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USDJPY Mini Flash Crash Not a Surprise

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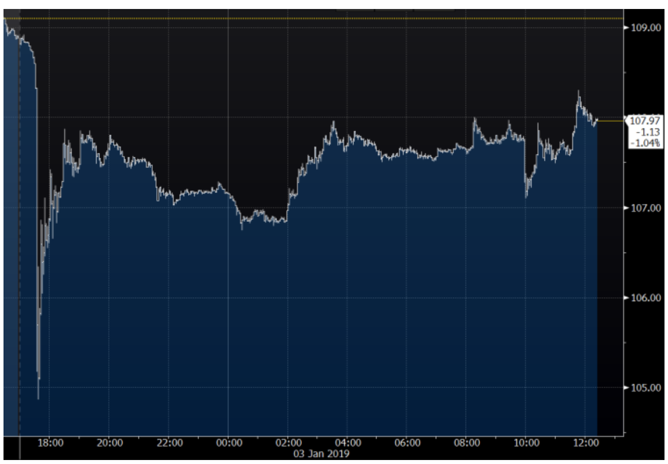
Let's Call it a Mini Flash Crash

- The USDJPY exchange rate dropped from 108.67 at 17:30 EST yesterday to a low of 104.87 just nine minutes later (a 3.6% move). See **Figure 1**.
- In comparison to recent 'flash crashes' in FX markets, the size of this one isn't particularly noteworthy. The flash crash in GBPUSD that occurred on 07-Oct-2016 was 6.2% (**Figure 2**). The subsequent flash crash on 09-Nov-2016 in USDCHF was 2.9%.
- The time of day at which this particular USDJPY flash crash occurred is reminiscent of the USDJPY flash crash that occurred in the wake of the Tōhoku earthquake/tsumani/nuclear disaster of March 2011. On 16-Mar-2011, USDJPY dropped 1.4% during the 24-hour cycle that ended at 17:00 EST. Over the ensuing 21 minutes it dropped another 4.1% to a low of 76.36 at 17:21 (**Figure 3**). That crash infamously occurred during the changing of the guard for traders, with most North America-based traders logging out at 17:00 and passing their books to Sydney-based desks until the Tokyo open 3 hours later. The tragic circumstances surrounding that 'flash crash' prompted the Fed, ECB and BoE to join the BoJ in a round of joint intervention a few hours later. The joint intervention (and early rumours thereof) prompted a quick recovery in the exchange rate. There hasn't been another G7 joint intervention since.
- So by size, this 'flash crash' comes in smaller than the aforementioned flash crashes in USDJPY and GBPUSD but slightly larger than the USDCHF flash crash. The uncertainty it has stirred and the likely response of authorities is not nearly as noteworthy as what we saw in the wake of the USDJPY flash crash of 2011. So with that in mind, let's call it a 'mini flash crash'.

Figure 1: USDJPY minute bar chart for the past 16H



Source: Bloomberg, BMO CM

Figure 2: GBPUSD flash crash of October 2016

Source: Bloomberg, BMO CM

This Was Probably Overdue Given Global Rate, Oil and Risk Appetite Fundamentals

- As we flagged a month ago (see [Yen Weirdly Weak]), USDJPY had been slow to respond to the recent meltdowns in oil prices, global interest rates and global equities. The yen wasn't strengthening as much as it should have been given its safe haven properties.
- The USDJPY pair is normally driven by a combination of Japanese monetary policy, global interest rates, global risk appetite and oil prices. With local monetary policy more-or-less on perma-hold due to the BoJ's ZIRP interest rate policy and QQE balance sheet policy, the local policy factor largely drops out of the equation. That leaves USDJPY to be

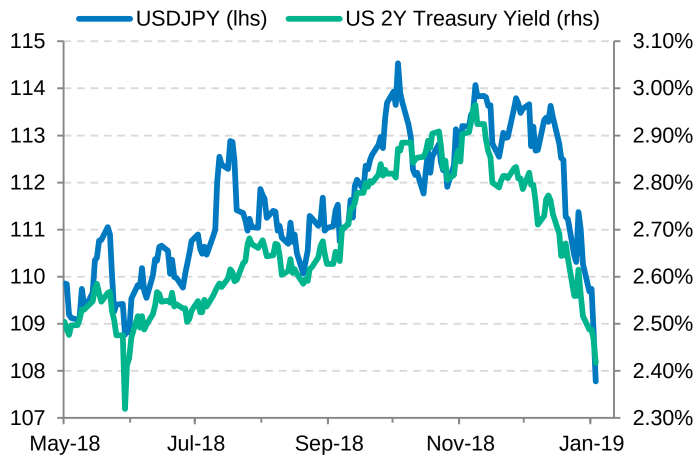
buffeted by the winds of global interest rate, equity and commodity markets. All three of those markets have been remarkably volatile over the past 2 months. And USDJPY was remarkably calm—until yesterday. So this move in USDJPY was probably overdue.

- As shown in **Figure 4**, USDJPY was highly correlated with US 2Y Treasury yields from May through November. However, USDJPY didn't fall with the same speed and magnitude as US yields in December. If USDJPY sticks somewhere around 107, it appears that this move has brought a roughly appropriate 'catch-up' correction.

Figure 3: Tōhuko flash crash in USDJPY

Sources: Bloomberg, BMO CM

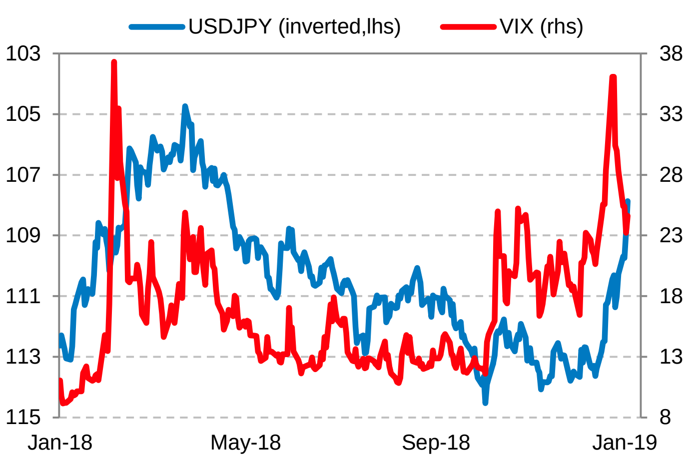
Figure 4: USDJPY and 10Y US Treasury yield



Sources: Bloomberg, BMO CM

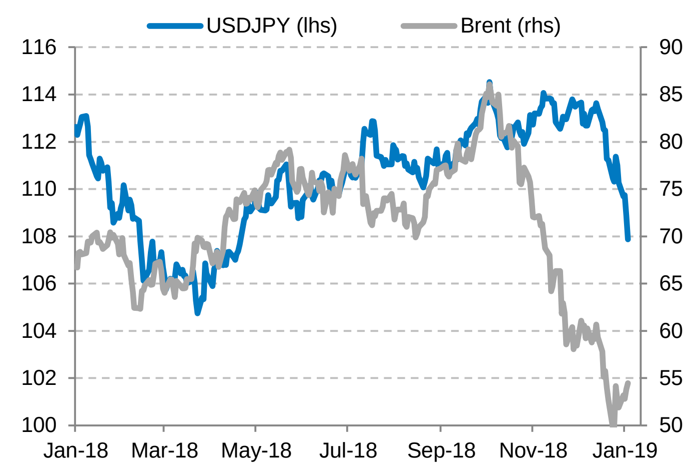
- We detailed in [Yen Weirdly Weak] how USDJPY is often correlated with the VIX (**Figure 5**). When the VIX spiked in December, USDJPY didn't move to nearly the same extent. But with this move in USDJPY and the calming in the VIX that we've seen over the past two weeks, USDJPY also seems to be roughly caught-up with the risk appetite fundamental.
- As detailed more fully in [Yen Weirdly Weak], USDJPY is also often correlated with global oil prices. Japan imports almost all its oil, so the sharp drop in oil prices is a very positive shock for Japan's balance of payments. This is the fundamental that USDJPY still has a long ways to go before it has fully caught up, as shown in **Figure 6**.

Figure 5: USDJPY and the VIX index



Sources: Bloomberg, BMO CM

Figure 6: USDJPY and spot Brent crude oil



Sources: Bloomberg, BMO CM

History Suggests that Implied Vols Should Hold Their Correction Higher

- Implied and realized volatility in USDJPY were both exceptionally low last year.
- Using daily returns, the realized volatility of USDJPY was 6.5% in 2018. It was 10.1% for the preceding 5 years. One of the things that makes the compression in USDJPY realized volatility so remarkable is the fact that volatility was above the norm of the previous 5 years in both equities and commodities.
- Implied 3M vol in USDJPY was trading under 7.0 at the start of December. There was a noteworthy increase in implied vols in the latter half of December that brought that price up to about 8.6 at year's end, so implied vols were trading at a substantial premium to historical volatility heading into this incident.
- With the mini flash crash of the past 24 hours, USDJPY vols are now higher across the curve. At the 3M tenor, implied vol is presently trading in the vicinity of 9.3.
- We expect implied vols to remain elevated for several months—even if spot USDJPY settles down. As a consequence, we think that those seeking to find the best vol capture strategy (via DNTs, TARNs, etc) can afford to be patient and watch things for the next several days.

This Move Front-ran the Q1 Seasonality in USDJPY but we Look for Further Downside

- The yen has strengthened during Q1 each of the past four years. Our explanation for this seasonality is the fact that Japanese institutional investors over-invest in foreign assets. They need to either liquidate or hedge their positions during Q1 to 'window dress' their balance sheets for financial year-end, which will land on 29-March this year.
- The higher the yield differential between Japan and the US, the greater the temptation faced by Japanese investors to invest in US bonds beyond established limits. With US yields where they were for most of H2 2018, we suspect Japanese investors got very overweight USD for this reason.
- The flatter the yield curve, the more expensive it is for Japanese investors to hedge long-duration bonds with rolling 3M forwards. We suspect the flat yield curve also tempted many Japanese investors into under-hedged position relative to their benchmarks.
- When USDJPY was at 113 in December, we published an outlook that called for a move to 108 on the 3M horizon (see 2019 FX Outlook). Even though that objective has been met (and then some), we still like the downside in USDJPY. This move was so abrupt that we don't think it triggered very many stop-in sales of USDJPY by Japanese investors. We still expect a seasonal move lower of somewhere around 5%.
- **At the present moment, we would offer a new 3M target in USDJPY of 103.**

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