



CHAPTER 5 CONCLUSION

As Mexico was one of the most outstanding countries in Latin America, the Mexican had had an elegant dream since in the President Carlos Salinas de Gortari's period, despite the fact that Mexico had huge current account deficit and 1% of growth rate which was the smallest in the world, the president for years had told the Mexican that national prosperity was possible to access. Overnight, there were a change from the former President. The Mexican was awaiting for the coming luminous future. Zedillo's task was just to extend the benefits from modernization to all Mexicans. But only few weeks after Zedillo became the Mexican president, the Mexican has been shocked because of the reversal of the future. With the slashed wages, the Mexican's dreams of prosperity have been dashed.

The main idea of Zedillo's devaluation policy is to put a lid on imports and domestic demand while letting the Peso devaluation to spark export-led growth. However, this policy already destroyed Mexican's dream as well as created the suspicion in the future of Mexico under the leading of this new president. Furthermore, there is also the forecasting about the future of NAFTA, the economic integration between countries that have great differences in terms of economic structure.

Since that time, Mexico has shifted from certainty to a risky developing country in the eyes of foreign investors. Although the investors are able to foresee benefits getting from lower costs, multinationals are worry about the sudden uncertainty they experienced in Mexico.

With globalization, this January currency crisis in 1994 also has affected on financial markets all over the world, particular the emerging market. It triggers attention of the public to consider the stability of their national currency as well as the currencies in the developing countries, including Thai Baht.

The analysis by foreign researcher, *Dr. Jim Walker from Credit Lyonnais Securities*, Hong Kong, published in Asia Morning Line, stating about the position of Indonesia, Malaysia, the Phillipines and Thailand which might cause financial problems in the Asia region, especially the Phillipines and Thailand. This only one page paper brought about the Baht devaluation rumor and finally a turmoil in Thai financial market.

After the distribution of this paper, the rumor about Thai Baht devaluation was spreaded and led to panic of the foreign investors. The foreign and some domestic investors pulled money out of Thai market and transfered to a strong currency as well as changed port of investment from Thailand to riskless ports such as Singapore. Thai stock exchange index dropped sharply and Baht tended to depreciate. Although the executives both in the public and private sectors tried really hard to stop the panic, it did not work.

What happened in Thailand in early 1995 was very severe, In spite of that event, a devaluation did not occur. If the rumor becomes true, it is really hard to imagine. Although the Bank of Thailand refused the statement in that analysis and confirmed the differential between both countries. Lot of efforts have tried to seek for the answer of the question that whether Baht will be devalued. This is one of those attempts to estimate the probability of Thai Baht devaluation.

The primary purposes of this study are, first, to establish an empirical model that is appropriate to predict devaluation of Thai Baht, and second, to seek for the answer that recently Thai Baht has to be devalued or not.

To see when Baht will be devalued and have the new exchange rate, set by the central bank, the model, established by Herminio Blanco and Peter M. Garber was applied to predict the devaluations in the past. If the three devaluations in the past (1981 and 1984) occurred when predicted by the model and the new exchange rate which is computed by the model is close to the rate materializing during the devaluation period, this model will be able to observe a change in devaluation probability when

exogeneous variables change. Then “*Forecasting Devaluations of Thai Baht*” is possible.

Thailand has increasingly opened to the world over time. As a result, there is a dramatic increase in economic transactions-trades and finances-which have been engaged by both residents and non-residents. The role of exchange rate has become more important since transactions in Thailand are mostly provided for only Thai Baht. So the fluctuation of Baht implies either gain or loss in business.

The stability of currency is closely related to BoP situation as well as the surplus or deficit position of BoP highly depends on the movement of the exchange rate. Besides reflecting the stability of economy, the exchange rate also influences imports and exports which directly affect the situation of trade account, current account and BoP respectively. On the other hand, imbalance of BoP impacts the stability of domestic currency through either increase or decrease of international reserves. Hence a country with a persistent balance of payments deficit will finally be unable to peg the exchange rate forever. Particularly, when capital is internationally mobile, the collapse of the fixed exchange rate is typically sparked by a severe balance of payments problem in which speculators occur.

For instance, if the exchange rate is pegged only through direct intervention in the foreign exchange market, the government’s international reserves will gradually decline. Before the international reserves reach some lower bound, there suddenly is a speculative attack which will rapidly alter domestic currency to acquire a large portion of the central bank’s foreign reserves stock. So that it will eliminate the last of the reserves. The government can not stabilize exchange rate any longer and ultimately abandon the current exchange rate.

Since the exchange rate stabilizing requires the control of a nominal price (according to Purchasing Power Parity), the government can sustain a pegged exchange rate by controlling money supply. The excessive domestic money supply will cause the reduction of the price of domestic currency due to the market mechanism. To prevent depreciation of

domestic currency, the government has to supply foreign currency through the foreign exchange market in order to stop demand for foreign currency.

In Thailand, economic growth seems to be the primary goal. This implies that the government tries to operate any thing to prevent from economic recession. Then the economy can not avoid from external disequilibrium. Finally if the requirements to finance the external deficit and to support the current exchange rate exceed some limit on the central bank's resources, the current exchange rate will be relinquished. The devaluation policy, therefore, is a policy that maintain conditional on fulfillment of other primary policies.

Obviously, in a country with imperfect capital mobility, preference to fulfill the goal of economic growth, the external balance, however, can not be attained through the private international capital markets. Since, suppose a trade account deficit, reserves will be used to pay out the external debts and money supply will decline. As a result, the deflation will rise interest rate and bring money back. Ultimately, the payment disequilibrium will be got rid of. However, the too high interest rate will reduce investment and lower aggregate demand. The government, thus, have to intervene to prevent the operation of the automatic adjustment mechanism which sometimes leads to a protracted recession of economy. It, therefore, keeps the economy off a payments equilibrium. This situation may be impossible to sustain over extended periods of time since the international reserves will continually decline. As a rational agent, the people will change from holding domestic currency to hold foreign currency because of profitable expectation and currency distrust.

Although international reserves in Thailand increases by an average of 400 million US\$ per month; presently, international reserves at the Bank of Thailand has also increased nearly ten-fold from 3.8 billion US\$ in 1986 to 35 billion US\$ in 1995, which is able to finance 7 months value of imports. In case of Balit, according to empirical regularities, there, however, is a possibility that BoP problem will become a crisis in which international reserves reach some critical lower level, e.g. in Mexico before the collapse of Peso, the international reserves of Mexico was 29 billion US\$ in 1994 but it declined to 7 billion US\$ in the late of 1994

since the occurrence of unpredictable disturbances, caused the January crisis. If there is something destroy the confidence in Baht--e.g. political reasons or unpredictable disaster etc., BoP problem may turn to be more serious. Owing to the freely capital mobilization, the unexpected movement of short term capital out of economy will immediately deplete international reserves, while Baht is always expected to depreciate, observing from forward premium on Thai Baht, there is eventually no longer effort to maintain the current exchange rate.

The devaluation model is a result from the speculative attack literature. The building blocks of the model can be classified into three parts which are a domestic money market, a policy rule for a policy rule for increasing in money supply and devaluation. Applying these components, the model will be able to forecast the probability that an exchange rate regime will collapse one period ahead and the expected value of the new exchange rate.

The central component of the model has been firstly derived from a money market model, relates the real demand for money positively to the income and negatively to the domestic interest rate and defines the money stock as the stock of reserves and domestic credit. Furthermore the model also assumes that the domestic price level and the domestic interest rate level are determined through the purchasing power parity and uncovered interest parity, respectively. After the collapse of the exchange rate, the central bank will devalue domestic currency and set a new rate higher than the previous one.

The changes in money supply and money demand will lead to a change in the net foreign reserves since a change in either money supply or money demand will affect the price of domestic currency. The excessive supply will cause depreciation of domestic currency. The central bank will intervene through foreign exchange market in order to maintain current exchange rate, until the international reserves reach lower bound which is a critical value.

The viability of current exchange rate reckons on the relationship between the current exchange rate and the shadow exchange rate. It can be

stated that if either one of these two events happens, the central bank will devalue Baht. These events, the first is when the shadow exchange rate is more depreciated than the current rate and the second is when the reserves level attains at lower bound. Then, the central bank will establish the new exchange rate, represented by the shadow rate plus the factor that forces the regime collapse. Due to the shadow exchange rate is a function of stochastic state variables, the new exchange rate, then, is unobservable. The devaluation policy stated that new produced exchange rate must be greater or equal to the post-collapse floating exchange rate, shadow exchange rate. If not, it will lead to the excessive demand for reserves. So, sometimes, the new exchange rate is named as shadow exchange rate, being visible only at devaluation time.

As a result, the model can generate the probability accumulative function which allows to calculate the possibility of devaluation at time $t+1$ based on the information available at time t , as well as forecast the new exchange rate.

In case of Baht, this Garber-Blanco original model was slightly modified in order to establish the appropriate devaluation model for Thai economy. Since it is different in the process of BoP crisis between Thailand and Mexico. In Mexico, this crisis was caused by the excessive domestic credit growth, due to high fiscal budget deficit, over domestic money demand. It led to the excessive money supply and the continuous reduction in the price of domestic currency, simultaneously.

Also the Mexican government has faced with BoP problem because of high fiscal budget deficit. The severe current account deficit and low international reserves, accompanied with uncertain inflation rate caused the Peso crisis as the government acquired insufficient international reserves. Then the model was employed to observe the domestic credit growth when the international reserves are supposed to attain at lower bound. The excessive domestic credit creation when the international reserves are at lower bound will cause a devaluation.

In case of Baht, the devaluations in the past always occurred because the severe current account deficit depleted the international

reserves and the government was unable to sustain the exchange rate. Ultimately they could not avoid to devalue Baht, stopping the demand for foreign currency. They wished that the devaluation will improve trade balance and increase the international reserves.

Recently, more people concern about the possibility of Thai Baht devaluation. Like in Mexico, the devaluation may occur because of an excessive money supply in economy. The approach, however, is slightly different from Mexico. While the increasing current account deficit has been continually financed by the huge capital inflows, BoP has undergone surplus over ten years. The surplus in capital account, tending to increase, causes a rise in the international reserves. To maintain money supply in the economy, the government should decrease domestic credit creation. In fact, the figure of domestic credit creation has sharply increased since 1985 so it leads to excessive domestic money supply and Baht tends to depreciate.

Since more than one-third of the huge capital inflows in Thailand, particular since 1990, has been concerned as non quality capital which is sensitive and moving with the interest rate differential between domestic interest rate and foreign interest rate as well as follows the yields in stock market. Once the uncertain international reserves flows out unexpectedly, the economy will suffer with a shock and the exchange rate can not avoid to be devalued. Since over the last ten years, Baht has experienced steady appreciation whereas in forward market, forward premium always identifies that Baht is expected to depreciate.

For the results of this modified model, the unconditional exchange rates are closely corresponding to the forward exchange rates. The conditional forecasted exchange rates are very close to the exchange rates, set when devaluations occurred. Although, the probabilities of devaluation were not at the high level, when the devaluations occurred three times in the past, the probabilities of devaluation immediately reached their local peaks.

This modified model, however, identifies that an important factor, influencing the probability of devaluation is money supply in the economy.

If the domestic money supply greatly exceeds its demand, domestic currency will tend to depreciate. In case of Thailand, the excess domestic money supply is caused by continuous capital inflows. This huge capital inflows is due to many reasons. The principal reason is the movement of domestic interest rate since high interest rate will attract capital inflows.

Notwithstanding, there were sometimes that the new exchange rate was larger than the actual rate in the previous period, the devaluation did not occur although the probability was locally high.

Comments on the Modified Model

Regarding to the data, employed in this model, there is a limitation on the forward premium on Thai Baht, applied in the equation 4.11, since the forward market in Baht did not develop until 1982. Thus, the forward rate data from the first quarter of 1978 to the fourth quarter of 1981 was estimated by random walk procedure.

Generally, a devaluation is a procedure, being applied by the government as the last action, since it may contribute complicated effects to the economy-- turmoil. Any decision about currency adjustment does not concern only on the level of money in economy. Various factors have been brought into consideration. As a result, the assumption that devaluation is caused by the situation when the expected exchange rate for next period exceeds the actual rate, induced by the excessive money supply in economy, is not exactly true in practise.

Furthermore, because of rapid increasing openness of Thai economy, there also has been an increase in amounts of factors that influence demand for foreign currencies e.g. movement of major trade partners' currencies, inflation rates or interest rates as well as unpredictable events--Gulf War, earthquake in Kobe and others. The movement of exchange rate is impossible to be explained by only the movement of US economic leading indicators. This makes the exchange is harder to observe and understand the offset between positive and negative impacts.

The wide gap between domestic interest rate and foreign interest rate attracts the huge capital inflows as well as BIBF facilities the investor in borrowing from abroad. These cause greater reserves stock. If there is no large enough disturbance to annoy economy, although the probability is attained at high level, the BoP crisis will not occur.

While the expected exchange rate tends to depreciate steadily, the devaluation does not occur because of high international reserves. The international reserves is put into this model as one of the components of money base but this model does not concern the reserves as a crucial factor that affects the decision of government to abandon current exchange rate. An increase in international reserves, in this model, implies a rise in money supply whereas, in fact, it also means more security for the nation.

In the original model, Garber and Blanco tried to observe the probability when the international reserves was fixed at the critical level (the level that triggers the crisis) and the domestic credit was allowed to move by, the actual level. They emphasized the growth of domestic credit that leads to the depreciation of domestic currency, caused by excessive money supply, and current account deficit. Since there has been continuous high fiscal budget deficit in Mexico.

In the modified model, the actual exogeneous variables were applied to calculate for the expected exchange rate and the series of probability. Since in Thailand, the domestic credit creation is not a major problem since fiscal budget has been surplus for eight consecutive years, all variables were considered in determining the expected rate. Then the probability of devaluation was estimated from the probability that the expected rate was larger than the previous rate. By the empirical regularities, if the expected exchange rate exceeds the actual rate, speculative attack will occur and then devaluation.

As a result, the original model yields the correct answer in predicting the probability since devaluations in the past did occur when predicted by the model. The probabilities of devaluation were relatively high prior to the actual devaluations. However, there are noticeable differences between the expected rate and the rate that materialized during

devaluations. For the modified model, the probabilities of devaluation did not reach the outstanding high peak as in Mexican results but the expected rates, computed by the model, are very satisfactory. Since the expected rates were computed by actual value of exogeneous variables, they could representing the shadow rate and reflect the market fundamental.

As known, Thailand is a country with managed floating exchange rate system. During the day, Baht is allowed to float in the foreign exchange market which implies that the exchange rate can, in some level, adjusted itself according to market mechanism. Eventhough the probability, calculated by this model, reached high level, the devaluation may not be necessary as the exchange rate ,applying in this model, is the official exchange rate, daily set by BOT but in fact the exchange rate can move according to market and lower the pressure of actual devaluation. However, if market rate was employed instead of official rate, in reality, if Baht is lower, the actual exchange rate will shift up and probability should decrease.

Note that the data, applied in this model, come from the financial survey table, Bank of Thailand which includes statistics, not only from Bank of Thailand and the commercial banks, but also other financial institutions, this makes model be comes more realistic.

Suggestions for Further Studies

Since there are differences in exchange rate regime and the policy application during the period, applied in this model. Then two dummy variables are suggested to be used. First dummy variable should represent the different exchange rate regime. During 1978-1984, the fixed regime was applied and then after 1985-1995, Baht has been pegged with basket of currencies. For the study after 1984, the target zone¹ exchange rate

¹ More details are in:

1. Krugman Paul and Miller Marcus. Exchange Rate Targets and Currency Bands.

2. Flood Robert and Peter Gilbert(1991). "Linkages between speculative attack and target zone models of exchange rates " Quarterly Journal of Economics 106, 1367-72.

model should be introduced. Another dummy variable represents financial liberalization policy since 1990.

Remarks on Baht

Ultimately, there are some opinions, relating to the stability of Thai Baht.

1. Recently, there are huge foreign capital flows in Thailand. This kind of capital is sensitive and causes difficulty to manage money supply in economy. Therefore the central bank should pay more attention in monitoring the capital flows.

2. To maintain the stability of exchange rate by supplying money in the economy yields positive result, internal balance, in short-run, however, in long-run, it causes the reduction of interest rate. The low interest rate will not attract public to saving. Then it will cause decline in saving rate and then there will be too much money in economy.

3. There is one considerable point that while the actual exchange rate has experienced a steady appreciation over 10 years, the forward exchange rate always states that Baht has been expected to depreciate. Monetary authorities should aware of for this occurrence.

Come up to the last paragraph of the thesis, hopefully that the results of this study may assist other researchers as a guide to further their studies in a variety of direction.