FEDERAL RESERVE BANK of NEW YORK

Global Creditor Mix and USD Liquidity Swap Lines

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Understanding the status of the dollar financial safety net

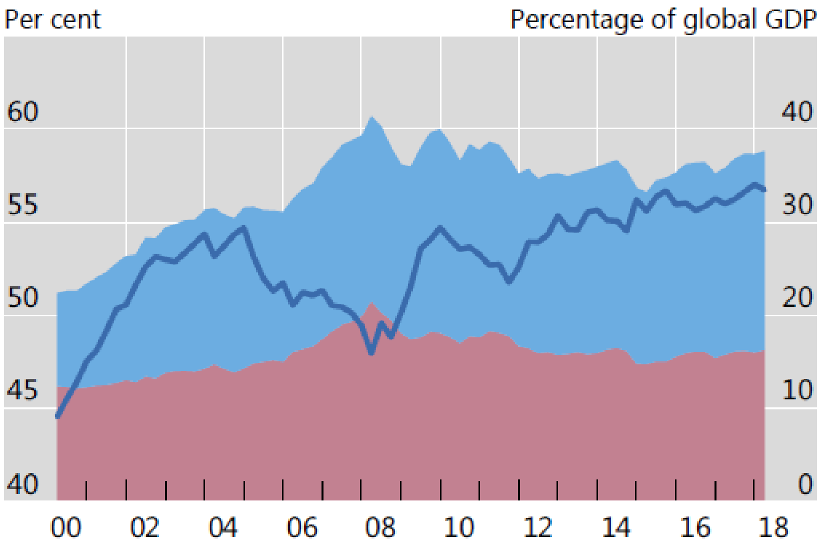
Main points

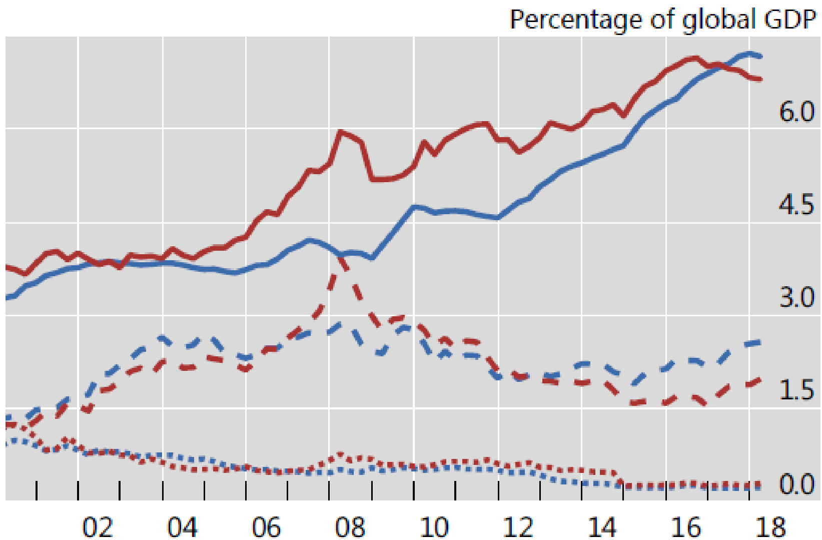
- International roles of USD dominate, strong on financial transactions.
- Structure of financial intermediation has evolved (more market based).
- Dollar imbalances have evolved (regulatory and management of banks).
- Constraints and reaction functions of banks vs nonbanks likely differ.
- Dollar financial safety net through central bank currency swaps
  - ✓ Extreme / systemic stress in private dollar funding markets
  - ✓ Needs for cross-currency liquidity change
  - ✓ Through central banks, via banks
- What approach to safety net under market-based institutions?
  - ✓ Lower cross-currency liquidity exposures and leverage. Outside of the central bank direct financial safety net. Is this unfinished business?

International role of USD continues to be strong in global liquidity

The share of debt securities and the US dollar in international credit has risen

International credit to the non-bank sector, amounts outstanding — Graph 1





Further information on the BIS global liquidity indicators is available at www.bis.org/statistics/about_gli_stats.htm.

[1] Cross-border loans and local loans in foreign currency to non-bank borrowers. [2] By residence and immediate sector of issuer; all instruments; all maturities; non-bank issuers. International debt securities are debt securities issued by non-banks in a market other than the local market of the country where the borrower resides.

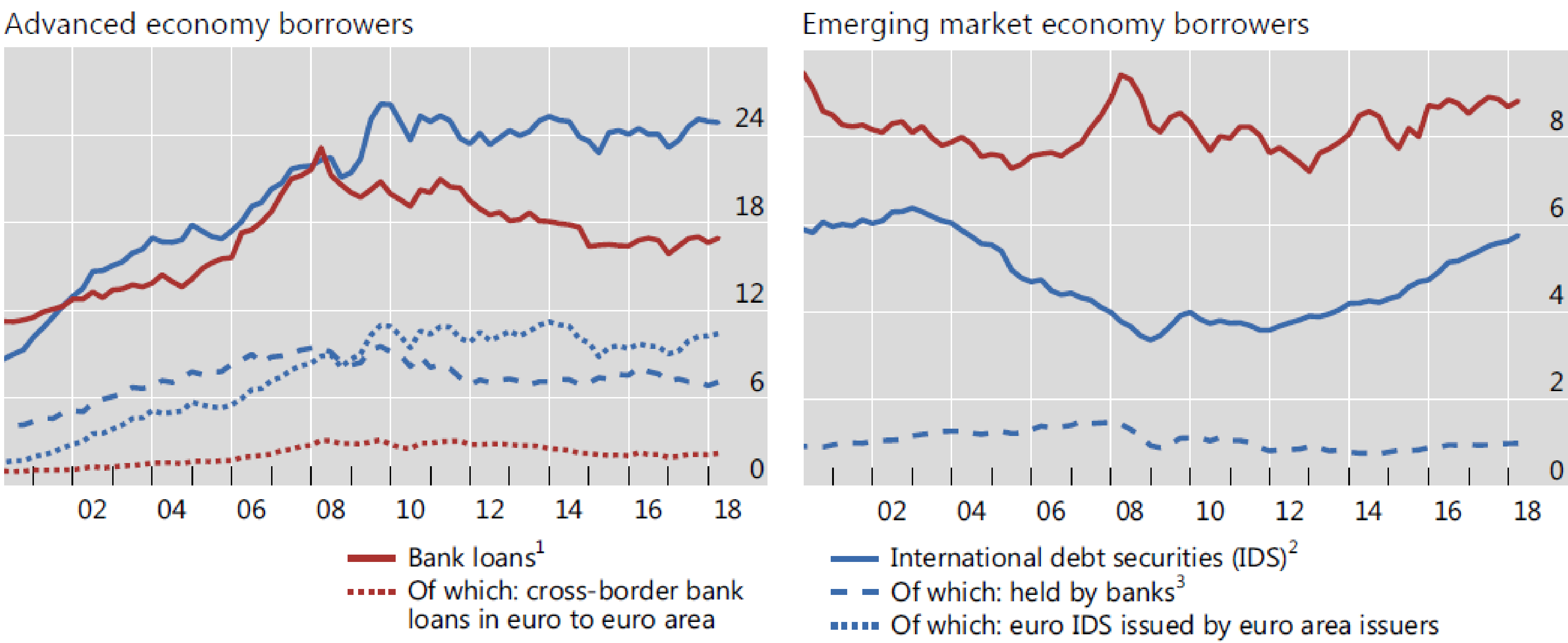
Sources: Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; BIS locational banking statistics and global liquidity indicators; BIS calculations; authors' calculations.

BIS Quarterly Review, Sept 2018

Banks now fall below nonbanks as creditors for AE borrowers (not so for EMs).

The shift to debt securities has been stronger for advanced economy borrowers

Amounts outstanding, as a percentage of regional GDP Graph 2



[1] Cross-border loans and local loans in foreign currency to non-bank borrowers. [2] By residence and immediate sector of issuer; all instruments; all maturities; non-bank issuers. [3] Cross-border debt securities holdings in all currencies and local holdings in foreign currency reported by LBS-reporting banks.

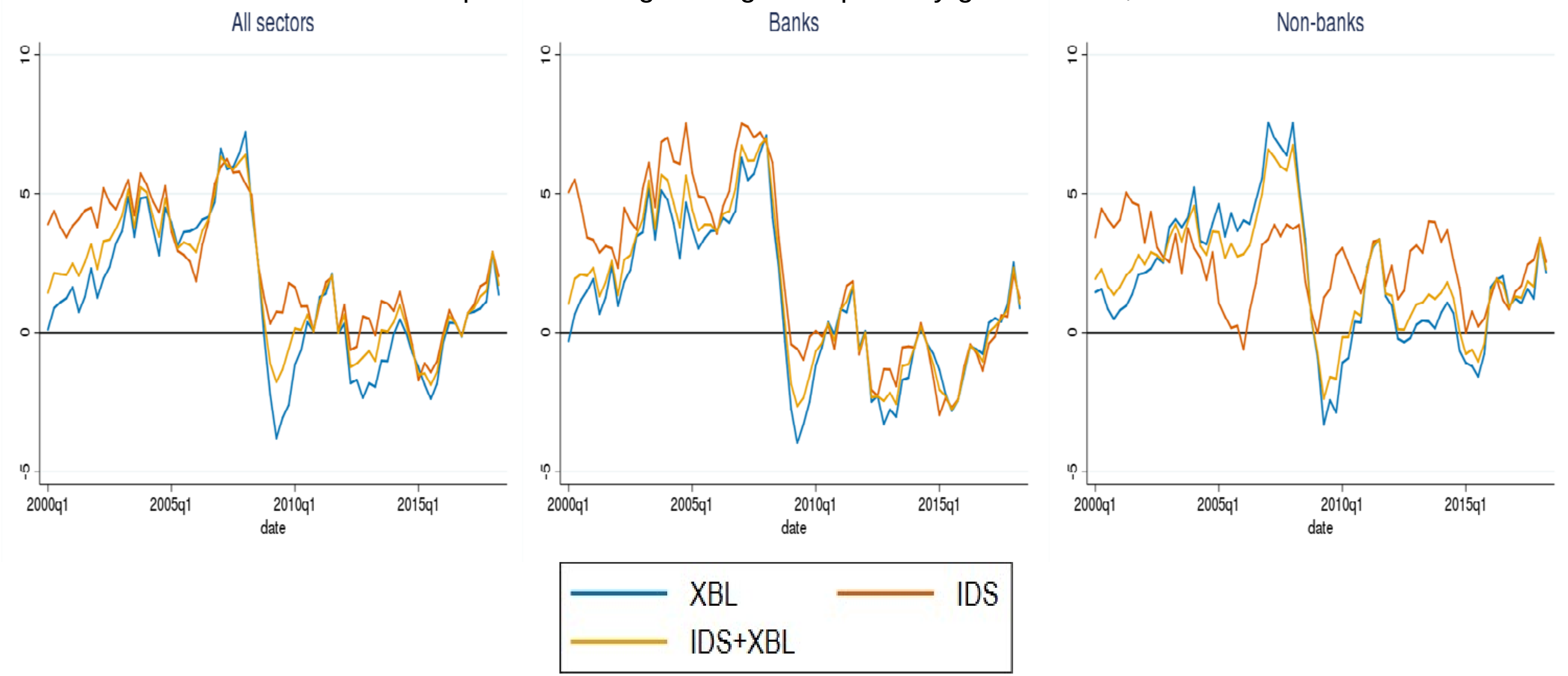
Sources: Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; BIS locational banking statistics (LBS); BIS calculations; authors' calculations.

BIS Quarterly Review, Sept 2018

Bank-based flows have been most volatile in response to risk events, especially for bank borrowers

XB Global Liquidity, all countries, borrower perspective

4-quarter moving averages of quarterly growth rates, %



$$\text{Quarterly Growth Rate}_t = \left(Outstanding\ Stock_t / Outstanding\ Stock_{t-1}\right) - 1$$

XBL = Cross-border loans, IDS = International Debt Securities

Data Source: BIS Locational Banking Statistics, International Debt Securities

Risk effects / constraints likely differ across bank v. nonbank creditors.

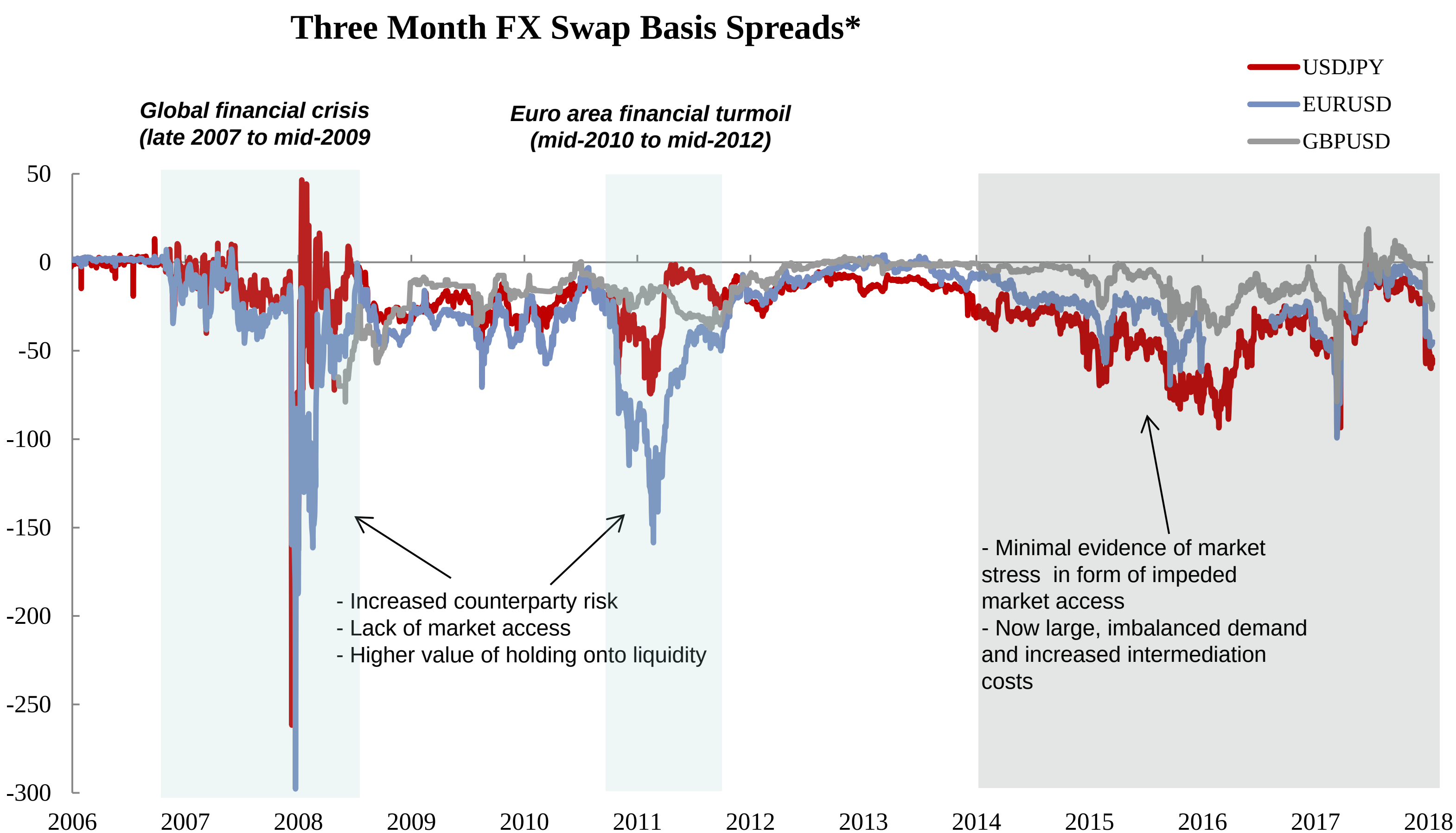
Types of participants in global flows evolve, so too elasticities/ constraints.

Still not well modelled in economic research.

- Devereux and Yetman (2010 JMCB): leverage constrained representative investors invest in equities and bonds. Sign of portfolio changes to shocks depends on assumed market segmentation
- Shin (2011 IMF Mundell lecture): risk-neutral but value at risk constrained banks expand or contract leverage, contingent on risk level, so that constraint always binds. Non-banks as mean-variance risk averse investors. Aggregate position depends on mix.
- Gabaix and Mattiori (2018 QJE): as financiers have limited risk taking capacity and have risks on balance sheets, shocks influence pattern of capital flows and exchange rates in equilibrium
- Gertler-Karadi / Gertler-Kiyotaki. Net worth collateral constraints

Central bank dollar swap lines

Usage of USD swap lines remains low: conditions in the FX swap market have continued to improve and market access has not been an issue.



*A negative number reflects a premium for $ funding.

Source: Bloomberg

Central bank dollar swap lines

Usage of USD swap lines remains low: as conditions in the FX swap market have continued to improve and market access has not been an issue.

Banks: better preparation, more efficient balance sheet management, lower FX mismatch and enhanced hedging

According to the BIS Triannual Survey

Size: Daily activity of FX swaps, forwards and cross-currency swaps ***increased by almost 50% to $3.1 trillion from 2007 to 2016***; For comparison FX spot activity $1.7 tril (2016)

Users and their objectives

Trades between the ***largest international banks account for roughly 51%;*** Demand is for funding and/or for hedging

Trades between reporting banks and ***other financial institutions is around 43%;*** Demand is mainly for hedging, at times regulatory hedging

Trades with ***non-financial customers account for 6%;*** Demand is mainly to exploit differences in funding costs in different currencies

Factors Driving Medium-Term Developments (since 2014)

- Since mid-2014, entities have been paying a premium for U.S. dollars despite minimal evidence of issues with market access.
- Wedges between demand and supply:
  - ***Demand*** for $ funding & hedging has been large, <u>particularly by non-banks</u>
    - ✓ Monetary policy divergence encourages investors to diversify internationally (particularly Japanese firms)
    - ✓ Cheaper issuance offers opportunities for U.S. corporates to issue in foreign currencies (e.g. euros)
  - Key sources of ***supply*** constraints impacting pricing are:
    - ✓ Bank balance sheet constraints post Basel III, limiting the capacity to expand the size of off-balance sheet items (including FX derivatives); Liquidity requirements
      - Reporting days key; particularly year end given specific year-end requirements (G-SIBs scores, bank levy taxes, resolution fees, etc.)
    - ✓ Self-imposed - more conservative pricing of counterparty and market risks and higher transaction costs around risk events
    - ✓ Limited investment options for the received foreign currency
    - ✓ Non-banks' constraints – limiting the capacity/interest of non-regulated investors to supply dollars in the FX swap market

Open issues

- USD foreign currency liquidity swap lines between Fed with ECB-BoE-SNB-BoJ-BoC meet systemic event dollar needs of banks

  ✓ Standing arrangement since October 2013

- Evolving constraints on nonbanks and net funding exposure information is less well understood.

- What are the risks through nonbanks, and are market-based mechanisms (including accessing dollar liquidity through covered banks) sufficient to avoid costly externalities?

Thank you.

Different institutions are involved in types of flows XBL and IDS, typical lenders and borrowers

	Typical Lenders	Typical Borrowers	*Notes*
XB loans to banks	Internationally-active banks	Banks (all sizes)	*Interbank market (unsecured and repo)*
XB loans to nonbanks	Internationally-active banks	Large non-financial corporates; exporting/importing firms; Leveraged non-bank financials	*Syndicated loan market; trade credit; project financing*
IDS issued by banks	Pension funds; Insurance companies; MMMFs; Hedge funds	Large and mid-sized banks	*Smaller investor base than for IDS issued by non-banks*
IDS issued by non-banks	Pension funds; Insurance companies; MMMFs; Hedge funds	Non-financial corporates; governments; Insurance companies	*Broader investor base than for IDS issued by banks*