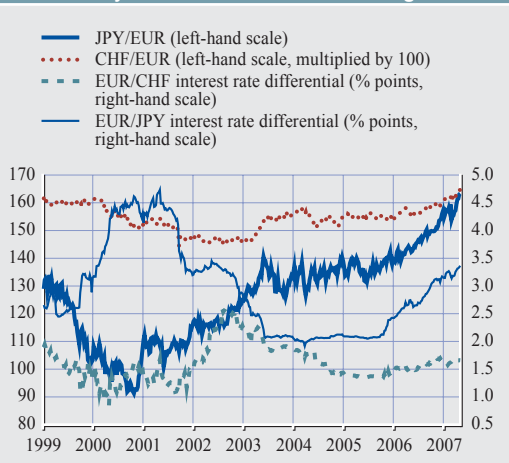


Box 4

CARRY TRADES IN FOREIGN EXCHANGE MARKETS

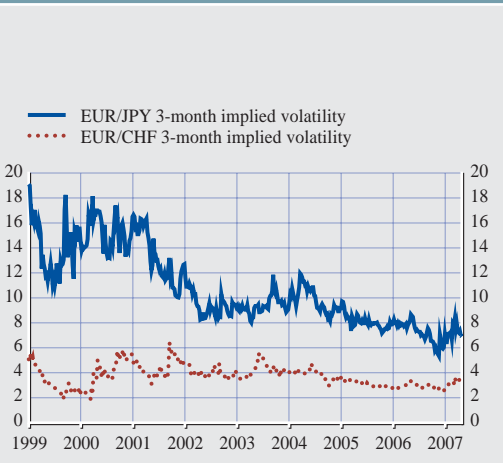
After nearly two years of broad stability, the Japanese yen began to depreciate vis-à-vis the euro in January 2005, and by May 2007 it had fallen in value by close to 15% compared with the end of 2004, and by around 45% compared with October 2000. By the same token, since around May 2006 the Swiss franc has depreciated almost continuously vis-à-vis the euro, reaching an all-time low in May 2007. Taking a long-term perspective and employing Consumer Price Index (CPI)-deflated bilateral exchange rates, both the Japanese yen and the Swiss franc are currently trading higher than their averages since 1992. In view of the prolonged phase of expansion experienced by the Japanese economy and the economic upswing recorded by Switzerland in 2006, the recent weakening of the two currencies is somewhat difficult to explain in terms of economic fundamentals. One factor often offered by market participants in explanation for the persistent weakening of the two currencies has been foreign exchange carry trades, driven by a significant widening of short-term interest rate differentials vis-a-vis the euro and especially the US dollar through 2005 and 2006 (see Chart B4.1 for developments vis-à-vis the euro). Carry trades are simple leveraged investment strategies consisting of borrowing in a low-yielding currency and investing in a higher-yielding one. The investment horizon for a carry trade is typically rather short in order to minimise the exposure to currency risk, thus requiring a systematic rollover to exploit gaps in interest rate differentials. From a finance theory perspective, the gains from carry trading are puzzling, as higher interest rate differentials should logically be offset by depreciation of the higher-yielding currency. However, in practice high-yielding currencies tend to appreciate on average, thereby increasing the returns and popularity of carry trades. When expected foreign exchange volatility is low – as was the case through 2005 and 2006 (see Chart B4.2) – further impetus can be given to investors to enter into carry trades since foreign exchange risk is perceived to be unable to affect the gains achieved from the interest rate side.

Chart B4.1 Differentials between euro, Swiss franc and Japanese yen three-month interest rates and JPY/EUR and CHF/EUR exchange rates



Source: Thomson Financial Datastream.

Chart B4.2 EUR/JPY and EUR/CHF implied volatility (three-month options)



Source: Bloomberg.

Despite the huge amount of attention recently paid to carry trades in research carried out by commercial banks and in the financial press, it is hard to provide evidence in favour of their existence or to estimate their size. As for the existence of such strategies, indirect evidence can be gathered, e.g. from the rise in realised correlation between the rates of change in the Swiss franc and in the Japanese yen vis-à-vis third currencies such as the US dollar (see Chart B4.3). Since the most noticeable feature shared by the Swiss and Japanese economies in the last couple of years seems to be the low level of their short-term interest rates compared to other industrial economies, there may be a direct link between such a feature and the prolonged phase of weakness affecting both. Another indicator commonly used to highlight speculative pressures on exchange rates is the net short non-commercial positions in currency futures, which is reported on a weekly basis by the CFTC. Such positions reached unprecedented levels in early 2007 both for the Japanese yen and the Swiss franc (see Chart B4.4), suggesting that carry

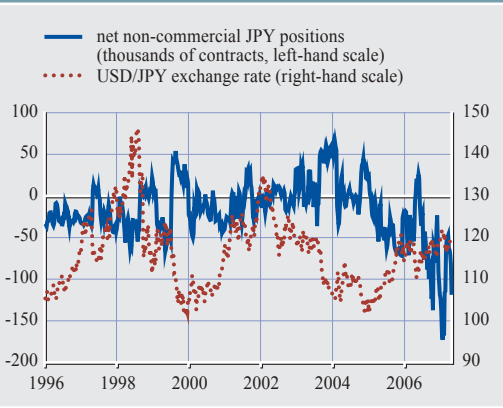
Chart B4.3 Correlation between weekly changes in the USD/JPY and USD/CHF exchange rates

(30-week correlation between weekly changes)



Source: Bloomberg.

Chart B4.4 Net non-commercial Japanese yen positions and the USD/JPY exchange rate



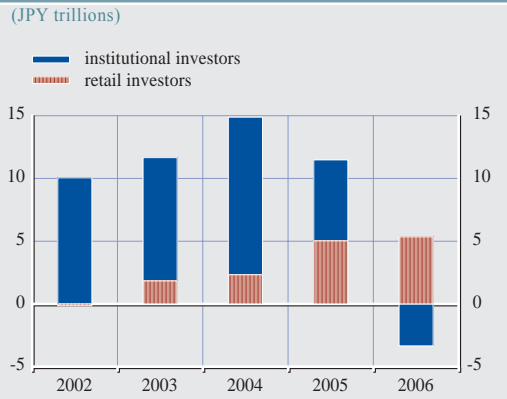
Sources: CFTC and Bloomberg.

trading is indeed a strategy widely adopted by market participants, and has grown in size since the beginning of 2006.

Indicators of international capital flows also point to the possible existence of significant amounts of carry trading. Cross-border loans granted by Japanese banks to non-Japanese banks increased significantly throughout 2005, although the new flows of loans were scaled back in the course of 2006. Beyond the role of international investors in using the Japanese yen as a funding currency, Japanese retail investors also seem to have been particularly active in the purchase of overseas securities (see Chart B4.5). Between 2000 and 2006, overall purchases of foreign currency-denominated bonds (so-called Uridashi bonds as well as investment trusts) totalled about 30 trillion yen. Strong global growth and the fact that since 2005 investment trusts have become more accessible to households may have resulted in first signs of a “cultural shift” among Japanese households, typically characterised by a high level of home bias. Furthermore, the willingness of Japanese retail investors to take on more currency risk than before may also be highlighted by the development of foreign exchange margin trading, a type of investment strategy which enables investors to take positions in the foreign exchange market. In addition to purchases of foreign bonds, additional downward pressure on the yen may have derived from the behaviour of Japanese exporters: whereas Japanese companies appear to have become more willing to consider making overseas investments – as reflected in increased Japanese net foreign direct investment (FDI) – the hedging of their foreign currency-denominated revenues may have been constrained by the high cost required to set up these hedging strategies, as the high yield differential between most foreign currencies and the Japanese yen has made forward sales of foreign currencies extremely costly. On the other hand, hedging has become rather cheap for foreign exporters to Japan, thus potentially increasing the forward sales of Japanese yen.

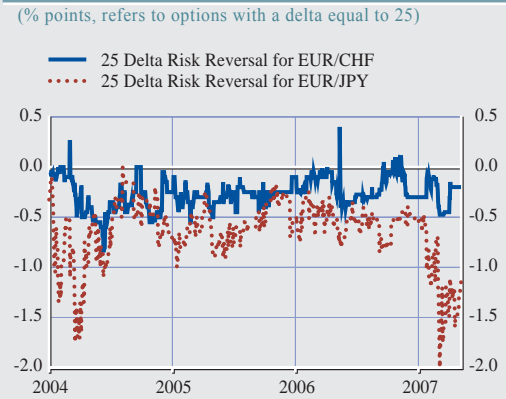
From a financial stability viewpoint, large outstanding carry trade positions may be a concern if developments in financial markets lead to conditions that favour their unwinding and induce disorderly asset price movements, paralleling the episode in October 1998, when a sudden unwinding of carry trades was held responsible for a sharp and rapid appreciation of the Japanese yen. In March, such conditions seemed to have gained strength as financial markets displayed increasing concerns, as signalled by (i) a rise in implied volatility in yen bilateral

Chart B4.5 Japanese investors' net purchases of overseas bonds and stocks



Sources: Japanese Ministry of Finance and Bloomberg.

Chart B4.6 Risk reversals for EUR/JPY and EUR/CHF



Source: Bloomberg.

exchange rates, (ii) stronger expectations of a yen – and to a lesser extent of a Swiss franc – appreciation, as signalled by risk reversals implied from currency options (see Chart B4.6), and (iii) increased overnight yen borrowing by foreign financial institutions on the Japanese call money market. This latter development may signal that foreign financial institutions perceive a significant risk of sudden movements in main yen bilateral exchange rates and therefore take on higher currency hedging activity than before. Since March such tensions have somewhat been easing, although the perceived riskiness in the yen foreign exchange market remains still higher than for other major currencies.