



USDJPY Cross-Currency Basis Update

YONG XU, PH.D., CFA / 212 224 5132 / yxu@smbc-cm.com

USDJPY Cross-Currency Basis Update

In this report, we present an update on the recent developments of the USDJPY cross-currency basis. Following the US money market funds ("MMF") reform in late 2016, the USDJPY cross-currency basis has trended upwards across the curve, defying the expectation of a US dollar funding crunch for non-US banks. Despite a shrinkage of prime MMFs by \$1.3 trillion and a loss of \$555 billion of US dollar funding from these funds, foreign banks showed resilience in US dollar funding by running down their excess reserves at the Fed, drawing on funding from headquarters, and diversifying their funding through offshore deposits, repo transactions, and debt issuance. According to the BIS, global on-balance-sheet US dollar funding for non-US banks remained at \$9.5 trillion by the end of 2016, with off-balance sheet funding, mainly via FX swaps, raising the total to around \$10.5 trillion. Therefore, the front-end USDJPY basis, which is more sensitive to the demand and supply dynamics of dollar funding than the rest of the curve, bottomed on November 29, 2016 (3m at -90.75bp and 1y at -83.5bp) and gradually moved higher throughout the year of 2017 (now 3m at -48.25bp and 1y at -46.75bp). Although the very front-end of the basis curve has been under the widening year-end turn effects lately, the upward trend of the USDJPY basis during most of 2017 reflected a more synchronous global growth outlook and an improving dollar funding environment for JPY institutions.

Theoretically, the existence of a non-zero cross-currency basis is the evidence that the no-arbitrage condition of Covered Interest Rate Parity ("CIP") is violated. Otherwise, an arbitrage opportunity exists when one borrows one currency against lending the other via an fx forward trade. Essentially, the cross-currency basis reflects a risk premium that one has to pay to borrow one currency against the other. In our view, the fundamental driver behind the front-end USDJPY cross-currency basis remains the relative demand for JPY versus USD among global financial institutions, corporations, and investors. For example, the plunging of the front-end basis during the recent weeks reflects the enlarging demand and supply imbalances for USD among foreign banks near the year end. Conversely, the BOJ's RRP of JGBs on March 27, 2017 temporarily withdrew JPY liquidity and supported the front-end basis around FY 2017. With the Fed tightening and tapering its balance sheet, the BOJ's easing measures of QQE, QQE II, and NIRP, had injected additional JPY liquidity versus USD into the systems and added widening pressure to the front-end basis from 2013 to 2016. As a JGB curve-steepening tool, the BOJ's YCC has tightened the basis since September 2016.

The longer-end of the USDJPY cross-currency basis curve is normally influenced by the cross-market debt issuance from USD and JPY-based issuers. More non-Japanese issuers have increasingly viewed the Samurai bond market as a way of seeking offshore funding diversification and low borrowing costs. The higher the Samurai issuance flows, the wider (more negative) the basis would become as the issuer has to pay more for swapping out of JPY. Except for robust Samurai issuance flows in January, the quiet issuance calendar in Q1 virtually removed the downward bias on the basis until BPCE and other issuers came to the market starting in June. In this piece, we link the movements in the belly of the USDJPY basis curve to the seasonal issuance pattern of cross-border flows between JPY and USD. Lastly, we identify relative value and carry opportunities along the spot and forward USDJPY basis curve.



USDJPY Cross-Currency Basis Update

A cross-currency basis exists when the no arbitrage condition of CIP is violated.

The widening of the cross-currency basis reflects rising market frictions that limit the arbitrage opportunities across the fx and rates markets.

Fundamental drivers behind the underlying fx and rates markets are likely to influence the cross-currency basis market.

Figure 1. USDJPY FX Forward Bias (1y) and USDJPY Interest Rate Differential (1y Swap Rate vs 3mL)

Source: Bloomberg and SMBC CM

USDJPY Cross-Currency Basis and Covered Interest Rate Parity

Theoretically, the existence of a non-zero cross-currency basis is the evidence that the no-arbitrage condition of Covered Interest Rate Parity ("CIP") is violated. Assuming that there is one time period, CIP states that $\frac{F}{S} \approx \frac{1+r}{1+r^*}$, where S is the spot exchange rate in units of domestic currency per foreign currency, F is the corresponding forward exchange rate, r is the domestic currency interest rate, and r^* is the foreign currency interest rate. In other words, if CIP holds, the fx forward bias versus the spot should be equal to the interest rate differential between the two currencies. Otherwise, an arbitrage opportunity exists when one borrows one currency against lending the other via an fx forward trade.

When such a market friction exists, a cross-currency basis, b , ensures that the no arbitrage condition holds through the following: $\frac{F}{S} = \frac{1+r+b}{1+r^*}$. Therefore, the widening of the cross-currency basis implies rising market frictions that limit the arbitrage opportunities across the underlying fx and rates markets. Since 2014, even once banks had strengthened their balance sheets and regained their access to funding, the persistently wide basis across major currencies versus USD has attracted a great deal of attention to the fundamental drivers affecting the basis market and leading to the failure of CIP. Figure 1 indicates that the widening front-end USDJPY basis from 2013 to 2016 coincided with the divergence between the forward bias versus the spot and the USD/JPY interest rate differential, implying a violation of CIP. Conversely, the narrowing of the front-end USDJPY basis was in line with the convergence between the forward bias and rate differential.

Essentially, the cross-currency basis reflects a risk premium that one has to pay to borrow one currency against the other, $b = \frac{F}{S}(1+r^*) - (1+r) \approx \frac{F-S}{S} - (r-r^*) = \text{fx forward bias} - \text{rate differential}$. Based upon this theoretical relationship, a cross-currency basis could be implied from fx forward, fx spot, domestic-currency, and foreign-currency interest rates. The fundamental drivers affecting fx and rates could drive the cross-currency basis. Figure 2 shows that the CIP fx/rates-implied USDJPY cross-currency basis has closely tracked the actual 1y USDJPY basis, especially since 2014 when the deviation from the CIP intensified.

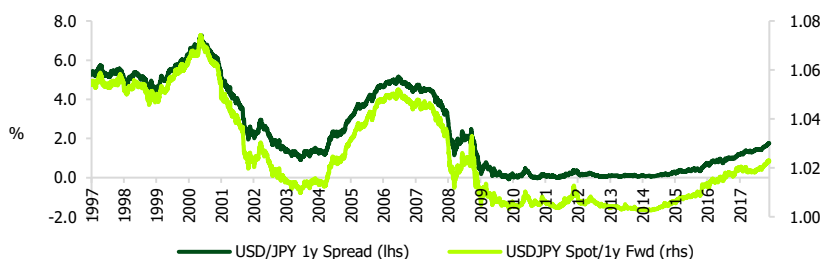
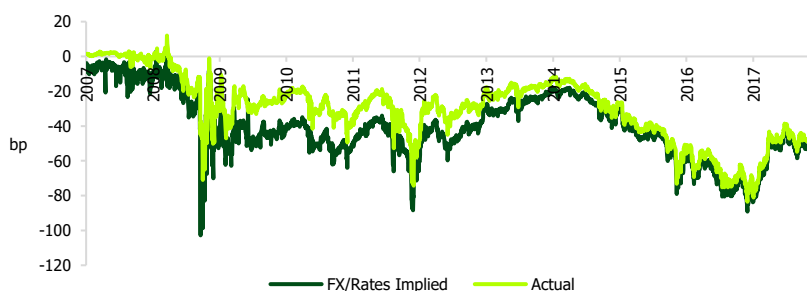


Figure 2. USDJPY Cross-Currency Basis, 1y Actual and CIP FX/Rates-Implied

Source: Bloomberg and SMBC CM





USDJPY Cross-Currency Basis Update

A front-end cross-currency basis can be approximated by the difference in IBOR/OIS spreads and a residual spread.

Front-End USDJPY Cross-Currency Basis and IBOR/OIS Spread

As a cross-currency basis is linked to the violation of CIP and the underlying fx/rates markets, we take a closer look at the credit and liquidity risk premium embedded in the money market rates in two currencies. We think that the front-end cross-currency basis is more influenced by IBOR fixings and credit/liquidity risk premium in IBOR rates while the longer end appears to be more sensitive to the demand and supply of assets in both currencies. It can be shown that the USDJPY cross-currency basis can be approximated by the difference in IBOR/OIS spreads in the two currencies of USD and JPY plus a residual spread as follows:

$$b_{USDJPY,3m} \approx b_{USDJPY OIS,3m} + (r_{JPY LIBOR,3m} - r_{JPY OIS,3m}) - (r_{USD LIBOR,3m} - r_{USD OIS,3m})$$

Where $b_{USDJPY OIS,3m}$ is the 3m USDJPY OIS basis swap, $(r_{USD LIBOR,3m} - r_{USD OIS,3m})$ is the 3m USD LIBOR/OIS spread, and $(r_{JPY LIBOR,3m} - r_{JPY OIS,3m})$ is the 3m JPY LIBOR/OIS spread. When we remove the embedded credit and liquidity risk premium of the two IBOR rates from the cross-currency basis, we are left with the overnight rates in two currencies as proxies for risk-free rates. When the USD and JPY overnight rates are close to zero, we can approximate the front-end cross-currency basis with the net USDJPY LIBOR/OIS spread. Figure 3 shows that 1y USDJPY basis inversely moved with net USDJPY LOIS spread since 2015, which suggests that credit and liquidity risk factors have mostly driven the front-end basis since then.

The 1y USDJPY cross-currency basis can be modeled with a predictor of 3m USDJPY LOIS spread.

A cross-currency basis swap is an exchange of two risky bonds linked to LIBOR rates in two currencies. For the swap to break even with a zero-sum PV of two risky bonds, an extra credit spread in the form of a cross-currency basis has to be added to the leg of a riskier bond. For the USDJPY cross-currency basis swap, the credit spread driven by a slightly wider USD LOIS over JPY LOIS is added to the USD LIBOR leg, which is equivalent to a conventionally quoted negative basis on the JPY LIBOR leg. Over the estimation window of 2015 to present, we model the 1y USDJPY cross-currency basis based upon the net USDJPY LOIS spread. With the current value of the 3m USDJPY LOIS spread at 10.458bp, the fair value of 1y USDJPY basis is estimated at -45.8bp, which is 1.2bp tighter than the actual basis at -47bp (see Figure 4). The wider the USDJPY LOIS spread, the wider the front-end basis would become. A 10bp increase in the 3m USDJPY LOIS spread would lead to a 47bp plunge in the 1y basis, as predicted by the one-factor model. As the 3m USDJPY LOIS spread has plunged to the near-zero level of 10.5bp from a recent peak of 38bp on November 4, 2016, right before the US elections, the 1y basis also has tightened by 23bp during the same period.

Figure 3. USDJPY Cross-Currency Basis and USDJPY LOIS Spread

Source: Bloomberg and SMBC CM

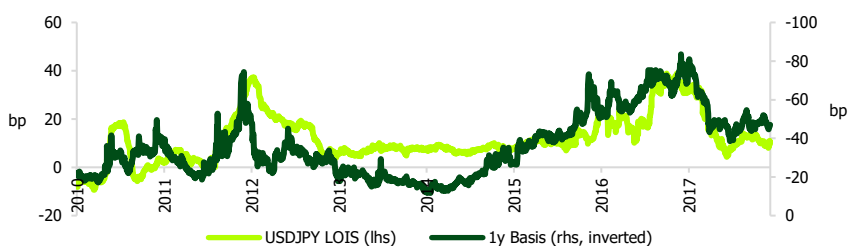
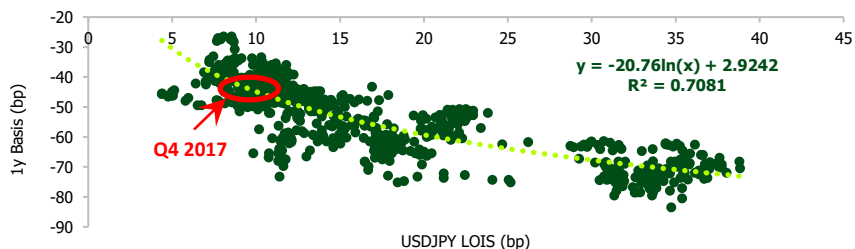


Figure 4. USDJPY Cross-Currency Basis and USDJPY LOIS Spread, 2015 -

Source: Bloomberg and SMBC CM





USDJPY Cross-Currency Basis Update

Front-End USDJPY Cross-Currency Basis and BOJ Monetary Policy Outlook

The downward trend to record lows in the front-end basis through 2016 was mainly driven by the BOJ's ultra-accommodative policy measures.

The BOJ's QQE with YCC and one-time RRP had tightening effects on the front-end basis.

Against the backdrop of rising deflation risk and sluggish domestic growth, the BOJ has implemented a series of nonconventional ultra-accommodative policy measures since April 2013, including Quantitative and Qualitative Monetary Easing ("QQE"), its extension ("QQE II"), and Negative Interest Rate Policy ("NIRP"). The BOJ repeatedly lowered its inflation forecasts and pushed back the timeline of reaching its two-percent price stability goal to Fiscal Year 2020. The deliberate cheapening of JPY raised the funding demand for USD versus JPY as Japanese institutions rushed for USD funding to meet their foreign liabilities. As a result of NIRP, JGB yields also plunged across the curve, with at least half of the JGB market dipping below zero. Negative JGB yields through the 10y squeezed out domestic investors in the JGB market, forcing them to turn to foreign securities and raising the funding demand for USD. In addition, the enlarging interest rate differential across sovereign debt markets also attracted some interest in repackaging JGBs into USD by foreign investors, supporting the basis through the opposite side of the USD funding trade. Overall, the BOJ's further easing measures to inject JPY liquidity and the structural demand for short-term USD funding could be the dominant drivers of pushing down the front-end basis towards record lows through 2016.

Due to the concern over NIRP on credit growth and JGB's supply constraints, the BOJ announced QQE with Yield Curve Control ("YCC") in September 2016, by setting the short-term policy rate at -0.1% and the 10y JGB yields at 0.0%. The innovative YCC framework provides the BOJ with the flexibility and sustainability in JGB purchases in accordance with the economic and inflation conditions as well as the state of the JGB market. The *de facto* curve-steepening tool appeared to have the opposite effects on the USDJPY basis as the previous easing measures. The year of 2017 saw a more synchronous global growth outlook across advanced economies including Japan. With the Japanese economy expanding at a strongest pace in 16 years in 2017, YCC eventually could be applied as a policy normalization tool, e.g., by switching the long-end target to 5y from 10y. Figure 5 and Table 1 link the movements of the USDJPY basis to the BOJ's policy outlook, with the additional easing-induced JPY liquidity pushing down the basis and the withdrawing tightening the basis. On March 23, 2017, the BOJ also unexpectedly announced a Reverse Repo transaction ("RRP") by selling JGBs to ease collateral shortage near the quarter end, which drove a one-time surge of 10bp in 3m basis.

Figure 5. USDJPY Cross-Currency Basis and BOJ Policy Measures

Source: Bloomberg and SMBC CM

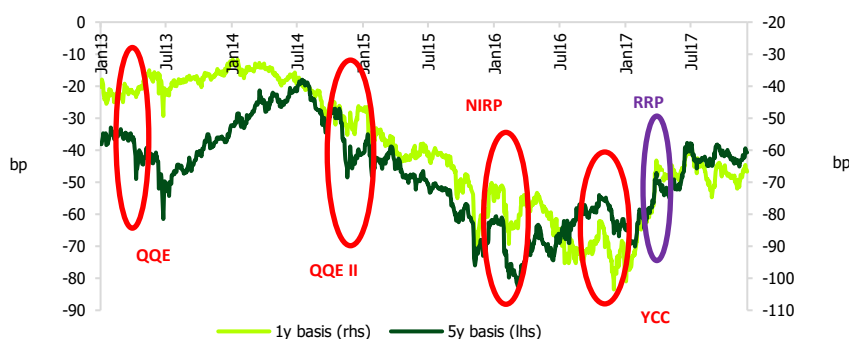


Table 1. USDJPY Cross-Currency Basis Changes and BOJ Policy Measures

Source: Bloomberg and SMBC CM

| Date | BOJ | USDJPY Basis Change (bp), 5d | | | | | USDJPY Basis Change (bp), 15d | | | |
|------------|--------|------------------------------|-------|-------|-------|--|-------------------------------|--------|--------|--------|
| | | 3m | 1y | 5y | 10y | | 3m | 1y | 5y | 10y |
| 4/4/2013 | QQE | (11.3) | (1.1) | 1.5 | (9.1) | | (2.8) | 2.1 | 2.3 | (6.8) |
| 10/31/2014 | QQE II | (4.9) | (1.3) | 1.8 | (6.0) | | (12.0) | (1.5) | 2.3 | (13.8) |
| 1/28/2016 | NIRP | (7.1) | (4.4) | (3.8) | (6.0) | | (13.4) | (12.4) | (22.6) | (12.3) |
| 9/21/2016 | YCC | 2.2 | 3.5 | 5.3 | 0.1 | | 1.6 | 3.8 | (3.8) | 0.3 |
| 3/22/2017 | RRP | 3.4 | 6.9 | 2.3 | 1.3 | | 2.1 | 7.8 | 3.3 | 0.4 |



USDJPY Cross-Currency Basis Update

USDJPY Cross-Currency Basis and Dollar Funding after US MMF Reform

The US MMF Reform did not cause a global dollar funding crunch among non-US banks.

Following the BOJ's NIRP in January 2016, the USDJPY basis curve became sharply inverted, with the 5y and 10y basis plunging to a record low of -102.5bp and -99bp in early March 2016, respectively (see Figure 6). The front-end of the basis curve dipped to record lows in late November 2016 (3m at -90.75bp) when the US MMF reform and presidential elections intensified the expectation of a global dollar funding crunch. Despite a shrinkage of prime MMFs by \$1.3 trillion and a loss of \$555 billion of US dollar funding from these funds (see Figure 7), foreign banks showed resilience in US dollar funding by running down their excess reserves at the Fed, drawing on funding from headquarters, and diversifying their funding through offshore deposits, repo transactions, and debt issuance. According to the BIS, global on-balance-sheet US dollar funding for non-US banks remained at \$9.5 trillion by the end of 2016, with off-balance sheet funding, mainly via FX swaps, raising the total to around \$10.5 trillion (see Figure 8). In particular, deposits outside the US rose at a robust pace, offsetting reduced funding from unsecured prime MMFs. Customer deposits held by Japanese banks in foreign currency (mostly dollars) were reported to increase by \$67 billion in the seven months to end-October 2016. Therefore, the front-end USDJPY basis, which is more sensitive to the demand and supply dynamics of global dollar funding than the rest of the curve, bottomed on November 29, 2016 and gradually moved higher throughout the year of 2017 (now 3m at -48.25bp).

Figure 6. USDJPY Cross-Currency Basis Curve Changes

Source: Bloomberg and SMBC CM

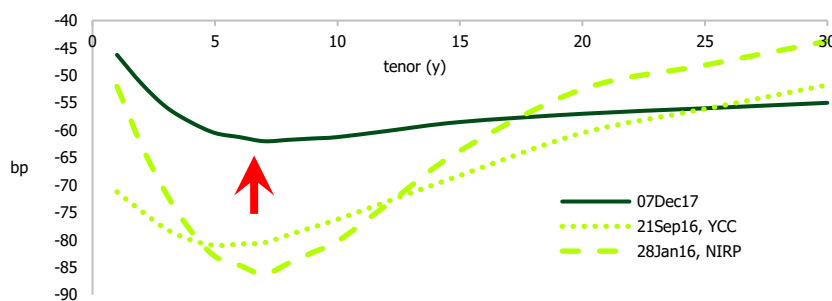


Figure 7. Funding by US Money Market Funds to Foreign Banks

Source: BIS

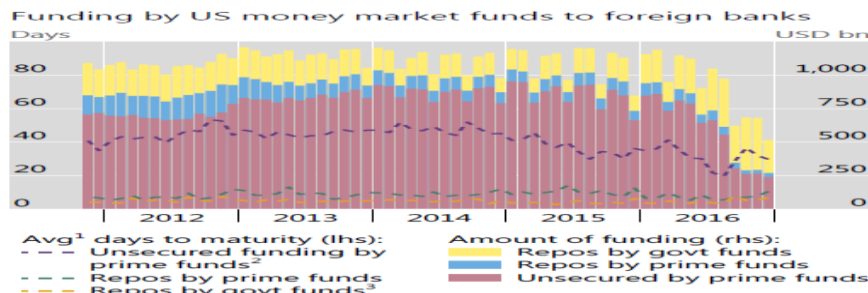
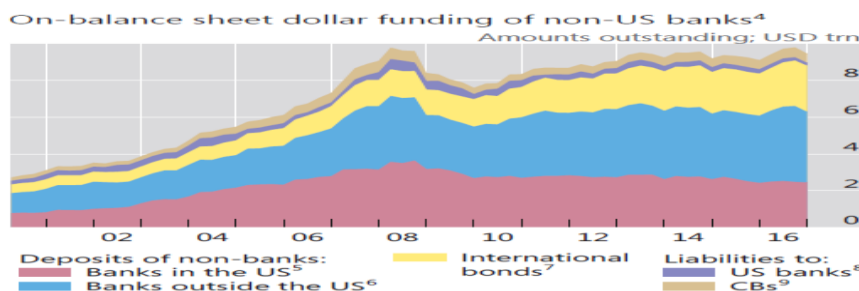


Figure 8. On-Balance Sheet Dollar Funding of Non-US Banks

Source: BIS





USDJPY Cross-Currency Basis Update

USDJPY Cross-Currency Basis and Cross-Boarder Investments

The recent tightening of the USDJPY cross-currency basis was driven by a rising demand for JGBs from foreign investors.

There are other factors driving the recent tightening trend of the USDJPY cross-currency basis, including a rising demand for JGBs from foreign investors (see Figure 9) and a decline in foreign investments from Japanese investors in Q1 2017 when the divergence in policy outlook peaked between the Fed and the BOJ (see Figure 10). Driven by the negative-yielding JGBs and the record-low USDJPY basis, foreign investors identified relative value opportunities by paying the USDJPY cross-currency basis to swap negatively-yielding JGBs into higher-yielding synthetic sovereign debt in their domestic currency. For example, a 2y JGB with a yield of -0.16% could be asset-swapped to a yield of 2.39 percent, achieving a pickup in yield of 59.3bp over a 2y US Treasury note and 36.2bp over USD LIBOR (see Figures 11 and 12). The structuring of the synthetic UST includes a JPY IRS, a JPY 3s6s basis swap, a USDJPY cross-currency basis swap, and a USD IRS. The negative 2y USDJPY cross-currency basis could help enhance the yield by 53bp as the paying of the negative basis works in favor of the investor. To realize that yield, the investor has to hold the synthetic security to maturity, taking extra market risk associated with an embedded USDJPY basis-paying position. Although the narrowing (less negative) USDJPY basis and the rising yields of US Treasuries somewhat diminished the yield pickup potential of this trade, we expect the demand for the synthetic repacking of the JGBs from yield-searching foreign investors into major currencies to increase in the near term, extending to the longer end of the curve and other higher-yielding currencies, and adding some paying pressure to the USDJPY basis.

The decline in net investments for long-term foreign debt securities tightened the basis in Q1 2017.

In addition to the BOJ, the Fed's hawkish policy outlook after the US elections also deterred domestic investors from investing in long-term USD-denominated debt securities in Q1 2017. According to the data on international transactions in securities compiled by the Ministry of Finance, the net dispositions of long-term foreign debt securities accelerated in the beginning of 2017. Figure 10 shows that the sharp decline in one-year rolling net investments in foreign securities coincided with the tightening of the 1y USDJPY basis, reflecting a lower demand for USD versus JPY among domestic investors at the time. As the Fed's gradual policy outlook remains in place with moderate increases in the fed funds target rate and gradual trimming of the balance sheet, the foreign investment demand among domestic investors has stabilized since Q1 and eased the tightening pressure on the front-end USDJPY basis.

Figure 9. JGB Investments by Foreign Investors, Sales, Purchases, and Net

Source: Japan Securities Dealers Association and SMBC CM

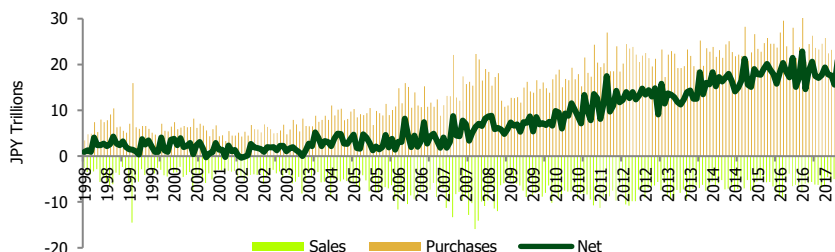
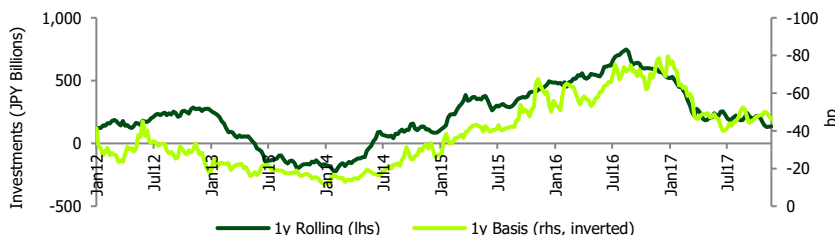


Figure 10. USDJPY Cross-Currency Basis and Net Investment Demand for Foreign Securities by Domestic Investors

Source: Ministry of Finance Japan and SMBC CM





USDJPY Cross-Currency Basis Update

Figure 11. Yield and Spread Analysis for Basis-Swapping a 2y JGB into USD



Figure 12. Asset Swap Analysis for Swapping a 2y JGB into Major Currencies





USDJPY Cross-Currency Basis Update

The belly of the USDJPY cross-currency basis curve is driven by cross-boarder debt issuance between JPY and USD-based issuers.

Credit spreads continued to converge between the US and Japanese credit markets.

Figure 13. Flow Chart for an fx-hedged Samurai debt deal

Source: SMBC CM

Longer-End USDJPY Basis and Cross-Boarder Debt Issuance

In our view, the main driver affecting the belly of the USDJPY basis curve (5y to 10y) is the cross-market issuance of the JPY and USD-based issuers. Historically, the market was biased one-way, with the USD issuance by JPY-based issuers dominating the JPY issuance by non JPY-based Samurai issuers. In other words, Japanese institutions viewed USD as an alternative funding currency due to low USD rates and the larger US credit market. At present, the negative USDJPY basis has an extra benefit of offsetting an issuer spread in USD for JPY entities, potentially reducing their borrowing costs. On the other hand, the basis becomes an extra cost for foreign entities issuing in Japan when they swap the proceeds back into USD. Figure 13 estimates the net cost for a USD-based issuer who issues JPY-denominated debt in a Samurai bond market and swaps the JPY proceeds back to USD. The net cost for the fx-hedged transaction is close to the difference between the credit spread and the USDJPY basis. When the basis is negative, in the case of a 5y USDJPY basis (-62bp) at this moment, the incremental cost from currency hedging is 62bp. The higher the Samurai issuance flows, the wider (more negative) the basis would become as the issuer has to pay more for swapping. Conversely, the less negative the basis becomes, the higher the likelihood would be for foreign issuers to tap the Samurai market for funding.

In 2017 credit spreads generally have tightened and resumed their convergence towards the pre-crisis levels across global credit markets. Similar to 2016, the year of 2017 continued to see significant issuance flows across global credit markets, thanks to low-for-longer rates, muted inflation risk, and supportive monetary policy. Figure 14 shows that the traded CDX/ITRAXX Japan indexes narrowed to 52bp and 46bp in 2017 from 76bp and 66bp in 2016, for the investment grade names of North America and Japan, respectively. Despite negative or record-low yields, supportive policy measures from the ECB and BOJ and a gradual normalization approach from the Fed have helped support the demand and supply of global fixed income markets, even though investors are likely to be pushed towards the lower credit spectrum for higher yields.

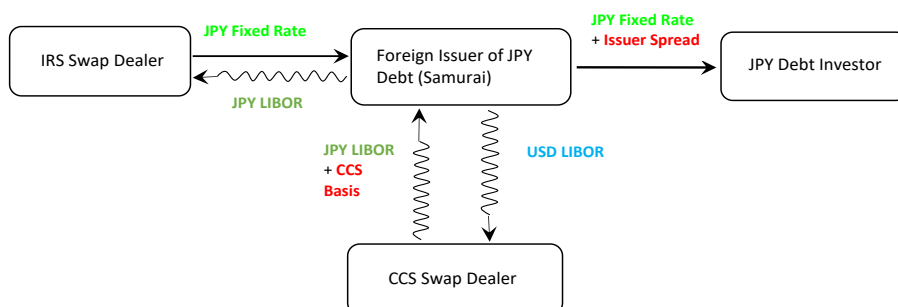
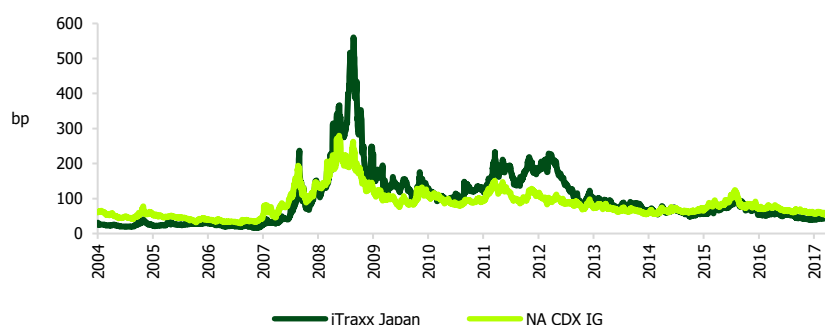


Figure 14. CDS Spreads, iTraxx Japan and NA CDX

Source: Bloomberg and SMBC CM





USDJPY Cross-Currency Basis Update

Samurai issuance has a distinct seasonal pattern that bottoms in Q1 and picks up afterwards.

Samurai issuance flows follow a distinct seasonal pattern from the rest of the global credit market. Around the end of the Japanese fiscal year in March, the issuance calendar usually becomes quiet, which eases the widening pressure on the belly of the basis curve. After a hiatus of three to four months, Samurai issuance flows normally pick up in June and then slow down again in the late summer. Figure 15 compares the monthly Samurai issuance flows for 2017 to the seasonal pattern during the period from 2012 to 2016. Except for an abnormally robust issuance month in January, Samurai issuance in 2017 generally follows this historical seasonal pattern. In 2017 French borrowers have been well represented in the Samurai issuance market. In December 2016, the passage of regulatory legislation for senior non-preferred debt instruments that meet total loss absorbing capacity ("TLAC") requirements triggered a wave of French issuance in global markets. For example, BPCE raised JPY412.7bn in a senior non-preferred TLAC-compliant Samurai deal in January and came to the Samurai market again with a JPY58bn deal in June. BPCE has recently confirmed its guidance as a regular Samurai issuer twice a year in December/January and June/July. Although the timing of the issuance was not directly linked to the upward trend of the basis, Samurai issuers such as BPCE did benefit from the recent basis movements and the month of June saw seven other deals from the Philippines, CBA, NAB, Renault, Svensk Exportkredit, BOA, and Lloyds. The less negative basis and the debt-friendly global macro environment could lead to higher market activities in the Samurai market in 2018.

The belly of the USDJPY basis is linked to the net supply of USD and JPY cross-market debt.

Figure 16 links the long-term basis changes to the net supply of USD and JPY issuance by foreign entities, that is, the difference in issuance flows between the USD issuance by JPY entities and the JPY issuance by non JPY entities. Historically, the higher the net supply of USD versus JPY cross-market issuance, the tighter the basis would become, implying a higher swapping demand out of USD into JPY and a higher (less negative) basis paid by the issuers. Conversely, the lower that net issuance is, the wider the basis would be, which was due to the fact that issuers had to receive a lower (more negative) basis for exchanging JPY for USD. The recent upward trend in the longer-end basis has been driven by a higher net supply of USD versus JPY, especially during the second half of 2017. As cross-border debt issuance is expected to be active in 2018, the longer-end basis could be driven by the offsetting swapping effects and remain near the upper end of the recent range in the near future.

Figure 15. Seasonal Pattern for Samurai Issuance Flows

Source: Bloomberg and SMBC CM

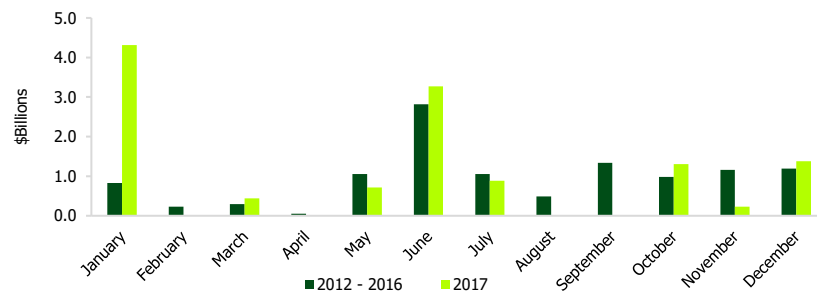
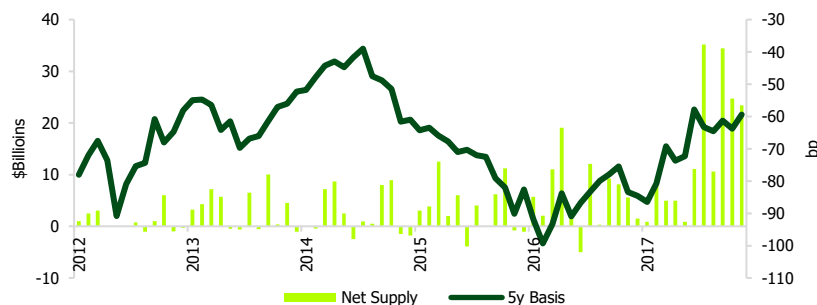


Figure 16. USDJPY Cross-Currency Basis (5y) and Net Supply of USD versus JPY Cross-Border Issuance

Source: Bloomberg and SMBC CM





USDJPY Cross-Currency Basis Update

USDJPY Cross-Currency Basis Outlook and Carry Opportunities

The USDJPY Basis will likely remain negative within the recent range due to the divergence in policy outlook between the Fed and BOJ and strong cross-market issuance flows.

In the near term, we expect the USDJPY basis to remain negative across the curve. The very front end of the basis curve (up to 6m) could widen further into deep negative territory as the year-end turn effects driven by dollar funding needs for non-US banks dominate the basis swap market for major currencies including JPY and EUR. Figure 17 shows that historically the 3m basis experienced a sharp collapse by more than 10bp at the end of September and continued to be under widening pressure until the basis rebounded towards the year end. The front-end of the basis curve will be anchored by the stable credit and liquidity risk premium embedded in the low USDJPY LOIS spread in the near term. For the longer run, we expect the front-end basis to be driven by the BOJ's policy outlook and to take its cue from USDJPY, with the weakening of JPY usually coinciding with a lower global dollar funding stress (see Figure 18). In particular, the path of Japan's core CPI inflation, excluding fresh food prices, towards the BOJ's price stability goal will determine the timing and pace of the BOJ's policy normalization. Despite the strongest growth in 16 years, our BOJ policy outlook remains that it will take longer for core inflation, excluding the temporary effects from the consumption tax hike in April 2014, to converge to the aggressive 2% target. On the other hand, the Fed is likely to maintain its cautious and gradual policy stance by raising rates somewhat further and trimming its balance sheet slowly. The divergence in policy outlook between the BOJ and the Fed will continue to keep the demand and supply imbalances of USD versus JPY funding intact for 2018. In addition, we expect cross-market issuance between JPY and USD credit markets to grow close to the recent trend after a seasonally slow Q1. Therefore, the longer-end basis could stay near the upper end of the recent range and the basis curve could stay less inverted for 2018.

Figure 17. Year-end Turn Effects on 3m USDJPY Cross-Currency Basis

Source: Bloomberg and SMBC CM

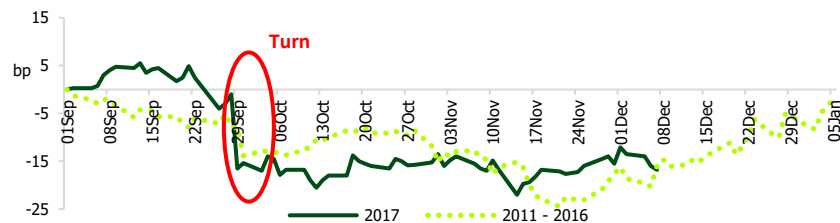


Figure 18. USDJPY Cross-Currency Basis and USDJPY

Source: Bloomberg and SMBC CM

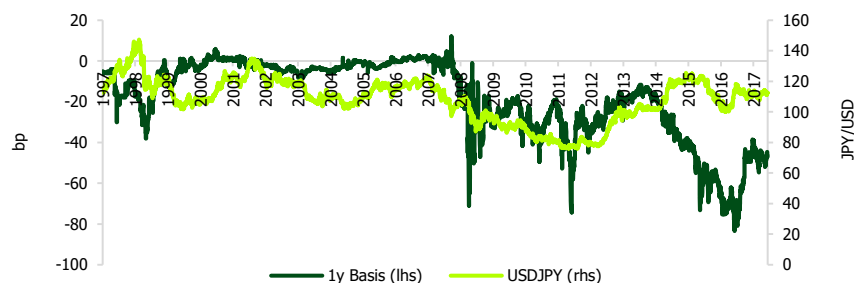
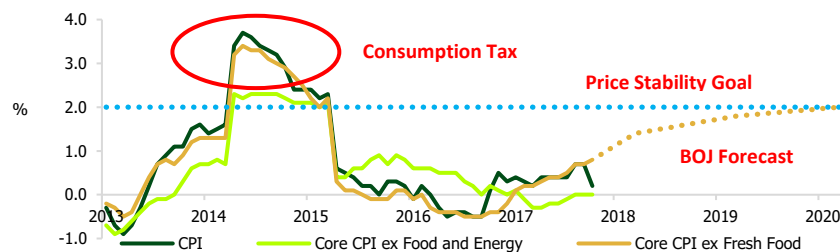


Figure 19. Japan CPI Inflation, Actual and BOJ Forecast

Source: Bloomberg, BOJ, and SMBC CM



The information in this document was compiled by SMBC Capital Markets, Inc. ("SMBC-CM"). That information is believed by SMBC-CM to be reliable, but SMBC-CM makes no representation as to, and accepts no liability as to its accuracy or completeness or for any opinion expressed herein. Opinions, projections, price/yield information and estimates are subject to change without notice. This document is for information purposes only. It does not constitute research, a recommendation nor is it an offer or solicitation to any person to enter into any transaction or adopt any hedging, trading or investment strategy. Any transactions or strategies addressed may not be suitable for all parties. Past performance is not necessarily indicative of future results. The value, price or income from transactions or strategies may fall as well as rise. SMBC-CM or an affiliate may have a position in any of the underlying instruments, assets, indices or rates mentioned in this document. You should make your own independent judgment or seek independent financial and tax advice with respect to any matter contained herein.



USDJPY Cross-Currency Basis Update

The less inverted USDJPY basis curve has reduced the carry and rolldown returns for basis-based carry trades.

The less inverted USDJPY basis curve has reduced the carry and rolldown returns for USDJPY basis-based carry trades. Paying in the front end of the curve could generate an annualized carry of 5bp and 4bp for the 2y and 3y, respectively, if the shape of the basis curve stays constant over time (see Table 2). On a forward basis, carry opportunities exist along the USDJPY basis curve through paying the basis in the front end and receiving in the longer end. We favor paying in the short end such as 1y1y in the USDJPY basis as a carry trade. Through rolling up the still inverted basis curve, the annualized carry of 1y1y is 11bp (see Table 3). The risk-adjusted Sharpe ratio is 1.1 for the 1y1y (see Table 4). The current entry point of -59bp for this trade does not appear to be attractive, considering the annual range of -90bp to -51bp and the recent strong upward trend (see Table 5). It would be worth waiting for a better entry point to put on the paying carry trade, in our view.

Table 2. USDJPY Cross-Currency Basis, Spot and Forward by Tenor

Source: SMBC CM

| USDJPY Cross Currency Basis (bp) | | | | | | | 07Dec17 |
|----------------------------------|------------|------|------|------|------|------|---------|
| Fwd Start | Swap Tenor | | | | | | |
| | 1Y | 2Y | 3Y | 4Y | 5Y | 7Y | 10Y |
| Spot | (48) | (53) | (57) | (60) | (62) | (63) | (62) |
| 1Y | (59) | (60) | (62) | (64) | (64) | (64) | (62) |
| 2Y | (61) | (64) | (66) | (66) | (66) | (64) | (62) |
| 3Y | (67) | (68) | (67) | (67) | (66) | (64) | (61) |
| 4Y | (69) | (67) | (67) | (65) | (64) | (62) | (60) |
| 5Y | (65) | (66) | (64) | (63) | (62) | (60) | (58) |
| 7Y | (60) | (59) | (59) | (58) | (58) | (56) | (55) |
| 10Y | (56) | (56) | (55) | (55) | (54) | (54) | (53) |

Table 3. Annualized Carry for Paying USDJPY Cross-Currency Basis

Source: SMBC CM

| Annualized Carry for Paying USDJPY Basis (bp/y) 07Dec17 | | | | | | | |
|---|------------|-----|-----|-----|-----|-----|-----|
| Fwd Start | swap tenor | | | | | | |
| | 1Y | 2Y | 3Y | 4Y | 5Y | 7Y | 10Y |
| 1Y | 11 | 7 | 7 | 5 | 4 | 2 | 1 |
| 2Y | 3 | 4 | 3 | 2 | 2 | 0 | (0) |
| 3Y | 6 | 4 | 1 | 1 | (0) | (0) | (1) |
| 4Y | 2 | (1) | (0) | (2) | (2) | (2) | (1) |
| 5Y | (3) | (1) | (3) | (2) | (2) | (2) | (2) |
| 7Y | (7) | (4) | (3) | (3) | (2) | (2) | (1) |
| 10Y | (2) | (2) | (1) | (1) | (1) | (1) | (1) |

Table 4. Carry to ex post Risk Ratio for USDJPY Cross-Currency Basis

Source: SMBC CM

| Carry to ex post Risk Ratio for USDJPY Basis 07Dec17 | | | | | | | |
|--|------------|-------|-------|-------|-------|-------|-------|
| Fwd Start | swap tenor | | | | | | |
| | 1Y | 2Y | 3Y | 4Y | 5Y | 7Y | 10Y |
| 1Y | 1.1 | 0.7 | 0.7 | 0.6 | 0.4 | 0.2 | 0.1 |
| 2Y | 0.3 | 0.5 | 0.4 | 0.2 | 0.2 | 0.0 | (0.1) |
| 3Y | 0.6 | 0.4 | 0.1 | 0.1 | (0.0) | (0.1) | (0.1) |
| 4Y | 0.2 | (0.1) | (0.0) | (0.2) | (0.2) | (0.2) | (0.3) |
| 5Y | (0.4) | (0.1) | (0.4) | (0.3) | (0.3) | (0.3) | (0.4) |
| 7Y | (1.0) | (0.6) | (0.4) | (0.5) | (0.4) | (0.4) | (0.3) |
| 10Y | (0.4) | (0.3) | (0.3) | (0.3) | (0.3) | (0.1) | (0.1) |

Table 5. Top Carry Trade Candidates for USDJPY Cross-Currency Basis

Source: SMBC CM

| Top Carry Trade Candidates for USDJPY Basis 07Dec17 | | | | | | | | | |
|---|------------|------------|----------------|---------------|------------|----------|----------|------------------|---------------|
| Fwd/Tenor | Carry-to- | | | | | | | | |
| | Basis (bp) | Carry (bp) | Hist Vol Ratio | Potential (%) | Range (bp) | Min (bp) | Max (bp) | Half Life (days) | Hist Vol (bp) |
| 1y1y | (59) | 11 | 1.09 | 19% | 38 | (90) | (51) | 59 | 10 |
| 1y2y | (60) | 7 | 0.72 | 14% | 35 | (90) | (55) | 70 | 10 |
| 1y3y | (62) | 7 | 0.70 | 12% | 33 | (92) | (59) | 82 | 9 |
| 3y1y | (67) | 6 | 0.63 | 15% | 35 | (97) | (62) | 53 | 9 |
| 1y4y | (64) | 5 | 0.57 | 14% | 33 | (93) | (59) | 92 | 9 |
| 7y1y | (60) | (7) | (1.00) | 34% | 32 | (81) | (49) | 34 | 7 |
| 7y2y | (59) | (4) | (0.56) | 36% | 32 | (80) | (48) | 30 | 7 |
| 7y4y | (58) | (3) | (0.45) | 37% | 29 | (76) | (48) | 26 | 6 |
| 7y5y | (58) | (2) | (0.44) | 37% | 26 | (74) | (48) | 24 | 5 |
| 7y3y | (59) | (3) | (0.43) | 37% | 32 | (79) | (47) | 27 | 7 |

The information in this document was compiled by SMBC Capital Markets, Inc. ("SMBC-CM"). That information is believed by SMBC-CM to be reliable, but SMBC-CM makes no representation as to, and accepts no liability as to its accuracy or completeness or for any opinion expressed herein. Opinions, projections, price/yield information and estimates are subject to change without notice. This document is for information purposes only. It does not constitute research, a recommendation nor is it an offer or solicitation to any person to enter into any transaction or adopt any hedging, trading or investment strategy. Any transactions or strategies addressed may not be suitable for all parties. Past performance is not necessarily indicative of future results. The value, price or income from transactions or strategies may fall as well as rise. SMBC-CM or an affiliate may have a position in any of the underlying instruments, assets, indices or rates mentioned in this document. You should make your own independent judgment or seek independent financial and tax advice with respect to any matter contained herein.