

Global Money Notes #13

Beyond the Outer Rim

Every segment of the global dollar funding market is in flux.

Repo has switched from trading well within the Fed's overnight IOR-RRP band to trading outside the band. Bill supply is the primary culprit for stressed o/n rates and as bill issuance moderates, repo should move back within the band.

Libor continues to trade at a wide spread to OIS which is mostly driven by repatriation. Corporate treasurers have not sold a lot of bank debt to date, but they made it clear to banks that they will no longer buy 1-3 year debt.

Banks basically lost their only dedicated buyer of 1-3 year debt, which prompted them to pre-fund and, as a result, over-fund their balance sheets. The aim of pre-funding was to preserve LCR and NSFR ratios through what was expected to be a difficult and uncertain funding environment in 2018. Banks pre-funded by issuing mostly at three-month and five-year maturities in unsecured dollar funding markets. They also shifted some issuance to euros.

Banks soon realized that funding at the three-month point is extremely illiquid. As they tried to replace 1-3 year debt partly with three-month debt, they learned that on the margin, corporate treasurers invest mostly in repos and bills for liquidity and only a little bit in CD and CP for yield. That's because the mandates of corporate treasurers have changed on January 1st: they now manage to a master that may need immediate liquidity for M&As and buybacks and so their new job is to build a money fund portfolio with the cash from bond sales and maturities. There are no other marginal buyers of CD and CP: prime funds are unable to attract inflows, and offshore money funds afraid of repatriation-related outflows have pared back their investments in CD and CP. Crossover buyers are now buyers of 1-3 year debt in the secondary market, and banks are testing the depth of the new buyer base. If the new buyers' interest at current yields is deep, the 1-3 year bank funding market will settle and pressures on three-month CD and CP, and hence Libor-OIS, may abate. But there are many ifs around that: a stock selloff could trigger more sales of bank debt as treasurers raise funds for buybacks and Libor could widen again.

Cross-currency bases continue to trade tight for a variety of reasons: lower hedging needs on the demand side and repatriation, BEAT and weak equities on the supply side. This issue of Global Money Notes explains the link between equity futures and FX swaps and why cross-currency bases may turn positive...

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In previous issues of Global Money Notes we've referred to FX swaps as the outer rim of funding markets. Money is hierarchical, and in the hierarchy of funding markets FX swaps trade at a premium to other market segments: OIS is at the bottom of the hierarchy, secured repo trades at a spread to OIS, unsecured Libor trades at a wider spread to OIS, and FX swaps typically trade at a spread to Libor. In recent years, the most lucrative money dealing activity was to raise dollars at lower levels of the hierarchy and lend them via FX swaps at the outer rim. The typical borrower of dollars was a real money manager from a negative rate jurisdiction looking to buy dollar assets – bonds – on a hedged basis.

But the buck does not stop at the outer rim....

Equity futures are another important segment of the global dollar funding market. Many banks look at equity futures as a product similar to FX swaps and dynamically shift capital between the two products depending on which trades at a more lucrative spread to Libor.

Exhibit 1 shows the implied yield on three-month \$/¥ swaps and S&P futures in 2017. Like the FX swap implied cost of dollar funding from yen, the implied yield on S&P futures trades at a spread over Libor. We call the spread between FX swap implied rates and Libor the cross-currency basis. We can think of the spread between equity futures implied rates and Libor as the equity futures basis. Exhibit 2 shows these rates in basis form over Libor.

As in repo and FX swaps, most trades in equity futures flow through matched books. In a typical matched book transaction, a customer pays a dealer Libor plus a spread to go long equities, and another customer receives from the dealer Libor plus a spread to go short equities. The dealer makes a bid-ask spread on both the funding as well as the total return leg of the transaction, similar to a matched repo or matched FX swap book.

But markets seldom clear through matched books, and imbalances in order flows are always absorbed by dealers' speculative books – or, in a post-Basel III financial order, banks' treasury functions. For example, in recent years, the bid for dollars via FX swaps exceeded the lending of dollars via FX swaps. This widened the cross-currency basis, which banks' treasury functions harvested by funding in unsecured and secured markets and lending the proceeds in the FX swap market (see Exhibit 3 and the Appendix [here](#)).

Similarly, in recent years, the market's appetite to go long equities consistently exceeded the appetite to go short equities. This imbalance gave rise to the equity futures basis. Banks harvested this basis by going short futures when clients wanted to go long, and offsetting the shorts by funding a long position in underlying cash equities (see Exhibit 4).

Thus, bridging imbalances in order flows always requires some funding on the margin: to raise dollars to lend at the outer rim in the case of FX swaps, and to raise dollars to buy cash equities to offset shorts in the case of equity futures beyond the outer rim.

In practice, the funding to go long cash equities is not raised real time. Banks ideally don't scramble for funding just when they need it. They pre-fund the equity futures desk's funding needs, similar to how they would pre-fund the FX swap desk's funding needs if the desk anticipated cross-currency bases to widen and asked for funding to harvest it.

Now that the equity market has wobbled, fewer clients want to go long equities via futures. All of a sudden, equity futures desks are overfunded: the cash banks raised to fund the purchase of cash equities to offset anticipated shorts via futures is no longer needed (see Exhibit 5). Worse, as clients started to pare their equity longs, to maintain a flat exposure, banks had to sell cash equities from their inventory. The funding that financed equity longs remains in place, but instead of equities, banks now hold cash – yet another source of overfunding which banks need to find an outlet for (see Exhibit 6).

Culturally, some banks' funding, repo, FX swap and equity futures desks are close-knit and sit side by side. When one team ends up overfunded, other teams get to deploy excess cash at more lucrative spreads in other markets. At most banks, however, these desks are siloed and some banks intend not to run speculative positions and enforce that by incentivizing market makers to run matched books through high internal funding costs.

Exhibit 7 zooms in on implied yields in S&P futures since the turn of the year.

The collapse in implied yields since March was driven by the turn in equity markets. Clients' desire to go long equities diminished and long positions via futures were trimmed. Implied yields collapsed and equity futures desks became overfunded for two reasons: first, because funding raised to offset budgeted shorts in equity futures were not needed; second, because reduced client longs forced banks to sell stocks and end up with cash.

The very day implied yields in equity futures started to collapse and crashed below Libor, cross-currency bases started to aggressively tighten too: the more nimble treasury teams took money from equity futures desks and gave it to FX swap desks. When you are suddenly overfunded and bases move against you, your aim is not to maximize profits but to minimize your losses. You go from playing offense to defense. If equity futures trade at a negative carry you move funding to areas that still have a positive carry, however small.

An important takeaway from this analysis is that equity market sentiment can have a major impact on funding markets. When equity markets fall and client interest to go long equity futures wanes, banks' equity futures desks get overfunded on the margin, which spills over into FX swap markets. Note that since the global adoption of Basel III in 2015, this is the first major turn in equity markets and we are witnessing the first major example of how an equity selloff impacts basis markets in a financial system subject to Basel III.

For now, the rule to keep in mind is this: if stocks fall, the cross-currency basis tightens. On the flipside, if stocks rise, futures desks tend to chase funding as the value of equities on their balance sheet rises. This tends to push Libor to trade at a wider spread to OIS.

To be crystal clear, we are not saying that this has anything to do with the widening of Libor-OIS this year, but it could certainly have been a factor behind the Libor-OIS move last December, when certain Canadian banks with large equity futures desks were understood to be aggressive bidders for unsecured funds via term fed funds, CD and CP.

Clearly, Libor-OIS and cross-currency bases can move for reasons other than [repatriation](#) and [sterilization](#). The wider you cast your radar to understand every possible factor that could be driving your markets, the less likely you'll be hit out of left field next time around.

We now have three supply-side explanations for the odd behavior of cross-currency bases since February, at a time when Libor-OIS is wider and most funding markets are tighter.

First, due to repatriation, foreign banks lost their dedicated buyer of 1-3 year debt, which prompted them to pre-fund and, as a result, over-fund their balance sheets. The aim of pre-funding was to preserve LCR and NSFR ratios through what was expected to be a difficult and uncertain funding environment. Banks always fund LCR and NSFR ratios unsecured, and excess cash raised unsecured can only be lent profitably via FX swaps – you can buy Treasuries too, but FX swaps are much better when the Fed is hiking.

Second, due to the equity market selloff since March, equity futures desks got overfunded and funding was shifted to FX swap desks to limit firm-wide negative carry.

Third, due to [BEAT](#), foreign banks are forced to trim their reliance on headquarters for funding, which can have an immediate impact on FX swap markets (more on this below) and, over time, it can also show up in foreign banks' CP and CD issuance patterns.

On the demand-side things are changing too.

Due to the widening of Libor-OIS this year, the carry on foreign buyers' hedged U.S. Treasury, MBS and IG credit portfolios have declined by around 60 bps. Appetite to roll these hedged investments diminished, especially when other parts of the world offer better hedge-adjusted carry. In fact, we've seen Japan sell \$50 billion in U.S. Treasuries during the first two months of 2018 and, anecdotally, we have heard about smaller Japanese banks starting to trim their corporate dollar lending books due to hedging costs.

If the rest of the world's demand for dollar assets declines due to dollar hedging costs, cross-currency bases tighten. But we will only know the true extent to which reduced hedging needs have caused cross-currency bases to trade tighter this year when the temporary glut of dollars due to overfunding related to repatriation (defensive overfunding), the equity rut (unforeseen overfunding) and BEAT (opportunistic overfunding) fade away.

When will overfunding fade?

It is hard to say, but given that foreign banks' defensive overfunding was done through a barbelled issuance strategy where they issued sub-1-year (mostly three-month) and longer-than-3-year paper, a significant chunk of overfunding should mature by June.

Regarding unforeseen overfunding, it depends on what stocks do. If equities rally, then equity futures are back in vogue and equity futures desks will get their funding back. But, on the other hand, if the equity rut continues, equity futures desks will continue to struggle and FX swap desks will be given even more funds to reduce negative carry...

Now a word on BEAT.

We did not claim that BEAT has been the primary driver of the Libor-OIS move this year. In our [conference call](#) on March 15th we attributed the Libor-OIS move mostly to repatriation and partly to bill supply. We brought BEAT into the fold in an attempt to rationalize why cross-currency bases have been narrowing since February in an environment where all other funding markets – except equity futures – have been trading much tighter.

In our last [piece](#) we laid out three ways in which a foreign bank optimizing for BEAT could change its funding strategy. In all three examples, increased CD and CP issuance was featured as a source of excess dollars as foreign banks replace inter-affiliate funding with third party funding. In all three examples, FX swaps were the outlet for excess dollars.

We did not include as an example the simplest and most low hanging fruit on the BEAT optimization ladder. Namely, most foreign banks that receive funding from headquarters deposit those funds at the Fed – i.e. interoffice funding is a reflection of global banks' HQLA portfolio construction. If a bank has excess in its dollar HQLA portfolio it can call back some of the funding it downstreamed to New York and reduce deposits at the Fed. If keeping excess HQLA costs 15 bps more because of BEAT, you can reduce the hit by lending your reserves anywhere in the world and to anyone but your New York affiliate. Here too, excess dollars are lent via FX swaps, but this won't show up in CD and CP data.

In fact, foreign banks' cash balances at the Fed are down by around \$60 billion this year, and their balance sheets have shrunk by a similar amount. There is no evidence that foreign banks increased their holdings of U.S. Treasury bills or repos since January. In fact they reduced their investments in both. Thus, reserves did not decline because foreign banks took down bills at auctions or because they lent in stressed repo markets. The decline in reserves is certainly not because branches are upstreaming dollars to headquarters to harvest deeply negative cross-currency bases in the FX swap market – cross-currency bases are extraordinarily tight. When cross-currency bases are tight, branches lend less to headquarters, and so rising values for “net due to head office” in the H.8 report likely reflect reduced “due from” and not increased “due to” head office.

The decline in foreign banks' balance sheets in New York since January, is consistent with the idea that excess cash at the Fed may have been subject to a recall by headquarters and that it's being lent elsewhere in the world through the FX swap market.

Beat that...

Our point was that BEAT could be contributing to tighter cross-currency bases now and could widen Libor-OIS in the future as some banks optimize funding for their affiliates.

Interpreting market moves real time is hard, especially if moves come out of left field.

There are no data and there will be no data to prove that BEAT contributed to tighter cross-currency bases intra-quarter as foreign banks called back excess dollars at the Fed.

Foreign banks most exposed to BEAT are filing their [call reports](#) as we speak and we'll soon see how funding relationship with headquarters changed since tax reform went live. But call reports are quarter-end snapshots: they are useful, but are not a definitive guide.

There is also no data to track the funding needs associated with equity futures desks, so we are left with trying to rationalize what we see on the screens through triangulation.

Collecting color is a big part of the game. Market anthropology is also a part of the game: what kind of markets are specific banks active in; do different desks talk to yours truly together, or do they take meetings as separate teams; is the head of funding present in these meetings – these are all important cues when trying to synthesize the market color with the team dynamics you see in meetings and the prices you see on your screens.

Soft intelligence is no replacement for hard data, but sometimes there ain't no data...

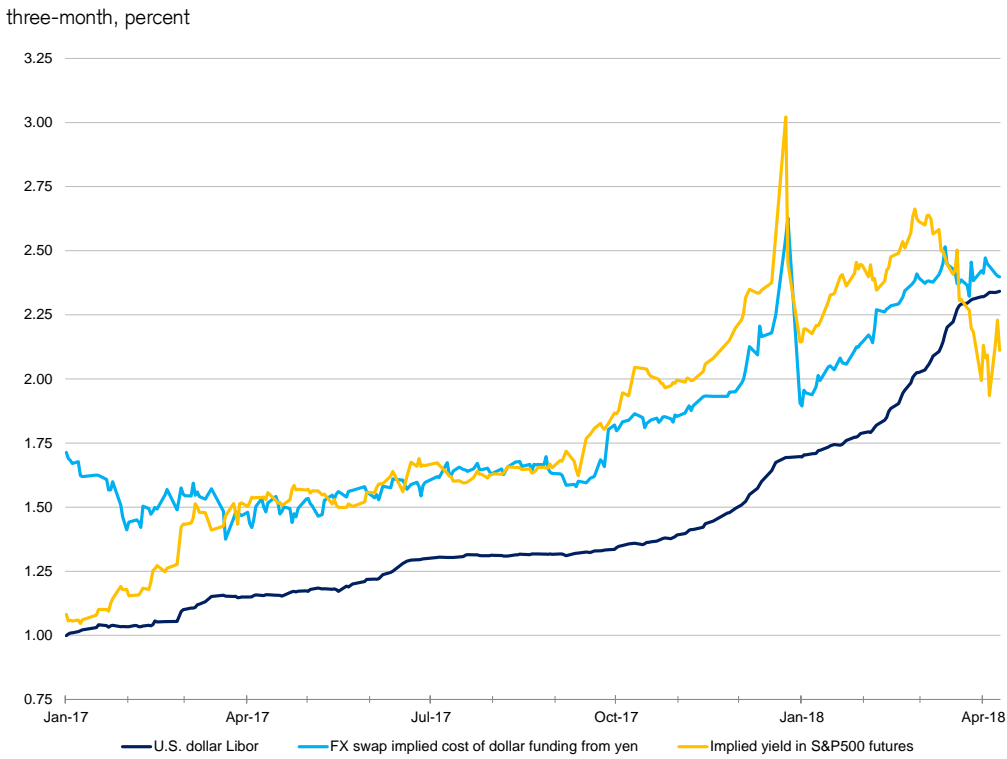
What you gained from this issue of Global Money Notes is a framework to think about how equity market sentiment can impact cross-currency bases pieced together from meetings and conversations with bank treasury teams during the first quarter, and a broader perspective to think about markets when too many moving parts jam the signal.

In fielding over 200 calls and meetings with clients since the beginning of the year, there was only one client who inquired about equity futures and asked how equity market dynamics can influence funding markets and especially the cross-currency basis. That suggests that most basis traders do not pay attention to equity futures, but they should!

Cross-currency bases between the dollar and other major currencies may be at risk of turning positive later this year. If the Fed keeps hiking and repatriation keeps Libor-OIS wide, the rest of the world's appetite to buy dollar assets on a hedged basis will diminish. If hedging needs diminish, the cross-currency basis tightens. Less interest in Treasuries, MBS and IG credit from the rest of the world means wider spreads and higher yields, which in turn are not constructive for equity market sentiment. Equity market sentiment in turn can cause wild swings in implied yields in equity futures, and as we've seen this year, these swings can spill over into FX swap markets – potential weakness in equity markets also points to tighter cross-currency bases. In a macro sense, tighter bases to Libor means less interest from the rest of the world to go long U.S. duration and risk assets: tighter cross-currency bases means less interest in U.S. duration and credit risk and tighter equity futures bases means less interest in U.S. equity risk. In recent years demand for risk was rising. The name of the game was to figure out how the system will source funding for carry traders – life insurers in Japan equity investors in the U.S., etc.

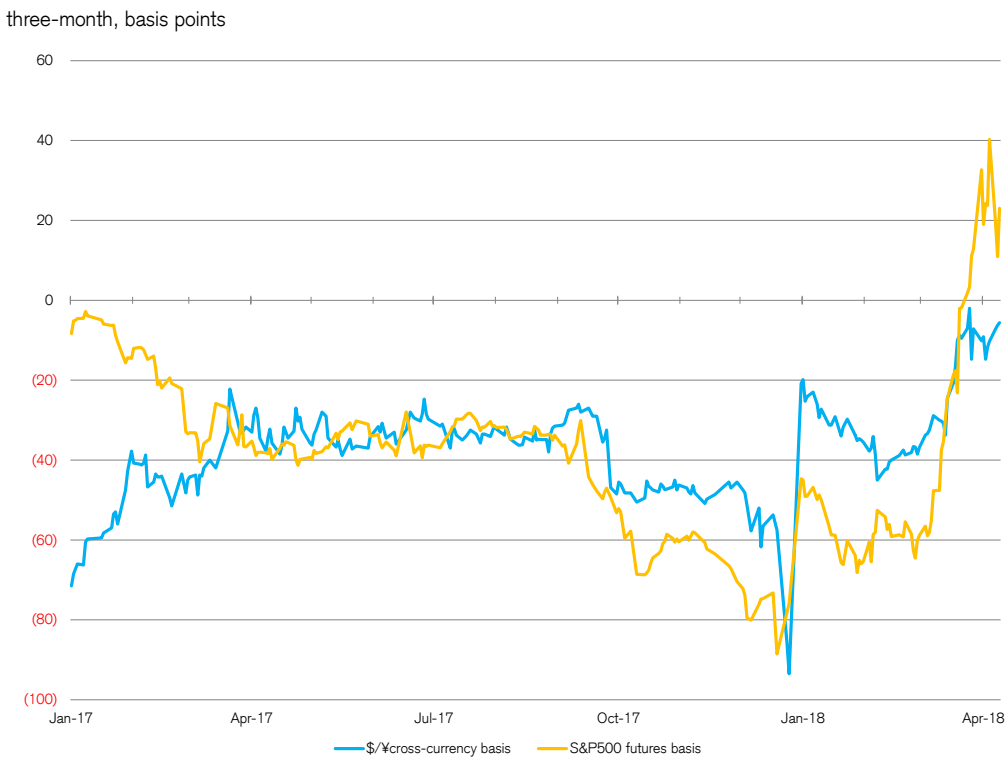
But the game is now changing. Less demand for duration and credit risk from overseas and less bullish equity market sentiment leave FX and equity futures desks overfunded. Risks are not that bases widen but that a funding dump will push them positive to Libor...

Figure 1: Beyond the Outer Rim (1)



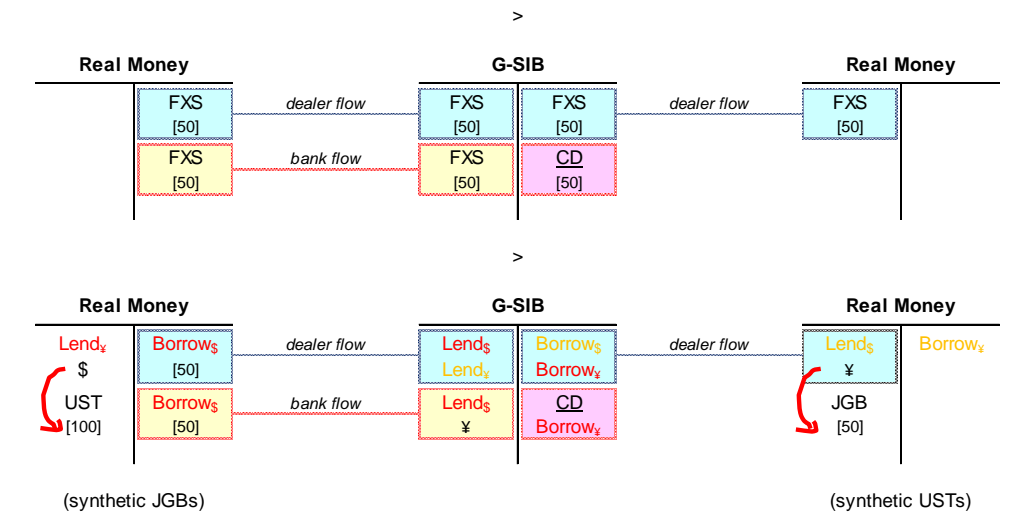
Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse

Figure 2: Beyond the Outer Rim (2)



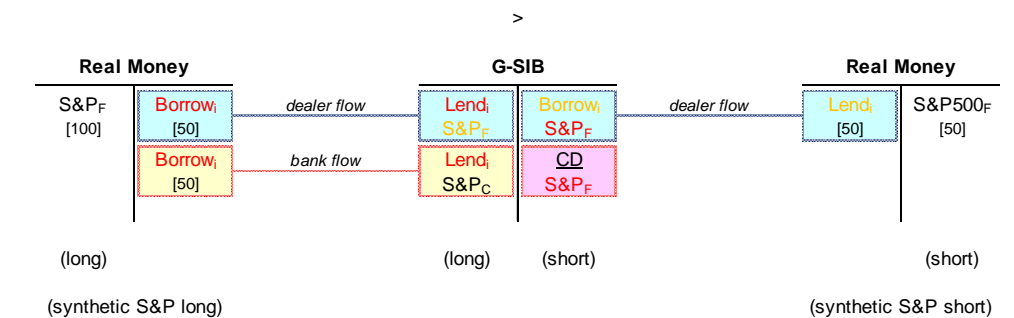
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Figure 3: Harvesting the Cross-Currency Basis



Source: Credit Suisse

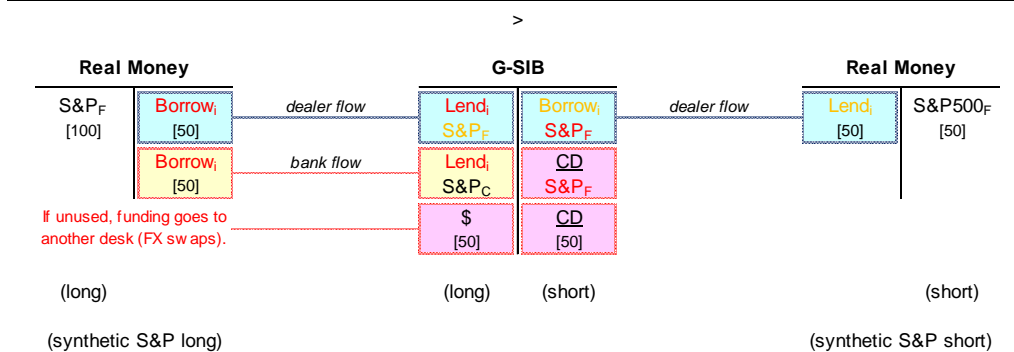
Figure 4: Harvesting the Equity Futures Basis



S&P_F = S&P futures S&P_C = cash equities Borrow_i = implied borrowing rate in S&P_F Lend_i = implied lending rate

Source: Credit Suisse

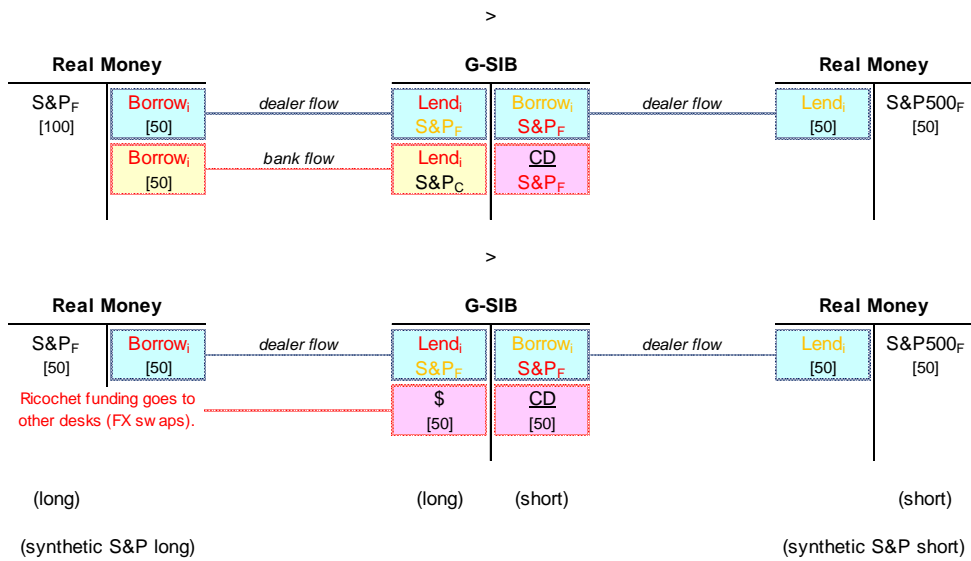
Figure 5: Unused Funding



S&P_F = S&P futures S&P_C = cash equities Borrow_i = implied borrowing rate in S&P_F Lend_i = implied lending rate

Source: Credit Suisse

Figure 6: Ricochet Funding

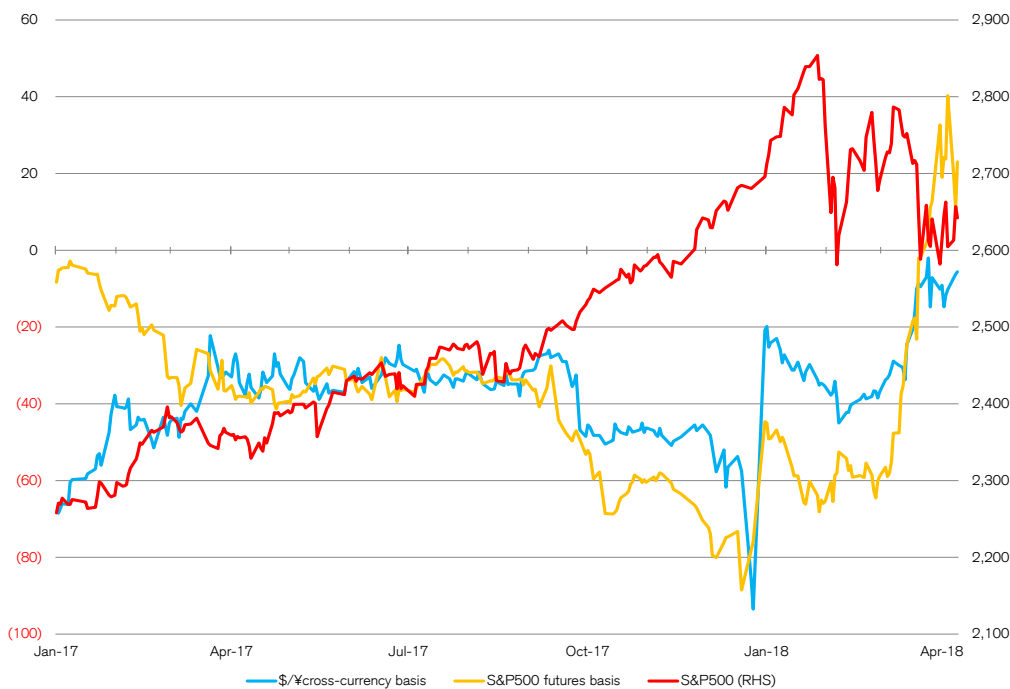


S&P_F = S&P futures S&P_C = cash equities Borrow_i = implied borrowing rate in S&P_F Lend_i = implied lending rate

Source: Credit Suisse

Figure 7: Collateral Damage

basis points (LHS) and index (RHS)



Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse

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