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Global Money Notes #12
BEAT, FRA-OIS and the Cross-Currency Basis

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Since the global adoption of Basel III in 2015, dollar funding markets were rattled by two events: money fund reform in 2016 and tax reform in 2018. Banks have weathered the storm of 2016 and will weather the storm of 2018, thanks to their robust liquidity buffers. While Libor-OIS spreads look scary, they are not systemic. Spreads have widened not because cash investors don't want to fund banks, but because external forces are changing their habitats.

During money fund reform, $800 billion went from prime to government funds. Foreign banks lost their access to CD and CP markets which they quickly replaced via FX swaps, pressuring cross-currency bases wider. Pressures on bases persisted until the three-month FX swap-implied cost of dollar funding got flat relative to 1-3 year funding, at which point banks started to term out. Term issuance relieved pressure on cross-currency bases and the CD market.

Back then, the marginal buyers of term debt were corporate treasurers. But now, tax reform is wreaking havoc with their investment patterns. Now that offshore corporate savings are available for use onshore, corporate treasurers are selling 1-3 year bank debt, forcing foreign banks to issue at those segments of the unsecured bank funding curve that are not selling off: barbelling by printing 3-month CD and CP and debt beyond the 3-year point.

Pressures due to repatriation will persist until the 1-3 year segment gets flat relative to the 5-year point, where a deeper buyer base is waiting to roll down the curve – at the right price. What corporate treasurers were to banks during money fund reform, intermediate bond funds will be to banks as they replace corporate treasurers as dedicated buyers of 1-3 year foreign bank debt.

Printing three-month CD and CP is not particularly helpful when the supply of short-term unsecured funding is a lot less flexible on the margin due to the legacy of money fund reform. Despite a steep Libor curve, inflows to prime funds have been negligible. Bill supply also does not help. But there is more…

The base erosion and anti-abuse tax (BEAT) has also been driving markets.

BEAT is forcing foreign banks to substitute FX swaps with unsecured funding and also leads to temporary overfunding on the margin. The only outlet for excess funding is FX swaps. BEAT explains why cross-currency bases are tighter while Libor-OIS is wider, and also introduces upside risks to FRA-OIS.

Certain aspects of tax reform constitute a re-boot in dollar funding markets, especially the FX swap market. Repatriation and the base erosion and anti-abuse tax (BEAT) are forcing banks to fund in three-month CD and CP markets and fund less via FX swaps.

BEAT impacts the FX swap market the most.

BEAT penalizes inter-affiliate funding by forcing the U.S. branches, broker-dealers and intermediate holding companies (IHCs) of foreign banks to add back to their taxable income base erosion payments like interest paid to headquarters or foreign affiliates.

To preserve the interest deductibility of all their liabilities, BEAT is forcing the branches and IHCs of foreign banks to replace inter-affiliate funding with unsecured funding from third parties. Banks are making adjustments already. Corporations, including banks, pay taxes quarterly and the sooner inter-affiliate funding is reduced, the less the bite of BEAT.

BEAT-related issuance leads to a temporary state of overfunding at headquarters. Excess funds are being lent in the FX swap market, which is the only segment of the money market that trades at a positive spread – however small – to U.S. dollar Libor. The spread that you make is not what you care about when your tax shield is at stake!

Excess dollars are keeping the cross-currency basis tight – for now, but not forever…

BEAT is also forcing banks to reduce their borrowing via FX swaps. Because local currency can only be swapped for dollars at headquarters, but not in New York, at the group level, foreign banks have to replace some FX swap funding with unsecured funding

BEAT thus leads to temporary overfunding and excess dollars in the FX swap market and it also reduces the structural appeal of FX swaps and increases the structural appeal of unsecured funding for global banks to fund their New York branches and broker-dealers.

This explains why cross-currency bases are tighter when Libor-OIS is wider. In a way, BEAT is redistributing pressures from the cross-currency basis to the Libor-OIS basis. The pressures we should be seeing in cross-currency bases from bill issuance are showing up in the Libor-OIS basis instead. This suggests Libor-OIS could widen more from here.

Let's consider some examples.

First, consider the New York branch of a foreign bank which receives funding from headquarters to fill a funding gap in its loan portfolio (see Figure 1). Transitioning from headquarters raising unsecured funding, to the branch raising unsecured funding directly leads to overfunding on the margin. Now that the branch is raising funding on its own, headquarters has some extra liquidity, which will be lent in the FX swap market.

Surplus liquidity will persist until the debt that used to fund inter-affiliate funding matures – that could last from a week to a quarter. When that debt matures, excess funding disappears from the FX swap market. Net demand for unsecured funding is unchanged.

Next, consider the example of an IHC which houses the broker-dealer of a foreign bank (see Figure 2). The dealer's HQLA portfolio has to be funded on an unsecured basis, and the IHC currently receives the funding from headquarters. As before, the interest paid to headquarters is no longer tax deductible and so the IHC is forced to raise unsecured funding from third parties. At the headquarters level, this leads to overfunding as well, with excess funding looking for an outlet, which here too will be the FX swap market.

As before, when the debt that used to fund headquarters' loan to the IHC matures, excess funding will disappear from the FX swap market. The bank shifted some portion of its unsecured funding from headquarters to the IHC. Bid for unsecured funds increased temporarily and the supply of dollars via FX swaps increased temporarily, but when excess funding disappears, the bank's need for unsecured funding is unchanged on net.

Now consider the case of a branch that receives some dollar funding from headquarters, which headquarters raised by swapping some local currency for dollars via FX swaps (see Figure 3). Like before, the interest paid by the branch for the downstreamed dollars is no longer tax deductible, so the branch has to raise unsecured funds from third parties.

As before, headquarters ends up with excess dollars which will be lent via FX swaps. When it lends dollars via FX swaps, headquarters ends up with a matched book position: headquarters went from a borrower to a matched book lender of dollars via FX swaps.

When the FX swap that was initially used to fund the branch matures, the matched book goes away and excess funding disappears from the FX swap market.

Unlike before, the bank's funding model also changed…

The bank shifted some funding from FX swaps to the unsecured market. That's because local currency can only be swapped for dollars at headquarters, but not in New York City – a fact of life. Bid for unsecured funds increased structurally, the supply of dollars via FX swaps increased temporarily, and the bid for dollars via FX swaps declined structurally.

Tracking the flows related to banks' adjusting their funding models is not possible on a high-frequency basis. The Fed's weekly H.8 release has one related line item, which is "*net due to related foreign offices*". Net measures are a pity. Like the BIS, we wished the Fed also embraced the virtue of gross measures more enthusiastically. On a net basis, foreign banks' New York offices owe $300 billion to related foreign offices. But this net measure does not tell us whether net $300 billion is the net of gross $300 billion borrowed and zero lent, or the net of gross $600 billion borrowed and $300 billion lent. For gauging the impact of BEAT-related flows, it is gross, not net borrowing that matters.

That leaves us with having to work with the FFIEC002 and Y-9C reports of foreign banks again. From earlier issues of Global Money Notes (see here and here) and our study, Dollar Funding After the Storm, we know that specific branches of foreign banks either lend dollars to headquarters or borrow dollars from headquarters. The statistical concept "*net due to related foreign offices*" only exists at a "macro" level, not a single entity level.

The balance sheets of Deutsche Bank in Germany, Barclays in the UK, DNB in Norway, BTMU and SMBC in Japan, UBS in Switzerland, and NBC, RBC and BNS in Canada all suggest some heavy reliance on headquarters for dollar funding (see Figures 4-12). Their funding would all have to be rejiggered so as to reduce their reliance on headquarters for dollars. To the extent that the dollars from headquarters were raised via FX swaps, replacing FX swaps with unsecured funding would explain why the basis between the dollar and all major currencies (EUR, GBP, JPY, CHF, NOK and CAD) have narrowed and are now borderline positive when the Libor-OIS basis has widened.

In the case of these banks, the aggregate amount of dollar funding received from headquarters is $300 billion. In the EU there is an additional group of small banks that downstream over $50 billion in funding to their branches in New York (see Figure 13). In addition to these branches, broker-dealers receive about $100 billion from headquarters. Re-calibrating the flows around $450 billion of funding could lead to considerable amounts of overfunding, and to the extent that these funds were raised via FX swaps at headquarters, it could also mean a meaningful decline in the bid for dollars via FX swaps.

In the case of Japan for example, megabanks roll about $200 billion in the FX swap market compared to $1 trillion for life insurers (see Figure 14). Japanese megabanks New York branches borrow about $70 billion from headquarters and their dealer arms about $30 billion. That means that about $100 billion in borrowing via FX swaps in Tokyo could be replaced with unsecured funding once the temporary glut of dollars disappears…

…and that's from Tokyo alone!

In an era where prime money funds are a shadow of their former selves and the supply of short-term unsecured funds is less flexible on the margin, that's a considerable amount of pressure on CD and CP rates and Libor fixings in general. BEAT-related issuance will add to the pressures coming from repatriation which is also forcing the same foreign banks to issue CD and CP (see the opening essay). Increased bill supply also does not help.

Where does all this leave us on the cross-currency basis and the hedging costs of the marginal buyer of U.S. assets – Japanese life insurers and hundreds of regional banks?

The risk that increased supply of Treasury bills will drain o/n repo funding, which has been the dominant source of dollars for Japan Inc.'s hedging needs (see Section 1 here), still persists, but the impact that bill issuance was supposed to have on the basis is being offset by banks in Tokyo and elsewhere stepping away from the FX swaps on the margin and the temporary overfunding at headquarters leading to an excess lending of dollars in FX swap markets. For now, the supply of dollars is greater than demand for dollars.

For now, but not forever…

As overfunding fades and banks' structurally lower bid for dollars is absorbed by others over time, cross-currency bases will widen again. Until then the pressure on marginal buyers' hedging costs will come not from the cross-currency basis (relative to Libor), but the Libor-OIS basis. Either way, the hedging costs of marginal buyers of U.S. assets are creeping higher. What matters is the FX swap implied cost of dollar funding and not whether the pressures are coming from the cross-currency basis or the Libor-OIS basis.

From a hedging cost perspective, a cross-currency basis of positive 20 and a Libor-OIS of 90 is the same as a cross-currency basis of negative 20 and a Libor-OIS basis of 50.

With hedging costs north of 2.5%, the U.S. Treasury curve is already flat from the perspective of Japanese buyers (see Figure 15). One should always evaluate the flatness of curves from the perspective of the marginal buyer, and the current marginal buyer does not fund at the repo curve, but rather at curves that are driven by repatriation and BEAT.

Further pressures on Libor-OIS and, at some point, renewed pressure on cross-currency bases could pressure U.S. dollar hedging costs to a point where Japanese and other marginal buyers are forced to sell U.S. Treasuries, MBS and credit in the U.S. and shift their portfolios to other regions – like Europe – where hedging costs are less of a drag.

We see marginal flows go the way of Europe already. Whether we will see a rotation out of U.S. assets is down to U.S. dollar hedging costs, which in turn is down to the interplay between and combined impact of taper, the echo-taper, BEAT and bill issuance. How tight the front-end will get and where front-end spreads will settle is the ultimate arbiter of where hedging costs settle and if they will trigger pressures on U.S. rates and credit…

As we have said before, the FX swap lines are not there to make life cheap for banks, but to make sure life goes on if funding markets dry up. But if funding market dynamics are going to turn the marginal buyer of U.S. assets into marginal sellers of U.S. assets, the Fed has a bigger issue at hand and may want to use the FX swap lines to a greater end…

Figure 1: BEAT and New York Branches

	NY		HQ		
1	Loan	interoffice	interoffice	Debt	The way it used to be.
2	Loan $	interoffice CD	interoffice	Debt	BEAT
3	Loan ~~$~~	~~interoffice~~ CD	~~interoffice~~ $	Debt	Excess funding.
4	Loan	CD	~~$~~ FXS	Debt	Release via FXS.
5	Loan	CD	~~FXS~~	~~Debt~~	The way it will be. *(unsecured to unsecured)*

Source: Credit Suisse

Figure 2: BEAT and Broker-Dealers

	IHC		HQ		
1	HQLA	interoffice	interoffice	Debt	The way it used to be.
2	HQLA $	interoffice CP	interoffice	Debt	BEAT
3	HQLA ~~$~~	~~interoffice~~ CP	~~interoffice~~ $	Debt	Excess funding.
4	HQLA	CP	~~$~~ FXS	Debt	Release via FXS.
5	HQLA	CP	~~FXS~~	~~Debt~~	The way it will be. *(unsecured to unsecured)*

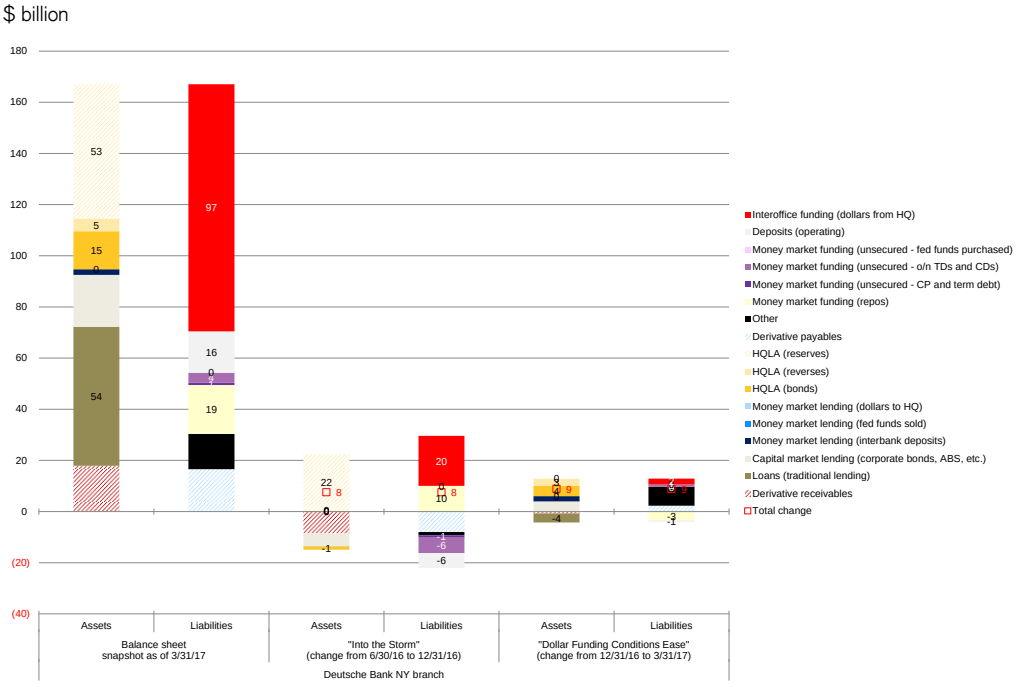
Source: Credit Suisse

Figure 3: BEAT and Banks' Demand for FX Swaps

	NY		HQ		
1	HQLA	interoffice	interoffice	FXS	The way it used to be.
2	HQLA $	interoffice CD	interoffice	FXS	BEAT
3	~~HQLA $~~	~~interoffice~~ CD	~~interoffice~~ $	FXS	Excess funding.
4	HQLA	CD	~~$~~ FXS	FXS	Release via FXS. *(borrower to matched book,*
5	HQLA	CD	~~FXS~~	~~FXS~~	The way it will be. *(FX swap to unsecured)*

Source: Credit Suisse

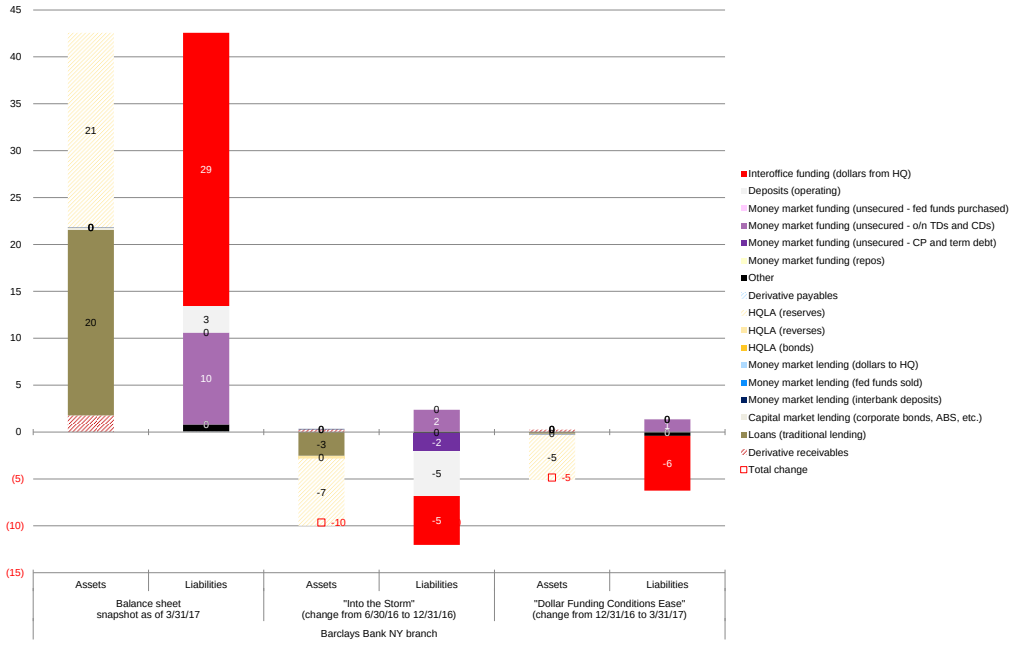
Figure 4: Deutsche Bank's New York Branch



Source: FFIEC002, Credit Suisse

Figure 5: Barclays New York Branch

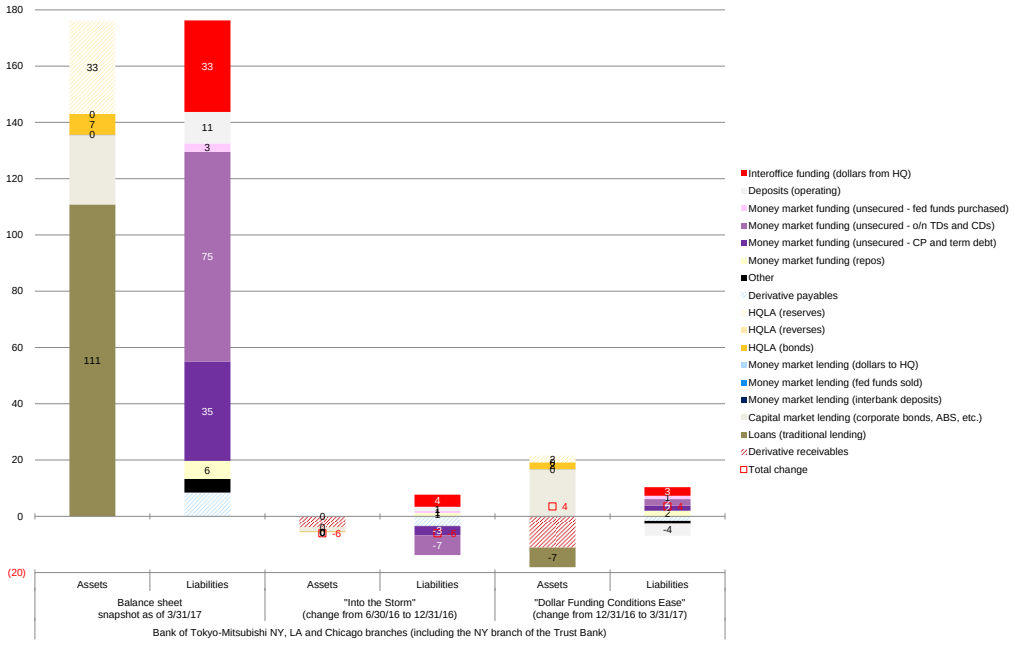
$ billion



Source: FFIEC002, Credit Suisse

Figure 6: Bank of Tokyo-Mitsubishi New York Branch

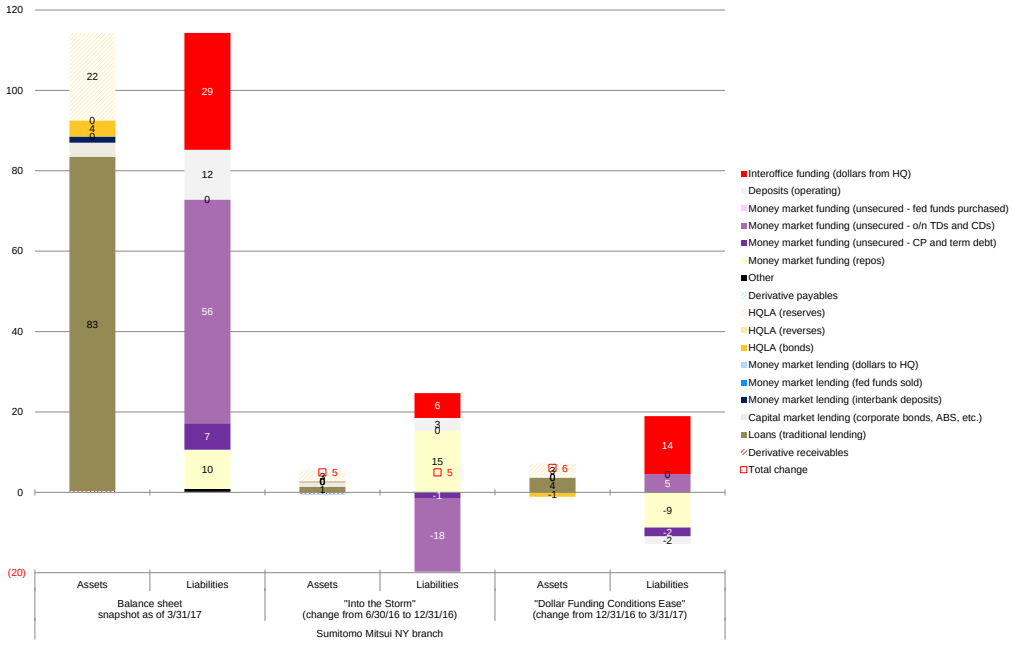
$ billion



Source: FFIEC002, Credit Suisse

Figure 7: Sumitomo Mitsui New York Branch

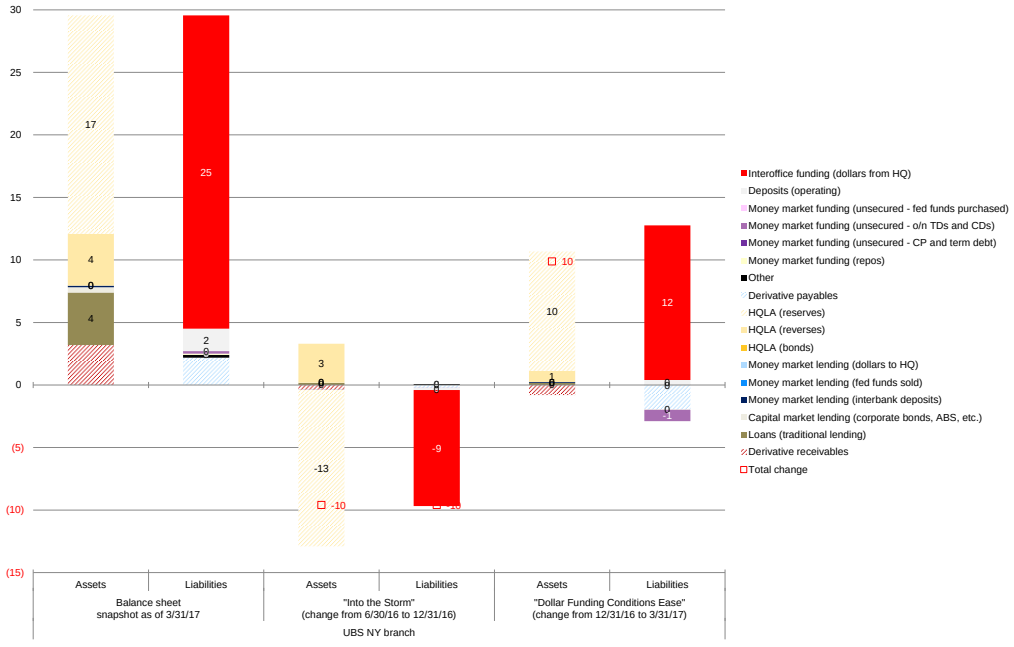
$ billion



Source: FFIEC002, Credit Suisse

Figure 8: UBS New York Branch

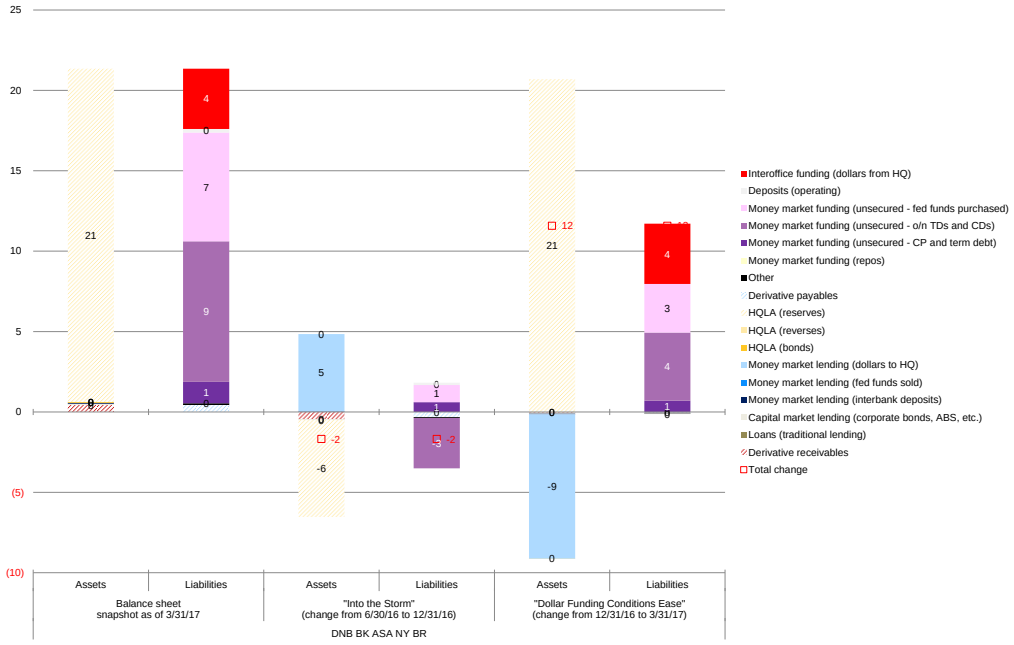
$ billion



Source: FFIEC002, Credit Suisse

Figure 9: DNB Bank New York Branch

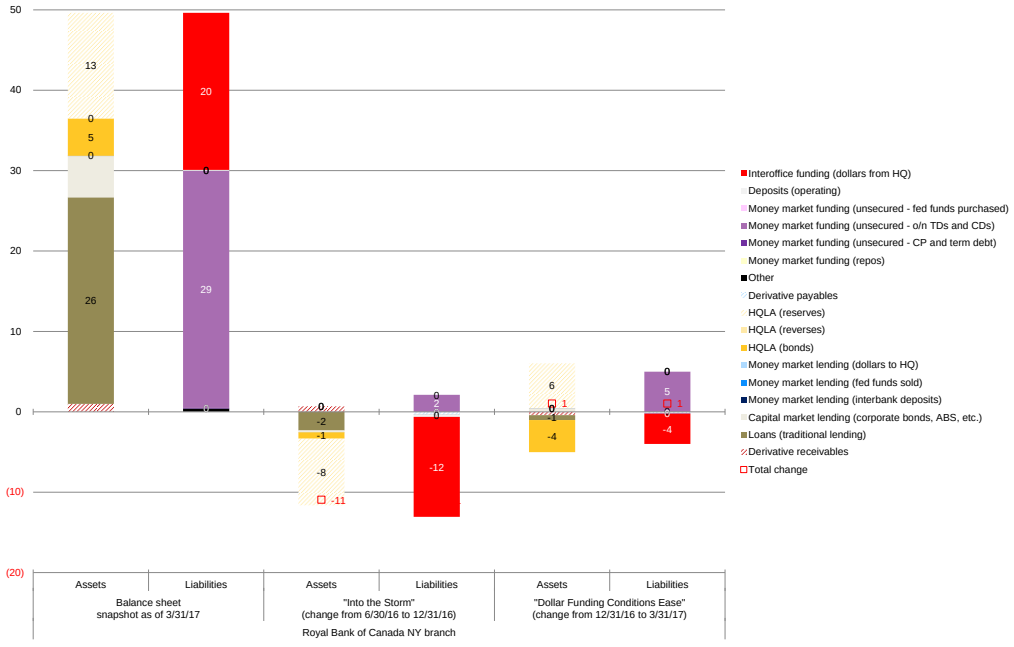
$ billion



Source: FFIEC002, Credit Suisse

Figure 10: Royal Bank of Canada New York Branch

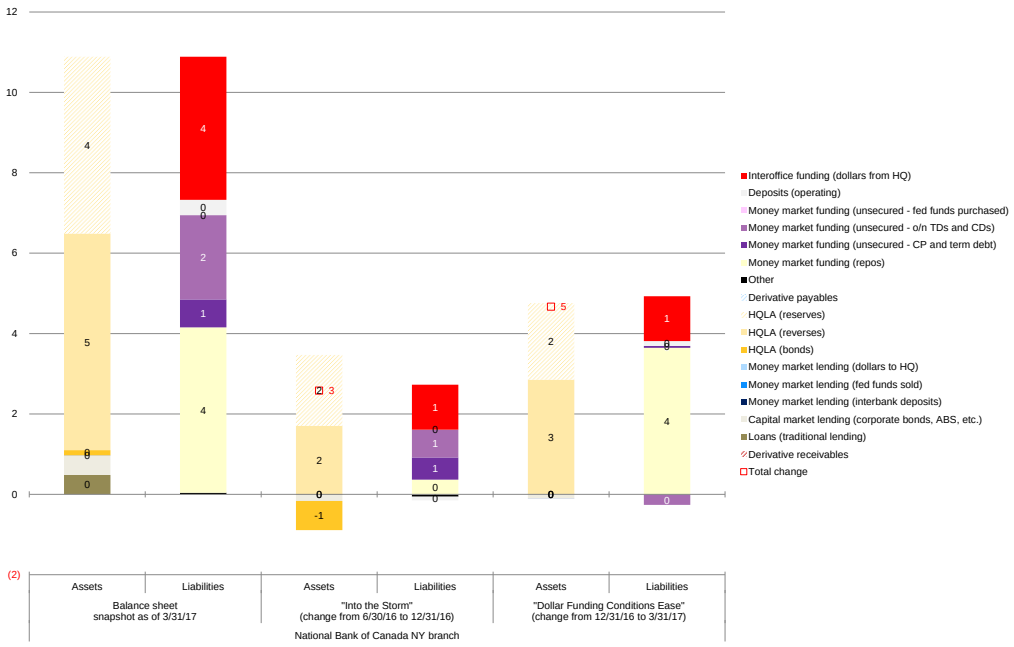
$ billion



Source: FFIEC002, Credit Suisse

Figure 11: National Bank of Canada New York Branch

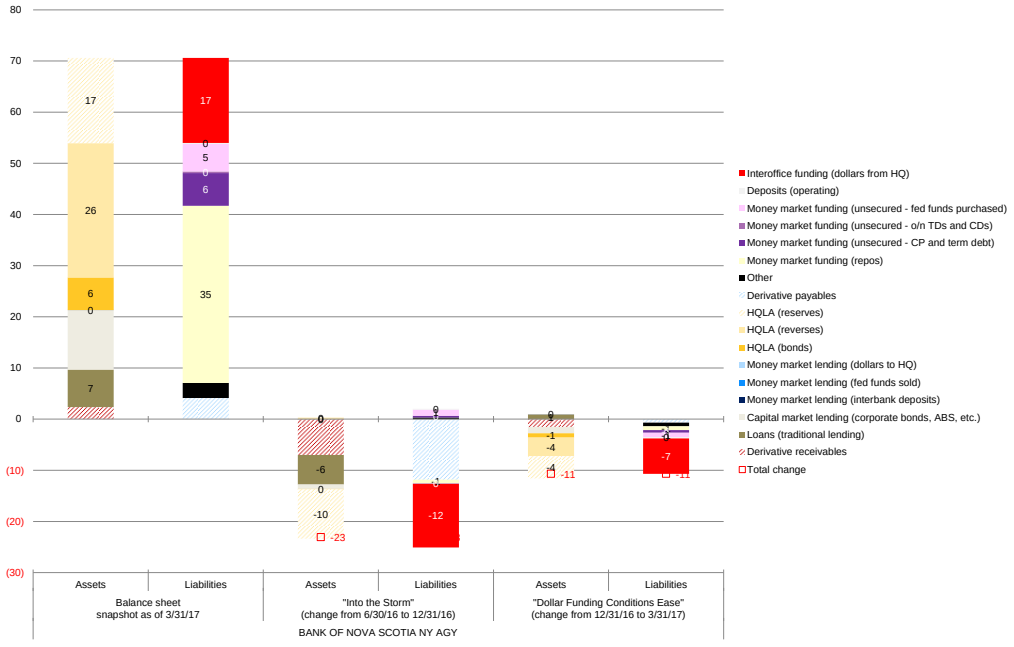
$ billion



Source: FFIEC002, Credit Suisse

Figure 12: Bank of Nova Scotia New York Agency

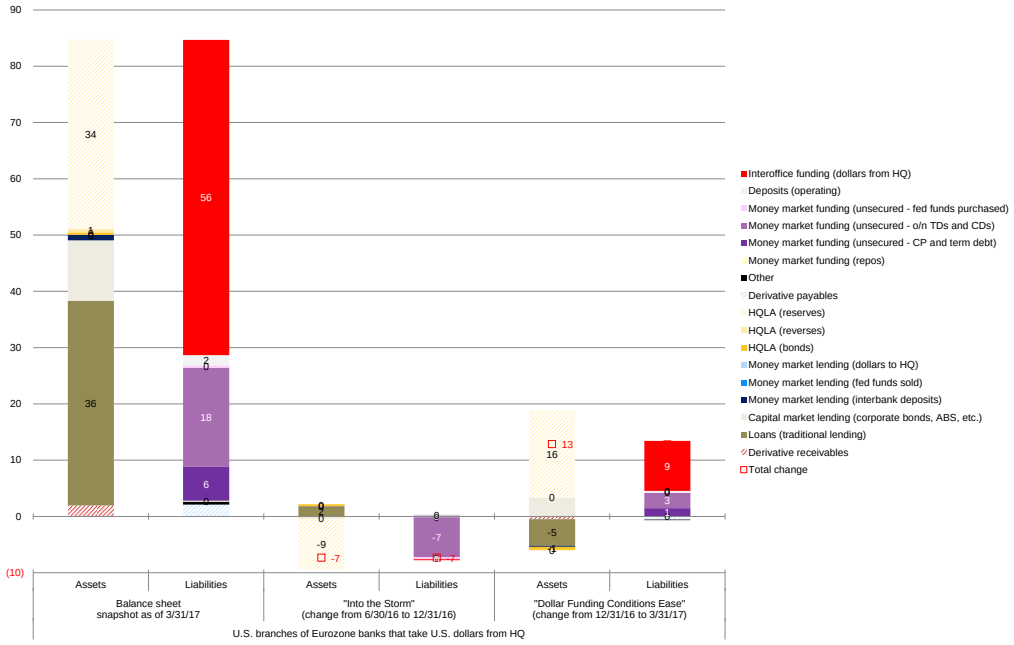
$ billion



Source: FFIEC002, Credit Suisse

Figure 13: New York Branches of Various Eurozone Banks

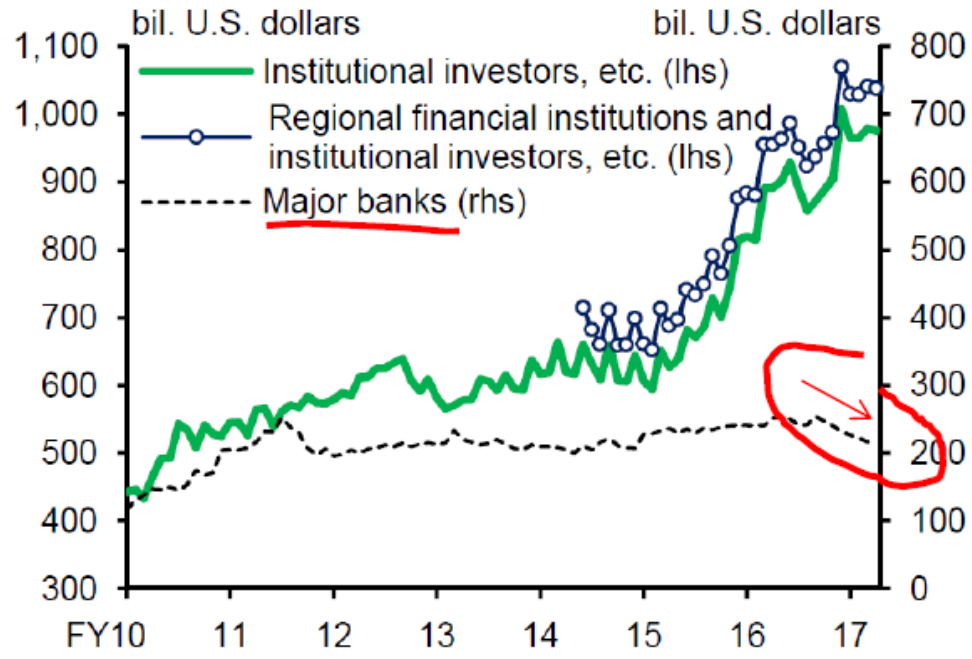
$ billion, excluding Deutsche Bank New York branch



Source: FFIEC002, Credit Suisse

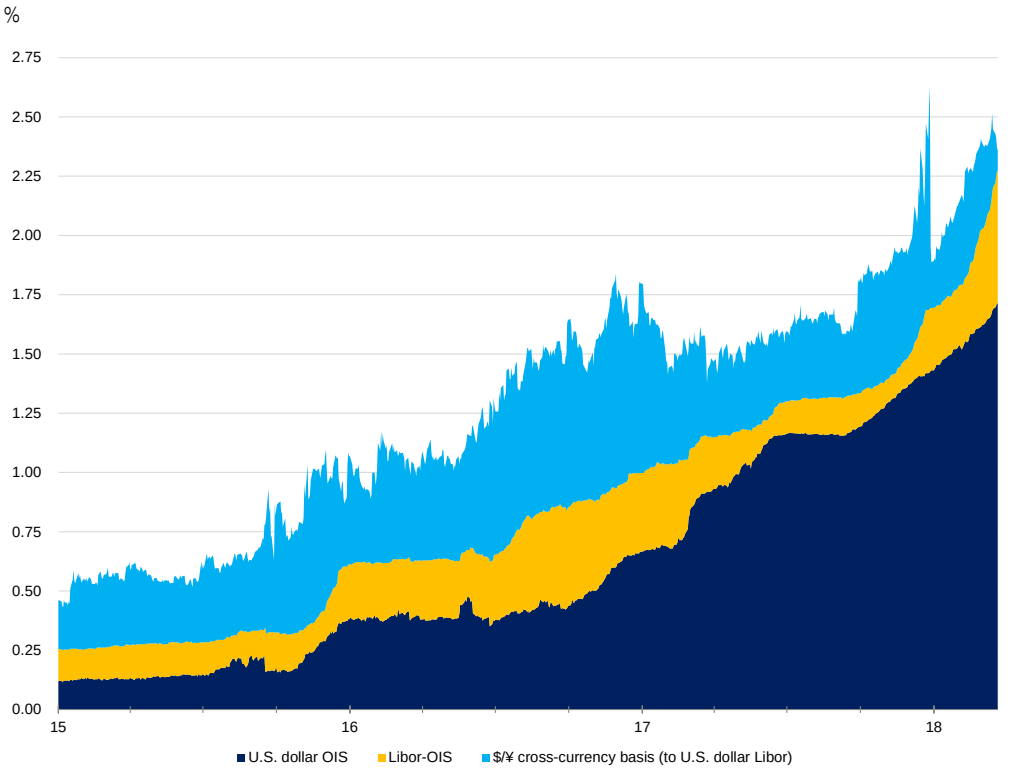
Figure 14: Japanese Megabanks' Dollar Needs in the FX Swap Market

$ billion



Source: Bank of Japan

Figure 15: Getting Expensive (for Changing Reasons)



Source: Credit Suisse

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