EUR-USD basis swap: risks skewed towards more negative levels

- The EUR-USD cross currency basis swap levels along the curve have fallen since the ECB’s October meeting and now trade very close to the lowest levels since 2012.

- Macro and micro factors have been driving the basis away from zero in recent years by impacting liquidity conditions and risk appetite and/or altering the supply-and-demand dynamics of funds in the two markets. In this respect, a negative basis reflects the relatively stronger demand for dollar funding.

- We see three main factors shaping the direction of the basis swap over the next few months: 1. monetary policy and macro factors, 2. trends in bond issuance at a more micro level and 3. risk appetite in relation to specific events.

- Based on the above, we think that the basis will remain close to its richest levels since 2012 for the time being. Risks are skewed towards more negative levels.

**EUR-USD CROSS CURRENCY BASIS SWAP ACROSS MATURITIES**

![Graph showing EUR-USD basis swap across maturities](source: Bloomberg, UniCredit Research)

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A closer look at the EUR-USD basis swap

A cross-currency swap is a derivatives contract that allows the two counterparties to exchange interest payments in two different currencies based on a fixed notional (expressed in the two currencies). There are various flavors of cross currency swaps. The two main types are fixed-for-floating and floating-for-floating contracts, quoted in various currency pairs over time horizons ranging from three months to 50 years.

The EUR-USD cross-currency basis swap (EUR-USD XCCY basis swap, or simply the basis swap) is traded as a margin on the 3M Euribor (EUR leg) vs. 3M Libor flat (USD leg). Theoretically, the basis swap should be zero, since both legs should have the same present value when converted at the current spot exchange rate. However, the basis can diverge from zero in the event of market segmentation.

Macro and micro factors might drive this asymmetry by impacting liquidity conditions, risk appetite and/or alter the dynamics of demand/supply of funds in the two markets. In this respect, a negative (positive) basis reflects relatively stronger demand to obtain funding in dollars (euros).

Before 2008, the basis swap was virtually zero, but since the onset of the financial crisis, it began to mirror imbalances in the supply and demand of funding in the two currencies, reaching extremely negative levels. Both credit and liquidity premiums weighed on the basis, pushing it to negative levels. More recently, monetary policy divergence in the US and the eurozone – with excess liquidity expected to rise sharply in the Eurosystem – and hedging of EUR bond issuance by non-euro area companies pushed the basis to its lowest levels since 2012. This year’s lows were marked in 1Q and, since then, the basis has hovered at around negative 35bp across tenors. The latest downward leg in the basis was registered after the ECB’s October meeting and due to the ECB’s dovish rhetoric and the prospect of additional easing also in terms of a rate cut. Currently, basis swaps within the 2Y to 10Y tenor trade between -35bp and -40bp and shorter-dated ones in the -25bp to -30bp area. These levels stand at the low end of the YTD range and close to the lowest levels since 2012.

The combination of macro and micro factors that has contributed to keeping the EUR-USD basis swap largely negative across the curve still persists and some factors are becoming more relevant. Hence, we think that the basis will remain close to its richest levels since 2012 for the time being. Risks are skewed towards more negative levels over the coming months.

We see three main factors shaping the direction of the basis swap: 1. monetary policy and macro factors, 2. trends in bond issuance at a more micro level and 3. risk appetite in relation to specific events.

Source: Bloomberg, UniCredit Research
Central banks, liquidity, scarcity and credit spreads

The Eurosystem currently runs with an excess liquidity of over EUR 500bn due to the ECB’s refinancing operations and QE (see left chart below). Increasing excess liquidity and expectations of further QE played a role in widening the basis at the beginning of 1Q. They have created an excess of supply of EUR (and the expectation of a larger surplus to come) while the deposit facility is negative, creating pressure to lend EUR in preference to other currencies, mainly the USD. Unconventional monetary policy operations have contributed to keeping market rates well below the Euribor level. Moreover, they have led to tighter credit spreads across euro area markets and fuelled yield hunting, making it more appealing for US companies to tap euro area markets, which weighs on the EUR USD basis swap if hedged.

Excess liquidity is set to increase sharply over the coming months. ECB’s QE will add EUR 60bn a month in purchases until September 2016, likely pushing excess liquidity above EUR 1tn. Speculation of further easing by the ECB has increased recently and we think an expansion of QE is in the cards: we project additional purchases of at least EUR 300-400bn. Under this scenario, excess liquidity will continue to rise and stay high for several years.

Moreover, at the October ECB meeting we learned that the central bank does not consider official rates to be at their effective lower bound, opening the possibility of a more negative rate on the deposit facility. An even lower deposit rate at a time when excess liquidity is on the rise will make the above arguments even more relevant.

Over time, especially as QE is stepped-up, the scarcity of government bonds will likely become more severe as increased demand will outpace a decreasing net supply of paper. We think this will keep swap spreads rich and lead to further tightening of credit spreads, also due to portfolio reallocation. On the other side of the Atlantic, paper has been cheapening recently. The unwinding of FX reserves across EM and OPEC countries had a visible impact on US swap spreads, which might remain cheap due to the forced sale of bonds from countries facing structural economic adjustments. Hence, the differential in credit spreads might widen in favor of EUR issuance, leading to a risk of a lower basis swap over the coming months.

On the corporate bond side, the issuance activity of US companies in the EUR corporate-bond market added to the liquidity flows across currencies. Due to the attractive all-in yield environment that came on the back of the ECB’s QE – resulting in negative govie yield levels and ultra-tight corporate bond spreads – US companies tapped euro bond investors for funds.
However, with some of the EUR liquidity probably being swapped back into USD, basis swap levels were pushed to even more negative levels.

EUR issuance by US companies (IG rated) started to rise in 4Q13 on the back of diverging interest rate expectations between the euro area and US markets, peaking in 1Q15. This coincided with the setting up of QE trades. Bond demand was particularly strong and pick-up hunting pushed credit spreads tighter, making EUR issuance relatively attractive. The EUR-USD basis swap plummeted quickly from -10/-15bp to the -35/-40bp area on 5Y-10Y tenors. A more modest adjustment at shorter tenors suggests that the widening in the basis was driven by hedging activity.

When the buying frenzy eased, the weight of supply started to push credit spreads wider. Cheapening pressure was particularly strong on US issuers, which underperformed the rest of the credit market. Currently for US issuers, getting funding in EUR is less appealing than it was in 1Q15 due to a wider credit spread. Moreover, the negative performance of this paper over the past few months has likely dented demand from the many portfolio managers that bought in 1Q. Other factors might limit supply of this paper in the short term, including increased risk aversion in relation to the VW case as well as seasonality issues (supply tends to be subdued towards year-end). From a more medium-term perspective, a possible QE extension would spill over to credit spreads (directly or, more likely, as a consequence of portfolio reallocations) and create market conditions more similar to those in 1Q15, possibly again weighing on the basis swap.

ISSUANCE ACTIVITY (IG RATED COMPANIES)

CREDIT SPREADS: OVERALL VS. EUR BOND OF US ISSUERS

Risk appetite has historically been a key driver of the basis swap. However, as the longer time series in upper left chart below shows, there have been two distinct periods since the financial crisis in which the basis moved substantially: in 2008/09 and in 2011/12. But the absolute level of the basis swap curve is only one part of the dynamic, curve effects are another one. While over the years that were dominated by the sovereign debt crisis the level of the basis swap curve (5Y bucket) was to some extent correlated to the overall currency movements, the dynamics of the slope (measured as the 1Y-10Y spread) had a more unique characteristic. Note that since the basis swap levels were negative over the plotted period a positive 1Y-10Y gap arises when the 1Y basis is more negative than the 10Y. In other words, the plotted spread shows a spike in times when there was an urgent near term USD liquidity crunch for European borrowers. The first (and also more dramatic) peak occurred in 2008/09, in the wake of the sub-prime crisis. However, the width of the peak illustrates that the pressure eased quickly. The explanation for this development was the injection of USD liquidity into the European banking system via the ECB.
The lower left chart on the next page shows the 1Y EUR-USD basis swap together with the volume of USD-denominated open market operations provided by the ECB. As eurozone banks were able to tap “their” central bank directly for USD dollar liquidity (without having to acquire it in the market) the corresponding liquidity crunch eased pretty quickly.

However, back in 2011 and 2012, the stress situation lasted longer. In that period, access to USD funding (when available) became very expensive for eurozone financial institutions. The driver was a significant USD liquidity demand by European banks because of their USD businesses. Note that USD funding demand by eurozone banks does not necessarily result from direct loans to US residents, but from financing global trade operations (e.g. oil, commodities, etc.), which are usually traded in USD terms. However, due to systemic fears stemming from the EUR crisis, the traditional sources of USD liquidity for European banks – US money-market funds – shied away. Because of the sheer demand the basis-swap premia skyrocketed. This can also be seen in the lower right chart, which depicts the 1Y basis swap alongside an average spread of Eurozone banks with a significant share of USD business.

Depending on the severity of the overall impact from the VW scandal, there could also be implications for the basis swap, since potential spillovers from the VW situation onto other large automotive companies with financial linkages to the US market might lead to a lack of access to direct USD funding and, in turn, create some pressure to convert EUR liquidity into USD. However, currently it seems the corresponding risks are more remote, since 1. the USD funding needs of the three German car manufacturers are in single-digit billion USD range (probably not big enough to move the basis), and 2. the corresponding risk aversion towards the German car manufacturers as a whole remains limited.

EUR-USD XCCY BASIS: DYNAMICS AND DRIVERS

Cross-currency basis (5Y bucket) vs. EUR-USD spot rate…

…and its slope (10Y-1Y steepness) vs. EA sovereign risk premium

2009: Cross-currency basis vs volume of USD liquidity by ECB

2011/12: Cross-currency basis vs. EA bank risk premium

Source: Bloomberg, UniCredit Research
**BOX: Cross-currency swap**

| What is a Cross-currency swap? | According to the ISDA, the cross-currency swap is “an interest rate swap in which the cash flows are in different currencies. Upon initiation of a cross-currency swap, the counterparties make an initial exchange of notional principals in the two currencies. During the life of the swap, each party pays interest (in the currency of the principal received) to the other. And at the maturity of the swap, the parties make a final exchange of the initial principal amounts, reversing the initial exchange at the same spot rate”. |
| Typical investors | The most active players in the cross currency swap market are debt issuers, which hedge their funding in foreign currency swapping interest flows back into domestic currency. They are typically active at medium and long maturities. Banks treasuries and market makers are also active but typically at shorter maturities. Asset managers and HF are less active and speculative activities are more frequent at shorter maturities. A broader range of investors are typically active on FX swaps than on cross-currency swaps, making the latter more exposed to one-sided order flows, especially when financial conditions tighten. |
| How is it traded? | This contract is traded as a margin on the Euribor (EUR leg) vs. Libor flat (USD leg). The usual benchmark that is used is the 3M index in both legs. Basis swaps are quoted in various currency pairs over time horizons ranging from three months up to 50 years. |
| Analysis of the CFs | At a quoted cross-currency basis-swap rate of -35bp and EUR-USD spot rate of 1.15, an investor who wants to swap EUR 100mn into USD for 5Y will pay EUR 100mn to the counterparty and receive USD 115mn in exchange. During the life of the swap, he will pay 3M USD-Libor on the USD 115mn and will receive 3M-Euribor minus 35bp on the EUR 100mn. After 5Y, the exchange of the notional amounts will be reversed at the initial spot rate of 1.15, i.e. the investor will pay back the USD 115mn and will receive the EUR 100mn. |
| Theoretically correct price | For pricing purposes, XCCY swaps can be decomposed in a portfolio of FX forward contracts and as such build on the concept of covered interest rate parity (CIP). FX forward prices should be fully consistent with interest rates differentials across currencies. Hence, getting straight financing in EUR should cost as much as getting funding in USD and swapping it back in EUR via currency swaps. In reality, regulation, risk aversion and its compounding effects on liquidity risk limit market volumes. So imbalances in demand for funding in different currencies might drive the basis swap level away from zero. Amatatsu and Baba\(^1\) showed that the non-arbitrage level of the basis might diverge from zero due to market segmentations. They analyzed in a stylized way two funding options of Japanese firms: getting funding directly in USD or getting it in JPY and then swapping it into USD, modelling asymmetric risk premiums across the two different markets; 

\[
(1 + r_{\text{usd}} + \phi_{\text{usd}}) = (1 + r_{\text{jpy}} + \phi_{\text{jpy}}) + ([1 + r_{\text{usd}}] - [1 + r_{\text{jpy}} + \alpha])
\]

The left side of the equation shows the cost of funding in dollars, including the risk free rate \((r_{\text{usd}})\) and a premium \((\phi_{\text{usd}})\) that Japanese companies face in the US market. The right side shows the cost of funding in JPY: risk free rate \((r_{\text{jpy}})\) plus the premium Japanese companies pay to tap the domestic market \((\phi_{\text{jpy}})\), and then the XCCY flows to receive \(r_{\text{jpy}}\) plus a margin \((\alpha)\) while paying the dollar rate \((r_{\text{usd}})\). Based on the above, \(\alpha\) (the basis) is zero when the risk premia are equal across the two markets. However, an \(\alpha\) different from zero does not violate the non-arbitrage condition if a premium differential exists. Risk premia are intended broadly to include any factor generating a spread (positive or negative) between market rates and the fixings. 

Fixings are no longer representative of short-term market EUR and USD rates, which leads to a EUR-USD XCCY swap basis different from zero. Risk aversion, liquidity risk and one-sided demand for liquidity have taken market rates away from the fixing. In the eurozone, market rates are generally lower than the Euribor, while the opposite is true for the US. In other words, the negative difference between \(\phi_{\text{eur}}\) and \(\phi_{\text{usd}}\) is consistent with a negative \(\alpha\). |
| Historical trend |  |

\(^1\)Price discovery from Cross-currency and FX swaps: A structural analysis, Y. Amatatsu, N. Baba, BIS Working Paper No.264, November 2008
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