

Box 8

**THE EUR/USD BASIS SWAP AS AN INDICATOR OF STRESS IN MONEY MARKETS**

The US dollar funding needs of European and other non-US banks has attracted a great deal of attention since the Lehman Brothers bankruptcy in 2008, not least given the fragility of this source of wholesale market funding. This box reviews the basic aspects of this market, and compares the situation in the foreign exchange (FX) swap market prevailing in the aftermath of the Lehman Brothers episode to the current situation by discussing the so-called basis swap as an indicator of stress in US dollar funding conditions.

FX swaps enable banks that have raised funds in one currency to swap those proceeds (and their subsequent interest payments) in another currency over a finite period – thereby broadening the availability of funding to cover multiple currency markets. In the EUR/USD swap market, the so-called “basis” is the premium paid by market participants to obtain US dollar funds. Normally, the premium is calculated as the difference between the US dollar interest rate implicit in the swap and the unsecured US dollar interest rate.

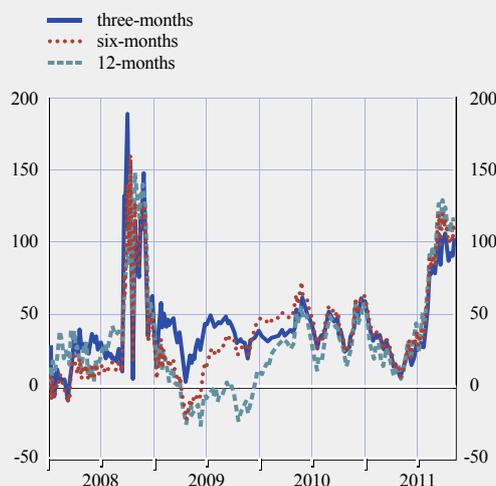
Prior to the financial crisis in 2008, many international banks, including European banks, used unsecured US dollar funding as an attractive alternative source of funding. The favourable funding conditions in US dollars reflected the size of the wholesale US dollar money market and the fact that unsecured funding was also available for longer money market maturities than in, for example, the euro money market. European banks active on the market often raised more USD-denominated funds than needed and therefore swapped back their US dollar surplus into their domestic currency. At that time, the cost of swapping euro into US dollars, as measured by the EUR/USD basis swap, was essentially zero, meaning that the cost of funding in US dollars was in line with the US dollar LIBOR and that there was no particular imbalance in the demand for US dollars or euro from market participants.

With the onset of the financial crisis, however, but also following the introduction of regulatory changes impacting US money market funds, the historic provider of US short-term funds, the EUR/USD basis in the FX swap market became negative in January 2010, underscoring a structural need for euro area banks to borrow US dollars via the FX swap market. Indeed, following the reduction in interbank unsecured lending at the start of the financial crisis, banks had to make greater recourse to FX swaps to fund their US dollar liabilities. After the bankruptcy of Lehman Brothers, the FX swap market became impaired – as did several other market segments – and banks became highly concerned about counterparty risks. Within the resulting struggle to reduce bilateral exposures, it became difficult and expensive to obtain US dollars via FX swaps and the EUR/USD basis swap widened significantly (see Chart A). In October 2008, the US dollar rate implied in short-term FX swaps reached 200 basis points above LIBOR in the three-month segment (see Chart A).

The general dislocation in money markets caused central banks across the globe to set up swap lines. At the end of 2008, the amount outstanding of US dollar liquidity provided by the ECB to Eurosystem counterparties peaked at almost USD 300 billion. The provision of US dollars outside the United States proved very effective in restoring the functioning of the EUR/USD swap market. The EUR/USD basis swap declined rapidly to levels close to those prevailing before the bankruptcy of Lehman Brothers. After a substantial narrowing of the EUR/USD basis swap, these lines were no longer necessary in 2010. Several factors may explain the more subdued

Chart A EUR/USD basis swap

(Jan. 2008 – Nov. 2011; basis points; five-day moving average)

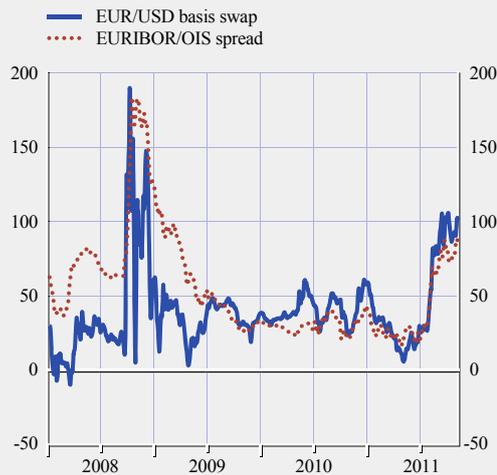


Sources: Bloomberg and ECB calculations.

increase in the EUR/USD basis swap and the shape of the basis swap curve in this period. First, there was an effective and unlimited backstop facility in the form of the ECB's US dollar facility. Second, international banks, including European banks, may have reduced their US dollar refinancing needs since 2008. Third, according to market participants, most European banks could still raise US dollar funds with short-term maturities, i.e. below one week, contrary to the situation prevailing in 2008. Fourth, international banks used the relatively good conditions in funding and capital markets in the first part of 2011 to build up US dollar cash buffers on the balance sheets of their US branches or subsidiaries. According to Federal Reserve data, a significant part of the excess reserves ended up on foreign banks' balance sheets.

**Chart B Three-month EUR/USD basis swap and the spread between the three-month EURIBOR and the overnight index swap rate**

(Jan. 2008 – Nov. 2011; basis points; five-day moving average)



Sources: Bloomberg and ECB calculations.

A re-emergence of tensions in this market led to a re-opening of the swap lines as a precautionary measure in June 2011. This coincided with the intensification of sovereign debt concerns about some euro area countries in mid-2011, leading to an increase in the basis swap – albeit one that was less pronounced than in 2008 (see Chart A). Moreover, the shape of the basis swap curve remained upward-sloping after May 2011, reflecting that mainly term funding was impaired and suggesting that forward-looking concerns were dominant relative to immediate funding tensions. This was the opposite of the situation in 2008 when the EUR/USD basis swap curve inverted (see Chart A). Unlike previous occasions, however, actual use of the swap line established by major central banks appears to have been hampered by negative reputational costs. In this context, in September 2011, the ECB announced, in coordination with other central banks, additional US dollar liquidity-providing operations over the year-end.

Notwithstanding central bank policy initiatives aimed at alleviating strains in this market, the EUR/USD market has seen tensions and, accordingly, the basis swap has been used by some as an indicator of funding tensions. While central bank actions have been successful in easing liquidity issues in this market, it reflects a wider issue of funding strains – mirroring the overnight index swap (OIS) and the EURIBOR/OIS spreads closely followed by market participants (see Chart B). However, both the basis swaps and the EURIBOR/OIS spread have some limits and should be interpreted both with caution and in a broader context.