The impact of interest rates on exchange rates

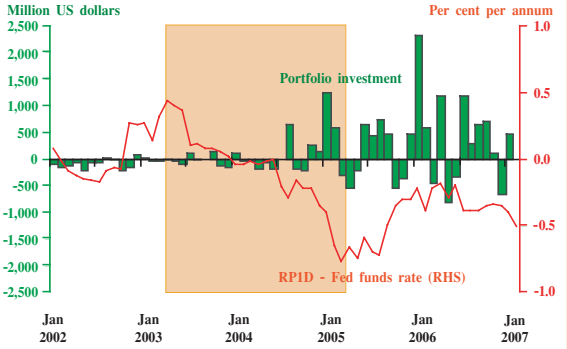
The continued rapid appreciation of the baht over the past year raised concerns over its adverse effect on the competitiveness of Thai exports, which was the main driver of economic growth. Such concerns led to the implementation of numerous measures to slow down the appreciation of the currency. There was, however, also a widespread belief that a reduction in the policy rate could be used as another tool to moderate the strengthening of the baht. Following this line of thought, if the policy rate was lowered, capital would flow out of Thailand to reap better returns elsewhere, given a reduction in the interest rate differential between domestic and foreign assets. Such outflows would therefore impose downward pressure on the baht.

Nonetheless, changes in interest rates would have had an impact on the exchange rate only if two important conditions were met, namely: (1) that interest differentials had an effect on capital flows and (2) that capital flows were an important factor in determining exchange rate movements.

Interest differentials and capital flows

Theoretically, capital would flow to where it would receive the highest return. In the recent past, however, interest differentials only had a partial impact on capital flows. As seen in Chart 1, between 2003 and 2005, average interest differentials declined from 0.20 per cent to -0.56 per cent owing to differing interest rate cycles, which caused the Fed funds rate to rise above the BOT's 1-day repurchase rate on average. Such a decline in interest differentials, however, did not lead to an outflow of capital, but on the contrary, raised capital inflows, as reflected in the shift from net capital outflows[1/] of USD 0.2 billion in 2003 to net capital inflows totaling USD 2.6 billion in 2005. This indicated that interest differentials were not the only factor investors took into account in making their investment decisions.

Chart 1 Interest differentials and portfolio investment



Source: Bank of Thailand

Factors that also determined capital flows included confidence and risk. A good example was the situation whereby foreign investors reallocated their portfolio away from assets in emerging markets to the major markets, despite insignificant changes in interest differentials between the two - the so called 'Emerging Market Risk Aversion'[2/] - which took place in mid-2006 and the beginning of 2007.

Another important factor was expectations on exchange rate movements. Aside from interest rates, changes in the exchange rate also determined returns on investment. If investors expected a currency to appreciate substantially, whether due to sound fundamentals or speculative pressures, even if the interest rate on that currency-denominated asset was low but that currency appreciated or was expected to appreciate significantly, investments in that currency-denominated asset could be more attractive than investment in other currencies. In the case of the baht, there clearly was room for profit making. For example, in January 2006, short-term Thai and US bond yields were 3.93 and 4.34 per cent per annum respectively. An investment of USD 1 million in Thailand at the January 2006 exchange rate of 39.58 baht per USD after 1 year would yield (1.0393 x 39.58) = 41.14 million baht in January 2007. Over the same period, the baht appreciated to 35.93 baht per USD, increasing the yield on that investment to USD 1.14 million.

[1/] This case refers specifically to portfolio investment, which should be more sensitive to interest differentials than other types of capital flows.
[2/] *Inflation Report* October 2006

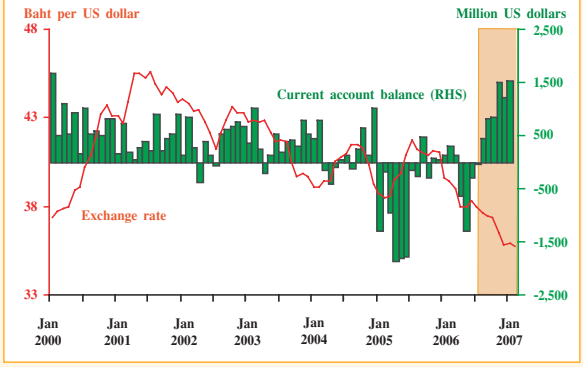
After deducting the principal of USD 1 million and interest on borrowed principal of USD 0.0434 million, the investment would have yielded a net profit of USD 0.10 million.[3/]

Determinants of exchange rate

Movements of the exchange rate also depended on various factors. In the recent past, capital flows were only one of many determinants of the exchange rate. Other important determining factors included the continued appreciation of regional currencies vis-à-vis the US dollar, due primarily to lower confidence on the US economy, and the Thai current account which registered a persistent surplus from August 2006 onwards.

Notably, in 2006 there were substantial capital inflows[4/], particularly in the first 11 months, totaling USD 5.5 billion. After the implementation of the BOT's reserve requirement on short-term capital inflows on 18 December 2006, the BOT observed capital outflows of USD 0.2 billion in total between December 2006 and January 2007. However, the exchange rate of the baht in bilateral terms vis-à-vis the USD, as well as in effective terms, appreciated by 0.6 and 1.8 per cent respectively between the end of November 2006 and January 2007. The appreciation was attributable to the current account that registered a surplus of USD 2.8 billion between December 2006 and January 2007, and exerted continued upward pressure on the baht despite the capital outflows.

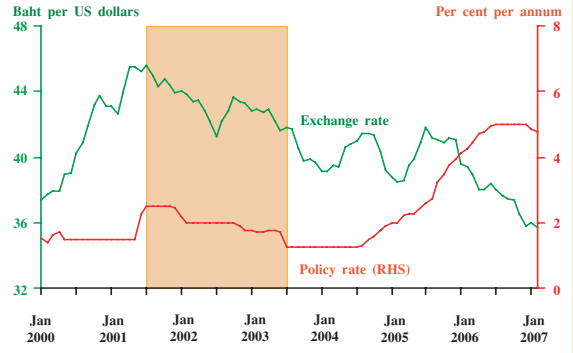
Chart 2 Exchange rate and current account balance



Source: Bank of Thailand

The relationship between interest rates and exchange rates

Chart 3 Policy rate and exchange rate



Source: Bank of Thailand

Given that capital flows were determined by several factors aside from interest rates, combined with the fact that various determinants affected the exchange rate aside from capital flows, the effect of interest rates on the exchange rate in practice may not be as significant as suggested by theory. Over the past 5 years, interest differentials did not have a statistically significant impact on the exchange rate.[5/] Even when interest rates were on a downward trend, for example, when the policy rate was lowered from 2.50 to 1.25 per cent per annum between July 2001 and July 2003, the baht continuously strengthened from 45.62 to 41.78 baht per USD. Thus, a reduction in the policy rate to lower the upward pressure on the exchange rate might not have been as effective as expected.

[3/] Net profit = {profits from currency appreciation on both principal and interests} + profits from interest differentials
10.15% = {10.16% x (1+ 3.93%)} + (3.93% - 4.34 %)

[4/] Portfolio investment only

[5/] $\Delta \ln(THB/USD)_t$ = -0.002 - 0.471 (RP1D - Fed funds)$_t$ - 0.009 (Portfolio Investment in bn USD)$_t$ - 0.005 (Current Account in bn USD)$_t$
(-1.145) (-1.040) (-2.817) (-2.157)
Data period: January 2003 - January 2007, t-statistics in brackets