments, and this is an advantage to Malaysia as it experiences rapid economic growth.

3.2 Inflation in Malaysia.

In Malaysia, price fluctuations have been associated with a number of factors, and these can be grouped into two broad categories: external

and internal shocks. However, as Malaysia is a small, open economy, external price shocks are unavoidable. Nevertheless, the Malaysian government has played a role in curbing internal inflationary pressures through the application of stringent monetary and fiscal policies.

There were two periods of significantly high prices in Malaysia over the twenty-year period from 1970-1990. The first occurred between 1970 and 1974 when inflation was a world-wide problem. Following global inflation, a dramatic increase in prices occurred in 1973 and 1974 in Malaysia, driven mainly by world oil prices. Malaysia's annual average of inflation between 1970 and 1979 was reported to be 7.3 percent. However, according to the 1994 *International Financial Statistics Yearbook*, inflation in Malaysia increased from 10.6 percent in 1973 to 17.2 percent in 1974.¹⁹

Although general prices stabilised after 1974, the price of oil increased once again by 47 percent in 1979 and subsequently rose by 66 percent in 1981. Furthermore, not only did the oil price increase between 1979 and 1981, but the prices of industrial raw materials and investment goods in the industrialised countries also increased significantly. As a result, inflation in Malaysia accelerated from 3.6 percent in 1979 to 9.7

¹⁹ International Financial Statistics Yearbook, International Monetary Fund, Publication Services, 1994, p. 495.

percent in 1981.²⁰ Clearly, inflation during that time period was imported from foreign sources and, thus, the second period of inflation in Malaysia was mainly due to external price pressures.

The cause of external price pressure has been the dramatic changes in oil, industrial raw material and investment good prices in the industrial countries. On the other hand, domestic inflation has been influenced by a few factors which resulted from the country's rapid economic growth. Among these factors were increased private consumption, shortages in manpower (especially skilled and technical labour), and the problem of infrastructural bottlenecks which caused production and transportation costs to increase.

On the monetary front, a tight monetary policy was implemented to constrain the growth of money supply. Fiscal measures also were taken. For example the government tightened the policy on credit card issuance to reduce private consumption growth. In addition, the policy regarding the entry of foreign labour was also eased in an attempt to reduce upward pressure on wages. The prices of essential goods such as rice, milk, and petroleum products have always been under the government's control, so

²⁰ Economic Report 1993/94, Volume 22, Ministry of Finance Malaysia, Percetakan Nasional Malaysia Berhad, p. 239.

that the impact of necessity-good price changes on domestic inflation has been minimised. Both fiscal and monetary policies have been carefully reviewed in order to avoid the situation where the effect of one policy might offset the other. As we can see from Table 3.1, Malaysia experienced one of the lowest inflation rates amongst the developing countries during this period:

Table 3.1

Inflation Rate Among Selected Developing Countries
(annual percentage change)

	1985	1990
Malaysia	0.4	3.1
Indonesia	4.4	7.4
Philippines	23.1	14.2
Thailand	2.4	6.0
Singapore	0.5	3.5

Source: Economic Report 1993/94, Ministry of Finance Malaysia

3.3 Malaysian Balance of Payments

Background

The Malaysian balance of payments experience for the decades of the seventies and eighties may be considered with respect to two distinct time periods, 1970-1979 and 1980-1990. Comparing the two periods in terms of the overall trend of the Malaysian balance of payments, the first time period shows a stable position whereas the latter shows a more volatile experience.

For the purposes of discussion, the terms current account, merchandise account, and capital account will be defined as follows:

- i) Current account of the balance of payments records the receipts from the sale of goods and services to foreigners, the payment for goods and services bought from foreigners, and gifts and other transfers (such as official contributions, i.e. foreign aid payments), received from and paid to foreigners. Transactions that appear in this account directly affect the level of Malaysia's national income.
- ii) Merchandise trade is a component of the current account. It is the value of all physical goods sold (exported) to foreigners and

purchased from them (imported). The value of these exports minus the value of imports is called the balance of trade.

- iii) Capital account is the other component of the balance of payments. This account registers the changes in Malaysian ownership of foreign assets, and changes in foreign ownership of assets in Malaysia. A *capital inflow* occurs when foreigners invest in Malaysia. Similarly, a *capital outflow* occurs when Malaysians invest in foreign countries.

As we can see from Figure 3.1 (page 37), the current and capital accounts moved in a fairly stable manner from 1970 until 1979 without any significant divergence. The situation did not stay the same for the period of 1980 - 1990, when both current and capital accounts became volatile and diverged substantially from one another. The trade balance, on the other hand, showed a positive balance throughout the period except for 1981 and 1982.

The first period (1970-1979).

After a decline in the prices of its primary export commodities, rubber and tin, in the early 1970's, Malaysia has concentrated on the production of other commodities such as palm oil and petroleum.

Malaysia had positive net exports during 1970-1980 and the evidence of this statement is shown by the consistently positive merchandise account balance during the period 1970-1979 (refer to Figure 3.2 on page 38).

One of the most outstanding years in the Malaysian economy was in 1973. According to the *International Financial Statistics Yearbook 1994*, GNP grew by 30 percent from RM13,842 million in 1972 to RM18,064 million in 1973. Exports soared by more than 50 percent from RM4854 million to RM7372 million. The significant increase in the export sector was largely due to the spill-over from the exceptional growth in the industrialised economies such as the US and Japan, which were experiencing an economic boom period.

Import spending also grew at that time (as a result of the increase in national income) but at a slower pace. Therefore, Malaysia experienced a surplus in her current account in 1973. It should be noted, however, that except for 1973, the current account registered a negative balance throughout the first half of the 1970's. Although the Malaysian export sector grew at a satisfactory rate, imports and service payments increased by even more, as did the public debt sector. Among the most important factors that caused the current account to have a negative balance were the high prices of imports needed to build the manufacturing sector, and high

services account deficits (largely due to the payments for freight and insurance, and investment income outflow). Furthermore, the current account deficits became more severe during the recession period of 1974-1975.

Nevertheless, the second half of the 1970's was a boom period for the Malaysian economy. After the recession (1974-1975), the current account recovered from a deficit of US\$496 million in 1975 to a surplus of US\$580 million in 1976. The current account deficit for the first half of the 1970's was reversed in the second half despite the continuing growth of imports and service payments. This was a result of the commodity boom in the late 1970's, involving better prices all around as well as increased production, especially of petroleum and palm oil.²¹ Since then, the current account continued to stay on the positive side through to the end of the 1970's when it reached a peak surplus of US\$929 million.

²¹ Growth and Structure in the Malaysian Economy, Jomo K.S., Basingstoke Macmillan, 1990, p. 67.

The second period (1980-1990).

In the 1980's the world underwent a severe recession. Not only did the recession affect industrial countries, it also affected third world countries such as Malaysia.

While recession was world wide, the Malaysian government implemented countercyclical spending in order to maintain the country's high growth rate. This resulted in fiscal imbalance as a substantial amount of money had to be borrowed from foreign sources. There was also a loss of international competitiveness due to the appreciation of the ringgit and higher wages relative to productivity gains. Consequently, a large deficit appeared in the current account, peaking in 1982 to approximately 14 percent of the GDP, matched with a public sector deficit of 17 percent of GDP. Despite the deficit in the current account, the balance of payments remained in positive balance as the surpluses in the capital account were enough to offset the current account deficits. The increase in the capital account was brought about by heavy foreign borrowing undertaken by the government as an attempt to finance the deficit.

According to a survey conducted by the International Monetary Fund (IMF), the recession in Malaysia was aggravated by a number of factors, including an erosion of business confidence exacerbated by

regulatory constraints; a loss of external competitiveness owing to the previous real effective appreciation of Malaysian ringgit; the low efficiency of many new investment projects; and, the effect of continuing fiscal retrenchment.²²

In 1983-1984, severe fiscal and external imbalances were reduced, as the government cut its spending dramatically and foreign exchange earnings and budget revenues were boosted by stronger external demand and better terms of trade. Yet, the prices of Malaysia's major export commodities dropped in 1985-1986; and again the disturbance led to a downturn in Malaysia's economy. During that period, Malaysian output dropped, investment declined, and unemployment rose. The current account deficit fell due to lower imports, while the fiscal deficit surged. These factors, together with a fall in major commodity prices, brought about a decrease in government revenues. Recognising the economic deterioration caused by this severe recession, the Malaysian government responded by adopting several strategies to promote growth. The private sector was urged to expand and was encouraged to take part as the main engine of growth in a supportive environment created by the public sector.

²² *Pursuit of Sound Economic Policies Restores Rapid Growth in Malaysia*, IMF Survey, August 26, 1991, p. 258.

One of the major elements implemented in the macroeconomic policies allowed the exchange rate to fall. The Malaysian exchange rate depreciated against its currency basket which, together with restrained cost and price developments in Malaysia, led to a 34 percent real depreciation of the ringgit during 1985-1988.²³

As a result of depreciating the ringgit during this period, Malaysian exports sector blossomed, and led an impressive recovery. From a deficit of US\$123 millions in 1986, the current account surged to a surplus of US\$2542 millions in 1987, a surplus unequalled at any time since independence. Exports continued to rise in the following years, and it should be noted that in addition to the real depreciation of the currency, another factor contributing to this achievement was the government's policy of encouraging the private sector to expand and to take part as the main engine of growth. Private sector interests have received the full support of the government under a policy known as 'Malaysia Incorporated'.²⁴

²³ *Pursuit of Sound Economic Policies Restores Rapid Growth in Malaysia*, IMF Survey, August 26, 1991, p. 258.

²⁴ The term "Malaysia Incorporated" has been proposed by the prime minister in an effort to improve relations between the government and the private sector, and more importantly, to try to get the government to play its traditional role of serving private capitalist interest. Refer to *Growth and Structure in Malaysian Economy*, Jomo, Oxford University Press, Kuala Lumpur, p. 211.

The current account surplus did not last long, and fell to a deficit of US\$918 millions in 1990. This was partly due to the rapid increase in imports of machinery and transport equipment as the country's industrialisation programme gathered pace. Increasing the imports of these capital goods was necessary in order to develop a long-term production capacity large enough to satisfy the requirements of the industrialisation programme. As noted in Figure 1, the large current account deficits (surpluses) have been accompanied by comparable surpluses (deficits) in the capital account during 1980 to 1990. This observation is evidence that the large deficits in the current account did not overheat the Malaysian economy, rather it demonstrates the ability of the country to attract foreign investment.

Evidently, the large imbalance in the external account in the late eighties was driven mainly by an investment inflows. Imports increased due to the large inflow of intermediate goods, and the final value of exports was substantially higher, reflecting the positive trade balance.

Given that capital goods constituted the main source of this imbalance, the Malaysian economy has something in common with infant developing economies: it has had only a minimal capacity to produce capital and intermediate outputs.

3.4 Conclusion.

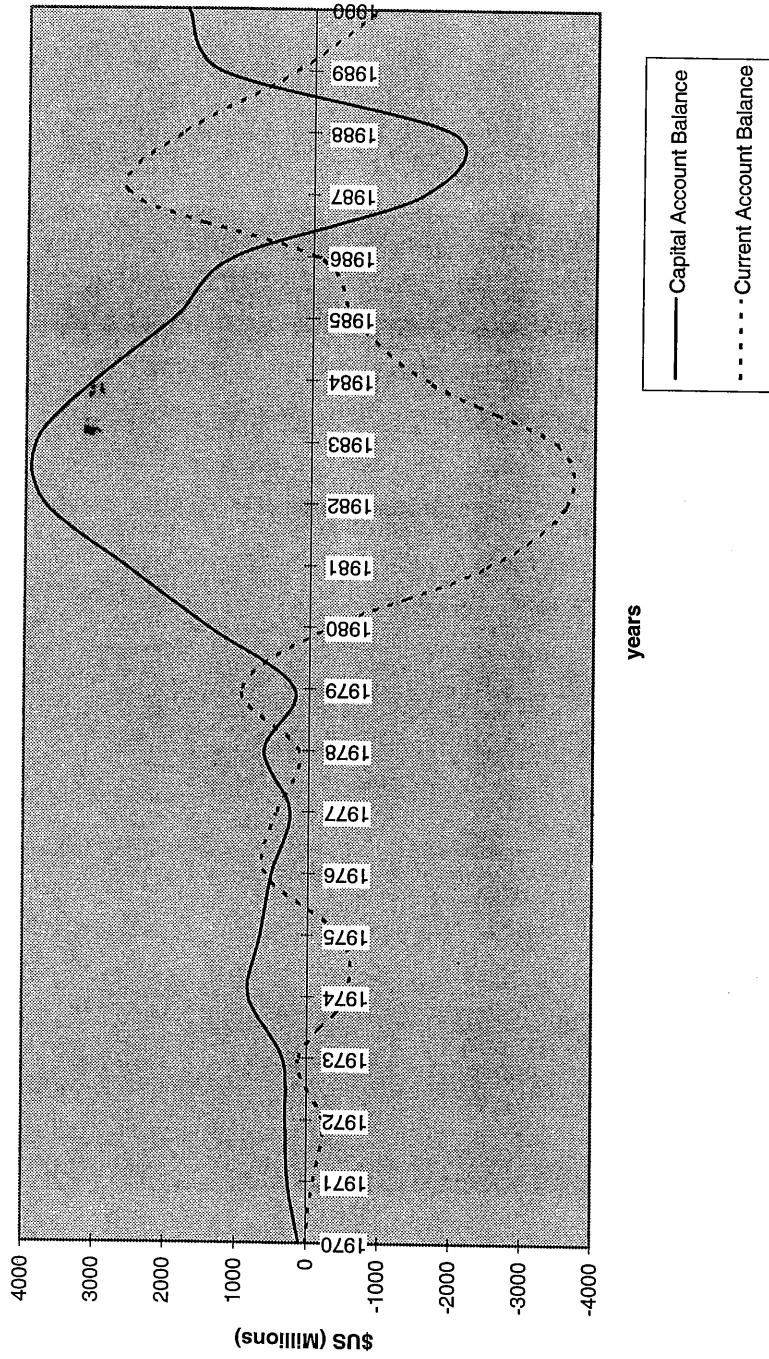
The high economic growth rate of Malaysia over the twenty-year period was to a large extent due to the government's macroeconomic policies as well as the diversification of Malaysia's exports commodities. Malaysia has also benefited from establishing itself as one of the members of ASEAN, as it obtained promising export markets for Malaysian products within the region.

The Malaysian government has played a role in maintaining a stable domestic economic condition particularly in containing domestic inflationary pressures. In regard to this case, the government's intervention has been beneficial to ensure the country's economic stability. This is due to the nature of Malaysia's economy which is small in contrast to the world economies; "when the world sneezes, Malaysia catches a cold" holds true.

In terms of the Malaysian balance of payments experiences over the twenty-year period, the economy experienced both boom and bust. While the period between 1970 to 1979 was a relatively stable experience, the years from 1980 to 1990 saw an unstable trend in the external account. Nevertheless, the trade balance was positive throughout the decade, except for 1981 and 1982 when the economy was under serious

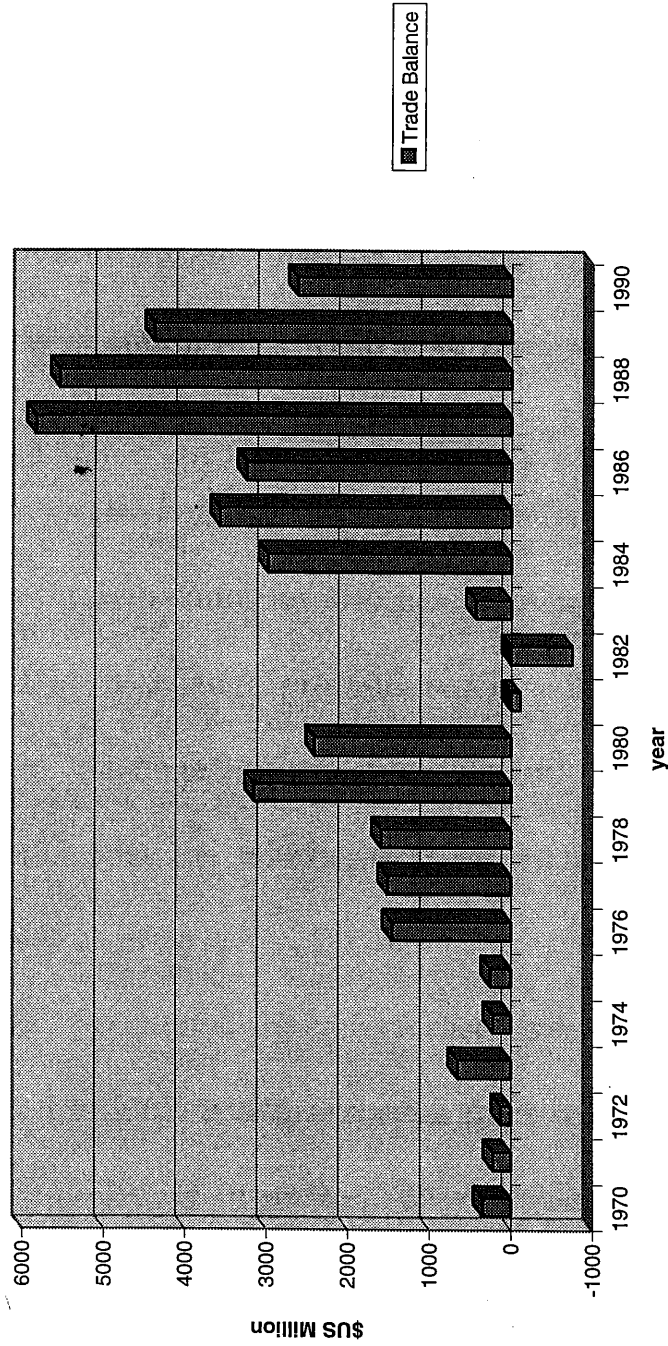
recessionary pressures. The trend in the balance of payments reflects the NDP, government's policy towards industrialisation, which emphasised wealth creation and capital growth (physical and human development). The Malaysian economy tends to accumulate and attract more capital goods from foreign sources from the early 1980's. It is clear that the foreign sources of capital goods along with the presence of huge foreign investments in the country resulted in the imbalances in the Malaysian balance of payment observed in the period from 1980 to 1990.

Figure 3.1
 Malaysian Balance of Payments
 (1970 - 1990)



Source: International Financial Statistics Yearbook, 1994

Figure 3.2
Trade Balance (1970 - 1990)



Source: International Financial Statistics Yearbook, 1994

CHAPTER 4

PURCHASING POWER PARITY THEORY

4.1 An Overview of PPP

Purchasing power parity (PPP) is a long run theory of exchange rate determination which states that the exchange rate between one currency and another is in equilibrium when their domestic purchasing powers at that rate of exchange are equivalent.²⁵ It follows that when two countries' relative price levels change, in order to maintain the *parity*, the exchange rate between the two countries also has to change in conjunction. But if relative price levels change proportionately with respect to each other, intuitively, the exchange rate remains constant. In other words, the PPP theory indicates that the main reason for exchange rate movements is changes in relative price levels.

Globally, price levels have increased over time. Given that PPP is directly related to price levels, exchange rates will adjust when one price level suffers inflationary pressures. Because the theory singles out price

²⁵ The Dictionary of Social Sciences, p. 368.

level changes as the overriding determinant of exchange rate movements, it has also been called the "inflation theory of exchange rates".²⁶

4.2 The theory and its limitations

There are several variables that will be used throughout this section in order to illustrate the theory of PPP. Firstly, let P_i and P_i^* denote the price of the i th commodity at home and abroad respectively, and they are stated in terms of their own currency. The other variable, e , represents the exchange rate and it is quoted as the number of units of domestic currency per unit of foreign money. Finally, let P and P^* represent the general price levels at home and abroad, respectively, and quoted in their own currency.

There are two versions of PPP. One is called an *absolute* PPP while the other is a *relative* PPP. The absolute PPP relies on the "law of one price" in an integrated, competitive market.²⁷ This simply means that the price of a given good will be the same in all countries when quoted in the same currency: i.e., $P_i = eP_i^*$.

²⁶ Exchange Rates and Inflation, Rudiger Dornbush, The MIT Press, Massachusetts, 1988, p. 265

²⁷ *Ibid.*, p. 266.

Further, let us consider the price index to be a function of all commodity prices. Given that, we will have :

$$P = f(P_1, \dots, P_i, \dots, P_n) ; \text{ domestic price index}$$

$$P^* = f(P_1^*, \dots, P_i^*, \dots, P_n^*) ; \text{ foreign price index}$$

For the absolute PPP to hold, the price of each good has to be equalised, home and abroad, and the same good should enter each country's market basket at the same weight. In view of the functions above, the absolute PPP prevails when P_i equals P_i^* and the weights of P_i and P_i^* are also the same.

The law of one price not only applies to individual goods, but also to the aggregate price level which is an important variable to macroeconomists. In this case, the absolute PPP has the form :

$$e = P/P^*$$

$$= \frac{\text{Price of goods in country A}}{\text{Price of goods in country B}}$$

The equation above implies that the value of a common market basket in the two countries will be the same if we measure them in terms of one currency. In like manner, the absolute PPP implies that $P/(eP^*) = 1$ at all times.

There are objections to this approach particularly regarding price level equalisation. In the real world, the price of a given commodity at a given time will not necessarily be the same in different countries. The difference might occur due to transportation costs or other costs such as tariffs and quotas. As a matter of fact, this is always the case. Taking these obstacles into account, we cannot simply say that the inequality of price levels across countries is conclusive evidence of market failure. Thus, the issues of price equalisation and obstacles to trade limit the application of absolute PPP.

The other version of PPP, the relative PPP, was developed in 1916 by Professor Gustav Cassel. This theory is a revised version of absolute PPP where transportation costs and other obstacles to trade are taken into consideration. Furthermore, instead of using the absolute price, the relative PPP uses the change in relative price levels to analyse the changes

in exchange rates. After taking trade barriers into account, the absolute version equation changes as below:²⁸

$$e = \theta P/P^*$$

where θ is a constant representing the obstacles to trade. Cassel suggested that the increase in the local price level relative to the price abroad results in the equi-proportionate depreciation of the local currency.

Dominick Salvatore states the relative PPP's equation as:

$$e_1 = \frac{(P_1/P_0) e_0}{(P^*_1/P^*_0)}$$

where e_1 and e_0 are the exchange rates in period 1 and in the base period, respectively.²⁹

Even though the theory of PPP has been fully revised by Cassel, in which he included the barriers to trade in his theory and used the relative instead of absolute price level, it is still subject to criticism. As claimed by

²⁸ Ibid., P. 267.

²⁹ International Economics, Dominick Salvatore, fifth edition, Prentice Hall Inc., N.J, 1995, p. 496.

many economists, the practical difficulty of calculating PPP is when it includes the prices of goods that are not traded internationally, namely non-tradable goods. Essentially, there are a number of goods and services that do not enter the international market (houses and barbers' service for instance). To illustrate the situation, let us take Malaysia and Canada. If the price of building a house in Malaysia is relatively higher than in Canada, the housing developers in Malaysia do not have to fear that Malaysians will import houses from Canada because such an action will never occur. Similarly, if the price of a haircut in Canada is relatively higher than in Malaysia, the difference in price will not induce people in Canada to fly to Malaysia to get their hair cut.

Another criticism concerns Cassel's statement on the *cause* of exchange rates movements. Cassel claimed that only the change in the relative price levels can cause the movements in the exchange rates and not the other way round. In other words, changes in exchange rates exercise no influence over price levels. But what had happened in Britain in the early 1930's proved that the latter part of Cassel's theory is not always true. In September 1931, the pound sterling was depreciated in foreign exchange markets. As the value of pound depreciated, more pounds were needed in order to import the same quantity of goods.

Hence, the demand for imported goods decreased substantially. Since the British market was large enough to influence world prices, the excess world supply caused the prices of imported goods to fall in terms of other currencies, which caused the relative prices in other countries to fall. The effect upon the fall in prices throughout the world, in turn, was a relative rise in British prices. Thus, the movements in British exchange rates caused the movements in its relative price levels, a phenomenon which clearly violates Cassel's theory.

4.3 The development of the theory

The idea of PPP was actually recognised as early as the 16th century by the Salamanca School in Spain and was supported through the writings of Gerald de Malynes in England. There is also evidence that this theory has its source in the mercantilist writings of the 17th century. However, the gist of the theory was elaborated during the controversies over the Bullion Report in 1810:

“ Whether this 13 1/2 per cent, which stands against this country by the present exchange on Lisbon, is a real difference of exchange, occasioned by the course of trade and by the remittances to Portugal on account of government, or a nominal and apparent exchange occasioned by something in the state of our currency, or is partly real and partly nominal, may perhaps be determined by what your committee have yet to state ”

(Bullion Report 1810, p. ccxxii).³⁰

In that century, further attempts to develop the theory were made by classical economists, particularly Ricardo, Mill, Goshen and Marshall.

Soon after World War One, almost every government of central Europe experienced economic chaos, centred on four economic problems: unbalanced budgets, swift expansion of paper money, rapid increases in domestic price levels, and persistent depreciation of currencies.³¹ The governments at that time decided that the fall of the currencies caused the increase in domestic price levels, and this phenomena impelled the governments to increase their expenditures while revenues remained unchanged. This, in turn, made it impossible for them to balance their budgets and, consequently, they printed more money to meet the deficits.

³⁰ Exchange Rates and Inflation, Rudiger Dornbush, The MIT Press, Massachusetts, 1988, p. 269

³¹ An Outline of Money, G. Crowther, Nelson, London, 1955, P.226

Cassel elaborated his theory to estimate the equilibrium exchange rate at which nations could return to the gold standard after the disruption caused by the war. His work was published in the 1916 *Economic Journal* where he demonstrated the inflation theory of exchange rates using price level and exchange rate data for the US and Sweden. According to Cassel, the exchange rate tends to fall in exactly the same proportion as the price level rises, and he further said that movements in a price level *caused* movements in the exchange rate, while he implied that movements in the exchange rate were powerless to produce any permanent effect upon the price level.³²

Clearly, Cassel's findings on exchange rate behaviour are totally opposite to what the governments had declared.³³ While the governments said that the exchange rate caused the movement in price levels, Cassel suggested that what happened occurred the other way round. Britain's experience in the early 1930's had proved Cassel's claim to be wrong, at least in some circumstances.

Nevertheless, Cassel foresaw a chance for the real exchange rate to deviate from PPP. Cassel, in a statement made in *Foreign Investments*,

³² Ibid.

³³ Recall what had happened to the economy after World War One and the problems faced by every government of central Europe.

admitted there were factors that could cause the exchange rate to "*deviate from the Purchasing Power Parity as factors of secondary importance, most suitably grouped under the head of 'disturbances' "*".³⁴ The disturbances Cassel recognised were actual and expected inflation or deflation, new hindrances to international trade, and shifts in international movements of capital.

4.4 Recent observations of PPP

In recent years, *The Economist* has maintained an ongoing interest in the PPP theory and has applied the theory for comparative purposes. A MacDonalds' hamburger was selected as the standard good to be compared in various economies. This has been carried out since 1986 leading to the development of the "Big Mac Index". The exercise is known as burgeronomics. Burgeronomics is, in a way, a rough guide to whether a currency is under/overvalued. Such an exercise is essential in making economic theories more meaningful. The use of a Big Mac as a market basket is mainly to avoid the impact of barriers to trade, as the hamburger is made locally from local ingredients in more than fifty countries. Thus,

³⁴ The italic words are Cassel's statement in *Foreign Investments*, 1928, University of Chicago Press, which are taken from Exchange Rates and Inflation, Rudiger Dornbush, The MIT Press, 1988, p. 270

the local prices are less likely to be distorted by international transport or any other international distribution cost. Since it is assumed that no trade barriers occur, the PPP exchange rate is calculated by dividing the local Big Mac price by the US price. In other words, The Economist used the absolute version method to calculate the implied PPP exchange rates. Table 4.1 presents the Big Mac prices and exchange rates for 1993.³⁵

As we can see, the first and second columns in the table show the countries and their local price of Big Mac hamburger, respectively, while the third column measures the dollar price of the Big Mac in various nations at the actual exchange rate (shown in column four). The fifth column measures the implied PPP of the dollar. To get the dollar price of the Big Mac, we simply divide the local price by the actual exchange rate. For instance, the dollar price of the Malaysian Big Mac is obtained by dividing the Malaysian ringgit price of RM3.35 by the actual exchange rate of 2.58. The implied PPP of the dollar, as mentioned previously, is measured by using its absolute version. In the case of Malaysia, for example, we divide the Big Mac price of RM3.35 by the US price of \$2.28. Lastly, the sixth column measures the overvaluation (+) and undervaluation (-) of the local currencies. It is calculated by dividing the

³⁵ The table is taken from *Big Mac Currencies*, The Economist, April, 1993, p. 79.

difference between PPP and the actual exchange rate by the actual exchange rate.

Table 4.1

Big Mac Prices and Exchange Rates, April 1993

Country	Prices in Local Currency	Prices in Dollars	Actual Exchange Rate 4/17/93	Implied PPP of the Dollar	Local Currency Over (+) or Under (-) Valuation
U. States	\$ 2.28	\$2.28	-	-	-
Argentina	Peso 3.60	3.60	1.00	1.58	+58
Australia	A\$ 2.45	1.76	1.39	1.07	- 23
Belgium	Bfr 109	3.36	32.45	47.81	+47
Brazil	Cr77, 000	2.80	27,521.00	33,772.00	+23
Britain	£ 1.79	2.79	0.64	0.79	+23
Canada	C\$ 2.76	2.19	1.26	1.21	- 04
China	Yuan 8.50	1.50	5.68	3.73	- 34
Denmark	Dkr 25.75	4.25	6.06	11.29	+86
France	Ffr 18.50	3.46	5.34	8.11	+52
Germany	DM 4.60	2.91	1.58	2.02	+28
Holland	F1 5.45	3.07	1.77	2.39	+35
Hong Kong	HK\$ 9.00	1.16	7.73	3.95	- 49
Hungary	Forint 157	1.78	88.18	68.86	- 22
Ireland	I£ 1.48	2.29	0.65	0.65	00
Italy	Lire 4,500	2.95	1,523.00	1,974.00	+30
Japan	¥ 391	3.45	113.00	171.00	+51
Malaysia	RM 3.35	1.30	2.58	1.47	- 43
Mexico	Peso 7.09	2.29	3.10	3.11	00

(continued)

(continued)

Russia	Rouble 780	1.14	686.00	342.00	- 50
S. Korea	Won 2,300	2.89	796.00	1009.00	+27
Spain	Ptas 325	2.85	114.00	143.00	+25
Sweden	Skr 25.50	3.43	7.43	11.18	+50
Switzerland	SwFr 5.70	3.94	1.45	2.50	+72
Thailand	Baht 48.00	1.91	25.16	21.05	- 16

Thus, in the Malaysian case :

$$\frac{1.47 - 2.58}{2.58} = -0.43 \text{ or } -43\%$$

indicates simply that a Big Mac in Malaysia is roughly forty three percent less expensive for Americans.

There are a few points that can be observed from Table 4.1. Several of the countries in the table have a significant misalignment of their currencies. Among the countries that show a serious overvaluation against the dollar are Denmark (+86%), Switzerland (+72%), Argentina (+58%), France (+52%), Japan (+51%), Sweden (+50%), and Belgium (+47%). Intuitively, these are among the most expensive countries for Americans to visit if we rely on the Big Mac price index as a basis of analysis. On the other hand, countries that show a significant

undervaluation of their currencies against the dollar are among the cheapest countries for Americans to visit. Notably, these countries are Russia (-50%), Hong Kong (-49%), Malaysia (-43%), China (-34%), Australia (-23%), Hungary (-22%), and Thailand (-16%).

From the observations above, it is obvious that most of the countries that seem to be overvalued against the US dollar are categorised as developed countries. Similarly, the developing nations are among the majority which have the most undervalued currencies against the US dollar.

However, there are some criticisms regarding this finding. *The Economist*, April 9, 1994 (page 88) cites the following:

- It assumes that there are no trade barriers. However, price differences between countries may, in part, reflect different levels of farm support. The currencies of places which keep out cheap beef (e.g., Western Europe and Japan) will appear overvalued; Hong Kong and Singapore, which import food at world prices, will seem to have undervalued currencies.
- High rates of value-added tax in countries such as Sweden and Denmark inflate prices and so exaggerate the degree of overvaluation.

- Profit margins vary with the strength of competition. In Buenos Aires, for example, McDonalds restaurants are in prime spots and appeal to upper middle-class families who are willing to pay a big premium to enjoy the American way of life.

Despite these criticisms, the burgeronomics theory does provide a rough idea on what is going on in foreign exchange markets. The Big Mac Index is not a good currency indicator, but the exercise makes the PPP theory more meaningful. Nevertheless, the next section will deal with PPP theory with an emphasis on its relative version, focusing on the Malaysian economy.

4.5 PPP in Malaysia.

Prior to the 1970's, the PPP theory seemed to describe the behaviour of exchange rates and prices in Malaysia. Confirmation of this is evidenced in "*An Exchange-Rate Policy to Protect Price-Level Stability*" by Wolfgang Kasper.³⁶ According to the author, the PPP theory held well in

³⁶ *An Exchange-Rate Policy To Protect Price-Level Stability*, Wolfgang Kasper, Readings on Malaysian Economic Development, ed. David Lim, Oxford University Press, Kuala Lumpur, 1975, p. 375-386.

Malaysia because it is a small, open economy. Did this theory hold from 1970 on ?

In the US economy, for instance, the PPP theory held relatively well in the 1920's, but Jacob Frenkel successfully demonstrated its collapse in his working paper entitled "*The Collapse of Purchasing Power Parities During the 1970's*".³⁷ Therefore, it is the aim of this section, as well as the thesis itself, to analyse empirically whether the PPP theory holds in Malaysia or not in the post-1960's. The scope of this exercise is limited to the use of Malaysia and the US exchange rates, and prices for the twenty year period from 1970 to 1990.

Figure 4.1 demonstrates graphically the actual exchange rate and the implied relative PPP between Malaysia and the US. The PPP has been calculated based on the equation:

$$e_1 = \frac{(P_1/P_0)}{(P^*_1/P^*_0)} e_0$$

³⁷ *The Collapse of Purchasing Power Parities During the 1970's*, Frenkel, Jacob A., Working Paper #569, NBER Working Paper Series, Cambridge, 1980.

where e_1 and e_0 are the exchange rates in year 1 and in the base year, respectively. For simplicity, the consumer price index (CPI) is used to represent prices for both countries (base year 1980). Table 4.2 summarises the Malaysian versus US exchange rates and the implied PPP for the twenty year period (note that the implied PPP is based on author's calculation).

Table 4.2

Malaysian versus US exchange rates and the Implied PPP, 1970-1990

Year	M CPI	US CPI	Malaysian/US Exchange Rates	Implied PPP	Percentage Misalignment
					(- overvalued)
1970	51.37	47.07	307.75	266.18	41.57
1971	52.25	49.13	288.60	259.39	29.21
1972	53.87	50.73	281.70	258.99	22.71
1973	59.62	53.89	245.20	269.83	- 24.63
1974	69.87	59.82	231.28	284.87	- 53.59
1975	73.00	65.31	258.83	272.62	- 13.79
1976	75.00	69.10	253.50	264.72	- 11.22
1977	78.62	73.60	236.55	260.53	- 23.98
1978	82.37	79.20	220.60	253.66	- 33.06

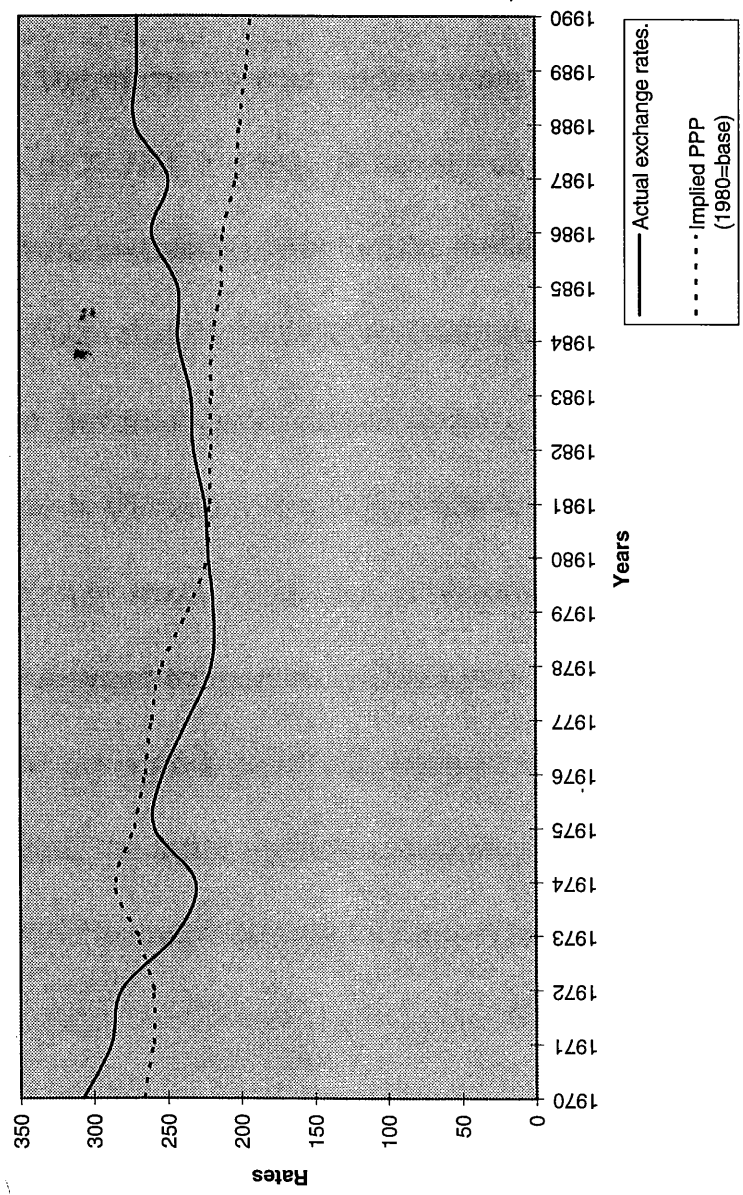
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1979	85.37	88.10	218.90	236.34	- 17.44
1980	91.12	100.00	222.24	222.24	0.00
1981	100.00	110.40	224.23	220.92	3.31
1982	105.75	117.10	232.13	220.26	11.87
1983	109.62	121.78	233.83	219.54	14.29
1984	114.00	127.04	242.50	218.86	23.64
1985	114.37	131.15	242.65	212.69	29.16
1986	115.25	133.07	260.30	211.24	49.06
1987	115.50	139.00	249.28	202.66	46.62
1988	118.50	144.53	271.53	199.97	71.56
1989	121.75	151.50	270.33	196.00	74.33
1990	125.00	158.48	270.15	192.37	77.78

Source: *International Financial Statistics Yearbook, 1994*

Figure 4.1
Actual Exchange Rates versus PPP



Source: International Financial Statistics Yearbook, 1994

From Table 4.2, it can be seen that the Malaysian Ringgit has been both undervalued and overvalued during the twenty-year period. Observe that the Ringgit switched from undervaluation of 22.71% in 1972 to overvaluation of 24.63% in 1973. The overvaluation of the Ringgit did not persist as the currency was undervalued increasingly from 3.31% in 1981 to a peak of 77.78% in 1990. To see the situation more clearly, observe Figure 4.1. It demonstrates graphically the under/overvaluations of the Ringgit. It is clear that from 1970 to 1980, the implied PPP did not have any significant deviation from actual exchange rates. The PPP tended to converge towards the actual exchange rate after experiencing deviations. However, starting from 1980, the deviation of PPP from the actual exchange rate seemed to increase. There was no tendency for the implied PPP to follow the trend of actual exchange rates as the former has a decreasing trend, the latter an increasing one. Unfortunately, it is difficult to come to a conclusion by simply looking at the graph.

For further analysis, consider the equation of relative PPP below:³⁸

$$\Delta \ln e_t = \alpha + \beta \Delta \ln (P_m/P_{us})_t + \xi_t$$

where Δ denotes a change, ξ represents the error term, and t represents year; in addition, \ln is used to linearise the equation for estimation. This equation will be used to estimate the relationship between changes in exchange rates and changes in relative prices.³⁹ Three hypotheses will be tested using a 5 percent level of significance. The first null hypothesis to be tested is: "there is no relationship between changes in exchange rates and changes in relative prices". This is to be done by observing the analysis of variance (ANOVA) from Figure 4.2. As suggested by the relative PPP equation, the second hypothesis to be tested is the zero constant term. Here, α denotes the constant term. If α does not differ significantly from zero, we may have the impression that the estimated regression is consistent with the given equation of relative PPP. The third hypothesis is to test whether β is equal to one. This hypothesis reveals the

³⁸ *The Collapse of Purchasing Power Parities During the 1970's*, Frenkel, Jacob A., *European Economic Review*, Vol. 15, 1981, North-Holland Publishing Company, Amsterdam, p. 145 - p. 165.

³⁹ Note that this exercise follows very closely the work done by Jacob Frenkel in which he demonstrated the collapse of PPP in the US during the 1970's.

idea that if β is one, there is a significant relationship between changes in the relative prices and changes in the exchange rate (at least statistically) and that the importance of PPP as the exchange rate determination is unquestionable. If β statistically differs from one, we may test the hypothesis: $\beta = \text{zero}$. This crucial hypothesis will determine the applicability of the PPP theory to Malaysia for the 1970-1990 period.

The given variables ($\Delta \ln e_t$ and $\Delta \ln (P_m/P_{us})_t$) are regressed by using Microsoft Excel Software. The data are tested using a 95 percent confidence interval and the results are summarised in Figure 4.2:

Figure 4.2

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.17905409
R Square	0.032060367
Adjusted R Square	-0.018883824
Standard Error	0.062919084
Observations	21

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.002491372	0.0024914	0.62932331	0.437398895
Residual	19	0.07521741	0.0039588		
Total	20	0.077708782			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-0.010869947	0.016264711	-0.6683148	0.51197071	-0.044912388	0.023172494
Change ln(P_m/P_{us})	-0.045446946	0.057288545	-0.793299	0.43739889	-0.165353287	0.074459395

The estimated regression equation is:

$$\Delta \ln e = -0.01087 - 0.04545 \Delta \ln (P_m/P_{us})$$

$$(0.01626) \quad (0.05729)$$

* Standard errors are in parentheses.

Note that the value of R Square (under Regression Statistics) is roughly three percent. The low value of R Square indicates a poor fit of the regression line.⁴⁰ In other words, only three percent of the variation in the change of exchange rates is explained by the estimated regression equation. Thus, our first observation is that the estimated regression is poor and imprecise.

The results of the hypothesis tests are summarised by the following:

- a) The first null hypothesis, "no relationship between $\Delta \ln e$ and $\Delta \ln (P_m/P_{us})$ ", is rejected. It can be seen from figure 4.2 that the calculated F - statistic equals 0.6293 while the critical value of it equals to 0.437, at 5 percent significant level. Since the critical F - statistic is less than the calculated F, the hypothesis can be rejected

⁴⁰ Econometric Models & Economic Forecasts, Robert S. Pindyck, Daniel L. Rubinfeld, McGraw-Hill Inc., Toronto, 1991, p. 62.

and thus shows that there is a relationship between $\Delta \ln E$ and $\Delta \ln (P_m/P_{us})$

- b) The second hypothesis concerns a zero constant term, i.e.: $\alpha = 0$.

The calculated lower bound of α under 95 percent confidence interval is -0.45 while its upper bound is 0.023. Clearly, the hypothesis cannot be rejected as the α lies between the two bounds. Therefore, the estimated constant is consistent with the given PPP equation.

- c) The third hypothesis is to test whether the slope, β , is equal to one or not. The lower and upper bounds of β as given in the computer output are -0.16 and 0.07. In this case, the null hypothesis can be rejected as 1 does not lie in the 95 percent confidence interval. Even though this result suggests a slight deviation in PPP theory, it is still too weak to support the collapse of the theory in Malaysia.
- d) The final hypothesis is to test whether β is equal to zero or not. As stated, this hypothesis is the most crucial because if β is zero, the PPP theory does not apply to Malaysia. By using the same intervals ($-0.16 < \beta < 0.07$), the null hypothesis of β equal to zero

cannot be rejected. Therefore, under a 95 percent confidence, PPP does not work in Malaysia.

Clearly, the results do not support the PPP theory. These results enable one to conclude that PPP theory does not apply to Malaysia from 1970 to 1990, where we would have expected it to be valid, if it were to be applicable to any economy.

According to Cassel, only a change in price levels can cause a change in exchange rates and the latter is powerless to cause the former. Based on this idea, it may be fruitful to show the behaviour of exchange rates and prices in Malaysia to further support the inapplicability of PPP theory. In order to do this, a test called Granger-causality will be used. The following quotation is taken from "Econometric Models & Economic Forecasts" which explains the idea of causality test:

If X causes Y, then changes in X should precede changes in Y. In particular, to say that "X causes Y", two conditions should be met. First, X should help to predict Y Second, Y should not help to predict X. (p. 216)

In order to test whether the change in exchange rate, E_t , is a cause of the change in the domestic inflation rate, π_t , two null hypotheses have to

be tested. The first hypothesis is " E_t does not cause π_t " and it is to be done by running two regressions:⁴¹

Unrestricted regression:

$$\pi_t = \sum_{i=1}^n \alpha_i \pi_{t-i} + \sum_{i=1}^n \beta_i E_{t-i} + \varepsilon_t$$

Restricted regression:

$$\pi_t = \sum_{i=1}^n \alpha_i \pi_{t-i} + \varepsilon_t$$

Next, coefficients β_i ($i = 1, 2, \dots, n$) are tested to be significantly different from zero. If they are different, the null hypothesis is rejected.

The second hypothesis " π_t does not cause E_t " is tested by the same regression equations. The only difference is that the position of π_t and E_t are switched. Again, the lagged values of π_t have to be tested whether they are different from zero or not. If they are, the second null hypothesis is rejected.

⁴¹ *Econometric Models & Economic Forecasts*, Robert S. Pindyck, Daniel L. Rubinfeld, McGraw-Hill Inc., Toronto, 1991, p. 62.

Table 4.3 summarises the results of the causality test. Six lags have been chosen, since causality test depends on relevant past information and different lag lengths may produce different results.

Table 4.3

Granger - Causality Test* on π_t and E_t				
n	First Hypothesis		Second Hypothesis	
	F-statistic	Prob. %	F-statistic	Prob. %
1	5.46	3.20	0.14	70.80
2	1.71	21.70	0.99	39.70
3	2.74	9.38	3.34	6.00
4	3.02	8.55	2.59	11.77
5	3.68	8.96	1.80	26.73
6	35.10	2.80	0.76	66.51

* The test is done by using Micro TSP software.

Results for the first null hypothesis, " E_t does not cause π_t ", vary as the length of lag changes. When lag length is one period, the value of F statistic is greater than zero with a probability of less than five percent. In this case, the null hypothesis is rejected at five percent level of significance. As the lag increases, $n = 2$ to 5, the null hypothesis cannot be rejected at the given significant level because the probabilities for not rejecting the hypothesis are far greater than five percent and the values of F statistic are not significantly greater than zero. The null hypothesis is rejected again when the lag equals six because the probability of not rejecting it is far less than the required probability. Even though the results vary, they are still in favour of not rejecting the null hypothesis because of the stable results at $n = 2$ to 5. In other words, a change in exchange rates does not cause a change in the price level.

Since the result of the first null hypothesis follows Cassel's theory, the second null hypothesis ought not to be rejected in order to support the collapse of PPP in Malaysia. As expected, the probabilities of not rejecting the hypothesis are above five percent (for all lag values): the hypothesis cannot be rejected. Therefore, "changes in price level do not cause changes in exchange rates" supports the collapse of PPP theory in Malaysia during 1970 to 1990.

The above exercise suggests a few explanations to the question of why PPP theory does not apply in Malaysia. One explanation is the existence of tradeable and non-tradeable goods along with international trade barriers, which have been proven by most critics as the largest source of such deviations. Another group of factors that, perhaps, contribute to the deviation from PPP are the real changes in the Malaysian economy such as changes in tastes, technology, and market structure.⁴² Recall from chapters two and three that the Malaysian economy has diversified since the early 1970's with the development of capital-intensive industries in the 1980's. These changes required an increase in the level of technology and productivity.

Given that exchange rates are very sensitive to any changes that alter expectations of the future, unlike prices, exchange rates will adjust much faster to these changes than will prices.⁴³ The Malaysian balance of payments experience detailed in chapter three illustrates the massive inflows of international investment (capital) into the country since the early 1980's. This shift in international capital is recognised by Cassel as a

⁴² The Monetary Approach to The Balance of Payments, Exchange Rates, and World Inflation, Thomas M. Humprey, Robert E. Keleher, Praeger Publishers, 1982, p. 370.

⁴³ Ibid.

disturbance to the application of PPP theory.⁴⁴ Perhaps, all these factors have contributed to the collapse of PPP between 1970 and 1990 in the case of Malaysia.

4.6 Conclusion.

The PPP theory was developed by Cassel from its absolute version to its relative version in 1916. The theory, however, has been subjected to criticism since its early development. Problems such as barriers to trade, the existence of non-tradable goods, and a variety of other factors discussed in this chapter have made the theory fail to apply consistently. For instance, Jacob Frenkel empirically concluded that PPP theory does not apply to the US economy during the 1970's. With respect to the Malaysian case, Wolfgang Kasper claims that the PPP theory worked excellently before the 1970's, however, the exercise undertaken in section 4.5 suggests that PPP theory fails to work in Malaysia during 1970's and 1980's. Beside the basic argument of non-tradable goods, PPP might have failed in Malaysia due to the changes in the structure of the economy since 1970. Such changes could include the drastic change in international investment

⁴⁴ Recall the three disturbances claimed by Cassel in Chapter Three.

and the change in technology and productivity in Malaysia. These phenomena, in a way, further reduce the role of PPP theory as a determinant of exchange rates.

CHAPTER 5

CONCLUSION

This thesis has considered the question of the validity of PPP theory as applied to the case of Malaysian economy. In dealing with the question, two chapters were devoted to a description of the economy itself. Chapter two touched on Malaysia's economic background and chapter three concerned its economic experiences from 1970 to 1990. Chapter four dealt with the PPP theory, from its development to the testing of PPP theory on the Malaysian economy. The exercise in section 4.5 suggests that the PPP theory does not apply to the Malaysian economy from 1970 to 1990. Consequently, the question raised in the introductory chapter has been answered.

It has been suggested in this thesis that the race riots in 1969 compelled the Malaysian government to introduce a new approach to national economics. The policy which resulted, NEP, emphasised restructuring Malaysian society to ensure a fair distribution of wealth among different ethnic groups. As the need for income redistribution became less pressing by the end of 1970's, the government introduced a

new set of policies, NDP, with the aim of creating wealth, along with a vision of transforming Malaysia into a developed nation by the year 2020.

The Malaysian government has been playing a vital role in the development of the country as well as achieving a better standard of living. Through government intervention, Malaysia managed to contain inflationary problems, and experienced one of the lowest inflation rates amongst the developing countries.

This paper also showed the trade imbalances from 1980 to 1990. One explanation suggested is the high inflow of foreign investments during that time period. This condition, however, may be temporary as the nation tried to build (accumulate) more capital to meet Vision 2020. Even though it does not exhibit economic overheating, chapter four suggests that the high international investment inflows had a direct impact on the collapse of PPP in Malaysia.

This paper suggested that PPP theory did not apply to the Malaysian economy from 1970 to 1990. The small open economy criterion seemed to fail to support PPP theory in Malaysia. This phenomenon further reduced the application of PPP theory as an exchange rate determinant. The causality test suggested that a change in prices does not cause changes in exchange rates. This implies that PPP theory, which

identifies the divergent rates of price inflation as an important source of exchange rate movements, failed to explain Malaysian exchange rate movements from 1970 to 1990.⁴⁵ Therefore, it is concluded that PPP is not a useful tool for analysis of the Malaysian economy between 1970 and 1990.

⁴⁵ Thomas M. Humprey and Robert E. Keheler in their book The Monetary Approach to the Balance of Payments, Exchange Rates, and World Inflation (p. 372) suggests that even though there exists a disparity in PPP, the theory remains useful *because it identifies divergent rates of price inflation as an important source of exchange rate movements and points out that this source could be eliminated if countries would pursue stable noninflationary monetary policies.*

REFERENCES

- "Big Mac Currencies" (1993): The Economist, The Economist Newspaper Ltd., New York.
- Dornbusch, R. (1988): Exchange Rates and Inflation, The MIT Press, Cambridge.
- Frenkel, J. A. (1980): The Collapse of Purchasing Power Parity During the 1970's, Working Paper #569, NBER Working Paper Series, Cambridge.
- Crowther, N. G. (1955): An Outline of Money, London.
- Humphrey, T. H. and Keheler, R. E. (1982): The Monetary Approach to The Balance of Payments, Exchange Rates, and World Inflation, Praeger Publishers, New York.
- International Monetary Fund (1994): International Financial Statistics Yearbook, Publication Services, Washington.
- International Monetary Fund Survey (1991): "Pursuit of Sound Economic Policies Restores Rapid Growth in Malaysia", International Monetary Fund, Washington, D.C.
- Jomo, K. S. (1990): Growth and Structure in the Malaysian Economy, Basingstoke Macmillan.
- Kasper, W. (1972): "An Exchange-Rate Policy to Protect Price-Level Stability" in Lim, D. (ed.) Readings on Malaysian Economic Development, Oxford University Press, Kuala Lumpur.
- Malaysia 1993 (1993): "Annual Report on Government, Economy, the Business Environment & Industry with Forecasts Through End - 1994", South East Asia Monitor, London.
- Ministry of Finance Malaysia (1993): Economic Report 1993/94, Percetakan National Malaysia Berhad, Kuala Lumpur.

Salvatore, D. (1995): International Economics, fifth edition, Prentice Hall Inc., N.J.

Pindyck, R. S. and Rubinfeld, D. L. (1991): Econometric Models & Economic Forecasts, third edition, McGraw-Hill Inc., Toronto.

Page, J. (1994): "The East Asian Miracle: Building a Basis for Growth", Finance & Development, March 1994.

The Dictionary of Social Sciences, p. 368.

SECONDARY REFERENCES

Devore, J. L. (1990): Probability and Statistics for Engineering and the Sciences, Duxbury Press, California.

Harris, R. G. (1992): Exchange Rates and International Competitiveness of the Canadian Economy, Canada Communication Group - Publishing, Ottawa.