CHAPTER IV

RESEARCH RESULTS AND ANALYSIS

4.1 Summary of Data

Before analyzing the empirical evidence and discussing the research results, Table 1 shows the summary of the ten sets of data chosen for the study. A full description of the data is shown in Appendix A.

Table 1: Summary of Data Analysis

Year	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}
1986	16,539	9,947.00	13,957	125.8	125.8	4.13	1.63	98,214	99.8	94.2
1987	19,432	10,455.00	15,684.90	126.8	118.8	2.68	2.03	102,973	82.8	94.9
1988	18,328	11,661.20	17,729.70	130	135	3.49	2.15	111,844	90.8	97
1989	21,660	14,993.40	21,104.90	133.7	148.8	5.29	1.88	114,474	96.1	103.3
1990	27,025	18,501.30	23,725.30	100	100	6.12	2	119,628	100	100
1991	30,452	22,050.10	26,792.30	88.9	83.9	7.27	2.17	131,044	101.7	105
1992	47,196	24,745.00	30,136.70	93.1	91.2	7.66	2.09	136,138	95.5	106.4
1993	76,435	27,564.20	41,513.00	96.4	75.5	6.48	2.41	145,615	91.2	107.1
1994	68,172	39,445.20	47,215.70	137.8	112.4	3.68	2.56	151,665	92	107
1995	63,769	47,330.80	53,293.30	103.4	127.1	5.5	2.47	171,544	95	100.1
1996	70,014	64,559.40	62,398.80	107	141.1	6.41	2.18	188,147	102.3	101.9
1997	59,123	82,896.10	63,290.10	109.9	156.1	6.41	2.99	204,283	106	94.1

where: X1= International Reserves of Malaysia (billions of RM)

X_2 = Reserve Money of Malaysia (billions of RM)

X_3 = Money Supply in Malaysia (currency + demand deposits)

X_4 = Consumer Price Index in Malaysia (1990=100)

X_5 = Industrial Production Index in Malaysia (1990=100)

X_6 = Interest Rate in Malaysia

X_7 = Exchange Rate defined as RM / Yen

X_8 = Money Supply in Japan (currency + demand deposits)

X_9 = Industrial Production Index in Japan (1990=100)

X_{10} = Consumer Price Index in Japan (1990=100)

4.2 Research Results

4.2.1. The Empirical Results of the Balance of Payments Analysis

Based on the model discussed in the research methodology, the model for the balance of payment analysis is written as below:

$$\left(\frac{R}{H}\right) gR_t = \beta_1 gP_t + \beta_2 gy_t + \beta_3 \left(\frac{D}{H}\right) gD_t + \beta_4 ga + \beta_5 gi_t + u_t$$

where

u_t = random disturbance term

and

$g_x = \ln X_t - \ln X_{t-1}$ for $X = R, P, y, i, D, a.$

As mentioned earlier the random disturbance term or also known as the error term represents all those factors that affect the international reserves but are not taken into account explicitly.

The expected signs for the coefficients are that:

$\beta_1 = \eta_0 > 0$; $\beta_2 = \eta_1 > 0$; $\beta_3 < 0$ and close to -1; $\beta_4 < 0$ and close to -1;

$\beta_5 = \eta_2 < 0$.

Malaysia is a country that has adopted a system of managed floating exchange rate since June 1973. In a system of controlled floating, the Bank Negara that acted on behalf of the government determines whether disturbances are to be corrected with changes in the balance of payments or the exchange rate or some combination of the two.

Estimating model 1 for the annual period of 1986 to 1997 thus yielding 12 observations, the results of the regression is shown in Table 2 and Table 3. Bear in mind that the domestic money multiplier, the ratio M/H (i.e. a) is not constant as that in the fixed exchange rate system due to the intervention of the monetary authority in the foreign exchange market to influence the exchange rate. A full description of the results using SPSS is shown as Output 1 in appendix B.

Table 2: Summary of the Balance of Payments Regression

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Durbin - Watson
1	.969[a]	.940	.890	7707.0693	2.648

Table 3: Summary of the Balance of Payments Coefficients

Model		Unstandardized Coefficients (B)	t	Sig.
1	(Constant)	115.716	3.019	.023
	β_1 (P)	.105	.504	.632
	β_2 (y)	.281	2.371	.055
	β_3 (D)	-1.539	-6.682	.001
	β_4 (a)	-1.072	-5.950	.001
	β_5 (i)	-.127	-.061	.953

a. Predictors: (Constant), β_1, β_2, β_3, β_4, β_5.
b. Dependent Variable: Y

where Y = International Reserves

β_1 (P) = consumer price index

β_2 (y) = industrial production index

β_3 (D) = reserve money of Bank Negara (H) - international reserves (R)

β_4 (a) = money multiplier (M/H)

β_5 (i) = interest rates (3-month Treasury Bills)

From the tables above, the results of the regression were:

$$\left[\frac{R}{H}\right] gR_t = 15.72 + 0.105gP_t + 0.281gY_t - 1.539\left[\frac{D}{H}\right] gD_t - 1.072ga - 0.127gi_t$$

$$(38.33)\quad(0.208)\qquad(0.118)\qquad(0.230)\qquad(0.180)\quad(2.064)$$

$$t = (3.019)\quad(0.504)\qquad(2.371)\qquad(-6.682)\qquad(-5.950)\quad(-0.061)$$

R^2 = 0.94 F (5,6) = 18.74 D-W = 2.648

(Number in parentheses is standard error)

The results obtained from the estimation, R^2 indicated that about 94 percent of the variance in the international reserves variable was explained by the regression whereas the F-statistic further proven the significant at the 0.001 level of significance. The result also shows that all the coefficients had the correct signs and were significant at least at the 10 percent level of significance. Unfortunately not all of the coefficients that have the right sign were significant.

The D-W or Durbin Watson statistic indicated that first order autocorrelation was not a problem in the regression. Another problem is since regressions involving time series data include the possibility of obtaining spurious or dubious results in the sense that superficially the results look good but on further probing they look suspect, Granger and Newbold have suggested a good rule of thumb to suspect a spurious regression which is when R^2 > D-W. Therefore, as the result shows that D-W is more than R^2 (2.68>0.94), then the regression above does not suffer from spurious regression.

As expected the price elasticity of money demand ($\beta_1 = \eta_0$) had a positive sign and from the results, a 1 percent increase in the price level would generate a 0.1 percent inflow of international reserves. This is because a 1 percent increase in the domestic price level will reduce real money balances or increase the demand for nominal balances by 0.1 percent. Given the initial money stock, there is an excess demand for money, which in turn generate an inflow of reserves just sufficient to restore real money balances back to equilibrium. Once this is achieved the flow of reserves will cease.

The income elasticity of money demand ($\beta_2 = \eta_1$) also showed a positive sign indicating that a 1 percent increase in income growth would generate a 0.28 percent inflow of reserves. According to the literature, the growth in income is associated with reserve inflows. The reason argued is that a 1 percent increase in income will generate a η_1 percent increase in the demand for money, which will result in an excess demand for money. An excess demand for money means a rise in nominal money stock that causes disequilibrium in the money market. An inflow of reserve will hence eliminate the excess demand when equilibrium is reached.

The estimate for the domestic credit variable was significant at 0.1 percent level. Having the expected negative sign of β_3 = -1.54, it implies that increase in this variable leads to increase in the money supply. However, since the demand for money is unaffected, there is an excess supply of money in the economy. This excess supply is eliminated by an outflow of reserves enough to restore the money stock to its previous level.

The control of the domestic component of the monetary base played an important role in the external balance of Malaysia. The implication of this is that in an open economy especially for a small country like Malaysia, any monetary policy of changing the money supply to induce changes in the domestic economy would not be effective since reserve flows would eliminate the excess or shortage of money.

The estimate for money multiplier was significant at the 0.01 percent level of significance. The results indicated that a 1 percent increase in money multiplier would generate a 1.07 percent outflow of reserves. The explanation for this is that an increase in the money multiplier will increase the stock of money in the economy. Other things being equal, this implies that money balances are arising faster than the rate at which residents want to accumulate money balances. This leads to a reserve outflow just sufficient to regain money market equilibrium.

Finally, the interest elasticity of money demand had the right sign implying a 1 percent increase in the interest rate would generate a 0.13 percent outflow of reserves. However the coefficient for the interest rate was insignificant. At 10 percent significance level, the T statistic stated a value of only 0.061 percent.

Since the monetary approach assumes a high degree of integration in the asset markets, this means movements in the domestic interest rate reflect similar movements in the world interest rate. Thus the interest elasticity of demand for money, η_2, in this context would be a negative value. An increase in the interest rate will lead to a reduction in the demand for money. At this point of time residents prefer to save money to earn a higher return.

For testing the null hypothesis:

H_0: The BOP is not a monetary problem

From the analysis of variance (ANOVA), the F value is:

$$F = \frac{1113.162}{59.399} = 18.74$$

If $F > F_\alpha(k - 1, n - k)$, reject Ho; otherwise fail to reject it.

Using the 5 percent level of significance, the critical F value for 5 and 6 degrees of freedom:

$F_{0.05}$ (5, 6) is 4.39

Since the computed F value is more than $F_{0.05}$ (5, 6), it is obvious that the F value is significant, and hence rejects the null hypothesis.

Based on the above testing, it shows that the balance of payment is a monetary problem.

4.2.2 Summary of the Balance of Payments Analysis

The conclusion of the empirical evidence is that the results showed strong support to the monetary approach. Although the interest rate variable was insignificant, the other coefficients conformed to the predictions of the monetary approach. The coefficient variables also had the postulated signs at least at the 10 percent level of significance.

Although the equation is derived base on the assumption of a fixed exchange rate system, the empirical evidence has somehow strongly support the monetary model. One main reason could be that Malaysia was following a managed floating system that pegged its currency to the US dollar. A general rule to remember is it needs to match an international system with its domestic monetary policy, which may result into conflicts that lead to crises and breakdowns. A pegged rate is an arrangement whereby the monetary authorities or the central bank intervenes in the exchange market to peg the exchange rate but still keeps an independent monetary policy.

The implications for the monetary authority if the monetary model is an accurate description of the balance of payments are quite clear. The monetary authority in Malaysia can minimize the impact of reserve flows on the economy by controlling the domestic component of the monetary base namely the M1 and M2. Not only that, the authority could also speed up the adjustment process by manipulating the base.

In an open economy as practiced by Malaysia, the monetary policies that can be pursued are restricted by the potential flow of reserves. This is because expansionary or contractionary monetary policies to combat inflation and unemployment can become ineffective due to reserve flows. For example if

Malaysia pursues a policy to reduce unemployment, it means it has to encourage spending by increasing the money supply and reduce interest rates in the country via the monetary policy. However by doing these, the policies could lead to increase in the reserves outflow and cause a deficit in the balance of payments.

The impact of changes in "real" variables that can cause a potential balance of payments deficit can be minimized by the appropriate manipulation of the monetary base. Thus if there was slow growth rate in Malaysia in a given period, the potential balance of payment deficit could be avoided through a tight monetary policy.

Since the monetary approach aggregates the current and capital accounts, through integrating these accounts and focusing on the demand and supply for money and their consequent influence on reserve positions, Malaysia can maintain a negative current account balance yet promote balance of payments stability through attraction of capital inflow. In other words, even though Malaysia has had a continuous current account deficit, monetary policies that generate confidence in the stability of economy can still attract foreign capital, which would generate a reserve inflow sufficient to offset the negative current account balance.

If Malaysia's goal is to acquire international reserves, she must control the growth of the domestic component of her monetary base. This is because a relatively faster growth in monetary base would induce the outflow of reserves from Malaysia. This will allow policy makers to formulate policy for the country by watching the growth rates in the money stock of other relevant countries specifically the United States and Japan.

Finally, the success of the empirical results for Malaysia suggests that the monetary approach has provided a relatively simpler method for the Monetary Authority to evaluate their results. The main reason is the model requires data on relatively fewer variables that are more readily available than some other models.

4.2.3 The Empirical Results of the Monetary Approach to the Exchange Rate

A. The Exchange Rate Equation Under A Perfect Flexible System

To examine the empirical results of the exchange rate, using the exchange rate model shown below:

$$e = \beta_1\left(\frac{m_t}{m^*_t}\right) + \beta_2 y_t + \beta_3 y_t^* + \beta_4 \ m_t + \beta_5 \ m_t^* + u_t \qquad (2)$$

where it is expected that

$$\beta_1 > 0; \ \beta_2 = \frac{-\eta}{1+\varepsilon} < 0; \ \beta_3 \frac{\eta}{1+\varepsilon} > 0; \ \beta_4 = \varepsilon k > 0; \ \beta_5 = -\varepsilon k^* < 0.$$

The variables are defined as:

e = exchange rate, quantity of RM per yen
m, m*= currency and demand deposits
y, y* = industrial production index (1990 = 100)
u_t = normal distributed error term

The asterisk * denotes the foreign country and in this case, it refers to Japan.

The equation above was estimated for the period of 12 years from 1986 to 1997. In this analysis, Malaysia will be the home country while Japan is chosen to be the foreign country. As mentioned earlier Japan was chosen because Malaysia is closely involved with the Japanese market as it exports to Japan is the third largest (1998 - 10.5%) while the imports is the highest (1998 - 19.6%).

The equation was estimated using the linear regression analysis and the computer program was the SPSS Package. Before discussing the results, I would like to examine the relationship between Malaysia's money and income variables with that of Japan. Table 4 shows the correlation between the money and income variables for Malaysia and Japan. This correlation measures the strength or degree of linear association between the two variables for both countries.

Table 4: Money Income Correlations

	Money (M'sia)	Money (Japan)	Income (M'sia)
Money (M'sia)	1	0.984	0.325
Money (Japan)		1	0.344
Income (M'sia)			1

From the results above, it seems that there is a positive or a direct relationship between the money supply in Malaysia and the money supply in Japan. A 0.984 correlation explains a strong association between the two variables. A positive relationship is also shown between Malaysia's income and its money supply as well as Malaysia's income and Japan's money supply. Both have correlation a value of +0.325 and +0.344 respectively. However the values are rather moderate.

In estimating the equation (2), the results obtained was

$$e_t = 2.348 + 4.479\left(\frac{m_t}{m^*_t}\right) + 0.000411y_t - 0.109y_t^* - 0.106\ m_t - 0.0486\ m_t^*$$

$$(1.639)\quad (1.466)\qquad (0.004)\qquad (0.017)\quad (0.120)\qquad (0.29)$$

$R^2 = 0.650$ F (5,6) = 2.23 D-W = 2.266

The results obtained indicated that about 65 percent of the variation in the exchange rate variable was explained by the regression. Only β_1 conformed to the predictions of the monetary model. β_1 had the right sign and was significant at the 1 percent level of significance with the T statistic value of 3.055.

The income variables (y_t and y_t^*) were not significant. The value of each T statistic was 0.883 and 0.168 respectively. The expectations variables (m_t and m_t^*) also showed insignificant and m_t had the wrong sign. The evidence proved that it did not lend support to the monetary approach as expected. Table 5 and Table 6 describe the summary of the results. A detailed description of the results using SPSS is shown as Output 2(a) in appendix B.

Table 5: Summary of the Exchange Rate Regression

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Durbin - Watson
1	.806[a]	.650	.359	.2843	2.266

a. Predictors: (Constant), y_t, y_t^*, m_t/m^*_t, m_t, m_t^*

b. Dependent Variable: e_t

Table 6: Summary of the Exchange Rate Coefficients

Model	Unstandardized Coefficients (B)	t	Sig.
1 (Constant)	2.348	1.433	.202
m_t/m^*_t	4.479	3.055	.022
m_t	-.106	-.883	.411
m_t^*	-0.0486	-.168	.872
y_t	0.000411	.115	.912
y_t^*	-0.0109	-.655	.537

Since the results do not lend support to the monetary model, some important points needed to clarify the situation. Firstly, the exchange rate equation estimated above was derived under the assumption of a perfectly flexible exchange rate regime. As mentioned earlier since Malaysia was following a policy of managed floating starting in 1973, hence the model derived may not be an accurate description of the exchange rate system practiced in Malaysia then. In a system of a managed floating there may have some degree of intervention of the monetary authorities to meet certain target level of the country's currency.

Secondly, since the monetary model is a long run equilibrium model, the 12 yearly data considered may not be sufficient enough to measure for the long run equilibrium model. The reason is that the adjustment process has not been fully worked out. Moreover, imposing the conditions of monetary equilibrium, goods market equilibrium and purchasing power parity for traded goods to derive the model may not hold for the 12 years period and therefore exchange rates can depart from the prediction.

In the exchange rate equation it was postulated that current and lagged changes in the money supply would reflect asset holders' expectations of future changes in money supply that influenced their behavior and which consequently affected the exchange rate. Henceforth the implication of this causality to managed floating system resulted from the change in money supply to the exchange rate.

As an example, consider the Malaysia's situation, due to some exogenous shock it causes the exchange rate to depreciate. Realizing this, the monetary will take action by allowing it to depreciate only to a certain target level as a way to protect the increase in the price of imports. This implies that at this target rate there is still a low demand for its money and this results in an outflow of international reserves and hence a reduction in the money supply. As a result of this the change in the home money supply and the exchange rate are negatively correlated.

Moreover, it is assumed that asset holders have an incentive to gather information on the process that generates the variable they want to forecast. If they observe the current or past money supply to decrease, they will confidently assume that in a system of managed floating, it is possible that the exchange rate has not depreciated to its market equilibrium level.

If they further assume that the monetary authorities may not be able to hold the rate at its artificially high rate for an extended period of time they would expect the exchange rate to continue to depreciate. Their reaction would be to sell off the home currency now as to avoid higher losses later on. The consequent of their action would be putting an extra pressure for the home currency to depreciate further. This was the phenomenon that occurred in Malaysia in the 1997 currency crisis.

Given the above reason, current or lagged changes in the money supply will yield a "wrong" sign in the estimation of the equation as those variables may be capturing the effects of managed floating. In order to include the reaction functions of the monetary authorities and the asset holders, assume that asset holders expect money supply to decrease next period and their expectations are accurate, i.e.

$$E_t(\ m_{t+1}) = \ m_{t+1}$$

According to the monetary model, this would cause asset holders to behave in such a way that the exchange rate would appreciate. Estimating the model again using m_{t+1} and the same procedure, the results were

$$e_t = 3.847 + 4.601 \left(\frac{m_t}{m^*_t}\right) - 0.02797y_t - 0.209y_t^* - 0.08298\ m_{t+1} - 0.0420\ m^*_{t+1}$$

$R^2 = 0.786$ $F(5,6) = 4.407$ D-W = 2.847

The results indicated that about 79 percent of the variance in the exchange rate variable was explained by the regression. Again only β_1 conformed to the predictions of the monetary model. β_1 had the right sign and was significant at the 1 percent level of significance. The estimated coefficients of the expectations variables were insignificant. The T statistic for β_4 is -1.014 and for β_5 is -1.846. The income coefficients were also insignificant. The summary of the results is shown as Table 7 and Table 8. A much-detailed result is shown as Output 2(b) in appendix B.

Table 7: Regression of the Modified Exchange Rate Model

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Durbin - Watson
1	.887[a]	.786	.608	.2223	2.847

c. Predictors: (Constant), y_t, y_t^*, m_t/m^*_t, m_t, m_t^*

d. Dependent Variable: e

Table 8: The Coefficients of the Modified Exchange Rate Model

Model	Unstandardized Coefficients (B)	t	Sig.
1 (Constant)	3.847	2.555	.043
m_t/m^*_t	4.601	3.913	.008
m_t	-.08298	-1.014	.350
m_t^*	-.04204	-1.846	.114
y_t	-.02797	-.846	.430
y_t^*	-.209	-1.554	.171

When testing the null hypothesis:

H_0: The exchange rate is not a monetary problem

From the analysis of variance (ANOVA), the F value is:

$$F = \frac{0.218}{0.0494} = 4.407$$

If $F > F_\alpha(k - 1, n - k)$, reject Ho; otherwise fail to reject it.

Using the 10 percent level of significance, the critical F value for 5 and 6 degrees of freedom: $F_{0.10}$ (5, 6) is 3.11

he computed F value is more than $F_{0.10}$ (5, 6), it is obvious that the F value ficant, and hence rejects the null hypothesis.

on the above testing, it shows that the exchange rate is a monetary n.

The results from the equation provided at least a modest empirical support monetary approach model. The conclusions that can be drawn are more similar to that in the balance of payments section. It can be said that the ce suggests that the monetary authority where in the Malaysia's case will Bank Negara, cannot formulate monetary policy according to domestic erations only.

The Bank Negara must realized the consequences of manipulating the ' supply which are first, other things being equal, it causes a stock ilibria in the money market that generates a stock adjustment process in turn will affect the exchange rate. Second, it will affect the expectations set holders, as the movements in the exchange rate will reflect their ior as they observe the monetary authorities formulate the policy.

Although the modification of the expectations variable did lend support to onetary model predictions, using the same equation for a managed floating n is still not appropriate. This will be examined on the next part of the sis.

B. The Exchange Rate Equation and Managed Floating System

Under a system of perfectly flexible exchange rates, the money supply is exogenous to the system because of the change in international reserves is zero. A simple reason is that in this type of system, the monetary authorities acting on behalf of the government is not allowed to intervene. However, in a system of managed floating, the foreign component of the monetary base is endogenous. This is because the monetary authorities will allow some changes in international reserves to offset wide fluctuations in the exchange rate. Hence the monetary authorities will allow a combination of exchange rate movements and changes in international reserves in the adjustment process.

Based on the above discussion and in the literature review, it implies that the existing or present exchange rate equation used is inadequate and may not apply to a managed floating system. Using the ordinary least square method of estimation is inappropriate because the estimators are inconsistent and biased due to the error term is correlated with some of the explanatory variables in the existing model. Thus the solution will be indeterminate.

To eliminate the problem above, the endogeneity of m_t and gR_t must be taken into account and are included in the existing model, which yields

$$e_t = m_t - m^*_t - \frac{\eta}{1+\varepsilon} y_t + \frac{\eta^*}{1+\varepsilon} y_t^* + \varepsilon kga_t + \varepsilon k\left(\frac{R}{H}\right)gR_t + \varepsilon k\left(\frac{D}{H}\right)gD_t - \varepsilon k^* \; m_t$$

Using the two least square method of estimation on the equation that is available in the SPSS computer package, the results obtained were

$$e_t = 1.504 - 0.000029m_t + 0.000016m^*_t - 0.004y_t - 0.0197y_t^* + 0.919ga_t + 0.000024\left(\frac{R}{H}\right)gR_t + 0.000024\left(\frac{D}{H}\right)gD_t - 0.005 \; m^*_t$$

$R^2 = 0.819$ $F = 1.7$

In examining the above results, the coefficients with the right signs were ga_t, gD_t, gR_t and m^*_t while others m_t, m^*_t, y_t and y^*_t were not only having the wrong signs but the T statistics were also insignificant. The main reason could be due to the sample size (12 years) is not large enough to estimate the model more precisely. However note that the money supply variables that are under the control of monetary authority (ga and gD) have a direct relationship with the exchange rate. Since the coefficients for these variables have the correct signs, this implies that if the monetary authorities increase the amount of domestic credit and thus the stock of money in the economy, asset holders will interpret this to be a future trend and hence behave in such a manner describe earlier, which in turn cause the exchange rate to depreciate.

Another reason could be due to the existence of multicollinearity problem. This is shown by the value of R^2, which is very high, but none of the conventional t test is statistically significant. An evidence to show that there is a sign of multicollinearity. Since the sole purpose of the regression analysis is prediction, then multicollinearity is not a serious problem as the higher the R^2, the better the prediction.[5] Furthermore the F test is significant at 36 percent level of significance.

Therefore, the results obtained from this model of estimation do support the predictions of the monetary model.

The summary of the results is shown in Table 9 and Table 10 and the full description can be seen in appendix B shown as Output 3.

Table 9: Regression of the Managed Floating Exchange Rate System

R	R Square	Adjusted R Square	Std.Error of the Estimate
.905	.819	.337	.2889

[5] Refer to Damodar N.Gujarati for a thorough discussion in his book,"Basic Econometrics", pp.330-335.

Table 10: The Coefficients of the Managed Floating Exchange Rate System

Variable	B	T	Sig.T
(Constant)	1.504	0.344	0.753
m_t	-0.000029	-0.524	0.637
m_t^*	0.000016	0.641	0.567
y_t	-0.004	-0.620	0.579
y_t^*	-0.019	-0.841	0.462
R_t	0.000025	0.588	0.598
D_t	0.000025	0.715	0.526
a_t	0.919	0.491	0.657
m^*_t	-0.005	-0.153	0.888

4.2.4 Summary of the Exchange Rates Analysis

In this section, I have tested the predictions of the monetary approach to the exchange rate for Malaysia. The analysis conducted was for the period of twelve years starting from 1986 to 1997, which as well analyzed the determinants of the exchange rate. On the first part of the analysis, to derive the equation it was assumed that Malaysia was having a perfectly flexible exchange rate system. The results obtained suggested that since Malaysia was following a managed floating policy, the choice of current and lagged changes in money supply as a reflection for expectations of future movements in the exchange rate may not have been appropriate. To correct for this, the equation was amended using the next period's change in money supply as a measure of expectations.

The results in this case were consistent with the predictions of the monetary model in such a way that both the expectations terms had the right signs. In the second part of the analysis, due to the presence of managed floating, the equation was again amended to take into account the endogeneity of the foreign component of the monetary base. The results obtained from this model were still consistent with the predictions of the monetary model although three of the coefficients had wrong signs. The reason for this circumstance was identified and explained in the analysis.

The results indicated that the money supply variables and the expectations variables played a significant role in the determination of the exchange rate even in the short run. There are two important factors need to be considered by the monetary authorities in formulating and implementing its policies. Firstly, exchange rate changes have real effects on the economy and thus any formulating of policy by the monetary authorities should be done cautiously. This is because changes in the money supply will affect the expectations of the asset holders whose behavior will affect the exchange rate.

Secondly, in a system of managed floating, the exchange rate can be used as a policy instrument since the authorities can influence the extent of exchange rate movements by its influence on the money supply. Hence, the stability of the exchange rate depends on the coordination of monetary policy between national governments. However in the Malaysia's 1997 crisis, this was not seen to be the best method used to stop Ringgit (RM) from depreciating. The better policy saw by the Malaysian government to correct the situation was to adopt back the fixed exchange rate policy regime.