Chapter 7

Macroeconomic Consequences of Thailand's Exchange Rate Policy

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Thailand's exchange rate policy has influenced the effectiveness of macroeconomic policies over the past decades. This chapter provides a critical review of this policy and draws lessons from Thailand's erroneous choices of exchange rate systems. Thailand's exports are fundamentally determined more by world income than exchange rate. Any attempt to create undervaluation would be counterproductive and costly.

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I. Introduction

During the first three decades of Thailand's plans for economic development, the GDP grew steadily at an annual rate of 7 percent. In this period, trade volume rose from 35 to 75 percent of the GDP. Rapid economic growth was achieved without sacrificing price stability. It can be argued that the fixed exchange rate system contributed significantly to trade expansion and rapid output growth in the early stages of Thailand's economic development. In 1963, the baht was initially pegged at 20.8 baht to the US dollar. It remained at that level until 1973, when the Brentton Woods system broke down and it was revalued to 20 baht. The baht was fixed at that level until 1978, when the basket of currencies system was introduced. Currencies in the basket included the US dollar, Japanese yen, West German mark, UK pound sterling, Malaysian ringgit, Hong Kong dollar, and Singapore dollar. Then came the first devaluation in July 1981; the baht was devalued by 8.7 percent to 23 baht to the dollar. In 1984, the second devaluation of 14.7 % took place. In the 980s, devaluations were carried out as a last resort when other policies failed to correct the unsustainable current account deficit. Even after the external disequilibrium was corrected by establishing a realistic exchange rate, old habits died hard. The system of a basket of currencies, adopted for the Thai baht after 1984 was supposed to give the baht more flexibility. It turns out that the weight given to the dollar in the basket gradually increased until July, 1997. At the end of June 1997, the currency-basket system set the exchange rate at 25.8 baht to the dollar. In practice, the baht had returned into the old regime of a fixed exchange rate despite a currency-basket system.

With increasing integration, the costs of maintaining a fixed exchange rate regime may outweigh the benefits. If monetary authorities conceive the virtue of maintaining exchange rate stability and competitiveness, intervention in foreign exchange markets may reduce the effectiveness of macroeconomic policy.

Although the fixed exchange system established stability for the exchange rate, the increasing weight of the US dollar in the basket caused an appreciation of the baht when the dollar appreciated with respect to other world currencies. Overvaluation of the baht resulted in a loss of competitiveness. The exchange rate was maintained by constant intervention in foreign exchange markets. The fear of floating can be seen as a reason for such intervention (Calvo and Reinhart, 2002). Thai financial institutions borrowed heavily in dollars, allowing the baht to depreciate substantially to correct the current account deficit, and damaging the balance sheets of banks and finance companies. The Bank of Thailand continued intervening in the spot and forward exchange markets despite a substantial loss in international reserves. Adverse consequences of the fixed rate had become more apparent after confidence in the baht was further eroded by speculative attacks.

On July 2, 1997, the Bank of Thailand gave up defending the baht and the exchange rate plunged to 27.4 baht to the dollar. That was just the beginning of the long slide of the baht. The value of the baht kept declining and triggered a financial crisis in Asia. Other regional currencies also suffered similar steep declines. When an exchange rate has been unrealistically fixed for so long, cost soon outweighs benefits. After the floating of the baht in 1997, the baht depreciated to a record low of 55 baht to the dollar in January 1998.

The baht continued to gain strength against the dollar, which depreciated to correct the unsustainable current account deficit of the USA. The strength of the baht could have been

more spectacular without market intervention by the Bank of Thailand. As the level of international reserves kept augmenting, the question arose whether the accumulated reserves could put to uses such as financing budget deficits or repaying debts accumulated from financial institution bailouts. The principal reason for intervention was the unwarranted fear that a strong baht would hurt Thai exports and slow economic growth. Therefore, the central bank must keep the baht at a competitive level. The Bank of Thailand still intervenes regularly to prevent the baht from rapid appreciation. As a result, the amount of international reserves increased from 26.9 billion dollars in 1997 to 138 billion dollar in 2009. During this period, the baht appreciated from 47.2 to 33.3 baht to the dollar.

Between 1960 and the early 1990s, Thailand grew rapidly because of a strong growth in exports and investment. From 1990 to 2008, the share of exports in GDP increased from 40 % to over 70%. After the 1998 collapse of financial institutions, investment ceased to be an important contributor to growth. By 2000, the share of investment in GDP had declined from 40 % to 20 %. Yet until the 2008 global recession, exports still remained as the ultimate engine of growth.

Thailand uses imported raw materials to manufacture export products. If Thailand experiences export shortfalls, imports can be curtailed. Thus a global slowdown shrinking the demand for Thai-manufactured exports would not lead to a current account deficit. Imports coincided closely with exports, implying that a majority of imports are raw materials for manufacturing products for exporting.

A contribution to growth by exports must not be overstated, since exports simultaneously lead to the import of raw materials. The content of Thai exports has changed considerably from agricultural commodities to manufactured products. Imported components of electronic products are required to manufacture hard disks and computers. Unsurprisingly, these industries create lower value added than agricultural and processed food exports, which mainly utilize domestic raw materials. This realization could reduce the urge to maintain the baht unrealistically low in order to promote growth.

This chapter examines Thailand's exchange rate policy and its macroeconomic impacts in recent decades. It provides a critical review of the choices made by the Bank of Thailand and draws lessons from Thailand's erroneous choices of exchange rate systems. After an introduction in section 1, Section 2 discusses the impact of transition from a fixed to a managed flexible system. Section 3 explores the relationship between export competitiveness and exchange rate systems. Section 4 investigates the impact of intervention in the foreign exchange markets and capital controls. Section 5 deals with macroeconomic policy responses and examines Thailand's exchange rate policy during the global economic slowdown. Section 6 offers conclusions.

II. Fixed vs. Flexible Exchange Systems

In addition to containing foreign exchange risk to promote international transactions, a fixed exchange rate can assure a steady growth path. Therefore, central banks regularly intervene in foreign exchange markets. Theoretical arguments exist to support intervention in the foreign exchange market. There is a link between the variability of exchange rates and interest rates (Bilson, 1985). Since interest rate fluctuations are a causal factor to the business cycle, as currency risk premiums increase, interest rates must also increase to compensate for the risk.

Thus the combination of real interest rate instability and real exchange rate instability must have an adverse effect on the economy. There are also internal factors such as domestic monetary shocks and political uncertainties which create currency volatility, which depends on the choice of exchange rate regime, provided that prices are stickier than the exchange rate (Hasan and Wallace, 1996).

Krugman (1989) argued that the gains from international trade would be reduced, when exchange rate instability blurs price signals which supposedly regulate international markets. If future exchange rates are uncertain, firms would be more cautious and delay investments, even when they face increases in demand for exports. Here the argument for a fixed exchange rate is based on the need to accumulate physical capital at an early stage of development. Between the 1960s and the early 1980s, Thailand greatly benefited from the fixed exchange rate system In the early stages of economic development, a country can experience steady growth while maintaing a fixed exchange rate.

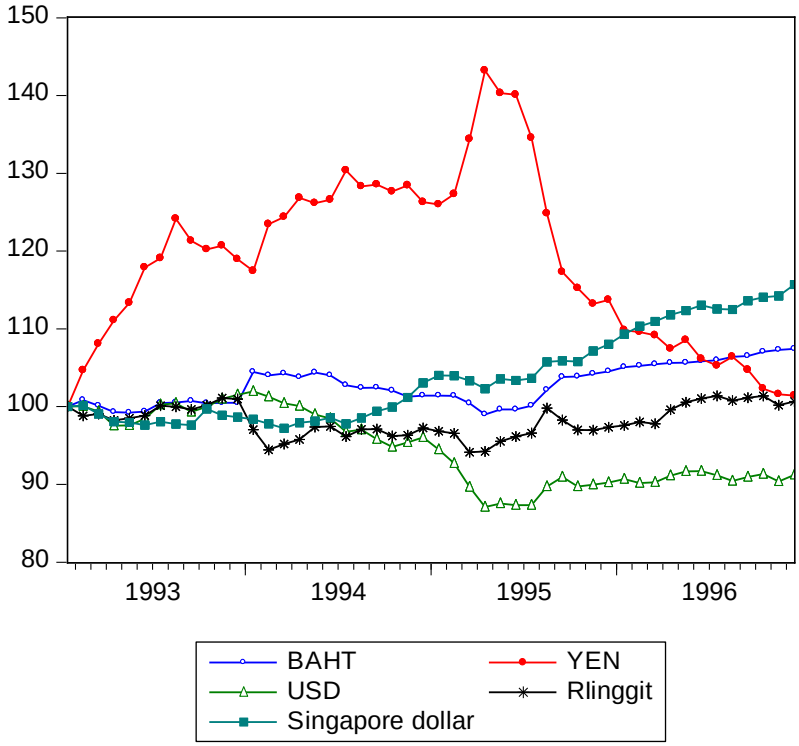
According to Friedman (1953), speculations are likely to be stabilizing as long as market participants are rational. When markets are efficient, there is no room for destabilizing speculation. Yet, as we have seen from the Asian financial crisis in 1997 and the US subprime loans crisis in 2008, speculative behavior is not always stabilizing. There is no concrete evidence of efficient asset markets. In Thailand, periods of departure from uncovered parity, which coincide with a high level of risk premiums. It is possible that speculation might be destabilizing, and negative externality provides a reason for intervention.

Pegging an exchange rate can lead to unrealistic values when productivity and price levels change over time. The Purchasing Power Parity (PPP) may not provide a benchmark for the target exchange rate. Substantial departures from the PPP, even in a world of flexible exchange rates, can exist in the short run and even over decades (Obstfeld and Rogoff, 1995). With a considerable differential between productivity growth in the tradable and non-tradable goods sectors, a country can experience rising relative prices of non-tradable goods, resulting in the appreciation of the real exchange rate. Therefore it is impossible to pinpoint the exact equilibrium value of the exchange rate based on deviations from the PPP. Nor can the current account deficit indicate an exact degree of overvaluation of the exchange rate. Investment-saving relationships and the level of public deficit also determine the current account position. Indeed, intervention in foreign exchange markets to obtain an appropriate value of the exchange rate must be exceedingly difficult, without considering complications arising from the impact on domestic absorption caused by changes in the exchange.

A flexible exchange rate allows the baht to become more flexible in response to fluctuations in world trade volume. Broda (2004) provided evidence that short-run real output responses to real shocks are significantly smoother in floats than in pegs. Coudert and Couharde (2009) found that pegged currencies were significantly more overvalued than flexible currencies. Real exchange rate volatility has a negative impact on private investment (Bhandari and Rabindra, 2010)**.** According to Kenen and Rodrik (1986), volatilities of real exchange rates reduce the volume of international trade. Exchange rate fluctuations comprise risks and uncertainties, which can disrupt international trade flow. Exchange rate volatility has a significant negative impact on export flow to the world market (Chit et al., 2010). Even when the nominal exchange rate does not change, the real effective exchange rate can fluctuate as a

result of movements of major currencies. Relatively high inflation at home can bring about a loss in international competitiveness.

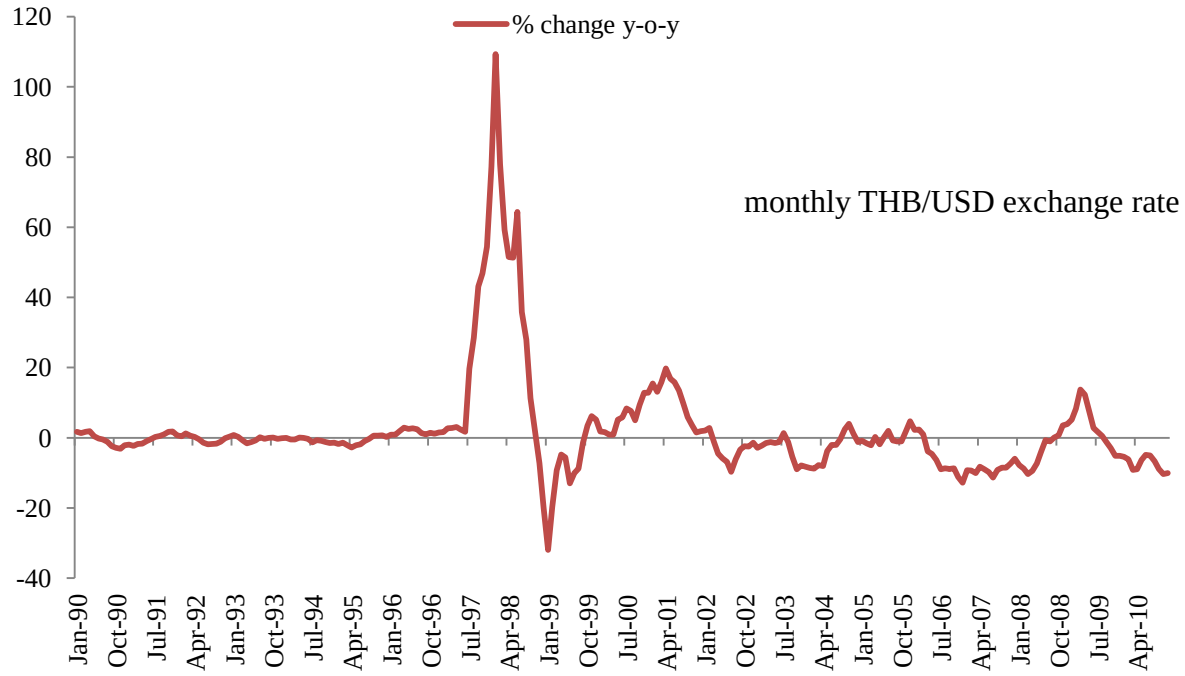
Figure 7.1: Real Effective Exchange Rates: 1993-1996



Source: International Financial Statistics

After 1994, when Thailand embraced capital account liberalization, which encouraged borrowing in foreign currencies, the real effective exchange rate of the baht appreciated more than in important trading partners (Figure 7.1). By the end of 1996, except for the Singapore dollar, the real effective exchange rate of the baht appreciated more than the yen, the ringgit, or the US dollar. The fixed exchange rate of the baht to the dollar did not reveal the erosion of Thailand's competitiveness.

Figure 7.2: Fluctuation of the Thai Baht: January 1990-December 2010



Source: The Bank of Thailand

In 1995, the continued strength of the dollar caused overvaluation of the baht, which needed to be corrected by a free fall of the baht against the dollar in the second half of 1997. Figure 7.2 illustrates the wide swings of the baht after the float in July 1997. By 1999, the baht began to depreciate again, but the degree of depreciation was greater than its appreciation. Apparently, asymmetric intervention maintained the bath stability. The Bank of Thailand will intervene less when the baht depreciates and more when the baht appreciates. The fear of appreciation is unwarranted.

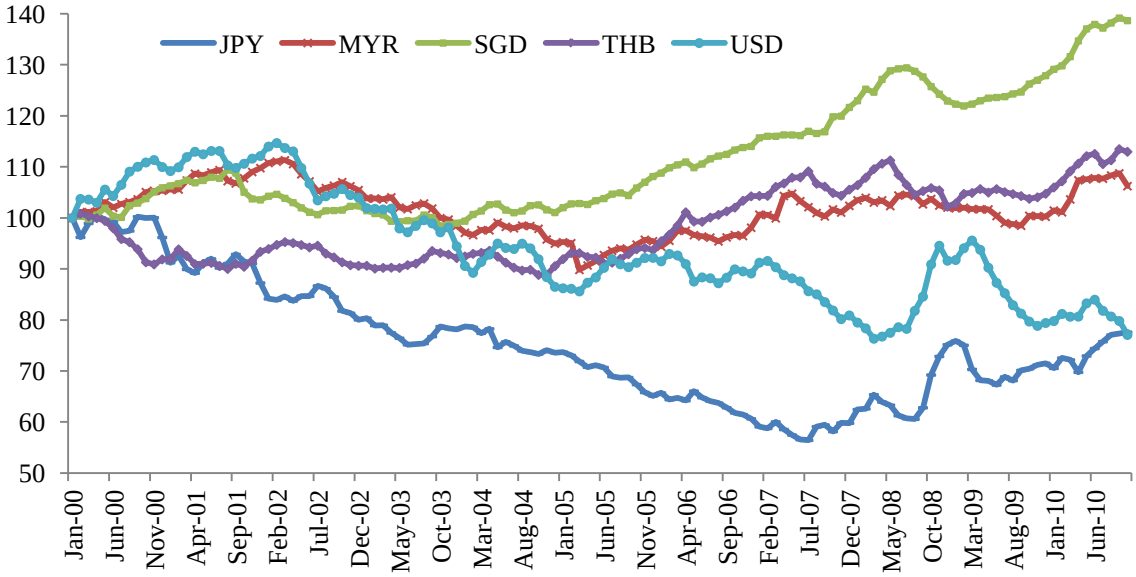
III. Export Competitiveness and Exchange Rate Regimes

Apart from the possibility of retaliation by other competitors, devaluation does not ensure a long-lasting effect on international competitiveness, which depends on a productive labor force, savings, and technological progress. A strong currency may be associated with export competitiveness. A country with a high savings rate and rapid productivity growth will experience real exchange rate appreciation, while commanding a considerable degree of international competitiveness. It has always been suggested that Thailand needs a weak baht to help exporters gain competitiveness. Since price changes in foreign currencies profoundly affect prices of all commodities, we must evaluate the impact foreign exchange rate changes on the rest of the economy. For example, there is an implication on income distributive issues, which involve income transfer between exporter and importer, tradable and non-tradable sectors, and creditor and debtor of foreign currencies.

Flexibility in the real wage rate could explain why Thailand was able to maintain the fixed exchange rate for so long[2]. According to Obstfeld (1998), before the 1997 crash, Thailand had been a "puzzle" since it is very rare for countries to observe the fixed exchange rate discipline for longer than five years. Flexibility of wages and prices would not require Thailand to rely on flexible exchange rates as a means to correct macroeconomic imbalances. Conservative fiscal policy (fiscal surplus) prior to the 1997 crisis helped mitigate monetary expansion caused by capital inflows. Monetary base growth was prevented from being explosive, threatening price stability under the fixed exchange rate system with an open capital account. With many policy objectives, the fixed exchange rate system, which previously worked well as a domestic anchor, had to be sacrificed.

A depreciation of real effective exchange rate does not always imply a gain in price competitiveness. Not only the direction of the movement matters, but also the gap between actual and equilibrium real exchange rates. A real depreciation would not improve competitiveness much if the actual real effective rate were significantly overvalued. A real appreciation may not necessarily imply a loss in competitiveness, if it reflects a productivity gain.

Figure 7.3: Real Effective Exchange Rates: 2000-2010



Source: International Financial Statistics

[2] The flexibility of wage rate continued until the late 2000s. Domestic demand grew by 2.3 % and 4.1 % in 2007 and 2008, respectively, while the real wage rate rose by 0.7% and 4.8%. When domestic demand contracted by 6.6 % in 2009, the real wage rate declined by 1.6%. See Nidhiprabha (2003) for a discussion of wage flexibility and implications of the trade-off between inflation and unemployment.

Between 2001 and 2005, the real effective exchange rate of the baht depreciated by 10 percent (Figure 7.3). The weakened baht helped the Thai economy recover from the recession through strong export growth. This depreciation had much to do with the strength of the dollar in the early 2000s. While the real effective exchange rate of the yen depreciated from 2000 to 2007, the weakening of the dollar only began after 2003[3]. Starting in 2005, weaknesses in both currencies gave rise to real effective appreciation of the baht. This episode led to the adoption of capital controls in Thailand in December, 2006. By 2007, the yen began to climb and the dollar started appreciating in its aftermath, leading to the depreciation of Thailand's real effective exchange rate, and relieving upward pressure on the baht.

Since 2005, the real effective exchange rate of the Thai baht has moved closely with the Malaysian ringgit, while the real effective exchange rates of the yen and the dollar have moved in the same direction. By 2009, the dollar and the yen depreciated by 30 and 20 percent respectively, while the Singapore dollar appreciated by 30 percent, compared to the level of real exchange rates in 2000.

When monetary authorities allow the baht to fluctuate more freely, it will be difficult to target a specific level of real effective exchange rates, let alone its direction[4]. The real effective exchange rate of the baht always moves in the opposite direction of the yen and dollar, while the impact of dollar movement has become increasingly more dominant. The implication of this long-term relationship is that the interest rate policy employed by that the Bank of Thailand to target the real effective exchange rate may not be useful since the baht's real effective exchange rate is determined by key currencies. When the real effective rates of the dollar and the yen depreciate, that of the baht would appreciate accordingly. Liew et al., (2009) also found that influences of domestic and foreign monetary policies on Thailand's exchange rates cannot be neglected. With more open capital accounts, the Bank of Thailand must choose between targeting the exchange rate or money supply. Capital controls permitted the Bank of Thailand to pursue monetary policy to deal with internal equilibrium adjustment. At the end of 2006, capital control was used to delay baht appreciation against the dollar.

IV. Market Intervention and Capital Controls

A fixed exchange rate system together with an open capital market is incompatible with independent monetary policy. Thailand has learned this lesson well after the 1997 currency crisis. The fixed exchange rate functioned well with monetary autonomy and a certain degree of capital controls. When capital controls were relaxed in 1993 to liberalize capital accounts, monetary autonomy was sacrificed. Trade reform can improve efficiency and resource allocations. However, as Bhagwati (1998) pointed out, there is a big difference between liberalization of trade and capital flow. Capital account liberalization does not always lead to welfare improving because financial infrastructure is not ready to cope with capital inflows. Lack of financial supervision and prudential rules and regulations on financial institutions led to excessive lending and property bubbles. Eichengreen (2000) suggested that Chilean-style

[3] The impact of the dollar decline on the US current account deficit was not apparent until 2008, when the US economy entered into the recession

[4] For evidence on temporary movements of the real dollar rates and interest rate differentials, see Nakagawa (2002).

capital control should be retained until banks' risk management practices and regulatory oversight have been upgraded. Capital control is found to be sufficiently supported by both economic theory and empirical evidence as ways to address macroeconomic problems associated with short-term capital flow (Montecino and Cordero, 2010).

The exchange rate is determined by trade and capital flow, in addition to external factors and exchange rate expectations. Exchange rate movement can be considered an indicator of country risks. A sharp plunge in the baht value would signify governmental mismanagement of the economy. A sharp deterioration of the external value of the baht during the last quarter of 1997 reflected in part the loss in policy credibility of the ruling government during a period of political turmoil.

Since capital controls are costly to enforce and may reduce welfare due to intertemporal consumption, total capital control is impossible. Insofar as excessive short-term capital flow raises the possibility of a financial crisis, hot money flows should be limited by establishing prudential regulations on overseas borrowing by the private sector.

The flexible exchange rate system also sends a signal to the private sector that borrowers of foreign capital must internalize some costs of failing to hedge against unanticipated movement of exchange rates. The need for strict capital controls is reduced as capital flight declines. Flexibility in foreign exchange rates guarantees that there is no serious misalignment of the exchange rate. Therefore, probability of capital flight would reduce, provided that economic fundamentals and political stability prevail. Recent evidence provide by Dubas (2009) indicated that an intermediate exchange rate regime between a pure float and hard peg is most effective in preventing exchange rate misalignment. Moreover, the welfare level of a small country under a freely floating regime was in generally higher than under other regimes (Akiba et al., 2009).

The effective exchange rate movement is still determined by the dollar/baht rate because of the dominance of the dollar in international trade transactions. Depreciation of the baht against the yen slowed appreciation of the baht's nominal effective exchange rate. Thus, the nominal effective rate did not appreciate as much as the dollar/baht exchange rate. Market intervention cannot maintain competitiveness of the baht (when using the effective rate measurement).

Taylor (2001) observed that current appreciation of the exchange rate, through inertial effects of exchange-rate transmission and the existence of a policy rule, will result in a decline in interest rate. Even though the exchange rate is not an explicit part of policy rule, because of current appreciation of the exchange rate, it becomes more likely that the Central Bank will lower the interest rate in future as inflationary expectations are revised downward**.** Monetary-policy rules that respond indirectly to exchange rate changes might work better than rules which respond directly. Accordingly, if the Bank of Thailand does not resist baht appreciation, there will be less need to initiate interest hikes in order to curb inflation.

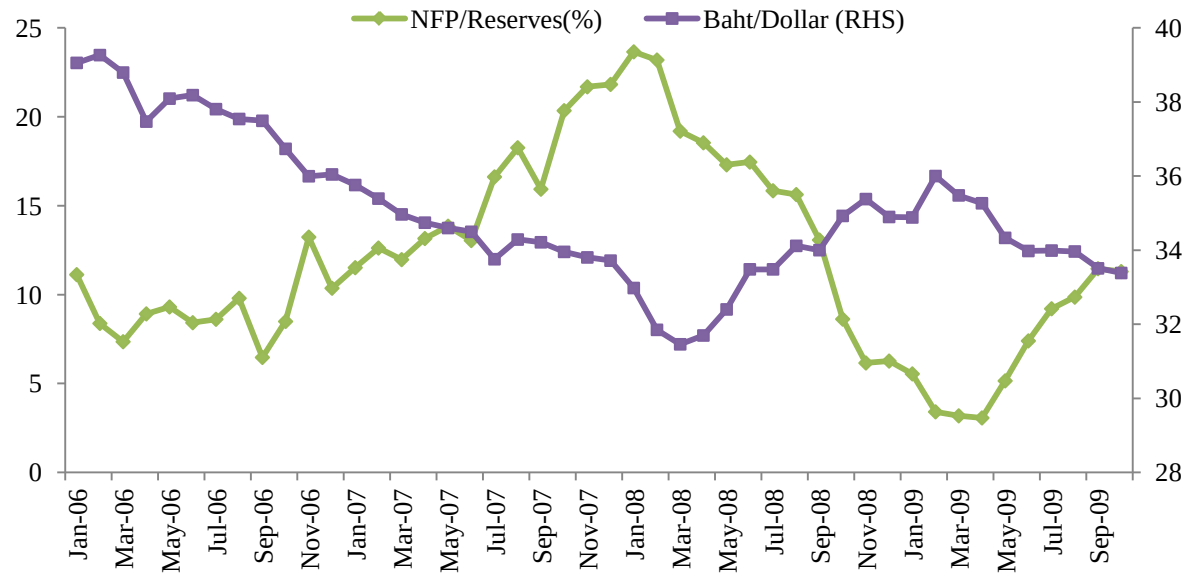
Intervention cannot slow down baht appreciation, which is caused by inherent weakness of the dollar. The Bank of Thailand cannot resist the trend of baht appreciation by intervening in

foreign exchange markets[5]. Figure 7.4 indicates that increased intervention, as measured by the ratio of net forward position as a percentage of total reserves, did not halt baht appreciation.

As a clear trend of baht appreciation emerged at the beginning of 2006, exporters did not want to hold dollars long after receiving payment. Figure 7.4 shows that, as the dollar's trend continued, the Bank of Thailand suffered enormous financial losses from buying the dollar forward in order to reduce pressure on the baht. From January 2003, when the net forward position (NFP) was a few percentage points of total reserves, intervention was intensified as the baht appreciated in 2006 and 2007. By January 2008, the amount of net forward position of the Bank of Thailand peaked at 24 % of total reserves.

International reserves accumulated every month; the Bank of Thailand was obliged to sterilize capital flows by issuing bonds to mop up excess money supply[6]. In doing so, it built up pressure on interest rates. As the federal funds rate was continuously cut to prevent recession in the USA, the Bank of Thailand was not able to maintain high interest rates to fight inflation, because widening uncovered interest differentials would further induce capital inflow and currency appreciation.

Figure 7.4: Forward Market Intervention by the Bank of Thailand



Source: Bank of Thailand

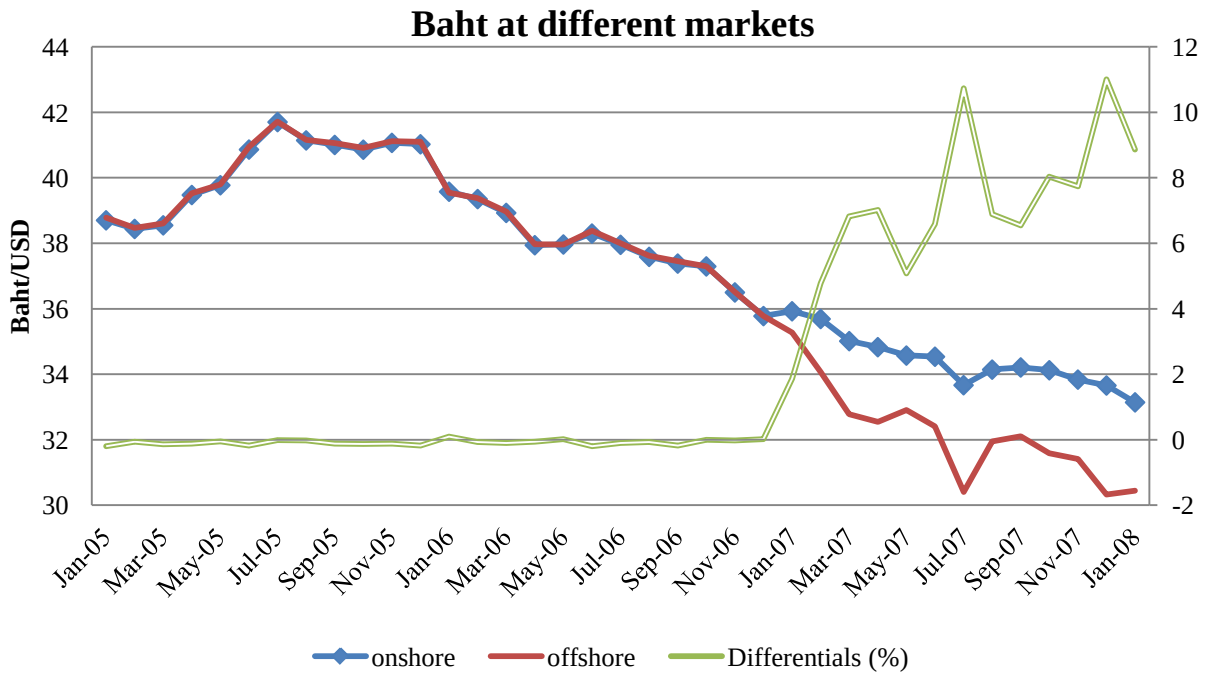
[5] Cointegration analysis indicates that the ratio of net forward position to total reserves moves in line with the rate of change of the baht exchange rate.

[6] By 2011, The Bank of Thailand is able to issue bonds without seeking approval from the Ministry of Finance.

During December, 2006, in a desperate attempt to prevent baht appreciation, a zero-interest reserve requirement of 30% on short terms flows was imposed. In effect, the onshore and offshore markets for the baht (Figure 7.5) were differentiated. Since, the baht's strength was caused by portfolio inflow, it was not surprising that the Bank of Thailand attempted to stem the flow of portfolio investment by imposing Chilean-type capital controls. In 1991, the Bank of Chile imposed a 30 % unremunerated reserve requirement (URR) to curb short-term capital inflow, which tended to cause domestic currency appreciation. Although the URR did not reduce capital inflow or halt currency appreciation, it changed the composition of inflow from short to longer maturity. Forbes (2007) found evidence that the Chilean URR increased financial constraints for small firms and misallocation of resource occurred because the control discriminated against short-term projects and firms that depend heavily on bank credit.

Investors in the stock markets were against capital controls because the control measure inhibited capital inflow to the stock market. The URR measure led to a stock market collapse and prompted the Bank of Thailand to exempt portfolio investment from capital controls one day after the measure was announced. The Bank of Thailand further relaxed and exempted debt instruments and forward covered transactions from the URR.

Figure 7.5: Separation of Foreign Exchange Markets



Source: Bank of Thailand

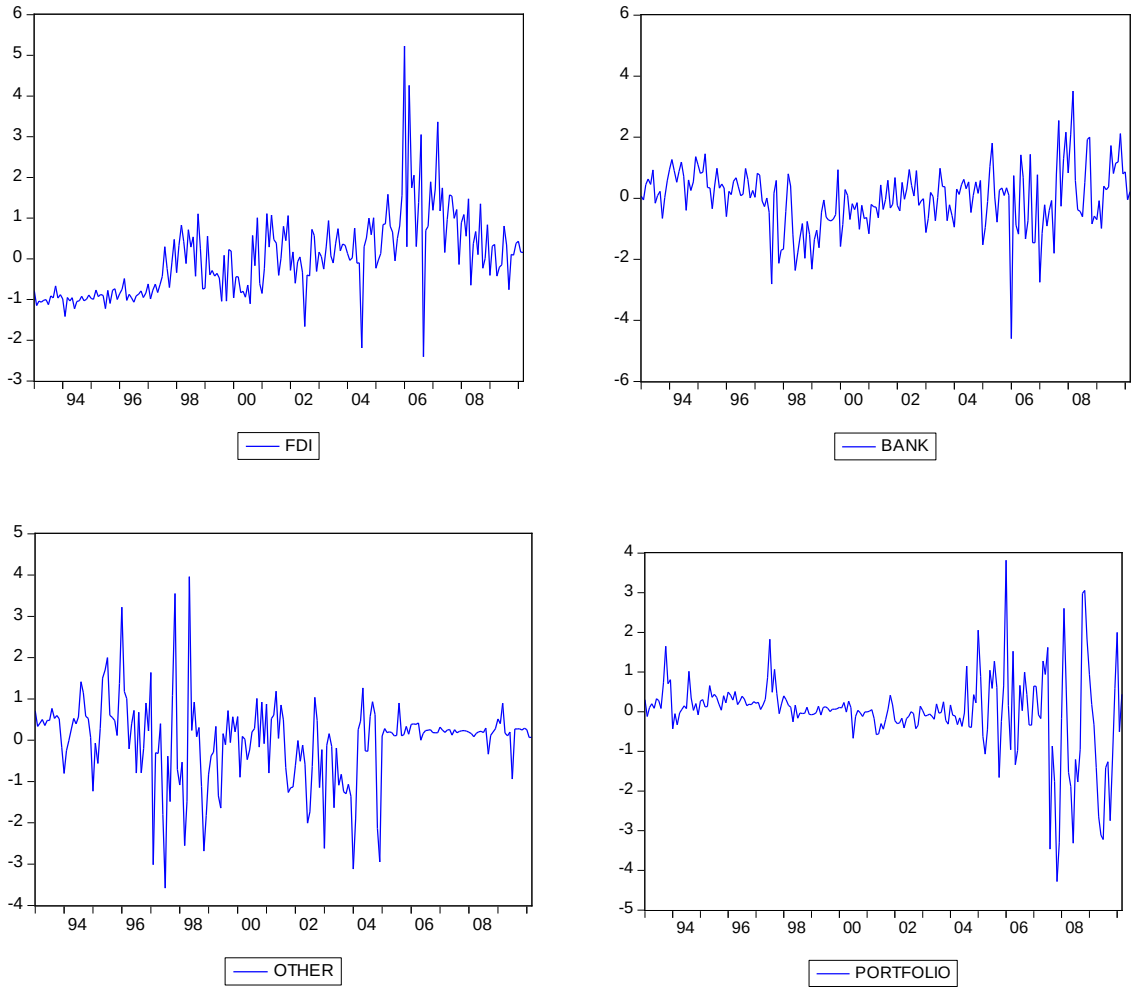
There is no evidence that the capital controls imposed in 2008-2009 significantly slowed down appreciation, as the Bank of Thailand had hoped. There are also unintended effects of capital controls. Asiedu and Lien (2004) found evidence that capital controls deter foreign direct investment in East Asian countries. In 2007, although foreign investment in Thailand

increased, the percentage increase was much lower than in neighboring countries such as Malaysia and Vietnam. Yet Coelho and Gallagher (2010) suggested that, by employing Columbia and Thailand as case studies, there is still a role for capital control to play in the 21st century, but such controls should be more sophisticated than in years past. The fact that capital controls are envisaged as anti-globalization by investors, among other policies of a military-installed government, the Chilean-style capital control measure became counterproductive and costly in terms of financial losses to the Bank of Thailand. Moreover, exporters would have no incentive to improve efficiency, since they were relying on undervalued currencies. Moral hazard arises as exporters believe that the government would help them by keeping exchange rates competitive.

Figure 7.6 shows deviations of different types of capital flow from their trend. In December 2006, portfolio investment, bank flow, and foreign direct investment fluctuated wildly after the imposition of capital controls. However, other types of capital flow (OTHER) experienced a significant decline in volatility. These flows were deposited in non-resident baht accounts, which can be used later for speculative purposes in currency and bond markets. These flows were related to speculation that the baht would imminently be devalued. The irregular flow returned to normal after the massive devaluation of 1998.

In the aftermath of capital controls, wider fluctuation of portfolio investment is to be expected. Notably, foreign investment, which is not supposed to fluctuate widely, becomes more volatile. This suggests that foreign investors are affected by the Thai government's uncertainty and policy inconsistency after the restriction of capital flow. Capital control was the wrong policy applied for the wrong reason. Previously, Thailand had maintained an open-door policy to foreign investors. Authorities believed that capital controls would not impact long-term investors, since the policy was only applied to short-term flow and for a specific duration. Little did the authorities realize that animal spirits of investors do not distinguish between short-term and long-term control measures. When policy becomes inconsistent with past expectations, risk premium is heightened resulting in massive capital flight from the stock market.

Figure 7.6: Volatility of Capital Flow (normalized values)



Source: Bank of Thailand

The Stock Exchange of Thailand recorded the single biggest one-day loss in its history of 820 billion baht—a decline of 14.8% one day after the measures were announced. On March 3, 2008, the Bank of Thailand finally abandoned capital controls, reasoning that the economic situation had returned to normality and they were no longer needed. In late 2009, after the fear of global recession subsided, capital inflow into the stock market resumed and the baht regained strength[7]. It is important to understand the macroeconomic policy consequences of this attempt to maintain a weak baht.

V. Macroeconomic Policy Responses to Global Recession

Despite the global slowdown beginning in 2007, Thai exports maintained high growth until the first half of 2008, due to agricultural commodity boom. The collapse of exports in 2009

[7] The stock exchange index of Thailand rose to 43.8 % from December 30, 2010 to in February 2, 2011.

led to a deeper cut in imports as oil prices also declined sharply during the first half of 2009. It is argued here that the demand for Thai exports depend more on foreign income than relative prices. Compared to changes in income levels of importing countries, changes in exchange rates have less impact on Thai export levels. Since income elasticity of Thai exports is high, the country's economy is vulnerable to world demand shocks.

As the world interest rate declined to a very low level, there is a limit to stimulating domestic demand to offset the contracted world trade. Expansionary fiscal policy is called upon in times of recession. Bond-financing budget deficits would be ineffective if the crowding-out effect is so strong that it induces capital inflow and causes currency appreciation. Nevertheless, deficit spending financed by foreign borrowing or pump-priming can stimulate the economy during recessions, in the absence of the crowding-out effect.

According to the Mundell-Fleming model, fiscal policy employed under the fixed exchange rate regime is less effective than when employed under the flexible exchange rate system. Yet monetary policy is more powerful under the flexible exchange rate system. This conclusion is based on the assumption that a country will experience a balance of payments surplus after enacting expansionary fiscal policy. Likewise, the conclusion on monetary policy ineffectiveness assumes that the country will experience a balance of payments deficit after pursuing easy monetary policy. Therefore an exchange rate appreciation mitigates the expansionary effect of fiscal policy, while a depreciation of exchange rate enhances the expansionary effect of monetary policy.

It is argued here that fiscal policy under a certain degree of exchange rate flexibility can be effective in certain circumstances, for example, when expansionary fiscal policy leads to a deficit in the balance of payments. This is not unusual if the income elasticity of demand for imports is very high, while responsiveness of capital flow to interest rate differentials is very low. Slow response of capital flow to changes in interest rates can be attributed to high transaction costs, risk premiums, and capital controls. Exchange rate adjustment after fiscal expansion results in currency depreciation, not appreciation. The exchange rate effect would intensify the multiplier effect of fiscal policy through increased net exports. Finally, the effectiveness of fiscal expansion depends on its impact on the balance of payments and the resulting exchange rate changes that can intensify or nullify the first round effect of fiscal policy expansion.

During fiscal contraction, output reduction leads to larger reduction in imports, while falling interest rates would not be able to create capital outflow to offset the fall in imports. The resulting surplus in the balance of payments would imply currency appreciation and magnify the output contraction effect of fiscal austerity by reducing net exports. In short, fiscal policy may not be totally ineffective undercurrent circumstances in Thailand, where income elasticity of demand for imports is high and capital flow is not hypersensitive to change in interest rate differentials.

A vector autoregressive model of five macroeconomic variables is employed to examine the impact of fiscal policy changes on output. It is imperative to understand the impact of various policy responses on recession. The VAR model can suggest the relative strength of monetary and fiscal policies when the policy interest rate is allowed to adjust. Monthly data from January 1993 to May 2009 are utilized in the model which includes output (manufacturing production index), exports, fiscal spending (FISCAL), the Bank of Thailand's key policy rate

(BOTRATE), and the real effective exchange rate (REER). All data are obtained from the Bank of Thailand.

A VAR model is used to examine the effects of certain shocks to macroeconomic variables. All the equations that contribute to figure 7.7 and 7.8 are listed below. The length of lags is four months, as suggested by the Akaike Information Criterion.

$$OUTPUT_t = \sum_{1}^{t} \mu_{1i} OUTPUT_{t-i} + \sum_{1}^{t} \alpha_{1i} FISCAL_{t-i} + \sum_{1}^{t} \beta_{1i} EXPORT_{t-i} + \sum_{1}^{t} \gamma_{1i} BOTRATE_{t-i} + \sum_{1}^{t} \delta_{1i} REER_{t-i} + \varepsilon_{1t}$$

$$FISCAL_t = \sum_{1}^{t} \mu_{2i} OUTPUT_{t-i} + \sum_{1}^{t} \alpha_{2i} FISCAL_{t-i} + \sum_{1}^{t} \beta_{2i} EXPORT_{t-i} + \sum_{1}^{t} \gamma_{2i} BOTRATE_{t-i} + \sum_{1}^{t} \delta_{2i} REER_{t-i} + \varepsilon_{2t}$$

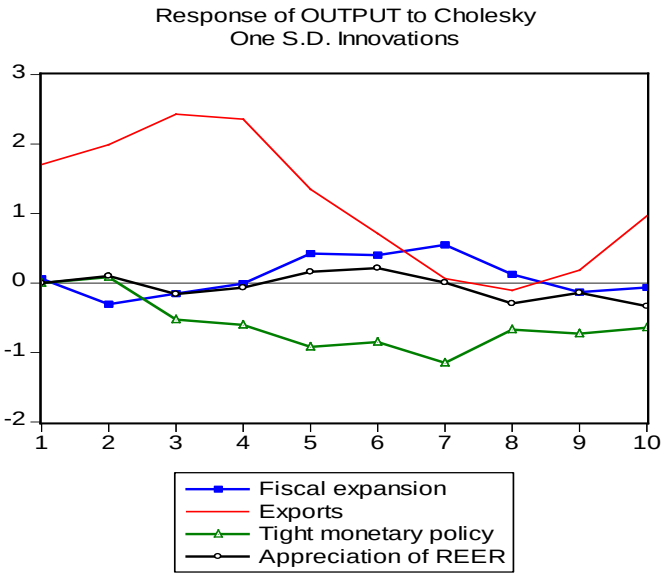
$$EXPORT_t = \sum_{1}^{t} \mu_{3i} OUTPUT_{t-i} + \sum_{1}^{t} \alpha_{3i} FISCAL_{t-i} + \sum_{1}^{t} \beta_{3i} EXPORT_{t-i} + \sum_{1}^{t} \gamma_{3i} BOTRATE_{t-i} + \sum_{1}^{t} \delta_{3i} REER_{t-i} + \varepsilon_{2t}$$

$$BOTRATE_t = \sum_{1}^{t} \mu_{4i} OUTPUT_{t-i} + \sum_{1}^{t} \alpha_{4i} FISCAL_{t-i} + \sum_{1}^{t} \beta_{4i} EXPORT_{t-i} + \sum_{1}^{t} \gamma_{4i} BOTRATE_{t-i} + \sum_{1}^{t} \delta_{4i} REER_{t-i} + \varepsilon_{4t}$$

$$REER_t = \sum_{1}^{t} \mu_{5i} OUTPUT_{t-i} + \sum_{1}^{t} \alpha_{5i} FISCAL_{t-i} + \sum_{1}^{t} \beta_{5i} EXPORT_{t-i} + \sum_{1}^{t} \gamma_{5i} BOTRATE_{t-i} + \sum_{1}^{t} \delta_{5i} REER_{t-i} + \varepsilon_{5t}$$

The impulse response function (Figure 7.7) indicates that export shocks exert the strongest impact on output. Both positive and negative shocks bring about massive changes in output level. In 2009, when exports collapsed, it is unsurprising that the Thai economy suffered from recession. Can exchange rate depreciation spur growth through exports? Currency shocks do not have a significant impact on output growth.

Figure 7.7: Impact on output from shocks and policy responses

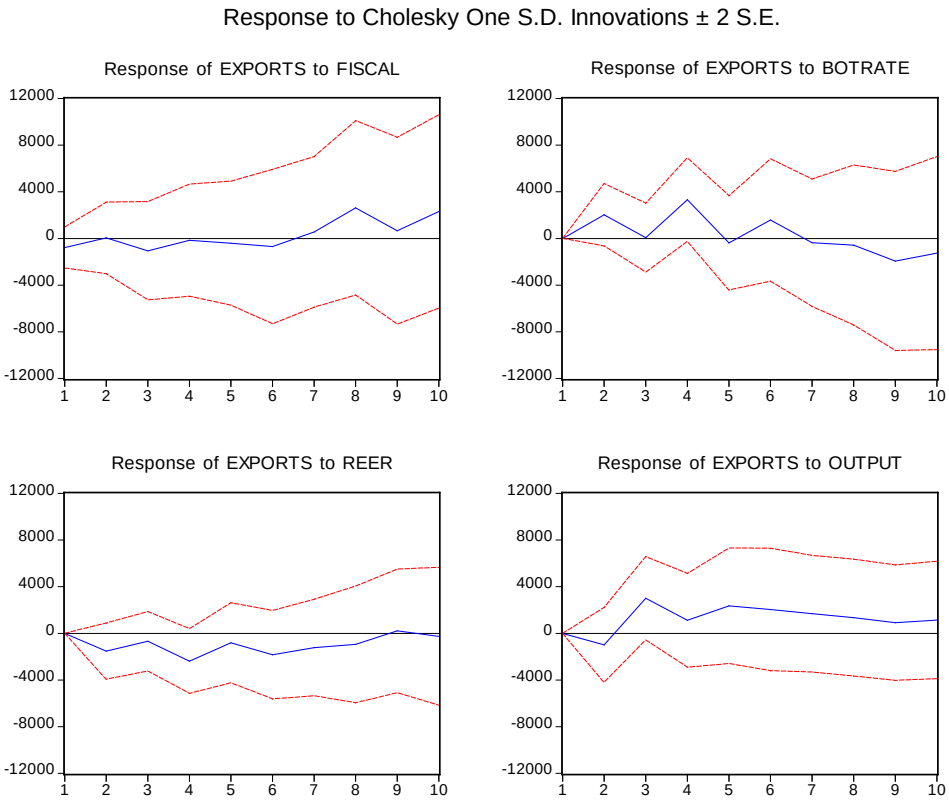


Appreciation of the real effective exchange rate may not lead to a heavy loss in competitiveness. Real exchange rate movements depend on domestic and foreign price levels. Exchange rate changes also affect the cost of imported raw materials and therefore would affect net exports and GDP relatively less than shocks from fiscal and monetary policy instruments. This notably suggests that if we allow the real effective exchange rate to adjust to external disequilibrium, its impact on real output will be more gradual and smoother than in the fixed exchange rate regime. Indeed, a more flexible exchange rate can insulate the economy from external shocks.

An analysis of the impulse response function suggests that monetary policy can be effective under the current exchange rate regime. A rise in key interest rate can lead to contraction in output. Thus, monetary policy is an effective policy instrument to stabilize the economy. This implies that as long as the Bank of Thailand can maintain an interest rate gap between domestic and foreign interest rates, there is room for monetary policy to maneuver. Capital mobility of the Thai economy is far from perfect. More effectively than fiscal stimulus, expansionary monetary policy can be employed to counteract a collapse in exports (Figure 7.8). Fiscal policy is less effective in terms of stabilization objectives. The expansionary effect of fiscal stimulus becomes apparent after a five month lag and dies off after three quarters.

Since export shocks create the greatest impact on output, we must understand how exports are affected by fiscal and monetary policy instruments. Figure 7.8 reveals that fiscal stimulus has a minimal impact on exports. Exports are not harmed by fiscal expansion. Indeed, appreciation of the real effective exchange rate reduces export levels. Yet this negative impact dies off within three quarters. If fiscal expansion gives rise to pressure on price levels, real exchange rate appreciation can thwart export growth. Figure 7.8 also illustrates that monetary tightening does not always lead to export slowdowns, simply because the real effective exchange rate is not much affected by tight monetary policy. Viewed in this light, with other factors remaining constant, monetary policy can be a powerful tool for stabilizing the economy as the baht becomes more flexible than in the past.

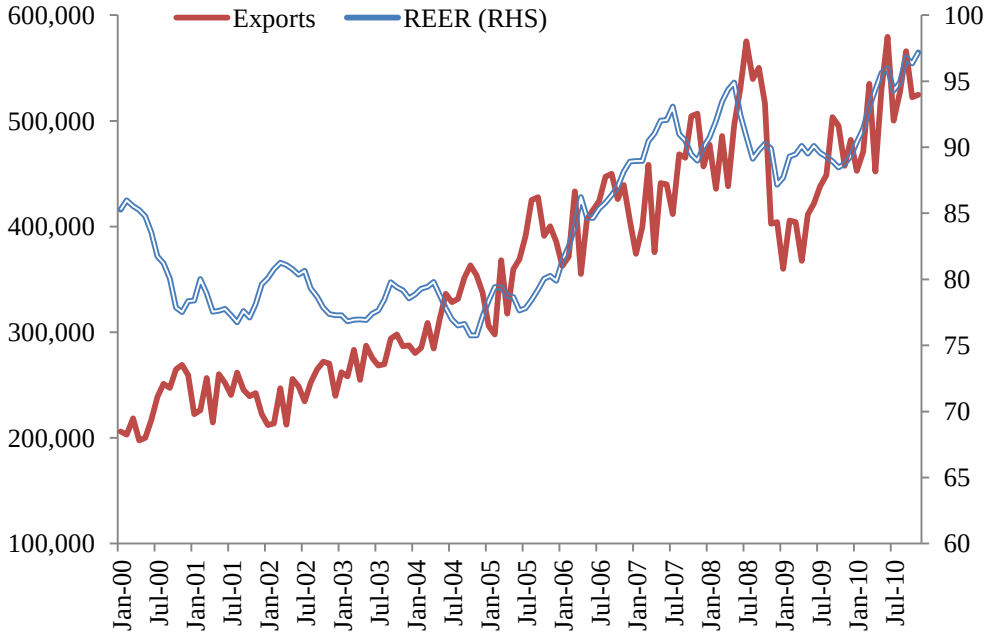
Figure 7.8: Export Responses to Various Shocks



Exports are largely responsive to output growth. With expansion in capacity output and a greater degree of capital utilization, exports can be increased. Therefore, instead of engineering a weak exchange rate, exports can be increased in the long term through promoting the flow of capital into productive sectors. Any measure that hinders capital inflow and foreign direct investment can reduce export growth in the long run. Political unrest and uncertainty, capital control, protectionism, and policy inconsistency would entail the reduction of long-term capital flow and thereby reducing export in the long run.

Thai monetary authorities are unwilling to let the exchange rate adjust to equilibrate external imbalances. The burden of the adjustment falls on output. If the real exchange rate is allowed to appreciate in response to surplus in the balance of payments**,** export growth can slow to prevent the economy from overheating. Likewise, if the real exchange rate depreciates in response to a deficit in the balance of payments, exports can be enhanced to stimulate the economy. The exchange rate is such an important macroeconomic policy variable that we cannot do without its equilibrating role.

Figure 7.9: Exports and REER



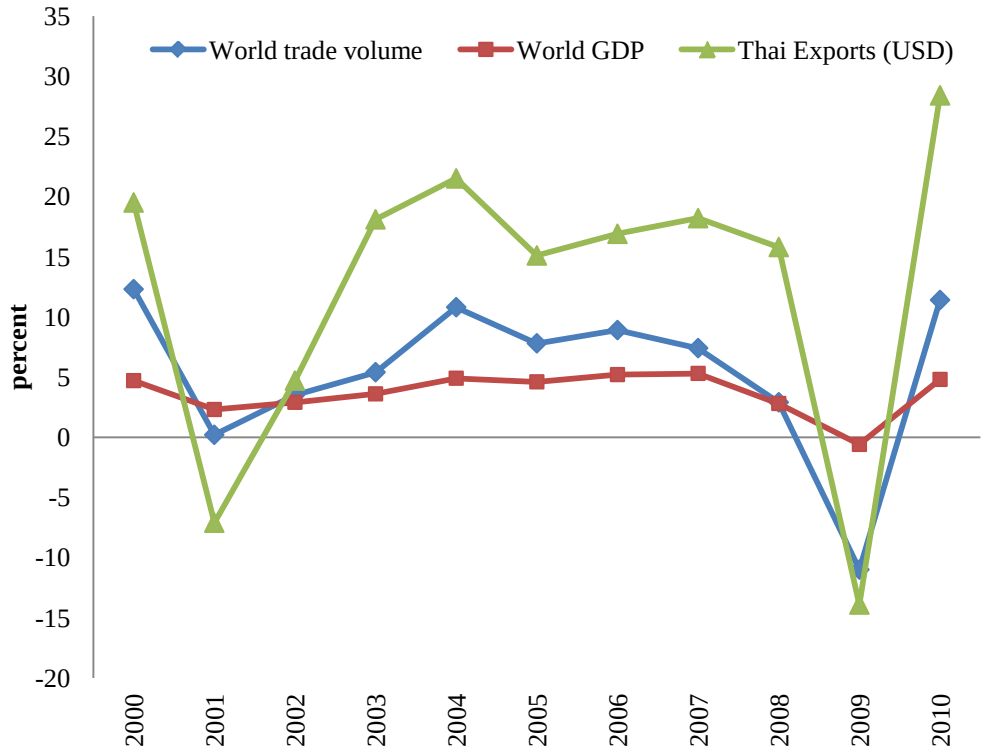
Source: Bank of Thailand

Figure 7.9 illustrates that exports continued in a rising trend despite appreciation of the real effective exchange rate between 2005 and the first half of 2008. The global financial crisis led to a steep decline in exports during the last quarter of 2008 and continued into 2009 before it rebounded in 2010, when the world economy started to recover. During this period, the real effective exchange rate also depreciated, partly as a result of price deflation and economic contraction in 2009. When the Thai economy experienced a V-shaped recovery in 2010, due to a revival of export and consumption demand, inflation started to pick up and led to the appreciation in real exchange rate. After 2000, exports and real effective exchange rate were positively correlated. Hence, the strength of the baht does not necessarily imply a poor performance in exports. The output effect on Thailand's exports from world business cycles is more pronounced than the substitution effect resulting from exchange rate changes.

Figure 7.10 demonstrates that Thai exports are dictated by world income and trade volume, which fluctuate more than the business cycle. Yet the Thai exports were even more sensitive to world output growth than world trade. In 2009, the collapse of Thai exports was mainly due to world recession rather than baht appreciation. By contrast, in 2010, the sharp rebound of Thai exports by 28 % can be attributed to the world economy's strong recovery. It is mere wishful thinking that an undervalued currency can stimulate export. It is therefore misguided to try to resist the baht's strengthening when the world economy rebounds[8].

[8] Nidhiprabha (2010) provides evidence that sustained economic recovery requires growth in world trade volume and enhanced business confidence.

Figure 7.10: World Business Cycle and Thai Exports



Source: Bank of Thailand

During a period of continued appreciation of the baht, the Bank of Thailand was under pressure to resist baht appreciation to protect exporters. The Bank of Thailand intervenes less in the forward market, thus allowing the baht to appreciate against the dollar. The Bank of Thailand has gradually raised its policy interest rate to discourage inflationary pressure. There is concern that the enlarged interest rate differential between key policy and federal funds rates would induce more capital inflow and further strengthen the baht.

In October 2010, the government revoked the 15 percent withholding exemption on interest and capital gains earned by foreign investors. The motivation of this policy was to prevent baht speculation as there was a capital flow surge in the bond market. Tax instruments were called upon to slow baht appreciation. Again, this policy was likely to fail to reduce capital flow, because the inflow is the result of portfolio investment in response to an anticipation of capital gains in the Thai stock market.

The Bank of Thailand has promoted direct investment abroad to lessen pressure on the strengthening baht. Listed firms are permitted to invest abroad. The ASEAN Economic Community framework for 2015 would ease the restriction on outward portfolio investments. With uncertainties in the recovery of the US economy and the sovereign debt crisis in Europe, there would be more volatility of the baht. The Bank of Thailand still ponders the use of various kinds of capital control measures to curb capital inflow, hoping that they may have some deterrent effect on speculators.

VI. Conclusions.

Thailand benefited from the fixed exchange rate system between the 1960s and the 1980s when Thailand experienced a steady growth rate while maintaining a fixed exchange rate, to promote international trade. At an early stage of development, exports were the main growth driver. As the country developed further, other growth drivers such as investment and consumption became principal sources of growth. Exports contributed less to growth as imports increased with exports. There was a tendency to keep the exchange rate at a competitive level to propel export growth. When the country increasingly relied on foreign capital flow to finance an investment-saving gap, the current account deficit became unsustainable. It was difficult for the Bank of Thailand to allow the baht to depreciate, because it would threaten the banking sector, which borrowed heavily in foreign currencies.

Nevertheless, maintaining the overvalued exchange rate of the baht too long led to a drastic exchange rate adjustment which culminated in currency and banking crises in 1997. In the early 1990s, when Thailand experienced rapid capital inflows, the Bank of Thailand did not permit the baht to appreciate against the dollar. Had the baht appreciated, the overheated economy and ensuing economic crisis could have been avoided. From 2006 to 2009, the baht was once again undervalued and the Bank of Thailand did not permit the baht to appreciate by market forces because of concerns that exports and economic growth could be jeopardized. A currency appreciation mitigates the impact of oil price shocks and would not have considerable impact on export growth, which is mainly dictated by world trade volume. An unrealistic exchange rate policy to protect exporters from currency appreciation may result in moral hazard and harm the incentive to enhance competitiveness through productivity improvement obtained from the importation of capital goods.

Interest rate policy cannot be used to target the value of the baht. Foreign exchange market intervention by the Bank of Thailand was intensified when the baht appreciated against the dollar from 2006 to 2009. Intervention in foreign exchange markets was ineffective, because the baht/dollar exchange rate is determined by movements of major currencies and capital inflow to the stock market. An attempt to sterilize this flow would be costly and ineffective in the long run. When exchange rate changes are not allowed to correct current account disequilibrium, adjustments must take place at the output level. With more flexible exchange rate movement, the burden of adjustment would not fall solely on output fluctuation.

Capital controls are instruments usually employed during currency crises. The fourteen-month capital control which began in December 2006 was unnecessary and ineffective. It may have had adverse consequences on foreign direct investment if it sent the wrong signal to investors worried about policy commitment to open capital markets. As such, temporary capital control measures can be detrimental to long-term economic growth.

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