Thailand’s experiences with rising capital flows: recent challenges and policy responses

Yunyong Thaicharoen and Nasha Ananchotikul[1]

1. Introduction

Over the past decade, the Thai economy has continued its financial integration with the global markets. This greater integration has brought benefits in terms of lowering the cost of capital and greater diversification, but it also presents greater risks associated with the increased volatility of flows that comes with a greater share of portfolio inflows. In 2006, the surge in capital inflows, coupled with a current account surplus, put tremendous pressure on the baht, leading to excessive baht appreciation. If left unchecked, this could have threatened export performance and, more importantly, economic instability as domestic demand was marred by political uncertainties and in no condition to provide an alternative engine for growth. Therefore, the Bank of Thailand (BOT) decided to step in to curb the excessive appreciation of the currency. However, several conventional methods to manage the exchange rate proved to be ineffective as the pace of baht appreciation continued to accelerate.

The unremunerated reserve requirement (URR) was thus implemented in December 2006 to provide a price-based friction on selected short-term capital inflows with the aim of slowing down the pace of baht appreciation, reducing short-term capital inflows and allowing the economy to adjust to the large change in international prices. The evidence suggested that the measure had succeeded in achieving its stated objectives, as inflows had been reduced, the baht was more stable and the economy continued to expand satisfactorily with robust export performance and signs of recovery in domestic demand. Mindful of negative and distortionary effects of the URR measure, especially if left in place for too long, the BOT subsequently lifted the measure on 3 March 2008, after carefully ensuring that the threat of excessive currency movements had subsided and that the Thai economy had improved and was ready to better cope with potential flow and currency volatility.

This paper highlights recent challenges to the Thai economy arising from surging capital flows as well as policy responses, with a focus on the implementation of the URR measure. Section 2 summarises key developments over the past decade of the financial integration process between Thailand and the world, in terms of both capital flows and the international investment position, as well as key policy developments. Section 3 focuses on the challenge of rapid appreciation of the baht as a result of surging inflows during 2006–07, as well as policy responses. Section 4 provides details on the URR measure and an assessment of its effectiveness. Section 5 outlines the conditions and rationale leading to the removal of the measure, and the progress on other measures that the monetary authority has recently implemented to strengthen Thailand’s resiliency against volatile flows and exchange rates. Section 6 concludes.

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2. Overview of the policy framework and key developments in capital flows

The BOT adopted inflation targeting as the monetary policy framework in 2000. The target band is for core inflation, which excludes energy and fresh food prices, to be between 0% and 3.5% on quarterly average. This flexible inflation targeting framework provides the central bank with the discipline needed to achieve long-run price stability as the main policy objective, while allowing enough policy flexibility to accommodate other important economic considerations such as economic growth and financial stability.

Under the managed float regime, the BOT has largely allowed the overall direction of the baht to adjust to changes in market fundamentals. The Bank intervenes in the FX markets only to curb excessive short-term volatility or prevent disorderly adjustment of the baht, which could result in adverse impacts on the real sector or pose risks to economic stability. It is not the BOT’s intention to peg the baht at a particular level, but rather to allow it to move in line with regional currencies and consistently with Thailand’s economic fundamentals. Indeed, greater exchange rate flexibility under the managed float regime over the past decade has proved to be quite successful in facilitating the adjustment of the Thai economy to various economic and financial shocks.

In terms of the capital account policy framework, the central bank recognises the importance of the direct benefits of freer flows of capital, including lower costs of funding and greater risk-sharing. Freer flows of capital also play a significant role in deepening the financial markets, improving governance and facilitating technology transfers. This recognition is reflected in Thailand’s record of having a relatively open capital account regime, especially on the inflow side, compared to its emerging market counterparts. However, greater financial integration does present significant policy challenges as well, since greater movements of capital usually entail increased volatility of flows and asset prices which could potentially undermine economic and financial stability. In the rest of this section, we will present a brief discussion of the key developments in capital flow movements into and out of Thailand over the past decade.

Inflows

Following the 1997 Asian crisis, which marked the end of the great wave of capital flows to emerging Asia that began in the early 1990s, there has been a new wave of large capital inflows to the region since 2002. Gross capital inflows to emerging Asia have now returned to the historically high levels of the pre-crisis period. This partly reflects strengthened macroeconomic policy frameworks and growth-enhancing structural reforms of most economies in the region, as well as ample global liquidity and favourable worldwide financial conditions. In the case of Thailand, gross capital inflow[2] had slowly picked up from its lowest level since the end of 1997, and accelerated markedly during 2005 and 2006.[3]

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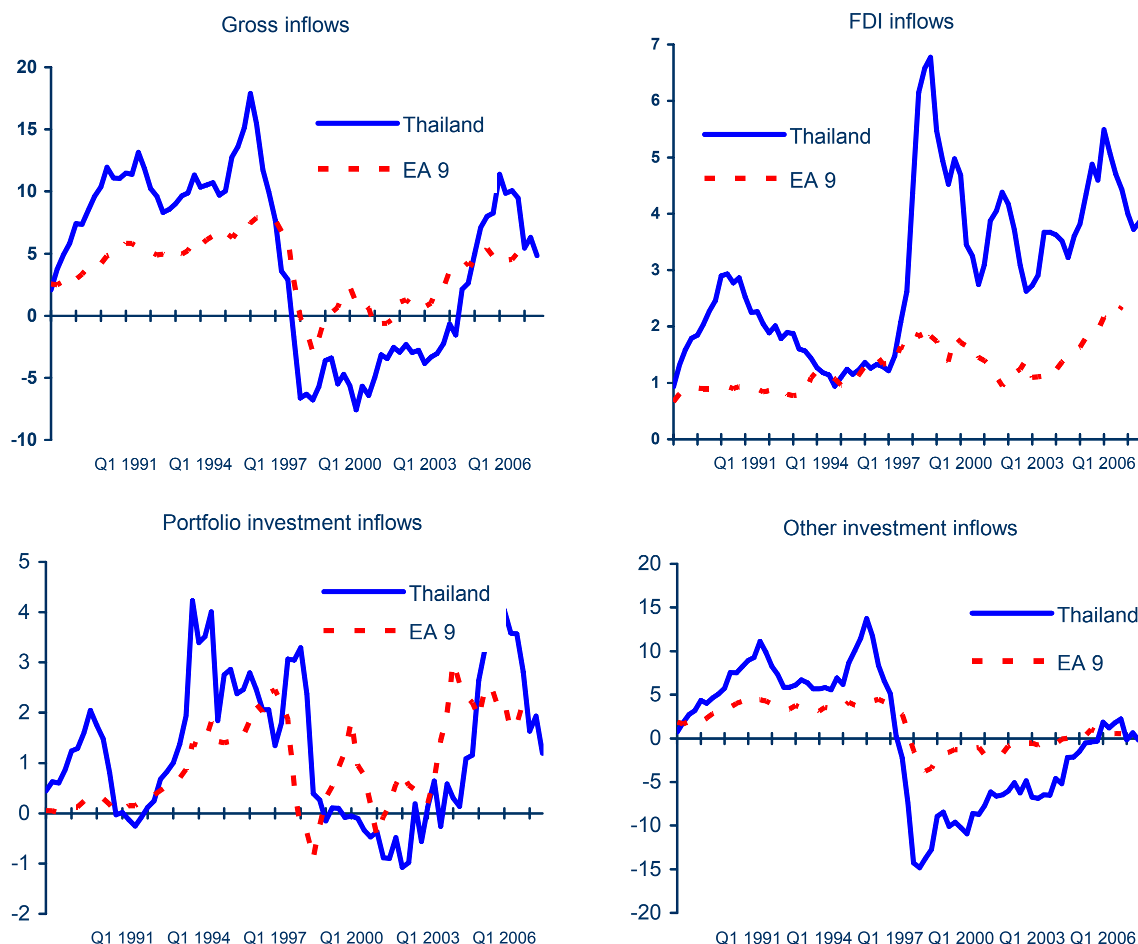
[2] Gross inflow is defined as total non-residents’ inflows minus total non-residents’ outflows. Total flow is comprised of foreign direct investment, portfolio investment and other investment (including loans).

[3] The peak of FDI during 1998–99, in the aftermath of the crisis, largely reflects the recapitalisation of the affected firms in Thailand by their parent companies abroad. Concurrently, the significant drop in inflows from other investment was driven by callbacks and repayment of foreign debt.

Figure 1

Capital inflows by flow type for Thailand and selected East Asian economies[1]

As a per cent of GDP, four-quarter moving average



[1] India, Indonesia, Korea, Malaysia, Pakistan, the Philippines, Sri Lanka, Taiwan (China) and Thailand.

In line with the regional trend, the inflows to Thailand have also shifted from being dominated by bank loans during the pre-crisis period to deriving increasingly from FDI and portfolio investment in recent years, with FDI becoming the most important component and reaching its highest level at 8.2% of GDP during the first quarter of 2006. This trend may be explained by the lessons learned from the Asian crisis, which has led Thai banks and businesses to rely more on domestic borrowing and foreign creditors to be more prudent in making loans, resulting in substantially reduced inflows in the form of foreign debt. Meanwhile, increases in portfolio investment flows probably reflect the movement of funds away from developed countries to seek higher yields in emerging markets, especially in Asia. In Thailand, recent surges in inflows may have also been driven by attractive yields and the expectation of baht appreciation. The increased share of portfolio inflows also implies an increase in the volatility of both asset prices and overall inflows.

Outflows

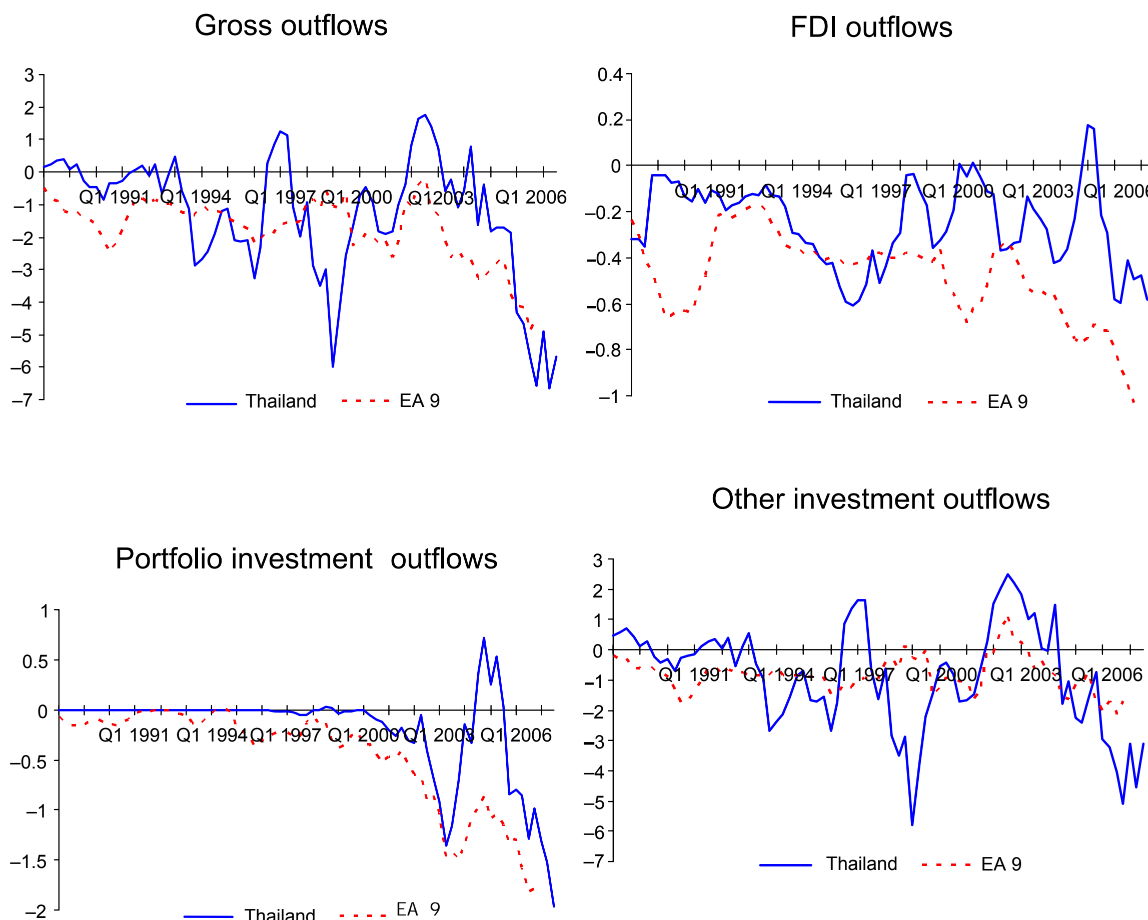
Capital outflows from East Asia and Thailand have increased rapidly in recent years, reaching unprecedented levels (Figure 2). A number of common factors have contributed to

this trend, including increased current account surplus, outflow liberalisation and, in the case of outward FDI, a more global and regional supply chain.

Figure 2

Capital outflows by flow type for Thailand and selected East Asian economies

As a per cent of GDP, four-quarter moving average



In the case of Thailand, most of the outflows remain in the form of foreign currency deposits by the banking sector, as with the other investment flows. This type of outflow largely reflects the increase in foreign asset holding by the banking sector to square its FX positions as a result of being the counterparty to the BOT's swap agreements, which are one of the channels the Bank uses to sterilise its FX intervention. However, in recent years, Thailand's portfolio outflows have increased significantly following the gradual liberalisation of portfolio investment through institutional investors. Still, the overall size of portfolio outflows to GDP remains relatively lower than that of other East Asia economies. (Details of Thailand's outflows liberalisation measures will be discussed in subsequent sections.)

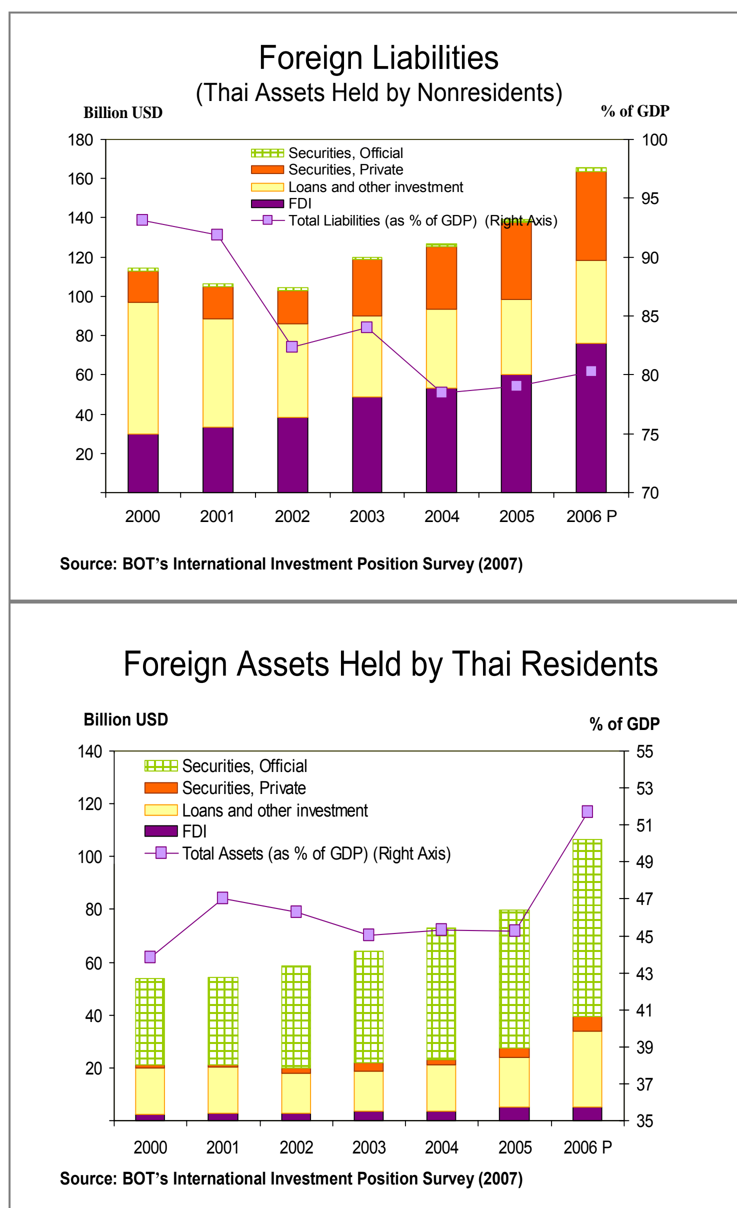
Key developments in Thailand's international investment position

The information from the latest survey of the international investment position (IIP) in 2007 reveals a number of interesting issues and trends:

Thai residents' holdings of foreign assets have risen steadily in line with the continued surplus in the current account. The value in US dollars of foreign assets held

by Thai residents has roughly doubled over the past seven years, from $55 billion in 2000 to $106 billion in 2006, equivalent to 51.7 % of GDP. Most of the increases in foreign asset holdings were, however, carried out by the official sector in the form of rapid accumulation of foreign reserves, which were intended initially to ensure reserve adequacy and later to slow down baht appreciation. The increase in the “loans and other investments” category – especially in 2006 – largely reflects the increase in foreign currency deposits by the banking sector to match increased hedging activities by exporters. Despite continued relaxation of outflow restrictions, both outward direct investment and portfolio investment abroad expanded only slowly during the period up to 2006.

Figure 3



Foreigners' holdings of Thai assets have seen a clear shift from bank loans to FDI and portfolio investment. Thailand's foreign liabilities have risen in dollar amount, but declined in terms of share of GDP, from 93% of GDP in 2000 to 80.3% in 2006. Foreign bank loans declined significantly after the 1997 crisis as both the official and the private sector paid down the external debt and sought alternative financing via domestic financial markets. In the meantime, non-residents' holdings of Thai assets in the form of FDI and portfolio securities

continue to grow steadily over the period as a result of the Thai economy's improved economic fundamentals as well as a global trend of diversifying into emerging markets.

Table 1

Thailand's international investment position, classified by business sector

In millions of US dollars

	Year	Banks	Non-bank corpora-tions	Govern-ment and state enterprises	Monetary authorities	Total	
						Amount	% of GDP
Assets	2001	16,546	3,807	923	33,048	54,324	47
	2006	25,628	11,702	2,335	66,985	106,650	51.7
Liabilities	2001	15,160	61,769	20,912	8,325	106,166	91.9
	2006	26,890	119,253	19,468	0	165,611	80.3
Net	2001	1,386	–57,962	–19,989	24,723	–51,842	–44.9
	2006	–1,262	–107,551	–17,133	66,985	–58,961	–28.6

Source: BOT 2007 IIP.

Though Thailand's external position remains a net foreign liability position at the aggregate level, its vulnerability to currency exposure has decreased significantly. As a percentage of GDP, the net foreign liability has declined from 45% in 2001 to 29% in 2006. In addition, the gross external debt figures certainly overstate the extent of currency exposure because they fail to capture the currency risk reduction through increased hedged positions as well as the rising share of baht-denominated external debt.[4] Moreover, the increased importance of FDI as opposed to bank loans has reduced the risk of sudden reversal. Thus, Thailand's external balance sheet position is much less sensitive to exchange rate changes now compared to in the past.

However, there are still a number of important distributional issues that warrant further scrutiny. In terms of sectoral distribution, there seems to be a clear trend of sectoral mismatch. While most liabilities are accumulated in the non-bank corporation sector, most of the assets, roughly two thirds of the country's foreign assets, are with the central bank in the form of foreign reserves.[5]

One of the implications of the sectoral mismatch is the big difference in terms of debt-equity profile between Thailand's foreign assets and liabilities. On the liability side, the share of Thai assets held by foreigners in the form of equity has been rising rapidly, reaching 65% of total liabilities in 2006. On the asset side, however, roughly 93% of foreign assets held by Thai residents are in debt form, largely reflecting the fact that a significant share of total assets is under central bank reserve management and can therefore by law only be invested in safe and liquid assets such as government bonds. The concentration of private assets in fixed income instruments could also be attributed to regulatory restrictions, low risk tolerance on

[4] A recent estimate indicates that up to 25% of total external debt is denominated in baht.

[5] As for the banking sector, the net position is expectedly small due to a prudential regulation that limits the open position of foreign currency holdings.

the part of Thai investors, and the lack of investment capability in a more complex setting or instruments in the form of both outward FDI and portfolio equity. Compared to debt, return on equity investment may be more volatile, but it is also associated with higher expected return and greater potential for risk-sharing in the long run. Thus, the current debt-heavy portfolio allocation by Thai residents is likely to be suboptimal in terms of risk-return profile. Granted, the share of outward equity investment will tend to rise along with the financial literacy and investment capability of Thai investors.

Table 2

Thailand's IIP by debt equity classification[1]

%	Year	Debt	Equity
Assets	2001	94.8	5.2
	2006	91.3	8.7
Liabilities	2001	65.1	34.9
	2006	34.7	65.3

[1] Equity includes equity FDI, equity portfolio, derivative instruments and gold holdings by the central bank.

Source: IIP survey (2007).

It is also worth noting that Thailand's holding of foreign assets in the form of FDI, portfolio and other investment, as a percentage of GDP, is very small in comparison to those of other countries in the region. An exception is the level of foreign reserves, which reflects the accumulation of reserves after the 1997 crisis, partly as a result of the FX intervention in an attempt to slow down the currency appreciation.

Table 3

Comparisons of foreign assets as a percentage of GDP across countries (by type of flow)

Stock as % of GDP	Direct investment outflows		Portfolio equity outflows		Debt outflows (portfolio + other)		Foreign reserve minus gold	
	1995	**2004**	**1995**	**2004**	**1995**	**2004**	**1995**	**2004**
Malaysia	10.5	21.0	1.0	2.2	14.7	31.2	26.8	56.4
Singapore	46.9	104.4	41.5	139.2	77.3	250.4	81.8	105.1
Philippines	1.7	2.3	0.7	1.7	13.2	20.1	8.4	15.2
Indonesia	0.8	1.3	0.0	0.0	5.7	7.4	6.8	15.5
Thailand	1.4	3.3	0.0	0.4	6.2	11.1	21.4	29.8
Korea	3.1	7.8	0.3	2.0	12.1	13.4	6.3	29.2
Taiwan	10.4	29.9	3.2	37.0	32.1	64.9	34.1	75.1
China	2.5	2.2	0.1	0.3	8.7	15.6	10.8	37.3
Japan	4.5	7.9	2.8	7.8	39.0	55.3	3.5	17.8
United States	18.4	28.0	10.7	21.5	22.1	33.9	1.0	0.6

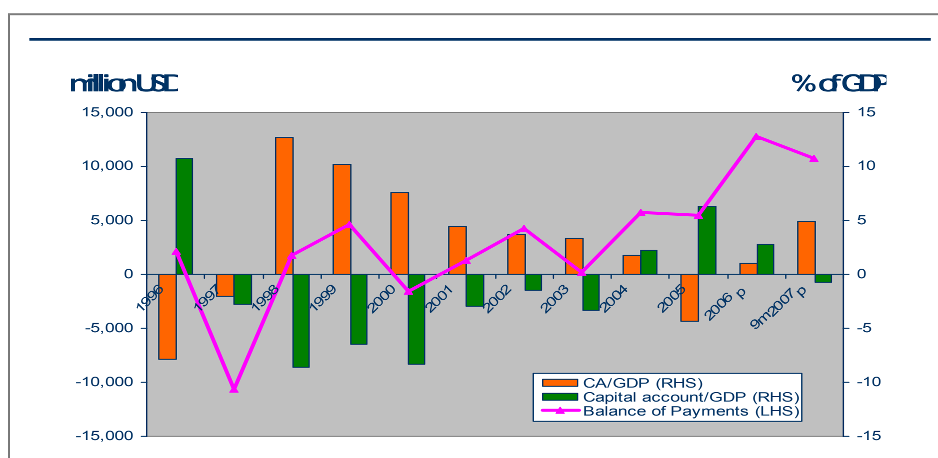
Source: EWN Mark II dataset; authors' calculations.

3. Rapid baht appreciation in 2006 and policy responses

Following the 1997 financial crisis and up to 2004, Thailand's balance of payments positions followed a similar pattern of surpluses in the current account and deficits in the capital account. The current account surpluses were attributable to robust export performance, benefiting from a competitive exchange rate as well as a healthy global economy, while import growth was relatively subdued owing mainly to the slowdown in investment spending relative to the pre-crisis period. At the same time, the deficits in the capital account over the period were mainly a result of the continuation of debt repayment to foreign investors by both the public and private sectors as well as the shift in funding towards domestic financial markets. Therefore, the upward pressure on the baht from the current account surplus was to some extent offset by the capital account deficit, resulting in a rather gradual trend of baht appreciation during 2001–04.

Figure 4

Balance of payments development

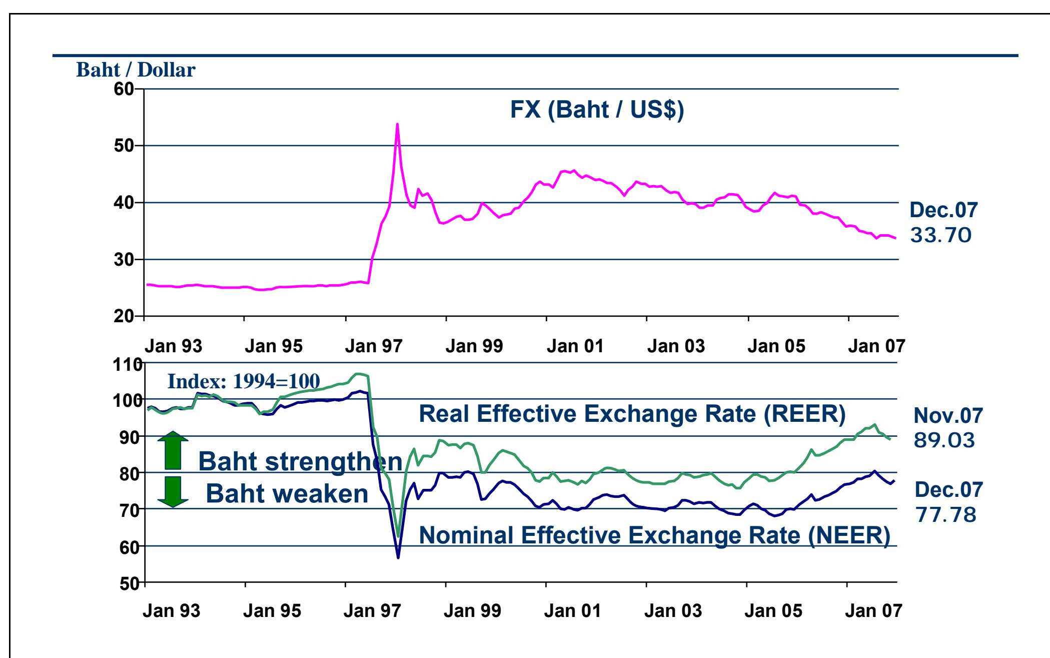


Source: Bank of Thailand.

In 2005, however, the situation began to reverse, with the current account registering a large deficit while the capital account recorded a surplus for the first time since the crisis. The sudden turnaround in the current account position was caused chiefly by the oil price subsidy programme implemented during 2004 and mid-2005, which fixed retail petrol prices below the world markets' prices, resulting in continued growth of domestic oil consumption and a huge import bill for petroleum products, given that Thailand needed to import nearly 90% of domestic oil consumption. Meanwhile, declining outflows of debt repayment and surging inflows in the form of both FDI and portfolio securities contributed to a large surplus in the capital account. Again, with the positions of the two accounts in opposite directions, the baht was largely stable in 2005.

Figure 5

Bilateral and effective exchange rate for the Thai baht



Source: Bank of Thailand.

However, the upward pressure on the baht intensified in 2006 due to surpluses in both the current and the capital account. In the former, while exports continued to expand satisfactorily, import growth declined sharply following the abolishment of the oil price subsidy programme and softened domestic demand due mainly to rising concerns over political uncertainties. As a result, the current account reversed from a $7.6 billion deficit to a surplus of $2.2 billion, or 1.1% of GDP. However, most of the upward pressure on the baht came from the capital account. In particular, the amount of inflows via private non-bank sectors had risen by more than $4 billion the previous year to $13 billion, or 6.6% of GDP. The increase in inflows to the non-bank private sector was accounted for by the sharp increase in both equity and debt flows. It is worth nothing that the outflows in the bank sector mainly reflected the increase in banks' holdings of foreign currency deposits or short-term instruments to square their foreign exchange position as a result of being the counterparty to the BOT's swap agreements (one of the channels the central bank uses to sterilise its FX intervention).[6] If the outflows associated with the swap agreements between the BOT and the banking sector were taken out, the adjusted figure for the capital account in 2006 would be much higher, comparable to the figure in 2005. The sharp increase in balance of payments surpluses from $5.4 billion in 2005 to $12.7 billion in 2006, with most of the surpluses coming from the capital account, led to a rapid baht appreciation of more than 16% against the US dollar, making it one of the world's most strengthening currencies in 2006.

[6] Therefore, the overall capital account position will underestimate the upward pressure on the baht in this case. To better assess the pressure from capital flows, one should consider the rise in reserves as a result of FX intervention to curb upward pressure on the baht from inflows as well.

Table 4

Thailand's balance of payments and selected external sector indicators (2001–06)[1]

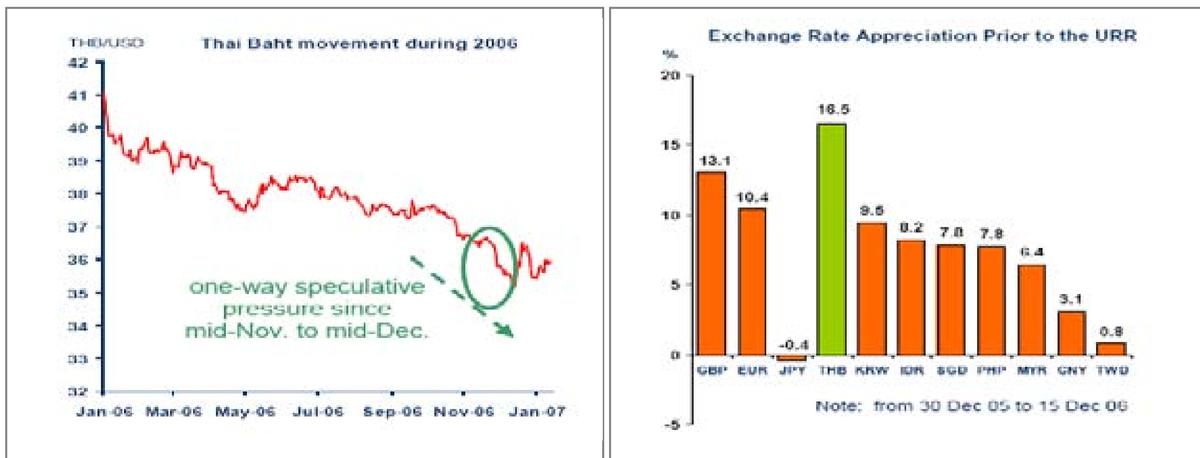
Millions of US dollars	Average 2001–04	2005	2006
Current A/C	**4,338**	**–7,642**	**2,315**
(% of GDP)	3.3%	–4.3%	1.1%
Capital and financial A/C[1]	**–1,613**	**11,085**	**6,806**
(% of GDP)	–1.4%	6.3%	2.1%
Of which: Bank	**–165**	**222**	**–7,427**
(% of GDP)	–0.2%	0.1%	–3.6%
Of which: Private non-bank	**–1,924**	**9,340**	**14,721**
(% of GDP)	–1.5%	5.3%	7.1%
Of which: Equity	**3,578**	**7,245**	**11,892**
(% of GDP)	2.5%	4.1	5.7%
Of which: Debt[2]	**–1,636**	**659**	**4,661**
(% of GDP)	–1.3%	0.4%	2.3%
Balance of payments	**2,857**	**5,422**	**12,742**
International reserves[1]	**40,988**	**52,066**	**66,985**
Forward obligations[1]	**1,810**	**3,840**	**6,941**

[1] Reinvested earnings (RE) included. [2] Including direct loans, other loans and debt securities.

Source: Bank of Thailand.

Figure 6

Baht movement in 2006



Source: Bank of Thailand.

If left unchecked, the rapid rise of the baht in 2006 could have posed significant risks to macroeconomic stability through its implications for export performance. Over the past decade, the importance of the export sector has increased significantly relative to Thailand's economic structure, with the value of exports relative to overall GDP rising from around 30%

in 1997 to more than 60% in 2006. Thus, in general, the health of the Thai economy has been increasingly tied to the performance of the export sector. Even more importantly, over the past few years the Thai economy has been left with not much choice but to rely on net exports as the engine for growth, as domestic demand has been markedly affected by continued political uncertainties and higher oil prices. Table 5 shows that during 2001–05, the country's economic growth was basically driven by domestic demand. However, during 2006–07, more than three fourths of GDP growth came from net exports. Indeed, without growth contribution from net exports, overall economic growth during that time would have been only 1.1%, a figure many may consider to be at the brink of recessionary conditions by the Thai economy's and other emerging markets' standards.

Table 5

Contribution to Thailand's GDP growth

	Avg 2001–05	**Avg 2006–Q3 2007**
GDP growth	5.1	4.8
– Domestic demand (includes change in inventory and statistical discrepancy)	5.4	1.1
– Net exports	–0.3	3.7

Sources: Bank of Thailand; NESDB.

Besides posing a threat to overall economic growth, excessive baht appreciation might also have resulted in instability in the labour market. The sectors most vulnerable to exchange rate appreciation were the agricultural sector and labour-intensive sectors such as textiles. The exporting firms in these sectors, compared to their counterparts in high-tech industries such as electronics or automobiles, tended to be characterised by small size, low import content production (thus, no offsetting gain from cheaper imports), low natural hedge, infrequent use of hedging instruments, low margin, little pricing power and higher price elasticity. Therefore, it would have been extremely difficult for firms in these sectors to cope with an excessive rise of the baht in a very short period of time. More importantly, these sectors accounted for a significant share of overall employment, with jobs in the agricultural sector representing 38% of Thailand's labour force, while the labour-intensive manufacturing sector made up 27% of total manufacturing jobs in Thailand. The loss in price competitiveness in such a short period could possibly have led to mass closure of the firms in these sectors, with potentially grave consequences for the labour market outlook.

Policy responses prior to the implementation of the URR

In response to the rapid rise of the baht, in 2006 the BOT tried to slow down the pace of baht appreciation by implementing a number of conventional measures including FX intervention, outflow liberalisation and anti-speculative measures. These measures, however, proved to be rather ineffective in achieving the stated objectives. Each of the measures is described below.

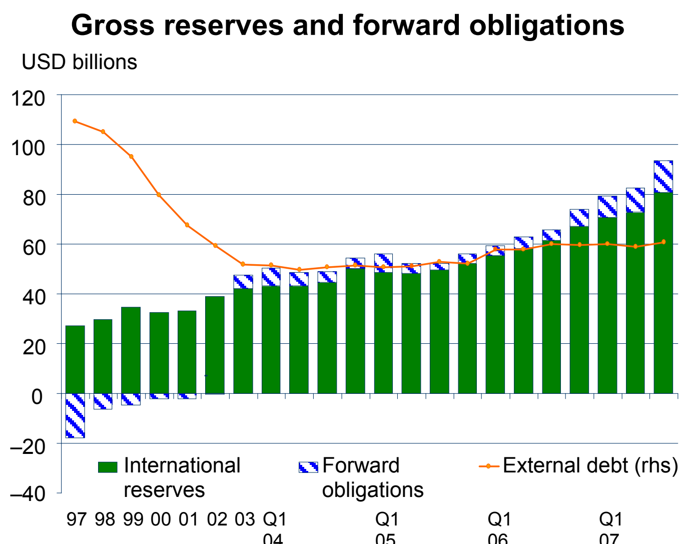
(i) FX intervention

The rapid baht appreciation in 2006 was deemed to be a situation that warranted closer management by the central bank as it could have posed a threat to economic stability. Thus, the BOT stepped up the conduct of FX purchase operations in 2006. This can be seen in a marked increase of net reserves (ie gross reserves plus net forward positions) of roughly $18 billion in 2006 alone (Figure 7), equivalent to 29% year-on-year growth, among the

highest rates of reserve accumulation in the region (Figure 8). The rate of reserve accumulation over this period was also significantly faster than that observed during 2000–05, when reserves grew on average only $5 billion per year.

Figure 7

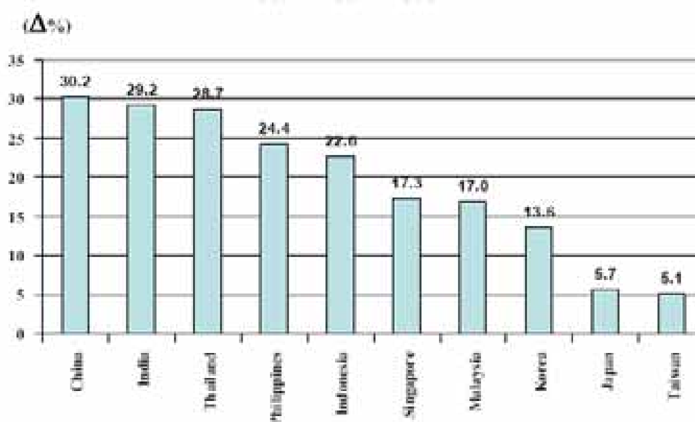
Gross reserves and forward obligations



Source: Bank of Thailand.

Figure 8

Percentage change in reserves in 2006 for selected countries



Sources: Bank of Thailand; CEIC.

Despite sustained efforts, the effectiveness of FX intervention proved to be limited under the surge of inflows as the baht continued to strengthen against the US dollar. This was especially the case in the last two months of 2006 when the rate of baht appreciation against the dollar accelerated to 0.7% per week, compared to the average appreciation rate of 1% per month over the first 10 months of the year.

Table 6

Net changes in reserves and pace of baht appreciation, 2006

	January–October	November–mid-December
Change in gross reserves	$1,023 million per month	$474 million per week
Change in net reserves[1]	$1,165 million per month	$912 million per week
Appreciation of THB/USD	1.0% per month	0.7% per week

[1] Reserves include forward obligations.

Source: Bank of Thailand.

The rise in reserves and surplus liquidity arising from intervention posed an additional significant policy challenge in terms of liquidity management. The BOT normally sterilises to offset the excess liquidity resulting from FX intervention in order to avoid inflationary effects and maintain the policy rate at the level set by the Monetary Policy Committee (MPC). In theory, sterilisation can be done by conducting the central bank's open market operations or raising reserve requirements. The latter option, however, imposes implicit costs on financial institutions if reserve requirements are not remunerated or are remunerated at lower than market rates. The BOT therefore chose to sterilise largely by utilising open market instruments, particularly through issuance of BOT bonds, FX swap and repurchase transactions.

Of the three instruments, the issuance of BOT bonds emerged as the main choice for liquidity management thanks to its relative efficiency in absorbing liquidity on a large scale with longer maturities. Its importance particularly grew over the past few years, in line with the accumulation of reserves. Figure 9 shows the shares of outstanding amounts of each instrument used for liquidity management in 2003 and 2007.[7] The share of BOT bonds increased from 43% in 2003 to 62% in 2007, while its outstanding value increased more than sevenfold over that period, from 180 billion baht in 2003 to 1,400 billion baht at the end of 2007. Meanwhile, to reduce the need for refinancing too frequently in the face of sustained pressure on the baht, the maturity of BOT bonds issued has become longer over the past few years, from largely one-year maturity in 2005 to one- to three-year maturity in late 2007 (Figure 10).

The direct cost of sterilisation has not been a big policy concern so far, since the cost of carry on international reserves is largely even, as domestic interest rates are on average comparable to foreign interest rates. However, too many bond issues bunching up together in a short period could have an adverse impact on the yield curve. Special attention was therefore paid to the timing, volume and maturity of the bond issues in order to minimise this impact.[8] Nevertheless, if the need to intervene in the FX market and subsequent sterilisation through issuance of BOT bonds persists for a very long time, it could have implications for the cumulative costs of such operations as well as the BOT's ability to maintain interest rates at a level consistent with targeted inflation rates.

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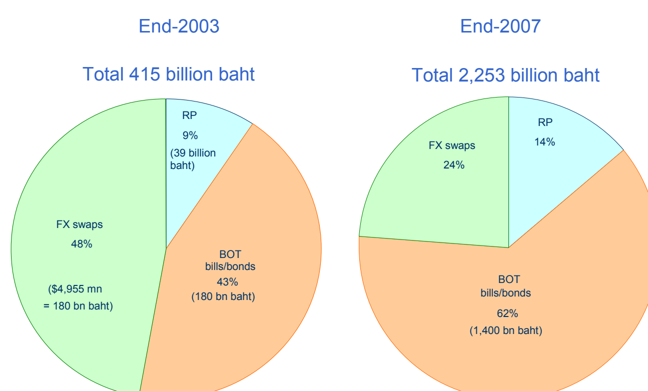
[7] Note that the figures shown here do not necessarily represent the amount of sterilisation (or intervention, for that matter) conducted by the BOT, as the Bank uses these instruments for overall liquidity management and not only for sterilisation purpose.

[8] Another way to minimise such risks is to issue bonds directly to household sectors. For example, recently BOT savings bonds were issued to retail depositors, and received tremendous interest. In this way, the Bank manages to absorb liquidity and provide an alternative saving vehicle for depositors while avoiding disrupting the yield curve.

Figure 9

Share of outstanding amount of OMO instruments for liquidity management (by type)

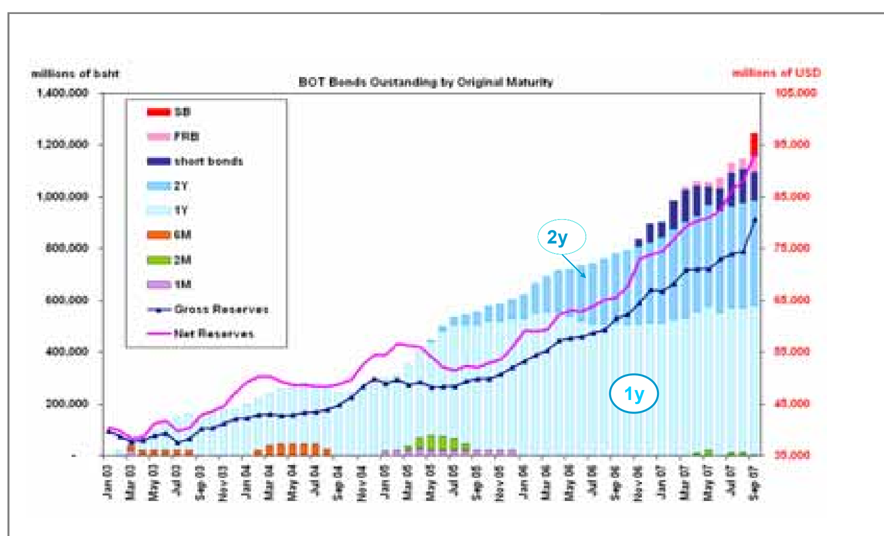


Source: Bank of Thailand.

Figure 10

Outstanding amount of BOT bonds

By original maturity



Source: Bank of Thailand.

As for the implications of FX intervention on the central bank’s balance sheet, rapidly rising reserve accumulation and substantial appreciation of the baht against the dollar led to considerable FX revaluation loss in 2006. Despite the BOT’s efforts to gradually diversify the currency composition of the reserves away from dollars over the past several years, dollar-denominated assets still account for a significant share of total reserves. At times, reports of losses on the BOT’s balance sheet have been played up by the media and often put out of context, creating misunderstanding among the public. In response, the BOT has stepped up its communication with the market and the public at large on the rationale behind and explanation of the implications of FX intervention for the BOT’s balance sheet. Emphasis should be placed on medium-term balance-sheet performance, and not as much on the

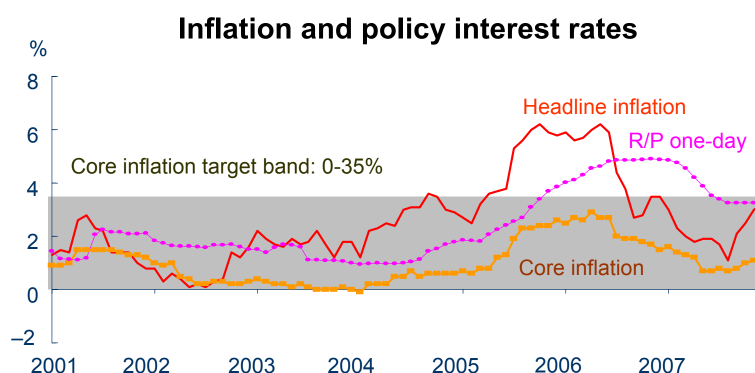
year-to-year valuation losses incurred as a result of short-term exchange rate fluctuations. More importantly, it is the BOT 's policy to give priority to maintaining overall economic and financial stability over the profits and losses on the central bank's balance sheet.

(ii) Interest rate policy

Theoretically, one way to reduce the size of inflows is to lower the policy interest rate. Granted, as an inflation targeting central bank, the BOT would give priority to keeping inflation within the stated band when setting the policy rate, while taking other factors such as economic growth and FX stability into consideration. However, the situation in 2006 complicated the BOT's decision whether to lower the policy rate even more than usual. In July 2005, after the termination of the oil price subsidy, headline inflation jumped markedly to average close to 6% over the second half of the year. Meanwhile, core inflation, which excludes energy and fresh food prices, came close to the upper bound of the inflation band (0–3.5%) in mid-2006. In response to this growing inflationary pressure, the BOT gradually raised the policy rate to the peak of 5% in mid-2006 in order to contain the second-round effects of the price increase. The boost in the policy rate seemed to have worked as inflation started to level off. However, towards the end of the year, there was renewed concern over price stability, as global oil prices seemed to be heading up again. As a result, the MPC decided in December 2006 to keep the policy rate unchanged at 5%. It was also of the view that lowering the rate with the aim of weakening the baht despite the looming threat of rising inflationary pressure might send the wrong signal to the markets about the Bank's commitment to maintaining price stability. Finally, the 5% policy rate was hardly high compared to rates in many other currencies at the time, and thus was unlikely to cause the baht to be a main target currency for carry trade activities.

Figure 11

Inflation and policy interest rates



Source: Ministry of Commerce.

(iii) Outflow liberalisation

Another policy measure which could help mitigate upward pressure on the baht is outflow liberalisation. Removing regulatory restrictions on outflows in an appropriate sequencing and pace would not only help create more balanced flows and thus alleviate upward baht pressure, but also enhance the benefits from greater economic and financial integration through risk-sharing, diversification and enhanced return. In fact, given the relatively low level of foreign asset holding by Thai residents compared to other comparable economies (as shown in Table 3), there was much room for Thailand to gain from greater investment opportunities in the global markets.

Responses to outflow relaxation were rather slow in the early phase. After the external position stabilised following the 1997 crisis, the BOT gradually relaxed restrictions on portfolio outflow investment from 2003 by allowing households and corporations to invest in

securities abroad through qualified institutional investors under the pre-announced annual quota. The given quota is allocated among seven types of institutional investors: (1) the Government Pension Fund; (2) the Social Security Fund; (3) insurance companies; (4) specialised financial institutions; (5) mutual funds; (6) provident funds; and (7) securities companies.[9] However, during 2003–06 only 18% the of total annual quota was actually invested abroad, and the outstanding amount of portfolio investment abroad by qualified institutional investors at the end of 2006 was less than $2 billion. Such low interest in investing abroad over that period can be attributed to both cyclical and structural factors. The cyclical factors included the favourable returns of domestic assets and the continued trend of baht appreciation, and the structural ones most likely included households' lack of financial literacy regarding foreign investment and institutional investors' inability to offer attractive investment products at reasonable cost.

Much of the portfolio outflows were in the form of fixed income funds with full FX hedging, with the simple objective of earning slightly higher fixed returns compared to the returns offered by domestic bank deposits. This type of investment would not necessarily provide much relief to the upward pressure on the baht, as the weakening pressure on the currency from the outflows was cancelled by the opposite pressure arising from forward purchases of baht. For private portfolio outflows to effectively counter the upward pressure, the hedging ratio of this kind of investment would have to be lower. Such an investment strategy is likely to require underlying investment assets in the form of equity securities[10] or more sophisticated FX risk management. Granted, these kinds of risk preference, literacy and skills can only be accumulated over time through actual experience as well as investment in the capacity-building of institutional investors. The bottom line is that the relaxation of outflow restrictions, while bringing immediate benefits in terms of greater risk diversification for investors, was quite ineffective in mitigating the upward pressure on the baht, especially while the market expected the currency to strengthen (see list of outflow liberalisation measures for 2003–07 in Appendix 1).

(iv) Measures to manage inflows

In general, Thailand has been very open to investment from abroad, with relatively small restrictions on inflows, especially those involved with genuine trade and investment. However, in cases where the BOT detected currency speculation activities which could jeopardise exchange rate stability, it would consider introducing measures aimed at prohibiting or discouraging such activities. Table 7 gives a summary of important anti-speculative measures implemented over the past five years.

Of particular interest are the measures implemented in November and December of 2006. Entering the fourth quarter of 2006, the upward pressure on the baht had intensified, with large sums of foreign inflows channelling into a number of short-term fixed income instruments with the objective of gaining from attractive yields and anticipated baht appreciation. These activities, if left unchecked, could have led to a self-fulfilling prophecy, as the baht would probably have continued to strengthen beyond what is justified by the fundamentals. As a result, the BOT implemented a number of measures to discourage such activities. However, the effectiveness of these measures proved to be limited. As the

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[9] For the first four types of institutional investors, the investment quota is allocated by the BOT. The quota for the latter three is allocated by the Securities and Exchange Commission (SEC), which receives the annual quota from the BOT.

[10] Discussions with institutional investors in Thailand revealed that most of the fixed income funds (with low volatility of underlying assets) were fully hedged for FX risk, while the FX exposures of equity funds tended to be unhedged since equity returns were usually already highly volatile. Nevertheless, hedging preferences may change in the future.

currency threatened to break 35 baht per US dollar – seen by market participants as the key psychological threshold – the BOT decided to announce the implementation of the URR on short-term inflows on 18 December 2006.

Table 7

Summary of the BOT's anti-speculative measures during 2003–06

Date	Detail of measures
11 Sep 2003	With underlying trade or investment, financial institutions can borrow Thai baht or enter into transactions comparable to baht borrowing from non-residents up to underlying value. However, for transactions without underlying trade and investment, financial institutions can borrow Thai baht or enter in transactions comparable to baht borrowing from non-residents for only up to 50 million baht per entity. Applies to transactions whose tenor is not over three months.
14 Oct 2003	The daily outstanding balance of the Non-resident Baht Account is limited to a maximum of 300 million baht per non-resident. Exceptions to this limit considered on a case by case basis by the BOT.
3 Nov 2006	The BOT seeks cooperation from financial institutions not to issue and sell bills of exchange in baht for all maturities to non-residents.
4 Dec 2006	– Financial institutions are asked to refrain from selling and buying all types of debt securities through sell-and-buy-back transactions for all maturities. Such transactions are financial instruments which non-residents can use to evade the BOT's anti-speculation measures. – Financial institutions are allowed to buy and sell foreign currencies with non-residents or to credit or debit the Non-resident Baht Accounts for the settlements relating to investments in government bonds, treasury bills or BOT bonds only when such investment holdings are longer than three months. – Financial institutions are allowed to borrow baht or enter into transactions comparable to baht borrowing from non-residents without underlying trades and investments in Thailand only for a maturity of at least six months, an increase of three months from the previous measure.

4. Implementation of the URR and assessment of its effectiveness

On 18 December, 2006, the BOT announced the implementation of the URR, considered a price-based friction, on selected types of inflows. The objectives of the URR were to: (1) break the momentum of rapid one-way speculation on the baht and allow the baht movement to be more in line with regional currencies; (2) slow down the surge of inflows, which would enable the FX management to be more effective, especially during the period of ongoing concerns over the US dollar slide; and (3) provide time for the private sector to adjust to the sharp rise of the baht and for various measures implemented by the central bank aimed at stimulating domestic demand and achieving more balanced flows to bear fruit.

Under the URR, investors who brought new foreign currency funds into Thailand and wanted to convert into baht for external borrowing, investing in debt securities, mutual funds and property funds, and those FX transactions without proof of underlying positions, were required to reserve 30% of the total fund amount with commercial banks and would be allowed to get the reserve back after one year without penalty. However, if the investors took

the funds out of Thailand within the year, they were refunded only two thirds of the reserved funds.

In designing the URR measure, the BOT was careful to apply the measure only to the types of inflows most likely to be employed by currency speculators, while minimising the impact of such measures on inflows associated with genuine trade and investment. Therefore, the Bank exempted inflows of less than $20,000 and those related to trade in goods and services, foreign direct investment, and equity portfolio investment in the stock exchange.[11] Moreover, the URR did not affect funds already in Thailand prior to 19 December 2006, or compromise investors' freedom to move such funds out of the country in the future.

To alleviate the burden of the URR measure on the business sector, the BOT gradually announced relaxations of the measure:

- In February 2007, the choice of full FX hedging was provided as alternative for the 30% reserve requirement for loans.[12] This option required the investor to fully hedge the FX exposure of the loan for its entire life, for loans with original maturity of less than or equal to one year. For loans with longer original maturities, investors had to fully hedge their FX exposure for at least one year, and could manage their FX risks as they desired afterwards.
- In March 2007, a similar hedging alternative was provided for investment funds into debt securities and unit trusts such as mutual and property funds, with the added conditions that: (1) the funds be kept in a Special Non-resident Baht Account for Debt Securities and Unit Trusts (SND), allowed only for settlements related to investment in debt securities and unit trusts; and (2) the full FX hedging be maintained throughout the holding of such securities.
- In December 2007, additional relaxations were announced, including:
  - Loans not exceeding $1 million and with a maturity of at least one year were exempted from both the reserve requirement and the full hedge requirement.
  - Businesses wishing to borrow in foreign currency and having a natural hedge in the form of future foreign currency earning were allowed to submit the request for exemption from both requirements on a case by case basis.
  - New investment funds, as part of the rights offering programme by existing property funds, were exempted from both requirements.

(Please see further details on the URR applications on different types of inflows and subsequent relaxations in Table 8.)

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[11] Initially, the URR measure was also applied to equity investment in the Stock Exchange of Thailand (SET). However, it was exempted on the day after the announcement for a number of reasons, including: (1) concern over the severe decline in stock value during the first day of trading following the URR announcement, with potentially much more selling orders to come; (2) the commitments by custodian banks that they could monitor the funds investing in the SET via the special accounts; and (3) the assessment that investing in equity securities is not the most likely option to be used for currency speculation due to its inherently high price volatility. Thus, beginning on 20 December 2006, new funds earmarked for equity investment in the SET and in other official exchanges were exempted from the URR and must be kept in the SNS. The funds cannot be used for investing in other types of securities.

[12] New inflows with fully hedged FX positions will not cause upward pressure on the baht at the time of converting foreign funds into baht since the buy order for dollars in the forward leg of the swap agreement will offset the spot sale of dollars. However, the pressure on the baht might resurface when the forward positions were unwound after the URR measure was abolished.

Table 8

Details of the Unremunerated Reserve Requirement (URR) measure and subsequent relaxation (by type of inflows)

	Trade, services, FDI	**Portfolio equity (<10% of ownership)**		**Loans (only those signed after 18 December 2006)**	**Bonds**	**Mutual funds, property funds**	**Swaps with local banks**	**Non-resident Baht Account (NRBA)**
		In the stock market	**Outside the stock market**					
URR (19 Dec 2007)	Exempt	Exempt; funds kept in SNS[1] account	Case by case basis	URR 30%	URR 30%	URR 30%	URR 30%	URR 30%
URR (between Mar and Dec 2007)	Exempt	Exempt; funds kept in SNS account	Case by case basis	URR 30% or full hedge (FH) for the maturity of loan, or up to one year for loans with maturities > one year	URR 30% or FH for the whole holding period, and funds must be kept in an SND account[2]	URR 30% or FH for the whole holding period, and funds must be kept in an SND account[2]	URR 30%	URR 30%
URR (17 Dec 2007– 3 Mar 2008)	Exempt	Exempt; funds kept in SNS account	Case by case basis	URR 30% or full hedge (FH) for the maturity of loan, or up to one year for loans with maturities > one year ***Exemption from URR/FH for*** – loans of amounts not exceeding $1mn and with lending period ≥ one year – loans for firms with export receipts (natural hedge)	URR 30% or FH for the whole holding period, and funds must be kept in an SND account[2]	URR 30% or FH for the whole holding period, and funds must be kept in an SND account[2] ***Exemption from URR/FH for*** – participation in right offering programmes by existing property funds	URR 30%	URR 30%

[1] SNS: Special Non-resident baht account for Securities. [2] The funds must be kept in Special Non-resident Baht Accounts for Debt Securities and Unit Trusts (SNDs), allowed only for settlements related to investment in debt securities and unit trusts.

The URR measure lessened the pressure of baht speculation and was pivotal in ensuring the stability of the currency. However, being aware of the potential adverse effects of the URR measure on the cost of capital for domestic business as well as the erosion of its effectiveness over the long run, the BOT intended to employ the URR only temporarily. In the following subsections, we assess the effectiveness and potential costs of the measure. Considerations leading to its removal in February 2008 are presented in the next section.

Assessment of the effectiveness of the URR measure

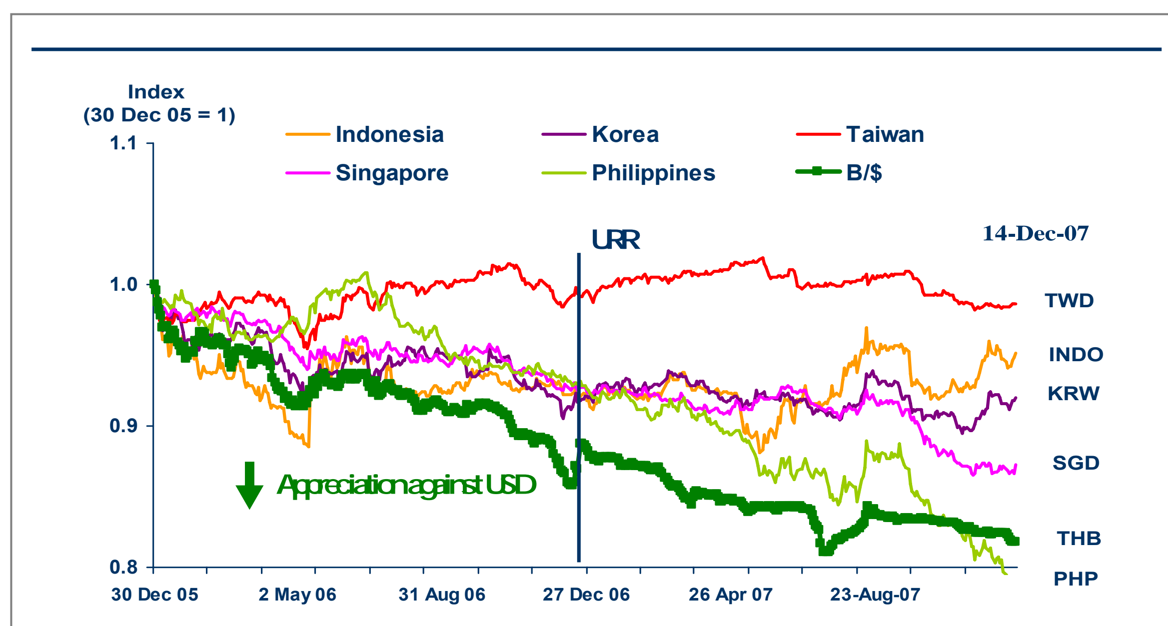
In terms of benefits, the URR measure apparently achieved its stated objectives in the following areas:

(1) The URR helped break momentum of the one-way bet on the baht and allow baht movement to be in line with regional currencies. Prior to implementation of the URR, the baht was under fierce speculative pressure, which caused an excessive pace of appreciation that could have harmed the real sector. After the implementation of the measure, baht movement stabilised.

Figure 12

Selected regional currency movements against the US dollar

2006–2007



Sources: Bank of Thailand; Bloomberg.

Granted, the URR did not succeed in reversing the trend completely, as the appreciation of the currency did resume subsequently due largely to the growing current account surplus. However, the pace of appreciation was much more moderate compared to the few weeks prior to the adoption of the measure, and more importantly was more in line with the currencies of Thailand's major trading partners and competitors. In 2006, however, the baht strengthened in both NEER and REER terms, by 9.8% and 11.3% respectively, implying a significant loss in export price competitiveness. In contrast, in 2007, despite the gain in bilateral terms against the US dollar of 7.4% (between 3 January and 14 December 2008), baht movement in NEER and REER terms was largely unchanged.

Table 9

Changes of baht value in bilateral, nominal effective and real effective terms during 2006 and 2007

	2006 (first 11 months)	**2006 (first 11 months + first two weeks of December)**	**2006 (whole year)**	**2007 (end date/begin date)**
% change in bilateral FX (baht/$)	+14.0	+16.6	+13.9	+7.4 (14 Dec 2007/3 Jan 2007)
% change in REER	+10.3	na	+11.3	+0.6 (Oct 2007/Dec 2006)
% change in NEER	+8.5	na	+9.8	+0.2 (Nov 2007/Dec 2006)

Source: Bank of Thailand.

(2) The URR measure contributed to the stability of the baht in 2007 by reducing inflows to a more manageable level and enabling FX interventions to become more effective in slowing down the pace of currency appreciation. Table 10 summarises selected items from the 2001–07 balance of payments. Most of the reduction in net flows in 2007 is attributable to the inflows to the non-bank private sector, declining from $13.6 billion in 2006 to $6.2 billion during the first nine months of 2007. Unsurprisingly, the net debt flows including loans and debt securities, both of which are subject to the URR or full hedge requirement, show the most significant drop, from $4.6 billion in 2006 to $1.3 billion during January–September 2007.[13] Meanwhile, net equity flows in the non-bank sector, which were exempt from the URR measure, remained large at almost 6% of GDP, similar to the previous year. It is interesting to note that equity flows in terms of both FDI and portfolio investment were apparently not significantly affected by the implementation of the URR, as some had initially feared. In particular, equity flows from non-residents into the stock market have been buttressed by the relatively low P/E ratio of the Thai stock markets and the anticipation among foreign investors of an imminent resolution to the ongoing political uncertainty.

Indeed, the contribution of the URR measure and the full hedge requirement to reducing the upward pressure on the baht goes beyond what is implied by the figures reported in the BOP table. The inflows for which investors chose the full hedge option do not put pressure on the baht at the time of converting foreign currency funds into baht, as the mandatory simultaneous forward purchase of dollars cancels out the pressure on the baht. Figure 13 presents data on the outstanding amount of inflows subject to either the reserve or full hedge requirement, by type of inflow, during December 2006–January 2008. It indicates that investors were more inclined to choose the full hedge option, with more than $4.4 billion worth of funds being fully hedged to cover their FX positions, compared to only around $1.2 billion under the reserve requirement.[14] Most of the fully hedged funds were loans, with

[13] The reduction in net debt flows was also due in part to the increase in portfolio outflows in the form of fixed income funds by domestic institutional investors, especially during the third quarter of 2007.

[14] The figures are the total amount of funds subject to the URR. Thus, only 30% of these amounts are actually required to be deposited at commercial banks under the reserve requirement. Based on available information, investors who choose the URR option can be divided into two main groups: (1) small firms that need to borrow

quite a small amount of funds earmarked for investment in debt securities and unit trusts. Thus, the current measure had directly eased the pressure on the baht by at least $4.4 billion by January 2007. What is harder to estimate is how much additional funds would have flowed into Thailand without the URR and full hedge measures. Based on market intelligence and what has transpired in regional financial markets, a fair and conservative estimate would probably put the total reduction of pressure on the currency resulting from these measures at around $10 billion in 2007.[15]

Table 10

Thailand's balance of payments and selected external sector indicators (2001–06)[1]

(**Million USD**)	**Average 2001-2004**	**2005**	**2006**	**2007[P]**
Current A/C	**4,338**	**–7,642**	**2,315**	**14,049**
(% of GDP)	3.3%	–4.3%	1.1%	5.7%
Capital and financial A/C[1]	**–1,613**	**11,085**	**6,806**	**–2,413**
(% of GDP)	–1.4%	6.3%	2.1%	–1.0%
Of which: Bank	**–165**	**222**	**–7,427**	**–1,121**
(% of GDP)	–0.2%	0.1%	–3.6%	–0.5%
Of which: Private non-bank	**–1,924**	**9,340**	**14,721**	**2,768**
(% of GDP)	–1.5%	5.3%	7.1%	1.1%
Of which: Equity	**3,548**	**7,245**	**11,892**	**13,810**
(% of GDP)	2.5%	4.1%	5.7%	5.6%
Of which: Debt[2]	**–1,636**	**659**	**4,661**	**2,024**
(% of GDP)	–1.3%	0.4%	2.3%	0.8%
Balance of payments	**2,857**	**5,422**	**12,742**	**17,102**
International reserves[1]	**40,988**	**52,066**	**66,985**	**87,455**
Forward obligations[1]	**1,810**	**3,840**	**6,941**	**19,086**
External Debts[1]	**57,516**	**52,039**	**59,643**	**61,738**

[1] Reinvested earnings (RE) included. [2] Including direct loans, other loans, and debt securities.

[P] preliminary

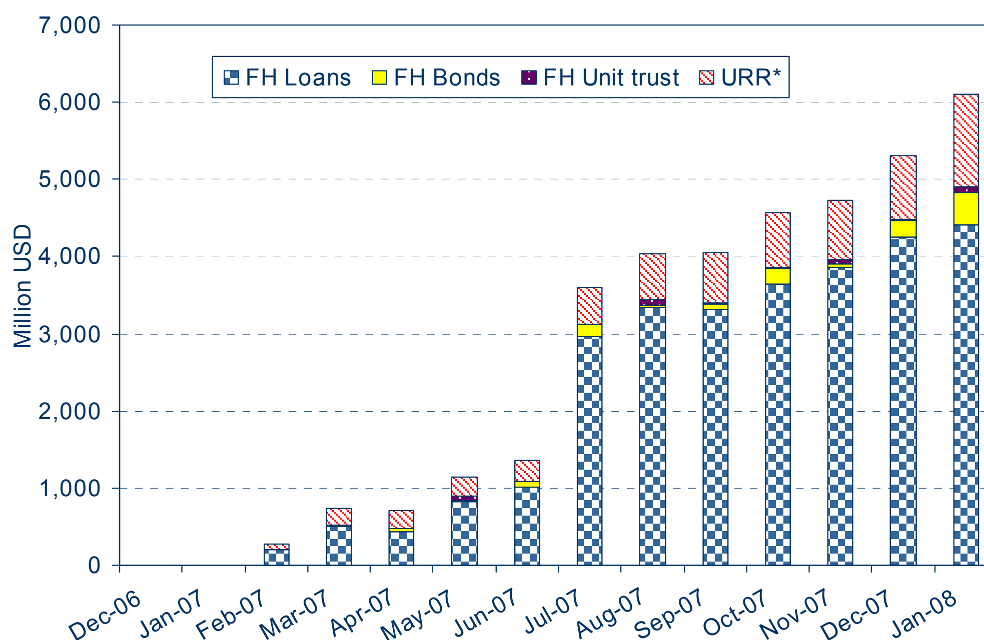
Source: Bank of Thailand.

abroad but lack the credit line with domestic banks to enter into forward agreements as required under full hedge option, and (2) investors who may bring funds into Thailand under the URR, driven by expected arbitrage opportunities of the two-tiered exchange rates.

[15] A further reduction of pressure on the baht was also achieved by the non-hedged portion of Thai residents' investment outflows (see Section 5) and by the management of public debt including the acceleration of foreign debt repayment, the reduction in the hedging ratio and the shift to domestic financing.

Figure 13

Outstanding amount of funds subject to the URR measure and the full hedge requirement



* Total amount of funds that were subject to the URR

Source: Bank of Thailand.

Despite apparently reduced pressure from net inflows, there was continued upward pressure on the baht, mainly from the increased surplus in the current account, which reached 6.1% of GDP during 2007, the highest share since 2000. This surplus was the result of a combination of robust export performance,[16] due largely to Thai exporters' success in finding new markets, and subdued import growth caused by stagnant domestic investment spending. Therefore, the BOT still needed to intervene in the FX markets in order to allow the currency to strengthen in an orderly manner. As a result, net foreign reserves, which include both gross reserves and net long forward positions, reached $106 billion at end-2007. Nevertheless, the bottom line is that by reducing the amount of short-term inflows, the URR measure made FX intervention more effective in curbing excessive changes in the exchange rate. Furthermore, by reducing the amount of foreign exchange the BOT needed to purchase, the URR measure helped lessen the costs associated with sterilisation and reduced the risks that too much BOT bond issuance could have a significant impact on the yield curve.

(3) By slowing down the pace of baht appreciation, the URR measure provided time for the economy and the private sector to adjust to the large change in relative international prices in a more efficient and orderly manner. If the excessive pace of baht appreciation observed in 2006 had been allowed to continue in 2007, it probably would have led to a significant slowdown in overall economic growth and resulted in mass business closures and layoffs, threatening economic and financial stability. This scenario would have

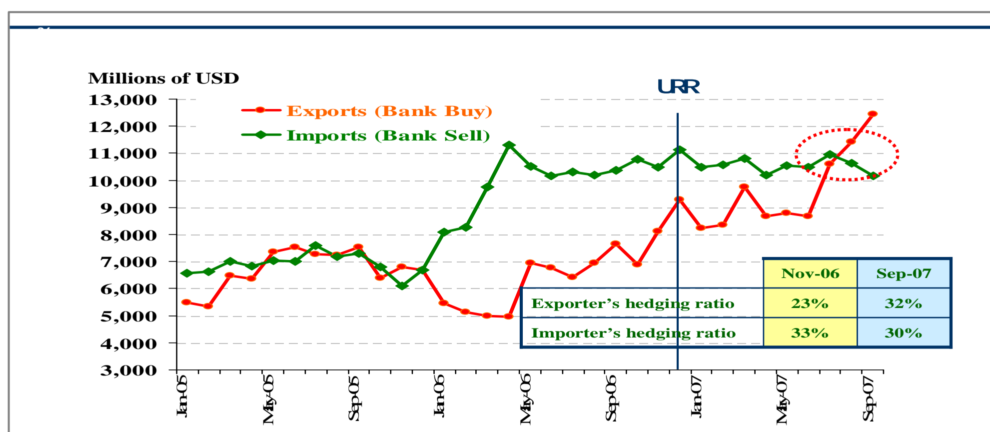
[16] Again, the impressive export performance in the face of baht appreciation has been uneven across sectors. While the high-tech and resource-based manufacturing sectors have continued to enjoy reasonably high growth of export values, the labour-intensive manufacturing sector (excluding exports of unwrought gold) saw export values, in baht terms, contract by 3.9% over the first nine months of 2007.

been even more likely given that the contraction in private investment persisted during the first half of 2007. Instead, the measure contributed to the steady growth of overall exports, which in turn supported overall economic activity. The preliminary estimate of GDP growth in 2007 was around 4.8%, a satisfactory rate given all the domestic and external difficulties the Thai economy had to contend with.

The URR measure also afforded the business sector time to adjust business operations and strategies to the changing environment. Granted, some of the necessary operational adjustment would take quite some time, certainly more than just one year, to bear fruit, but the evidence indicates that the business sector responded earnestly to this competitive challenge by enhancing their risk management and improving their business operations. In terms of risk management, the amount of forward FX purchases by exporters to hedge FX risks rose,especially during the second half of 2006 through the first quarter of 2007 in both absolute terms and in terms of a percentage of overall export receipts. Surely, part of the increased hedging activities was attributable to expected baht appreciation, but the rise in the hedging ratio was still a welcome development as it indicated that an increasing number of exporters had realised the importance of hedging compared to in the past. It might well also have reflected better knowledge and access to hedging,[17] as a result of the campaign by commercial banks and the central bank to promote FX risk management literacy, especially among SMEs, over the past few years. All of these efforts should help them manage their FX risk more efficiently in the future. With regard to short-term adjustments in business operations, the most frequently cited initiatives by exporters are trimming unnecessary costs and finding new markets. At least with respect to the latter, there have been signs of success since export values to the new markets such as the Middle East, China, India and the new EU countries all showed impressive growth in 2007, helping to reduce dependence on traditional export markets.

Figure 14

Bank's forward FX positions with exporters and importers



Source: Bank of Thailand.

[17] According to the BOT's corporate survey on FX hedging behaviour (2005), the main obstacles to hedging reported were the lack of knowledge, the lack of access and an improper attitude towards risk management. These problems were apparently more severe in the SME group compared to their larger counterparts.

Potential costs of the URR measure

While Thailand's experience with the URR measure seems to indicate that it brought benefits by reducing inflows and slowing down the pace of baht appreciation, it certainly was no free lunch. By introducing additional costs to the funding of selected types of inflows into Thailand, the measure could have raised the overall cost of capital for Thai businesses and create inefficiencies owing to distortions in economic and financial decisions. There was also the issue of market confidence in policy direction with regard to capital account policy. To quantify these impacts would require a detailed analysis of data and information beyond the scope of this paper. However, this subsection provides a preliminary discussion of the three areas in which the URR measure and the full hedge requirement could have had undesirable effects on the Thai economy: (1) the cost of capital, (2) the two-tier FX market and (3) market confidence.

(1) Higher cost of capital and distortions in financial and economic decisions

The URR measure required that 30% of the funds from abroad for the purpose of loans, debt securities and unit trusts be deposited at commercial banks for one year without interest payments. In effect, the measure raised the cost of funding from abroad through these channels. The added costs were relatively high for short-term flows and declined with a longer investment horizon. Whether the measure raised the overall cost of funding significantly or not also depends on many other related factors, particularly the availability of alternative sources of funding. In 2007, there were reasons to believe that under liquidity conditions in Thailand at that time, the impact of the URR measure on the overall cost of capital to the business sector thus far had been minimal. First, there was still ample liquidity in the banking sector to accommodate firms that might want to switch from external to domestic financing without much difference in the cost of funds. In addition, in contrast to past situations, Thailand's current account had been in surplus, implying that, at least for the moment, the economy did not depend on external financing to close its financing gap. Second, any potential increase in the cost of capital due to the URR measure was further alleviated by the gradual decline in the policy interest rate during 2007, from 5% to 3.25%. Third, investors had the option to fully hedge their FX positions, instead of putting up the 30% in reserves. Indeed, information collected by the BOT indicates that the majority of funds subject to the measure in 2007 chose the full hedge option, with only a relatively small number choosing the reserve requirement option. Thus, the option of full hedge did play an important role in minimising the URR's impact on the cost of capital.

However, the full hedge requirement for loans did introduce new inefficiencies in terms of possible overhedging, especially by firms with some degree of natural hedge. Also, the information also reveals that firms that chose the reserve requirement over the full hedge option tended to be smaller ones with difficulties securing credit lines with local commercial banks to enter into forward contracts.[18] To further alleviate the burden of overhedging on small firms and reduce the cost of capital, the BOT announced a further relaxation of the measure on 18 December 2007 which included: (1) lowering the hedging ratio for external loans taken out by firms with natural hedge by the extent that its FX exposure had already been covered by future foreign currency earning, and (2) waiving any loans less than $1 million and with maturity of at least one year.

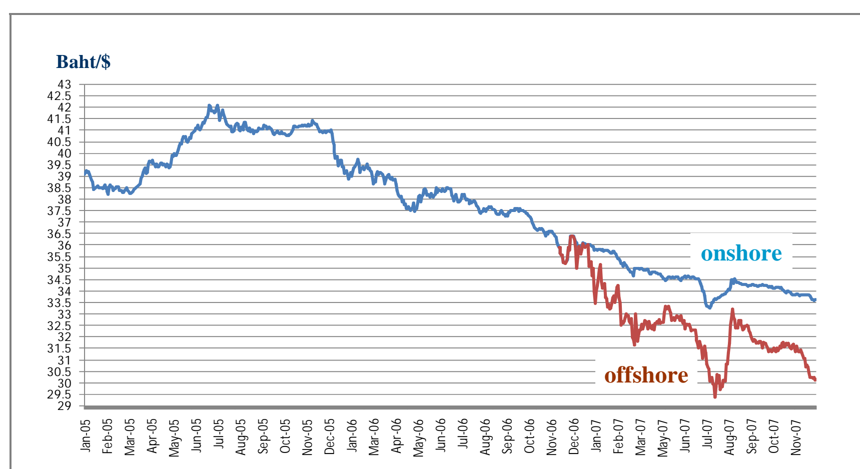
[18] The fact that, in some respects, smaller firms tend to suffer more from the capital control than their larger counterparts is consistent with the findings from other countries' experiences.

(2) The two-tier FX market

The URR created a two-tier FX market in which the baht was more expensive in the offshore than the onshore market. Though almost all FX transactions involving baht were settled onshore, the discrepancy in the two rates occasionally created confusion among exporters that led to panic selling of the dollar, especially during the initial period after URR implementation. Some market participants were also concerned that the offshore rate might serve as a psychological reference point for investors with respect to where the baht would be heading in the future – which could lead to a self-fulfilling prophecy, where the onshore baht rate is expected to move towards the more expensive offshore rate.

Figure 15

The two-tier FX market after the implementation of URR



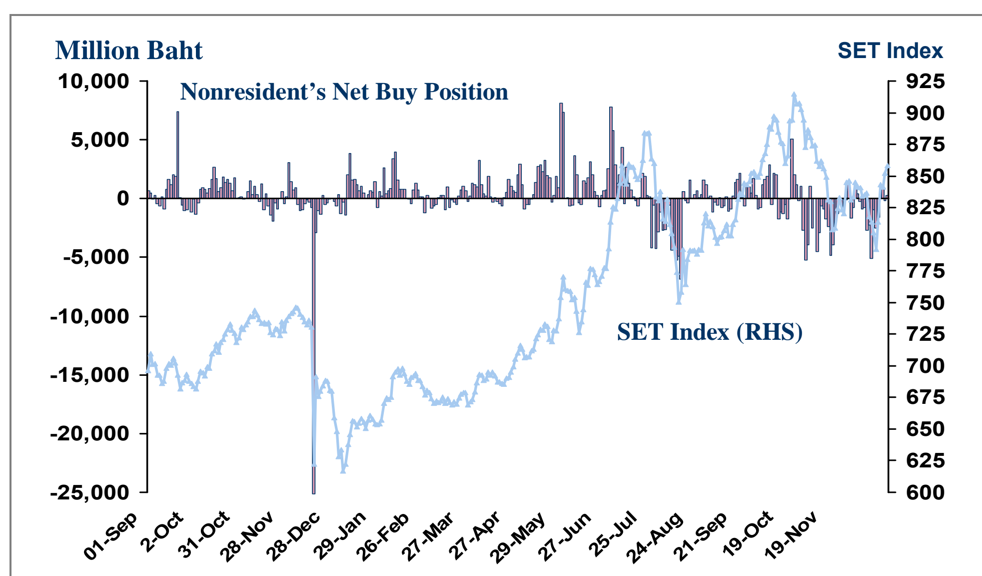
Source: Bank of Thailand.

(3) Impact on investor confidence

The most potential significant cost of the adoption of the URR measure was probably its impact on investor confidence. Needless to say, these types of issues are very difficult to assess in the short run. Granted, most initial commentaries on the URR implementation were negative, based mainly on the large fall of the SET index on the first trading day following the announcement of the measure. The index dropped from 730.55 at the end of 18 December 2006 to 622.14 the next day, driven by a record 25 billion baht one-day sell-off by foreign investors. Many predicted it would take a long time to attract foreign investors back to the Thai stock markets, but this was not the case. The day after the announced exemption of investment in the stock markets from the URR measure, the SET index recouped a large part of its initial loss, and over the following few months it gradually increased and finally surpassed its pre-URR level in May 2007. The SET index recovery was supported by large inflows from foreign investors, attracted by a relatively low P/E ratio and the anticipated resolution of political uncertainties. Indeed, between 20 December 2006 and the end of 2007, foreign investors had cumulative net buy positions in the SET of more than 49 billion baht. Thus, the initial adverse impact on investor confidence seem largely to have steadily subsided over time.

Figure 16

SET index and non-residents' net buy position in the Stock Exchange of Thailand



Source: Stock Exchange of Thailand.

The BOT knew there would be costs associated with the implementation of capital controls, mostly related to the inefficiency in economic and financial decisions. This is why the URR (a price-based measure) was chosen over other quantity-based measures to minimise potential distortionary effects. Once it was implemented, the BOT monitored the situations closely and chose to gradually relax some aspects of the measure in order to mitigate the burden and inefficiencies inflicted on the business sector, while keeping the essence of the measure in place. However, based on other countries' experiences, the adverse impacts of capital control measures grow over time in terms of the distortions they may cause in financial decisions. The BOT thus communicated clearly to the markets its intention to employ the URR only on a temporary basis, to give the economy time to adjust to the large change in the exchange rate in a more efficient and orderly manner. Thailand has always been committed to the stepped and gradual liberalisation of capital flows to facilitate the process of financial integration with the global markets. However, removal of the measures must be carried out with the appropriate timing and under the right conditions.

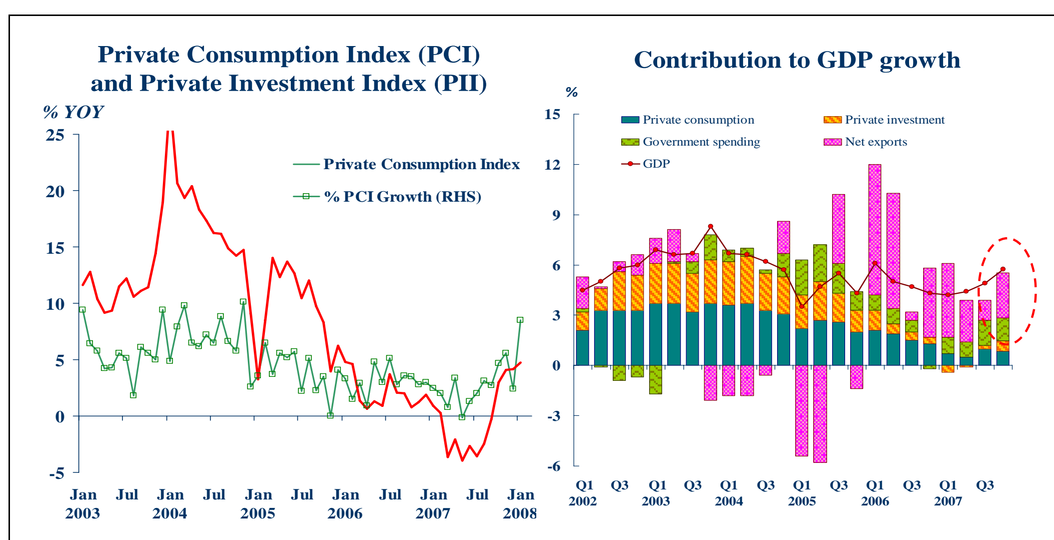
5. Removal of the URR measure

Fourteen months after its introduction, the URR measure was lifted, on 3 March 2008. The decision to do so was in line with the BOT's intention to adopt the measure only temporarily and after carefully ensuring that the appropriate conditions and timing were met to ensure a smooth transition. Chief among the key factors leading to the decision was the fact that the economic expansion had become more balanced, with improvement in domestic demand and continued robust export performance. In addition, more balanced FX flows, additional policy tools for liquidity management, and supporting fiscal policies on the part of the government also contributed to the conclusion that the authority would be in a better position to curb excessive currency movements effectively and that the economy would be able to cope with potential currency volatility more efficiently. Details of each of the reasons for the decision are described below.

More balanced growth. Economic data in the fourth quarter of 2007 and January 2008 indicated a healthier recovery in domestic demand along with continued export expansion. Figure 17 shows that the private consumption and the private investment index bottomed out in Q2 2007, leading to an increase in the contribution to growth from domestic demand in Q3 2007. Both indices continued to rise sharply during the last quarter of 2007 and into January of 2008 (except for a single decline in private consumption index in December 2007), partly due to lower interest rates and an improved political outlook after the establishment of the new government early in 2008. Additional fiscal stimuli, such as public infrastructure investment in mega-projects, will lend further support to continuing domestic demand recovery. Greater investment spending will also lead to an increase in imported capital goods, which would help the current account be more balanced, thus further reducing the upward pressure on the baht.

Figure 17

Signs of domestic demand recovery



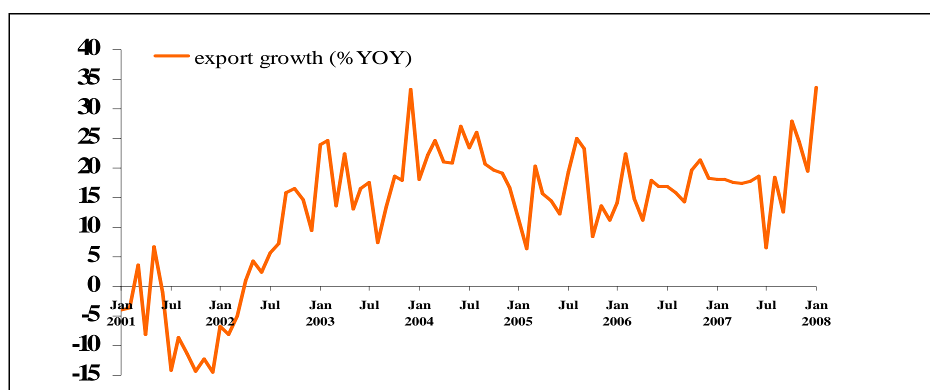
Sources: Bank of Thailand; NESDB.

In addition to rising domestic demand, exports continued to expand briskly despite the baht appreciation, further stimulating economic growth while lessening the earlier fear of a sharp slowdown in exports. As illustrated in Figure 18, growth in export value has accelerated since mid-2007, reaching 33.6% year on year in January 2008. This reflects exporters' ability to compete and adjust to the new environment through greater use of foreign exchange hedging and improvements in production efficiency, management and market diversification. In terms of market diversification, the recent period has seen Thai exporters finding new markets for their products and selling to a wider range of markets, particularly in the Middle East, India and new EU member countries, as shown in Table 11.[19] Expansion of the new export markets as well as enhanced risk management on the part of exporters will continue to support export growth and strengthen the resiliency of the Thai external sector to exchange rate variability.

[19] The new EU countries include Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.

Figure 18

Continued robust export performance



Source: Bank of Thailand.

Table 11

Export shares and growth, by market

Country	Share (%)			Growth (% yoy)		
	2006	2007	Jan 2008	2006	2007	Jan 2008
Japan	12.6	11.9	10.9	8.6	10.6	11.3
United States	15	12.6	11.5	14.4	–1.2	16
EU (27)	13.9	14	13.8	19.2	18.4	23.8
New EU	0.9	1.2	1.2	40.4	60.4	53.9
ASEAN:	20.8	21.3	22	10.8	20.4	43.8
Middle East	4.4	4.9	4.7	28	30	48.8
Australia	3.4	3.8	4.6	37	31.6	54.3
China	9	9.7	9.9	27.9	26.5	45.5
Hong Kong SAR	5.5	5.7	6.2	16.2	21.2	57.7
India	1.4	1.7	1.7	18.3	47.2	37.7
New Zealand	0.4	0.4	0.4	0.8	17.1	18.5
Taiwan (China)	2.6	2.2	1.8	23.7	–1.4	–17.5
All (customs)	**100**	**100**	**100**	**16.9**	**17.5**	**33.3**

Foreign exchange flows had become more balanced as a result of moderating trade account surpluses, increasing the amount of Thai investment abroad, and regulations that permit residents to deposit foreign currencies effective early February 2008. Moderation in trade surpluses in December 2007 and January 2008 was largely due to an increase in import volume of consumer and capital goods in tandem with rising domestic demand. This toned down foreign exchange inflows.

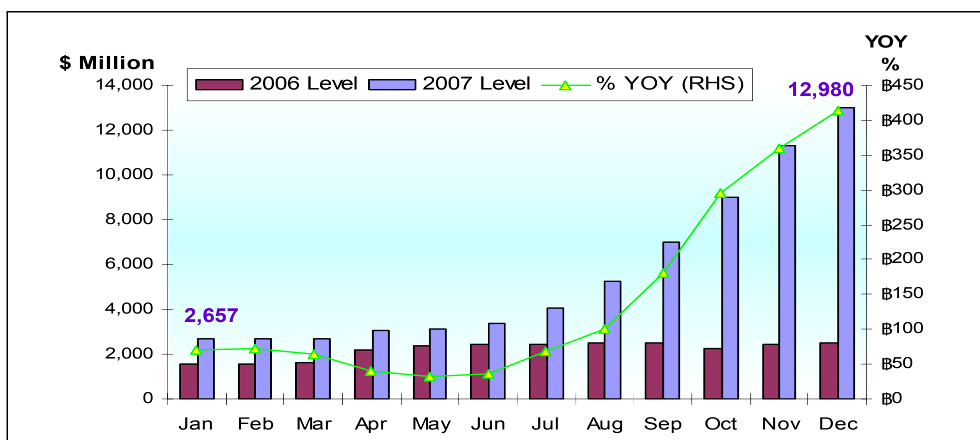
Meanwhile, capital outflows in terms of portfolio and direct investment have increased significantly as measures to stimulate outflows have become effective. Recent key measures include the January 2007 announcement that qualified institutional investors wishing to invest

in securities abroad in amounts not exceeding $50 million per fund could do so without having to seek approval from the BOT. This measure was meant to reduce policy uncertainty and send out a clear policy signal to institutional investors so that they could plan their trading strategies and capacity-building more effectively. In addition, in August 2007 the BOT allowed private funds to invest abroad and agreed to grant a quota of up to $10 billion to the SEC to be allocated among mutual funds, securities companies, provident funds and private funds.[20] The types of foreign investment products have also been expanded to include foreign securities listed in the Thai capital markets. This greater availability of foreign financial products and investment opportunities would enable Thai investors to diversify their portfolios more efficiently.

The above initiatives to further liberalise capital outflows resulted in an acceleration of portfolio outflows by Thai residents in 2007. The data in Figure 19 show that portfolio outflows through institutional investors increased substantially in the second half of that year and into January 2008, with an outstanding amount in January 2008 of roughly $13 billion, a marked increase from $2.5 billion at the beginning of 2007. Most of the increase in outflows was attributable to shifts from bank deposits to foreign investment funds that invest in foreign fixed income instruments, with most FX exposure being hedged. This can be viewed as depositors' attempts to seek higher yields through the new foreign investment channel compared to what they earn from domestic deposits.[21]

Figure 19

Outstanding amount of portfolio investment abroad through institutional investors[1]



[1] Qualified institutional investors include mutual funds, pension funds, the Social Security Fund, the Government Pension Fund, insurance companies, specialised financial institutions and securities companies.

Source: Bank of Thailand.

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[20] This quota was later extended to $30 billion on 3 March 2008, as a supporting measure to help manage the capital flows after the lifting of the URR.

[21] However, the hedged portion of the outflows will not necessarily relieve the upward pressure on the baht, as the weakening pressure on the currency from the outflows was cancelled out by the opposite pressure from forward purchases of the baht. Thus, the increase in overall outflows will provide relief directly only for the portion that is unhedged, and indirectly to the extent that it may influence market psychology regarding the future direction of the baht. Going forward, based on other countries' experiences, it is likely that the hedging ratio of portfolio outflows will decline as the share of equity investment increases and investors become more selective in their hedging strategy.

Regarding outward direct investment, the BOT has further reduced restrictions to facilitate the expansion of Thai businesses abroad as well as the financial management of multinationals operating in Thailand. The new regulation introduced in 2007 allows a parent company (a subsidiary company) in Thailand to invest in, or lend to, its subsidiary company[22] (a parent company[23]) abroad in an aggregated amount not exceeding $100 million per year, up from the $50 million limit imposed by the previous regulation. In addition, under the new rule, companies registered in the main board of the SET are free to invest abroad with no limit and can lend abroad up to $100 million per year without approval from the BOT. This relaxation of direct investment regulations and the more outward-looking focus of Thai businesses resulted in a sharp increase in outward direct investment in 2007, equivalent to 123% year-on-year growth (Table 12).

Table 12

Capital outflows, 2006–07

Millions of US dollars	2006	2007	Δ% yoy
Thai direct investments (1)	639	1,422	122.54
– investment in a subsidiary company[1]	639	1,394	118.15
– investment in a parent company[2]	–	28	–
Thai loans (2)	574	741	29.09
– extended to a subsidiary company[1]	462	581	25.76
– extended to a parent company[2]	112	160	42.86
Property investment abroad (3)	24	54	125.00
Total (1) + (2) + (3)	1,237	2,217	79.22

[1] Subsidiary company here refers to a foreign company of which at least 10% of shares are held or owned by a Thai parent company. [2] Parent company here refers to a foreign company that holds at least 10% of total shares of a domestic subsidiary company.

Besides outflow liberalisation, foreign exchange regulations were also relaxed to help Thai corporations and households manage their financial positions more efficiently. Key regulatory changes introduced in 2007 include the extension of the repatriation period for income earned abroad from 120 to 360 days, the abolishment of the surrender requirement so that those with income from abroad were no longer required to sell their foreign currency income to a bank within any time limit, the removal of the limit on foreign currency deposits for those with income from abroad and, for the first time, permission for those without income from abroad to open a foreign currency deposit account with an imposed limit. See Appendix 1 for a chronology of the relaxations of controls on capital outflows.

This rapid increase in overall outward investment brought about more balanced flows, which helped reduce the upward pressure on the baht and thus created an appropriate environment for removing the URR measure. To further encourage portfolio investment abroad and facilitate capital flow management, upon the announcement of the URR removal on 29 February 2008, the BOT increased the foreign investment limit for the SEC from $10 billion to $30 billion, to be allocated among domestic institutional investors. Going

[22] A foreign company of which at least 10% of shares are held or owned by a Thai parent company.

[23] A foreign company that holds at least 10% of total shares of a domestic subsidiary company.

forward, the Bank will continue to further liberalise capital outflows, with priority being placed on proper pacing and sequencing of regulatory relaxation to ensure maximum benefits while minimising associated risks. To strengthen market infrastructure, efforts and resources will also be devoted to enhancing retail investors' financial literacy and upgrading institutional investors' capability to invest abroad and manage risk effectively as well as strengthening retail investor protection through improved information disclosure.

The BOT has more instruments to manage liquidity and the currency under the new Bank of Thailand Act. The new BOT Act, passed in early 2008 by the National Legislative Assembly, will give the central bank more flexibility in managing liquidity and reserves. It will grant the BOT an additional instrument for managing liquidity through the acceptance of deposits from commercial banks, for which the Bank will pay market-determined interest rate. Thus, these added options will diversify the channels in which the Bank manages liquidity in the system, thus helping reduce the risks of over-reliance on BOT bond issuance, which could impact on the yield curve.

The progress on a number of policy fronts discussed above allows us to infer that the Thai economy is now more ready to cope with greater flows and FX volatility compared to the pre-URR period. Before the measure was lifted, market participants adjusted their behaviour in line with expectations that the URR would be removed, which eroded its effectiveness. After carefully considering the changes in the environment and internal and external factors, the BOT decided at the end of February 2008 that it was the appropriate time to lift the measure. Since 3 March, financial institutions have been able to purchase or exchange foreign currencies against the baht from their customers in full amounts without withholding 30% of the foreign currencies as reserves in all cases. Customers whose foreign currencies were withheld as reserves can make a request to the BOT through financial institutions for a full refund, unremunerated, without having to prove that the funds remained in Thailand for at least one year.[24] Customers who hedge their foreign exchange risks for exemption from the URR and wish to unwind their hedging contracts can submit a request to the Bank through financial institutions on a case by case basis, which the BOT will consider for approval within 15 working days.

In addition to the above-mentioned relaxation of outflows through the extension of the SEC quota to $30 billion, the BOT also announced the following measures on 29 February in order to smooth out the adjustment process after the lifting of the URR.

1. To improve the measures to prevent baht speculation:

- Revision of the rule on domestic financial institutions borrowing baht from non-residents by reducing the limit for transactions with no underlying trade or investment for all maturities to no more than a 10 million baht outstanding balance per group of non-residents.
- Revision of the regulations regarding the provision of baht liquidity by domestic financial institutions to non-residents by expanding each institution's limits for transactions with no underlying trade or investment to no more than a 300 million baht outstanding balance per groups of non-residents.

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[24] The BOT will remit the funds to financial institutions on the seventh working day from the date requests are received. If customers do not request a refund within two years of the date the reserves were withheld, the reserves will be considered forfeited and be earmarked for public benefit.

2. To streamline the rules for Non-resident Baht Accounts:

- Revision of the structure of the Non-resident Baht Account (NRBA) by dividing it into the Non-resident Baht Account for Securities (NRBS) and the Non-resident Baht Account (NRBA). Under the new structure, the transfer of baht between the same types of accounts is allowed while the transfer between different types of account is prohibited.

The BOT has also launched the following temporary programmes to support the adjustment and improve the production efficiency of small and medium-sized enterprises (SMEs):

1. A programme to support the improvement of SMEs' production efficiency by providing soft loans through financial institutions totalling 40,000 million baht for a period of three years.
2. A facility to purchase (back-to-back) foreign currency that SMEs sold forward to financial institutions for a period of six months.

The market took the lifting of the URR measure quite well, as there were no significant unexpected movements in the stock, bond or foreign exchange markets following the BOT's announcement.[25] This smooth and orderly transition came thanks mainly to the credible and well oriented package of policies that not only succeeded in deterring short-term speculative inflows but also prepared the economy and the private sector to better withstand fluctuations in relative international prices. Moreover, the clear signal from the BOT to actively manage surges in capital flows also helped prevent further speculative attempts. However, there is no reason for complacency. Several risks remain for the Thai economy – a major one being the ongoing subprime crisis in the United States, which might slow down global economic growth much more than expected, adversely affecting Thai export growth and possibly driving more capital inflows into Thailand and other regional economies. Rising oil prices might also threaten domestic economic stability and deteriorate global economic growth. The BOT will continue to monitor internal and external conditions closely to ensure timely and appropriate policy response to any shock that might adversely impact the Thai economy.

6. Conclusion

The experience of coping with volatile flows and currency movements over the past few years has highlighted the significant challenges that Thailand and other emerging markets must face in the era of greater financial integration. The effectiveness of various conventional tools to manage the impact of capital inflows proved to be limited in the midst of a surge in inflows. The adoption of capital controls such as the URR measure could be a policy option under certain circumstances, but careful consideration must be paid to specific implementation plans to minimise potential adverse impacts on the markets and long-term microeconomic costs to the economy. It is important to realise that the central bank's ability to manage the movement of capital flows and the exchange rate is rather limited, especially against the background of increased integration of global financial markets. The priority going forward must then be to implement reforms that will strengthen economic resiliency against flows and currency volatility.

Progress has been made in many areas which should help the Thai economy to be more resilient to potential volatility of capital flows and the exchange rate in the future. Outflow investments have risen, bringing more balance to the net flows as well as reaping the

[25] The baht appreciated from 32.01 to 31.70 against the US dollar the day after the announcement of the URR removal.

benefits of international diversification, following the relaxation of outflow restrictions. Greater use of financial hedging instruments as well as further regulatory relaxations on FX transactions should lead to more efficient financial and risk management in the business sector. Going forward, it is imperative that both the public and the private sectors continue to strengthen the resiliency of the Thai economy in preparing for increased risks associated with greater financial integration. The main efforts would include upgrading risk management practices among all economic sectors through the promotion of financial literacy as well as the development of efficient hedging instruments; deepening the financial and capital markets through institutional reforms and enhanced corporate governance; improving the quality and timeliness of data on capital flows and FX transactions; and enhancing Thailand's productivity and competitiveness by creating more a favourable investment climate and upgrading the quality of human resources and public infrastructure.

Appendix 1

Selected measures and relaxation of controls on capital outflows and FX regulations, 2002–08

Issue date	Direct investment abroad	Portfolio investment abroad	Foreign currency deposit (FCD)			Others
2002		Mutual funds are allowed to make portfolio investments abroad of up to $200mn total per year.				
2003		Upon approval by the BOT, six types of institutional investors[1] are allowed to invest abroad, in: (1) debt securities issued by the Thai government and corporates, and (2) sovereign and quasi-sovereign debt instruments issued by non-residents, subject to annual limits set by the authorities.				
April 2005		The range of securities the six types of institutional investors[1] are allowed to invest in is extended to include: (1) investment grade debt securities issued by non-resident international organisations, and (2) investment units of foreign unit trusts supervised by securities agencies that are members of the IOSCO,[2] or investment units issued in countries with securities exchanges that are members of the WFE,[3] excluding investment units of hedge funds.				

For footnotes, see the end of the table.

Selected measures and relaxation of controls on capital outflows and FX regulations, 2002–08 (cont)

<table>
<tr><th>Issue date</th><th>Direct investment abroad</th><th>Portfolio investment abroad</th><th colspan="3">Foreign currency deposit (FCD)</th><th>Others</th></tr>
<tr><td>10 May 2006</td><td></td><td></td><td colspan="3">The amount of FCDs’ outstanding balance for a juristic person is extended, to foreign currency (FC) earnings and future FX obligations between $10mn and $50mn.</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td>Individual</td><td>Juristic person</td><td></td></tr>
<tr><td></td><td></td><td></td><td>With obligations within six months</td><td>$1mn</td><td>$50mn</td><td></td></tr>
<tr><td rowspan="4">12 Jan 2007</td><td rowspan="4">Thai parent companies[4] are allowed to invest in or lend to subsidiary and affiliated companies abroad up to $50mn per company per year (previously $10mn).
Thai subsidiary companies[5] are allowed to invest or lend to their parent and affiliated companies up to $20mn per company per year (previously $5mn).</td><td rowspan="4">Seven types of institutional investors[6] are allowed to invest in Thai securities issued abroad with no limit, and in foreign securities abroad up to an outstanding balance of $50mn per fund with no prior approval. An eligible institutional investor wishing to create a fund that invests in foreign securities abroad with an outstanding balance beyond $50mn may seek approval from the BOT or the SEC, depending on assigned jurisdiction.</td><td colspan="3">Extends permission to open FCD accounts to individuals and juristic persons with FC earnings, but without future foreign exchange obligations.</td><td rowspan="4"></td></tr>
<tr><td></td><td>Individual</td><td>Juristic person</td></tr>
<tr><td>With obligations within six months</td><td>$1mn</td><td>$50mn</td></tr>
<tr><td>Without obligations</td><td>$0.05mn</td><td>$2mn</td></tr>
<tr><td>1 Apr 2007</td><td></td><td>The BOT approves a quota of $3bn to the SEC to be allocated to foreign juristic persons, with certain qualifications, for issuing securities in the Thai stock market.</td><td colspan="3"></td><td></td></tr>
</table>

For footnotes, see the end of the table.

Selected measures and relaxation of controls on capital outflows and FX regulations, 2002–08 (cont)

Issue date	Direct investment abroad	Portfolio investment abroad	Foreign currency deposit (FCD)			Others
24 Jul 2007	Companies listed on the Stock Exchange of Thailand with positive net worth and which are not under rehabilitation can invest abroad up to $100mn per year (previously $50mn).		– Residents with funds originated abroad regardless of sources may deposit foreign currencies with financial institutions in Thailand according to the following rules:			The limit of fund remittances by Thai residents to a family member who is a permanent resident abroad is raised to $1mn.
				Individual	Juristic person	Repatriation requirement: extends the duration within which Thai residents with foreign currency receipts must bring such receipts into Thailand, from 120 to 360 days.
			With obligations within 12 months	$1mn	$100mn	
			Without obligations	$0.1mn	$5mn	Surrender requirement is extended from 15 to 360 days.
1 Aug 2007		The BOT approves a quota of $10bn to the SEC to be allocated among mutual, pension and private funds for purchasing securities abroad. The quota can also be applied to foreign securities issued in the Thai markets such as cross-listing products or Transferable Custody Receipts (TCR).	– Residents with foreign currency funds originated within the country can deposit them with financial institutions in Thailand according to the following rules:			
				Individual	Juristic person	
			With obligations within 12 months	$0.5mn	$50mn	
			Without obligations	$0.05mn	$0.2mn	

Selected measures and relaxation of controls on capital outflows and FX regulations, 2002–08 (cont)

<table>
<tr><th>Issue date</th><th>Direct investment abroad</th><th>Portfolio investment abroad</th><th colspan="3">Foreign currency deposit (FCD)</th><th>Others</th></tr>
<tr><td rowspan="4">17 Dec 2007</td><td rowspan="4">– Thai parent companies[4] are allowed to invest in or lend to their subsidiary and affiliated companies abroad up to $100mn per year.
– Thai subsidiary companies[5] are allowed to invest or lend to their parent and affiliated companies up to $100mn per company per year.
– Companies listed on the Stock Exchange of Thailand (SET) are free to invest abroad with no limit, and can lend abroad, in accordance with the two points above, up to $100mn per year.</td><td rowspan="4"></td><td colspan="3">– Removing any limit on FCDs as long as the funds are originated abroad for both individuals and juristic persons.
– Raising the limit on FCDs for residents with foreign currency funds originated domestically (below).</td><td rowspan="4">Increases the limit for purchases of properties abroad from $1mn to $5mn.</td></tr>
<tr><td>Funds originated domestically</td><td></td><td></td></tr>
<tr><td>– With obligations within 12 months</td><td>Not exceeding $1mn or with obligations not exceeding 12 months</td><td>Not exceeding $100mn or with obligations not exceeding 12 months</td></tr>
<tr><td>– Without obligations</td><td>$0.1mn</td><td>$0.3mn</td></tr>
</table>

For footnotes, see the end of the table.

Selected measures and relaxation of controls on capital outflows and FX regulations, 2002–08 (cont)				
Issue date	**Direct investment abroad**	**Portfolio investment abroad**	**Foreign currency deposit (FCD)**	**Others**
3 Mar 08		The BOT increases the foreign portfolio investment quota for the SEC to $30bn, to be allocated to pension and private funds for purchasing securities abroad.		

[1] Government pension funds, social security funds, provident funds, mutual funds (excluding private funds), insurance companies and specialised financial institutions. [2] International Organization of Securities Commissions. [3] World Federation of Exchanges. [4] Parent company here refers to a foreign company which holds or owns at least 10% of the total shares of a domestic subsidiary company. [5] Subsidiary company here refers to a foreign company of which 10% of shares are held or owned by a Thai parent company. [6] Includes the six types of institutional investors previously eligible to invest abroad, plus securities companies.