CHAPTER THREE

LITERATURE REVIEW

3.1   Introduction

It is important to review the literature related to the objective of this study. As in tandem with the objective of this study which is to see the influence of fiscal policy on the behaviour of real exchange rates and its impact on the trade balance, a number of articles related to the subject matter will be reviewed.

3.1.1 Theory

Among economists, there is no universal agreement on the role of that fiscal policy plays in the determination of exchange rates. Economists disagree on just how fiscal impulses are transmitted to exchange rates and whether a particular stance will result in a appreciation or a depreciation of the exchange rates. The influence of fiscal policy on the exchange rates can be transmitted through various channels. Some of those channels may transmit positive influences on a currency's value, while other channels may transmit negative influences on a currency's value.

Most economists today use some variant of the Mundell - Fleming model to analyse how exchange rates respond to changes to fiscal policy. This model serves as a useful starting point to analyse short-run response of exchange rates to fiscal policy actions. The Mundell - Fleming framework clearly shows that the degree of capital mobility and the degree of central - bank monetary accommodation will dictate whether a currency will rise or fall in the short - run in response to a fiscal policy action. A fiscal policy change may contribute to a rise or a fall of the currency's value in the short - run but cannot guarantee that the adjustment in exchange rates will be sustainable in the long - run . The Mundell - Fleming model is a short - run model, therefore an extension to that model is required to analyse the long - run response of exchange rates to fiscal policy actions. In the analysis that follows, a review of the basic Mundell - Fleming model and the extensions to that model is examined more closely in order to see just how fiscal policy impulses are transmitted to exchange rates in both the short - run and long - run.

3.1.2 Analysing Fiscal Policy's Impact on Exchange Rates in the Mundell - Fleming model.

The Mundell - Fleming model is essentially a short - run model of exchange rate determination in that it does not make any allowance for the long run effects of budgetary imbalances that typically arise as a result of fiscal policy actions. Instead the model simply focuses on the short -

run response of exchanges rates to fiscal policy actions and assumes any imbalances that arise can last forever without any real or financial consequences. The Mundell - Fleming model typically focuses on an open economy that is too small to influence the trend of interest rates or output in the rest of the world. Therefore, if the authorities in this small, open economy, were to pursue an expansionary fiscal policy, the thrust of its actions are assumed not to exert a material impact on either the level of interest rates or output abroad. Instead, the fiscal policy stimulus action would be felt entirely in the domestic economy, with the thrust of the fiscal policy stimulus pushing up both the level of domestic interest rates and domestic output in the short - run. As for the policy's impact on the domestic currency's value, its influence is ambiguous. The rise in domestic interest rates will induce a capital inflow, which should contribute to a rise in the domestic currency's value, but the consequent rise in domestic economic activity will contribute to a deterioration of the trade account, which should put downward pressure on the value of the domestic currency.

The sensitivity of capital movements to the rise in domestic interest rates will determine whether the induced capital inflow will dominate the deterioration in trade or vice versa. If the degree of capital mobility is high, the capital account will dominate, and thus the domestic currency will be expected to rise in response to a domestic fiscal stimulus action.

On the other hand, if the degree of capital mobility is low, the trade account will be expected to dominate, and thus the domestic currency will be expected to fall in response to the fiscal stimulus action.

The policy course that the central bank adopts in this small open economy will also play an important role in determining whether a fiscal stimulus action will result in a rise or a decline in a currency's value. A expansionary fiscal policy will give rise to a appreciation of the domestic currency's value under conditions of high capital mobility only if the central bank pursues a policy restraint. If instead, the central bank pursues a policy of monetary ease to accommodate the stimulus on the fiscal front, the net impact of the dual policy action on the domestic currency's value would be ambiguous. Similarly, under conditions of low capital mobility, an expansionary fiscal policy would unambiguously give rise to a depreciation of the domestic currency's value if central bank policy were accommodative. If, instead, the monetary authorities were to lean toward greater monetary restraint to counter the thrust of the fiscal stimulus, the net impact of the dual policy action on the domestic currency's value would be ambiguous. Capital flows are considered to be highly mobile across financial markets, in most economies in the developed countries, therefore most economists believe that the capital account, not the trade account, represents the primary channel through   which   fiscal   policy   changes   are   transmitted to

exchange rates. If that be the case, therefore an expansionary fiscal policy which is not accommodated by an expansionary monetary policy should in the Mundell - Fleming model give rise to an appreciation of the domestic currency by driving domestic interest rates higher relative to interest rates in the rest of the world in the short - run.

The Mundell - Fleming model has its shortcomings in describing the fiscal policy impulse. The model assumes that debt - financed increase in government spending permanently raises the level of domestic interest rates relative to the rest of the world and that the consequent rise in in the domestic currency's value represents a permanent appreciation as well. No allowance is made for the fact of that a widening of the domestic and foreign interest rate differential should give rise to expectations of an eventual decline in the domestic currency's value, assuming uncovered interest parity holds.

The Mundell - Fleming model also implicitly assumes that the debt - financed increase in government spending can last forever. No allowance is made for the fact that risk - averse investors may demand that domestic bonds offer a higher risk premium in the form of higher domestic interest rates or an immediately weaker domestic currency , in order to induce them to buy and hold the increasing supply of government debt . Finally the Mundell - Fleming model assumes that the current account deficit can

financed indefinitely over time by capital inflows from abroad. No allowance is made for the fact that foreign investors may become unwilling to add riskier domestic assets to their portfolios.

3.1.3 Real Interest rate differential model (RID)

An extension of the basic Mundell-Fleming model is the real interest rate differential model (RID). The RID model of exchange rate determination states that in a world of high capital mobility, an expansionary fiscal policy will give rise to an immediate appreciation of a domestic currency's value relative to it's long-run equilibrium value. But in contrast to the Mundell-Fleming model, the RID model posits that the domestic currency will not permanently remain at it's new higher level but instead will gradually decline overtime back to it's original long-run equilibrium level. The RID model shows that the magnitude of the initial appreciation and the length of time it takes to return the domestic currency back to it's long-run equilibrium level will be dictated by how long the fiscal stimulus action is kept in place.

The RID model captures much of the spirit of the Mundell-Fleming model in a world of high capital mobility, but it also introduces a number of new wrinkles that offer richer insights into the short and long-run dynamics of exchange rate movements. The RID model is derived as follows:

$$q = \underline{q} + n\,(r^* - r\,) + n\phi \quad \text{---------------------------------} \quad (3.1)$$

Equation (3.1) states that the level of the real exchange rate(q) can be explained by three variables namely:

(a) The level of the real long-run equilibrium exchange rate ($\underline{q}$),

(b) The real long term interest rate differential between the foreign and domestic country $(r^* - r)$ and,

(c) The level of the risk premium (ϕ) on domestic debt.

For example we can describe the Malaysian ringgit real value versus the USD in the following manner:

$$q\text{USD/RM} = \underline{q}\,\text{USD/RM} + x\,(r\text{M} - r\text{US}) + x\,\phi\,\text{us} \quad \text{------------------} \quad (3.2)$$

In the above equation (x) is the number of years while (r US) is the real long term interest rate of United States and (r M) is the real long term interest rate of Malaysia. According to equation (3.2), the ringgit's real value would rise if there occurred:

(a) An upward rise in the ringgit's real long-run equilibrium value,

(b) A rise in Malaysian relative to U.S real long-term interest rates, which in this case refers to US 10 year Treasury bonds and Malaysia's 10 year government bonds and,

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(c)   A rise in the risk premium on U.S. debt (or a decline in the risk premium on Malaysia debt).

A currency's real long-run equilibrium ($\underline{q}$) is assumed to be the level that a currency will gravitate to in the long-run in order to generate a zero current account balance. A major problem in the Mundell-Fleming model was that a fiscal stimulus action was assumed to give rise to both a permanent rise in the currency's value and a permanent deterioration of the current account. Since a continued deterioration of the current account is clearly not sustainable in the long-run, the RID model requires that currency values must adjust to ensure that a zero current account balance is achieved in the long-run. The RID model assumes that 'q' may at times deviate from '$\underline{q}$' in the short-run, but in the long-run 'q' is expected to return to '$\underline{q}$'. That implies that any shock that causes 'q' to rise relative to '$\underline{q}$' will generate the expectation in the market place that 'q' will eventually fall back to '$\underline{q}$' in the long-run.

Thus in terms of equation (3.2), any shock that pushes Malaysia x-year real interest rates upward relative to U.S's x-year real rates (assuming ϕ remains constant) will immediately push the ringgit's real value up by x-percent relative to its real long-run equilibrium level and at the same time generate the expectation that the Malaysia's ringgit real value will gradually decline by x-percent back to it's long-run equilibrium value

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over the next x-years. For example if a real or financial shock pushes Malaysia one year real interest rates up by one percent relative to U.S one year real interest rates, this will result in an instantaneous one percent rise in the Malaysian ringgit's real value above it's long-run equilibrium level, but at the same time, assuming uncovered interest rate parity, the widening of the Malaysia – U.S one year real interest rate differential will give rise to an expectation of a gradual one percent depreciation of the ringgit's real value back to it's original long-run equilibrium level in one year's time. Similarly, a one percent rise in the Malaysia – U.S five year real interest rate differential should give rise to an immediate five percent rise in the ringgit's real value, while at the same time the widening of the five year real yield gap should give rise to the expectation that the Malaysian ringgit will gradually depreciate by five percent over the next five years (at a rate of one percent per annum).

3.1.4   Budget Deficits, Exchange rates and the Current Account: The United States evidence.

The first study that will be analysed closely in this chapter is the study done by two economist from the Federal Reserve Bank of San Fransisco. The study was conducted by Michael Hutchinson and Charles Pigott(1983). These economist noticed that over the last several years between 1973 to 1983, the United States economy has seen record highs

in Federal Budget deficits, real interest rates, the strengthening of the dollar and large trade deficits.

A breakdown of their analysis includes identifying the key channel of the transmission mechanism of the fiscal policy. The study reflected that trade deficits, high interest rates and the dollar are closely linked by a common cause - government fiscal policy. Federal budget deficits are seen as pushing up domestic interest rates and are ultimately responsible for the strong dollar which in turn is the major cause of the nation's declining competitiveness and rising trade deficits. This view suggest that only by balancing the budget can the other problem be fundamentally and permanently be resolved. A second element to this argument is related to the tax aspect of the government's fiscal policy. Increased business investments following tax cuts increases the demand for capital and therefore pushing nominal interest rates higher. This in turn pressures the real interest rates to increase assuming inflation is subdued and finally causing the dollar to appreciate and worsening the trade deficit in the economy. Both the Federal Reserve economist observed that the current account deficits in the United States economy was not only the difference between exports and imports but more importantly it is also the channel which foreign savings is brought into our economy to help meet the credit demands of both the government and the private sector. In this way a rise in the budget deficit may easily

lead to a current account deficit, depending on the extent to which the government's credit demand are met directly or indirectly from foreign or domestic sources.

The conceptual frame work of their study heavily weighed on the asset market approach to exchange rate determination (Dornbusch, 1976, Isard 1980), the static short-term fiscal analysis of Mundell-Fleming(1962) and the short-term dynamic adjustment of the open economy to fiscal deficits (Blanchard and Dornbusch, 1984, Hodrick, 1980, Sachs and Wyplosz 1984) with an analysis of the deficits long-term impact. To begin with both of the San Fransisco Fed economist applied their ideas on the United States economy. Their period of study was between 1973 to 1983. Their study showed that the blow up in the fiscal deficit of the United States from $US 57.9 billion in 1981 to $US 195.4 billion correlated with the widening current account deficit. The current account position moved from an initial surplus of $US 4.5 billion in 1981 but recorded an deficit of $US 40.8 billion by 1983. During the post 1973 floating exchange rate period the United States economy endured a close correlation between the current account and the federal budget balances. The deterioration in the current account was brought about by the strengthening of the dollar. The study reflected that a 40% appreciation of the average value of the dollar since 1980 as

responsible for the greater part of the deterioration in the current account.

The other channel of influence that worsened the current account position of the United States economy was due to the high level of real long - term interest rates which in turn appreciated the exchange rate and adversely affecting the current account position. Between the period of 1979 o 1983 there was a strong correlation between short and long - term interest rates against the federal budget balances. The correlation showed as the government's fiscal position moved to a deficit, short and long - term interest rates increased in the economy.

The rapid run-up in long -term interest rates, in particular is consistent with market expectations of a long series of large future budget deficits and associated high future short-term interest rates. The study also indicated that a possible factor in explaining the high real interest rates and the appreciation of the dollar was attributed to the safe haven status position that the United States economy played, in particular it's currency following political and economic turmoil out of United States. This in turn contributed to the deterioration of the United States current account position.

3.2. Long -term Implications

a) Anti - inflation stance

The widening current account deficit of the United States was gradually financed by foreign savings. However the study indicated that foreigners were willing to finance the deficit provided that inflation was contained in the economy. Confidence on United States policy makers in keeping inflation subdued was the key to capital inflows into the economy. This scenario leaves unanticipated inflation as a major potential risk faced by foreign lenders to the United States. An unforseen and prolonged surge in inflation could seriously erode the purchasing power of funds lent by foreigners and also be a stumbling block in financing the current account deficit. In order to tackle this problem the Federal Reserve Bank in the United States continued to face a situation of **" between the devil and the deep blue sea",** where it had to keep monetary policy relatively tight to reflect it's anti inflation stance switching to a strong dollar policy whenever the tight monetary policy stance was detrimental to the domestic economy. In both situations of a strong dollar policy and the anti inflation stance of keeping monetary policy relatively tight, the main objective of policy makers was to finance the current account deficit.

(b)   Size of the Current account deficit.

The study done by the San Fransisco economists indicated that the size of the current account deficit was closely determined by the level of private saving and investment.   The size of the current account deficit was estimated firstly by projecting the fiscal deficit amount, which in their study indicated a deficit of 3% - 3.5% of GNP. In line with this the private savings rate on historical basis amounted to 7.3% of GNP while the private investments rate amounted to 6% of GNP. The savings investment gap amounted to 1.3% of GNP and subtracting this amount from the upper limit of the fiscal deficit would point to a current account deficit of 2.2% of GNP while the lower limit of the fiscal deficit would translate a current account deficit of 1.7% of GNP. Based on this simple method of estimating how large the current account deficit would be provided with a fiscal deficit, the study implied that by increasing the rate of the private savings rate and reducing the rate of private investment the current account gap could be closed.

3.3 Current Account Imbalances.

A study conducted by Jonathan D.Ostry (1995) on Asean economies analysing the current account positions of five Asean economies, namely Thailand, Malaysia, Indonesia, Philippines and Singapore. In this literature review the focus will primarily be on Malaysia. In this study the objective

by Jonathan was to see the current account imbalance faced by certain economies and the factors that caused this scenario. The main building block in his analysis used a consumption smoothing approach to current account determination which heavily weighed on the permanent income theory of consumption and savings. His assumption was that in a small open economy with access to international capital markets, the model implies that temporary shocks which by definition have larger effects on current resources than on life-time resources should cause larger fluctuations in national savings and the current account than permanent shocks. The underlying shocks here include productivity disturbances, changes in government spending or fluctuations in investments. The model focuses primarily on the response of consumption and saving to shocks, it is fully consistent with investment being chosen to maximise the net productive wealth of the economy given the world interest rates and the investment technology. The model makes use of a Fisherian separability, which implies that the investment decision may be treated as exogenous to the consumption-saving rule. Finally the model's dual assumptions that the government has access to lump-sum taxation to finance its expenditure and that it chooses a spending and taxation path that results in intertemporal solvency mean that budgetary deficits will not matter for private behaviour. Among the forcing variables included in the optimal current account model is government spending. The model estimation was made using a Vector Auto Regressive Model (VAR), using

data between the period 1960 to 1995. The model was used to analyse if the optimal current account series tracks the actual current account series. In the case of Malaysia the correlation between the optimal current account series and the actual series was at 0.99, implying that the consumption smoothing model was clearly accurate in defining the current account imbalance in the Malaysian economy. Evidence from the study brought about two key points that caused the current account deficit in Malaysia namely the surge in private investments and private consumption.

3.3.1   Private Investments

Jonathan D.Ostry noticed that macro economic stabilizations policies and structural reforms conducted by the Malaysian government in the 1980's subsequently became a factor that caused a sizeable deterioration in the current account position in the late 1980's and early 1990's. The surge in investments which was partly financed by domestic savings and by net capital inflows from abroad was a factor in worsening the optimal and the actual current account position of Malaysia. His study also indicated due to Malaysia's short-coming of technology in producing intermediate and capital goods in the domestic economy for investment expansion purposes and also for the production of high technology and value added goods for export, intermediate and capital goods were forced to be sourced from overseas which in turn put a strain on Malaysia's current account position.

3.3.2   Private Consumption.

The study in consumption smoothing model indicated that in 1995, Malaysia was running a current account deficit in excess of 1% of GDP, which was larger than warranted on the basis of consumption-smoothing considerations.

The factor that spiked this widening deficit was due to private consumption. Private consumption accelerated the widening of the deficit following a rise in the disposable income in tandem with low inflation, high wage growth and high returns from the equity market in Malaysia. On the merchandise account the demand for imported good namely luxury items increased while on the services account of the balance of payments the robust economic growth increased demand for services such as in the shipping and insurance sector and transportation, these developments thus exerted an adverse impact on the current account tilting it into a deficit.

The study by Jonathan D. Ostry in conclusion reflected that current account deficits in Malaysia brought about by strong private investments and consumption, forced policy makers to have an relatively tight monetary policy stance to subdue any inflationary pressures emanating in the economy and also pursuing a strong ringgit policy to mitigate inflationary pressures emanating from the external sector of the economy

via imported inflation. His study also indicated that pursuing a strong ringgit policy in the mid 1990's gradually appreciated the real exchange rate which in turn continued to weaken Malaysia's competitiveness and straining the balance of payments position.

3.4 A Generalized Uncovered Interest rate Parity Model - the United States Evidence.

The linkages between real exchange rates and fiscal balance was further explored by Adrian W.Throop(1993) of the Federal Reserve Bank of San Fransisco. His study examined the source of fluctuations in the United States exchange rate in the post 1973 flexible rate experience. His study identified several important factors in addition to real interest rate differentials that have altered the real exchange rate. These factors include productivity in traded and non-traded goods, the real price of oil and government budget balances.

3.4.1 Productivity Growth.

The flexible - price equilibrium will tend to change over time as a result of differential rates of productivity between traded and non-traded goods. Since productivity grows faster in the traded goods sector than in the non-traded goods sector, the relative price of traded goods falls over time. If the relative price of traded goods falls faster at home than abroad, then the real value of the home currency in terms of overall prices would rise even

though the real exchange rate in terms of traded goods prices remain constant. The theory of purchasing power parity suggests that the exchange rate should adjust to equalize the prices of traded goods at home and abroad in terms of the same currency. However even if purchasing power parity holds, the flexible price equilibrium of the real exchange rate in the uncovered interest parity model would vary over time according to differential productivity growth.

3.4.2 Budget balances

Another variable that was taken into account in the study was the fiscal policy variable. The study indicated that a country with high rate of investment relative to savings will tend to absorb more output than it produces., which will tend to put upward pressure on the prices of home traded goods relative to those of foreign traded goods. The study indicated that historically, private savings has been quite stable. In the 1980s and 1970s the United States government savings has fluctuated wildy. The author's hyphothesis was that a fiscal expansion in the form of large budget deficits or smaller surplus at home will increase the demand for home goods. Either a higher real interest rate or higher real value of the domestic currency, or some combination of the two   is necessary   to maintain the same level of aggregrate spending on home goods as before. However if the increased spending occurs on foreign goods a trade deficit occurs in tandem with a fiscal deficit. On balance widening of the fiscal

deficit will appreciate the real value of the currency and increase the level of real interest rates.

As the fiscal deficit continues to persist, the value of the domestic currency will depreciate. This occurs if there were a limit to the amount of home currency assets that foreigners were willing to absorb. Associated with the net import surplus resulting from the currency's appreciation is a net capital inflow into the home country. As a result, as foreigners increase their holding of home country's assets, the risk premium on them is likely to increase, driving a growing wedge between home and foreign country interest rates.

An important implication from the study conducted by the author is that the movements in the real exchange rate that are produced by changes in budgetary positions correspond to changes in the long-run flexible-price equilibrium of the real exchange rate in the uncovered interest parity model. The actual effect of budgetary changes on the exchange rate in the short-run will depend upon the character of market expectations. In particular, it is important to see if the market views changes in the budgetary position as permanent or temporary in the effective time horizon over which its expectations is formed, and the degree to which the risk premium can be expected to change as indebtedness changes. Although the very long-run effect of a persistent fiscal expansion would

appear to be one of depreciation in the real value of the home currency, the market may well expect an appreciation to result over its relevant time horizon.

3.4.3 Real price of Oil

The study also provided how price of oil affected the exchange rate. In the 1970's the real price of oil increased by 65% and by 70% in the late 1970's and early 1980's as a result of the actions of the OPEC cartel. In the mid 1980's the price of oil dropped by 50% as the cartel's power started to erode. The effects of oil price changes on the flexible price equilibrium value of real exchange rates between currencies of the oil-importing countries depend upon the effects on the goods markets of those countries. Following oil price increases, the less developed oil - exporting countries typically have temporarily invested the proceeds of higher oil export revenues in the capital markets of the developed oil-importing countries which in turn have lent much of these funds to other less developed countries. In this recycling process international capital mobility have been fairly high, so that it can be assumed that real interest rates in different countries would continue to be roughly equalized in flexible -price equilibrium. As a result and similar to the effects of the budget deficits, the effect of an oil price change on equilibrium exchange

rates of the oil-importing countries depends upon the relative effects on aggregate demand in those countries.

The study by the author indicated that a price increase by OPEC, in the first stage assume that all of OPEC's oil revenues are invested abroad. If the home country is less dependent upon imported oil than its industrialized trading partners, its import bill will increase but by less than theirs. The increase in the import bill will reduce aggregate demand, and so requires a reduction in real interest rates to maintain full employment equilibrium. The result is a decrease in the world real interest rates because of the increase in OPEC's saving and a real appreciation of the home currency (in terms of tradable goods prices). The currency of the foreign country, which is more dependent on imported oil than the home country, depreciates so as to allow it to export more to the home country in order to pay for its oil imports more cheaply.

Over a long-run, OPEC will gradually increase the proportion of oil revenues that are spent on foreign goods and services. This increases the demand for exports of both the home country and the foreign country in the model. But as long as OPEC does not have a much stronger preference for the goods of the foreign country compared with those the home country, the real appreciation of the home country's currency will not be undone. Thus, following an oil price increase it is likely that the market

will expect an appreciation in the flexible-price value of the real equilibrium exchange rates of those countries that are less dependent on imported oil.

3.4.4 Empirical evidence of the Generalized Uncovered Interest Parity Model

The time frame in the analysis was from 1974 to 1992 on a quarterly basis. The author used the log of the real exchange rate on a trade weighted basis against United States's ten major trading partners while the independent variables include the price of oil, United States budget balances and its trading partner's budget balances, real interest rate differentials, price of traded goods differentials and inflation differentials. The evidence indicated United States budget balance had the expected signs but the foreign budget balances had the unanticipated signs. The real interest rate differentials, the differentials of traded goods prices, oil prices and inflation differentials all had the anticipated signs or effect on the real exchange rate. The author also noticed that the variables in the model was cointegrated in the long-run and this was described by an error-correction model using the maximum likelihood estimation. The maximum Eigen-value was significant when the real interest rate differential was tested for it's cointegration with the trade weighted real exchange rate. The study also reflected that a one percent increase in the United States budget

deficit (as a percent of GDP) appreciated the trade weighted real exchange rate, while a one percent increase in the price of oil induced a point three percent appreciation of the trade weighted real exchange rate. The real interest rate differential if it increased by one percent induced a seven percent appreciation of the trade weighted real exchange rate. The author concluded by identifying the importance of keeping the fiscal budget on balance or in a surplus in order to avoid a deficit in the trade balance following the appreciation of the real exchange rate.

3.5 Real Exchange rate, its determinants and significance to the macro economy - The Malaysia Evidence.

A study conducted on the Malaysian real exchange rates (Tan Eu Chye, 1995), was very significant in providing answers to Malaysia's exchange rate regime. His study was to assess the fundamental determinants of real bilateral exchange rates of Malaysia vis-a-vis the United States dollar. The objective was to see if Malaysia has been maintaining a competitive undervalued exchange rate environment that probably has contributed to its economic development. The second part of his study was to assess the assumption that real exchange rate movements have a bearing on macro economic performance. This is achieved by verifying whether rapid exports and economic growth achieved by Malaysia have been influenced by exchange rate movements.

In the author's study the long-run equilibrium exchange rate function was estimated by using the Johansen procedure. The dependent variable was the real exchange rate of Malaysia, while independent variables include the terms of trade- expressed in the ratio of unit value of exports to unit value of imports, federal government consumption as a proportion of national income - proxied by total expenditure of the federal government as a proportion of nominal GDP, the ratio of total import duties collected to total retained imports and the ratio of total imports of investment goods to nominal GDP as a proxy for technological progress and/or rate of capital accumulation. The author indicated that the priori expected signs of coefficients as positive or negative for all the independent variables with the exception for the coefficient for ratio of total import duties which is expected to be negative.

To avoid the problems of spurious regressions, all the variables involved have been subjected to unit-root tests which indicated that all the variables, considered in their long-run estimates are integrated in the first order. The author used the sample period from the third quarter of 1975 to the final quarter of 1987 with a provision for two lags. No serious serial correlation and normality problems arise with the use of this number of lags. Based upon the trace and maximal eigenvalue statistics, the null hyphothesis that one cointegrating vector exists can be upheld. A

weak exogeneity test conducted on the independent variables suggests that the null hyphothesis of weak exogeneity is valid at the 5% significance level. The empirical evidence indicated that the terms of trade improvement and trade restrictions seem to have an appreciating effect on the real exchange rate, the extent of the government's fiscal involvement in the economy and the ratio of total imports of investment goods to nominal GDP seem to yield a depreciating impact on the exchange rate. The author also indicated in his study that there was no evidence of a sustained overvaluation or under valuation of the Malaysian exchange rate over the entire sample period as years of overvaluation and under valuation can both be found as highlighted by the residuals of the cointegrating vector. All this constitutes the evidence that Malaysia has not followed a deliberate policy of under valuation at all times to arrive at its present stage of economic development.

The author also further investigated the short-run dynamics of the model. Variables in this short-run dynamic model included excess domestic credit and excess money supply used interchangeably as a monetary policy variable and the change in the total debt of the federal government relative to nominal GDP as an indicator of the fiscal policy stance of the government. The empirical evidence pointed that the monetary policy variable does not seem to influence the real exchange rate in the short-

run, however the fiscal policy variable seems to yield a contemporaneous influence on the exchange rate causing the rate to depreciate, though the magnitude of influence is rather small estimated at about 0.03. However it is more interesting to note from this study that expansive monetary and fiscal policies do not affect real exchange rate movements as popularly conceived.

The author also further investigated into real exchange rate movements and the its impact on the macro economy. Variables that were included to gauge the macro economic performance were real GDP and real exports. The econometric estimation used was the Sim's VAR technique. The empirical evidence indicated that there does not appear to be any causal relationship existing between real exports and real GDP on one hand and real exchange rates on the other. To further verify that there was no relationship actually exists between real exchange rate movements on one hand and exports and economic activity on the other, Granger causality tests was also conducted on a bivariate basis. The tests confirmed that the real exchange rate has no causal relationship at all with real exports and real GDP. The author concluded in his study that Malaysia's economic growth and development performance cannot so far be ascribed to real exchange rate management.

The study also indicated that periods of under valuation and over valuation rather than under valuation alone have been witnessed in the nation's past let alone the empirical reality that no relationship have actually existed amongst real exchange rates, exports and income. The empirical estimates reveal that though terms of trade and trade restrictions have a appreciating influence on the real exchange rate, federal government expenditure and imports of investments goods both relative to nominal GDP have a depreciating influence on the real exchange rates in the long-run. Assuming that these long-run relationships indeed hold, evidence is not found of any sustained overvaluation or under valuation of the real exchange rate over the period 1975 through 1987. Further more, the very fact that a cointegration exists would suggests that there has been no exchange rate misalignment in the case of Malaysia. Perhaps it can be concluded that it has not been a deliberate policy of Malaysia to maintain an undervalued position for its currency in its development pursuits. In assessing influence of short-run macro policies, namely the monetary policy as proxied by excess domestic credit and excess money supply and fiscal policy as proxied by total debt of federal government relative to nominal GDP has turned out to be insignificant short-run determinants of the real exchange rate. The study also indicated that linking real exchange rates to economic performance via real exports has not been significant. Finally the author

indicated in his study that exchange rate policy is insignificance to national economic development from a macro perspective instead it is important to have a industrial or structural development policy.