



# Financial stability risks: old and new

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\*Views expressed here are mine, not necessarily those of the BIS

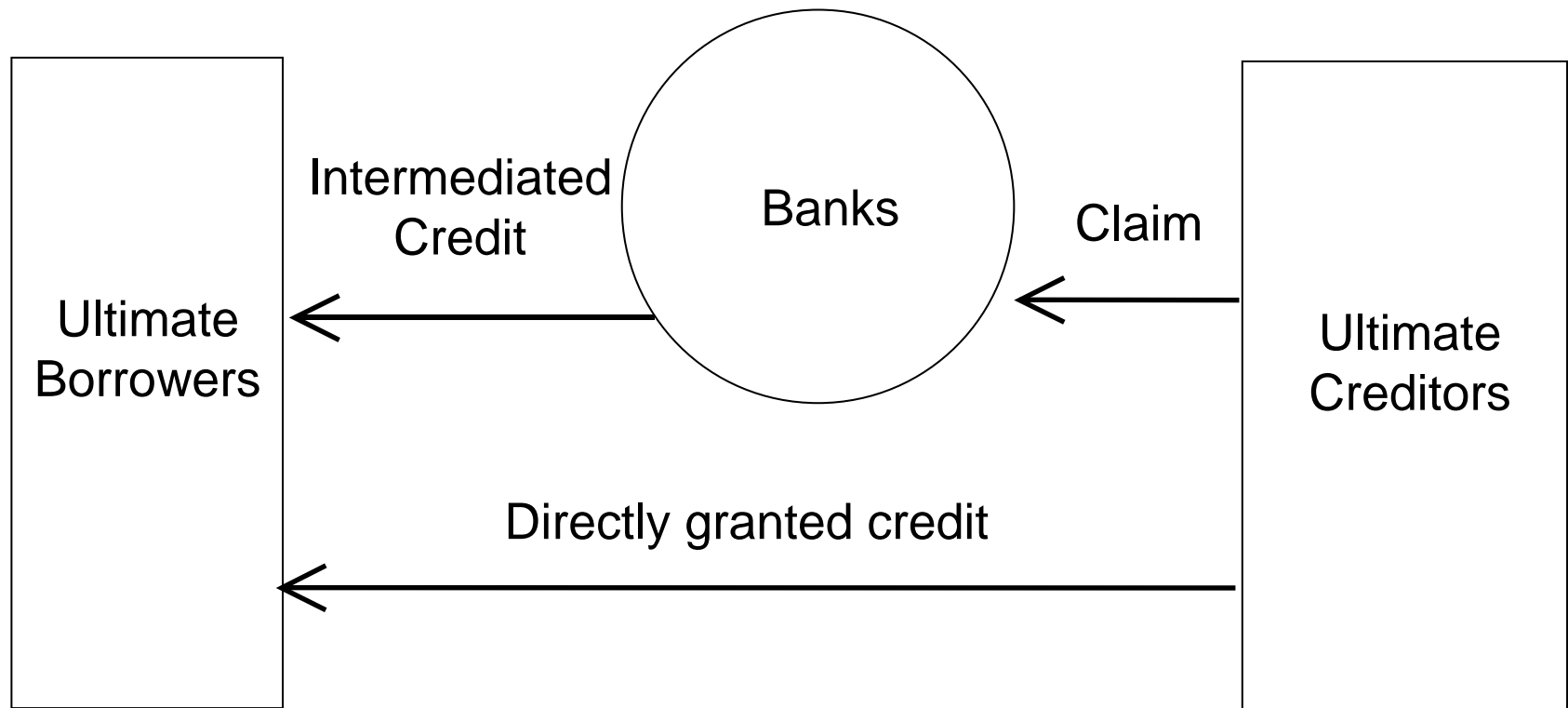
## Rear view mirror

- Our understanding of crisis propagation is heavily influenced by the experience of the 2008 crisis; watch words are
  - Credit growth
  - Leverage and maturity mismatch
  - Complexity
  - Insolvency and Too-Big-To-Fail
- Still relevant for key EMEs and some advanced economies (BIS 2014 Annual Report, chapter 4)
- But it does not follow that future bouts of financial disruption must follow the same mechanism as the past
- Yet accountability exercises can focus on known past weaknesses

## Two themes

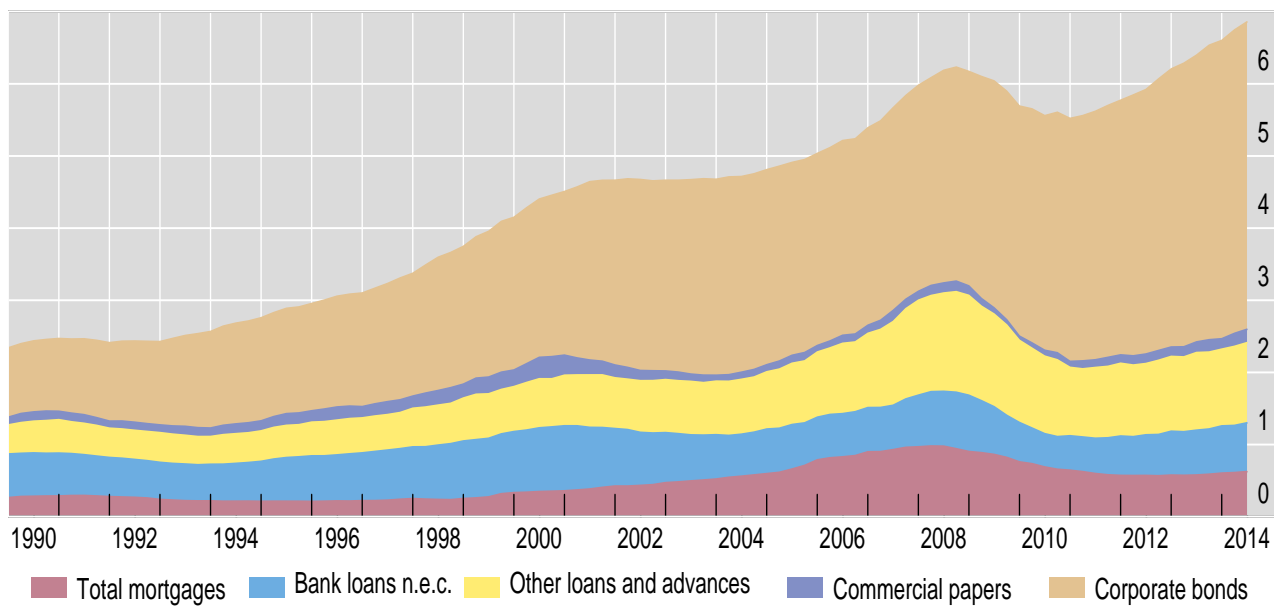
- Changing pattern of financial intermediation
  - Shift from banking sector to capital markets
  - Focus on market liquidity
  - Shift from banks to long-term investors as protagonists
  - Impact on real economy; what happens in financial markets don't always stay in financial markets
- Global perspective
  - US dollar as global unit of account in debt contracts
  - Stronger dollar constitutes a tightening of global financial conditions
  - Impact on global growth and further upward pressure on the dollar

# Direct and Intermediated Finance



## Credit to US non-financial corporate sector

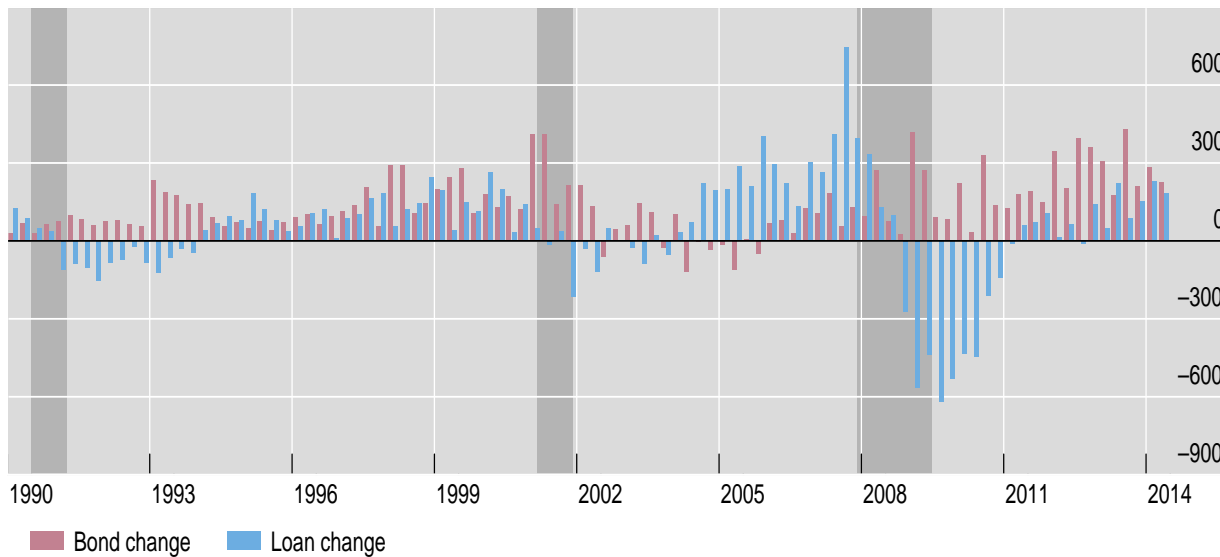
Amount outstanding, in trillions of US dollars



Source: US Flow of Funds.

# Changes in outstanding corporate bonds and loans<sup>1</sup> to US non-financial corporate sector

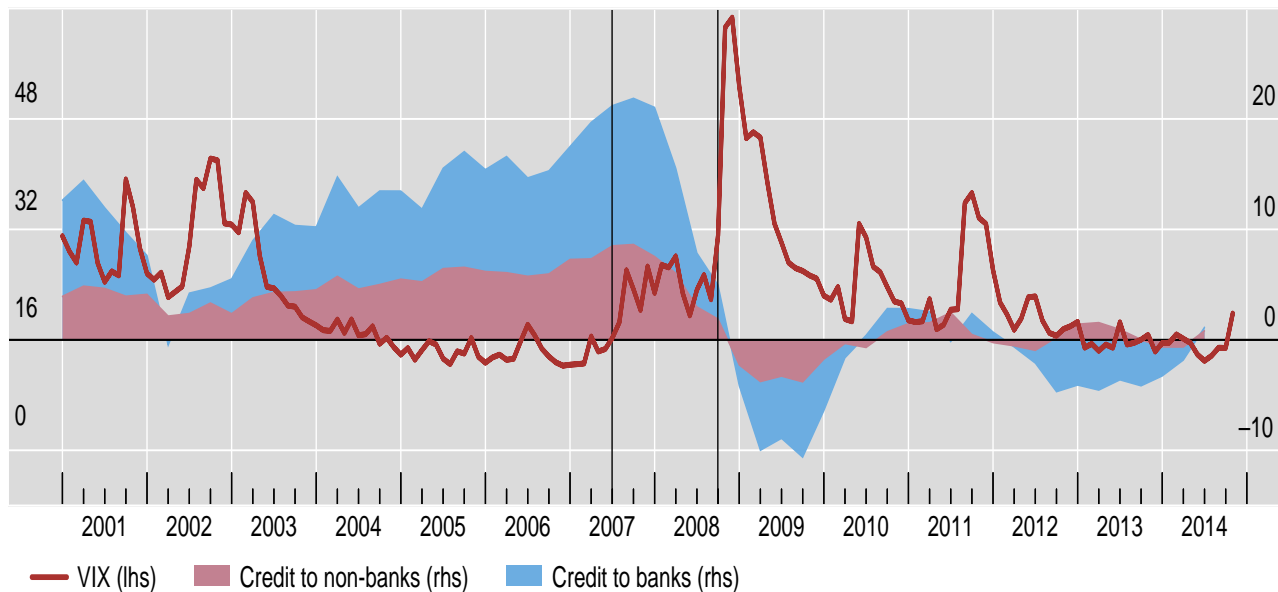
In billions of US dollars



<sup>1</sup> Loans are defined as sum of mortgages, bank loans not elsewhere classified (n.e.c.) and other loans .  
Source: US Flow of Funds.

## Year-on-year rate of growth in international bank claims<sup>1</sup>

In per cent



The vertical lines indicate: 2007 beginning of global financial crisis; 2008 collapse of Lehman Brothers.

<sup>1</sup> Includes all BIS reporting banks' cross-border credit and local credit in foreign currency.

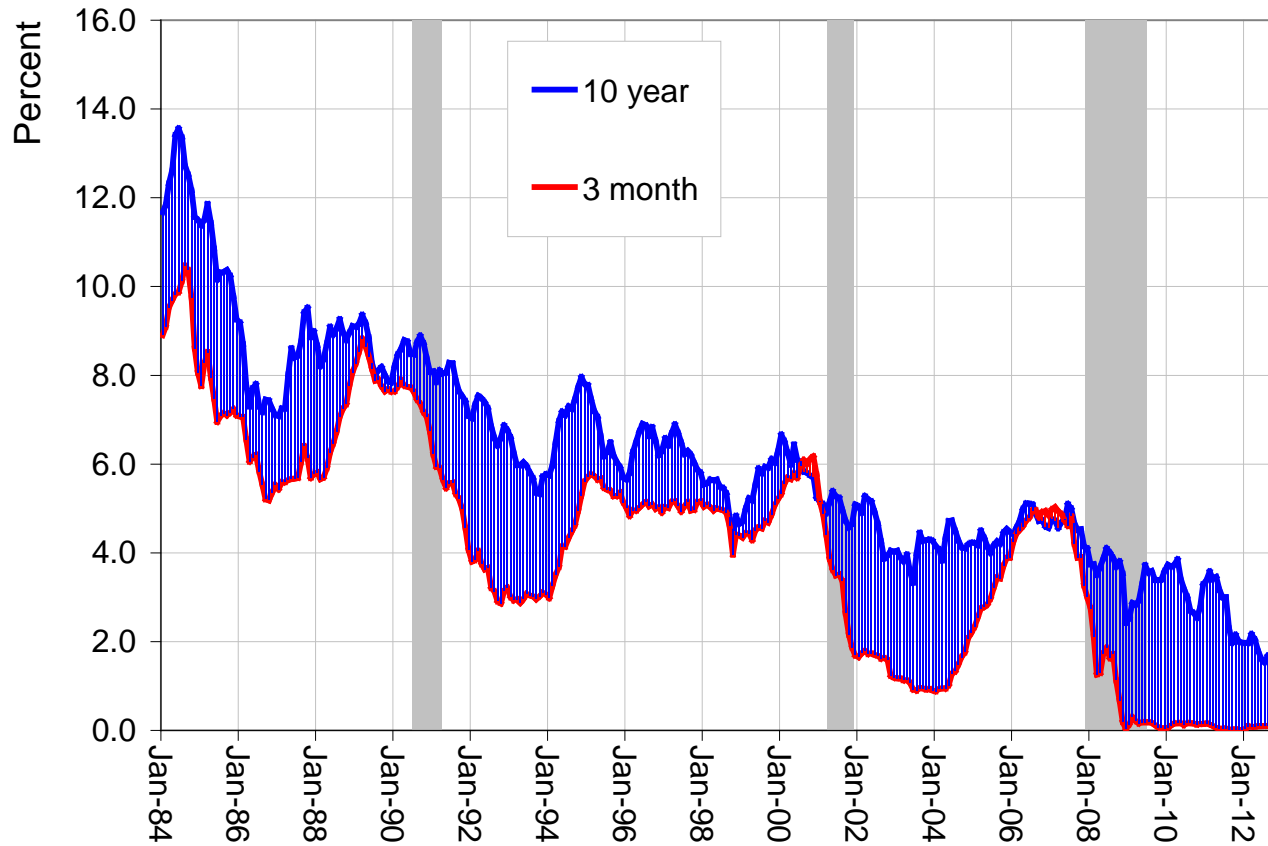
Sources: Bloomberg; BIS locational banking statistics by residence. Source: Bloomberg.

## Two phases of global liquidity

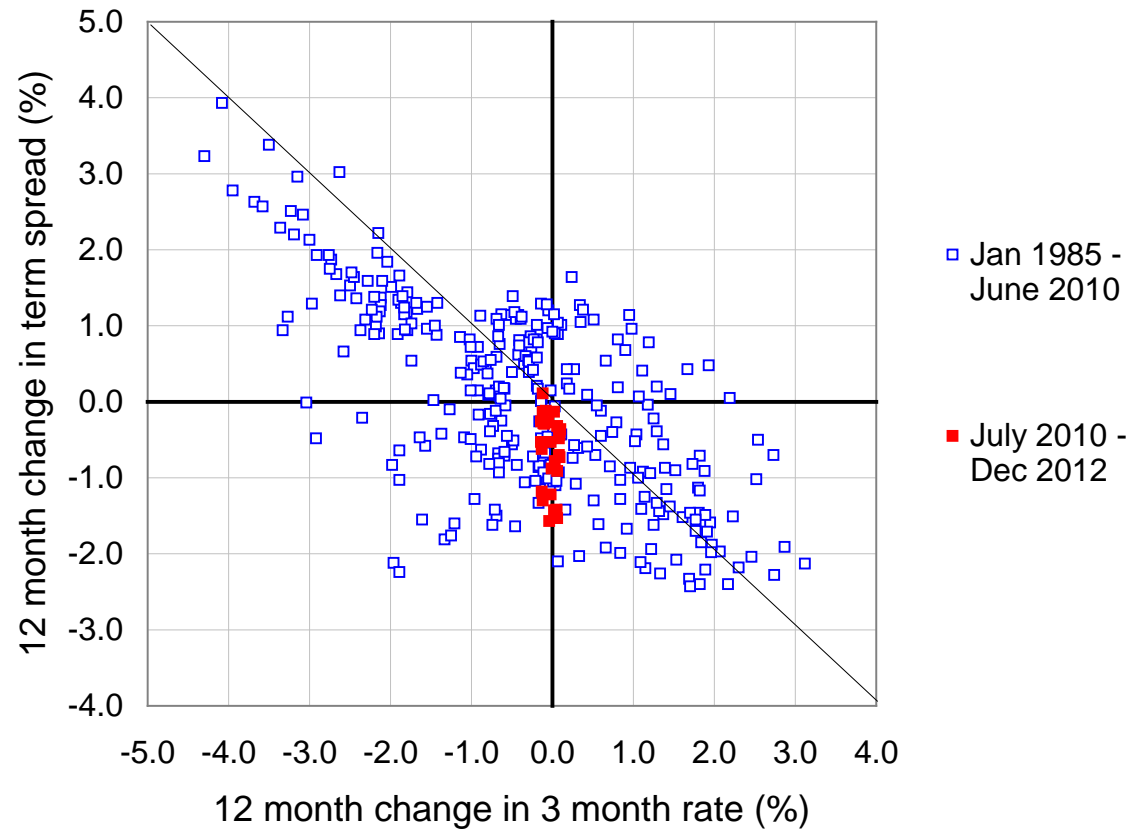
- Banking sector-led credit growth (2003 – 2008)
  - Procyclical leverage driven by wholesale bank funding as marginal source of finance
  - Driven by combination of
    - steep yield curve
    - certain path of short-term rate
- Bond market-led credit growth (2010 – )
  - Long-term investors as creditors
  - Focus on corporate borrowers, especially EME corporates
  - Driven by low long rates and flat yield curve



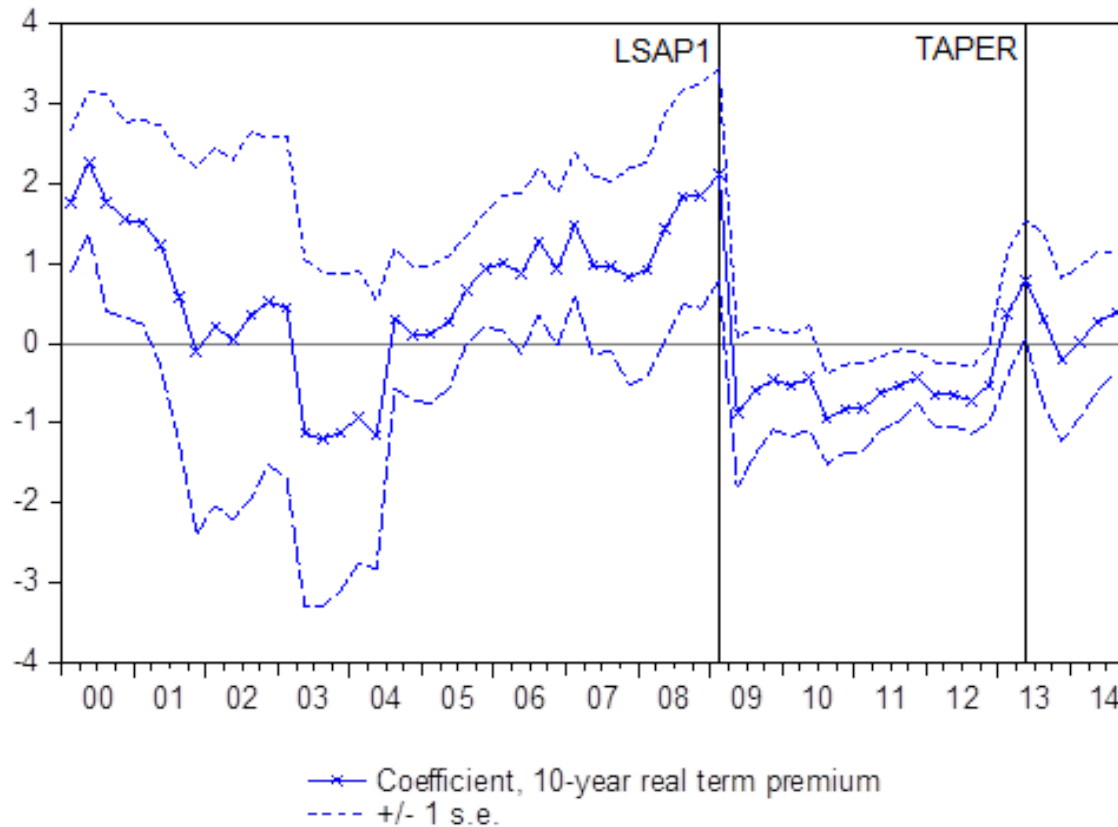
# US Treasury 10 year and 3 month rates



# Term premium used to be determined by short rate; but not any more



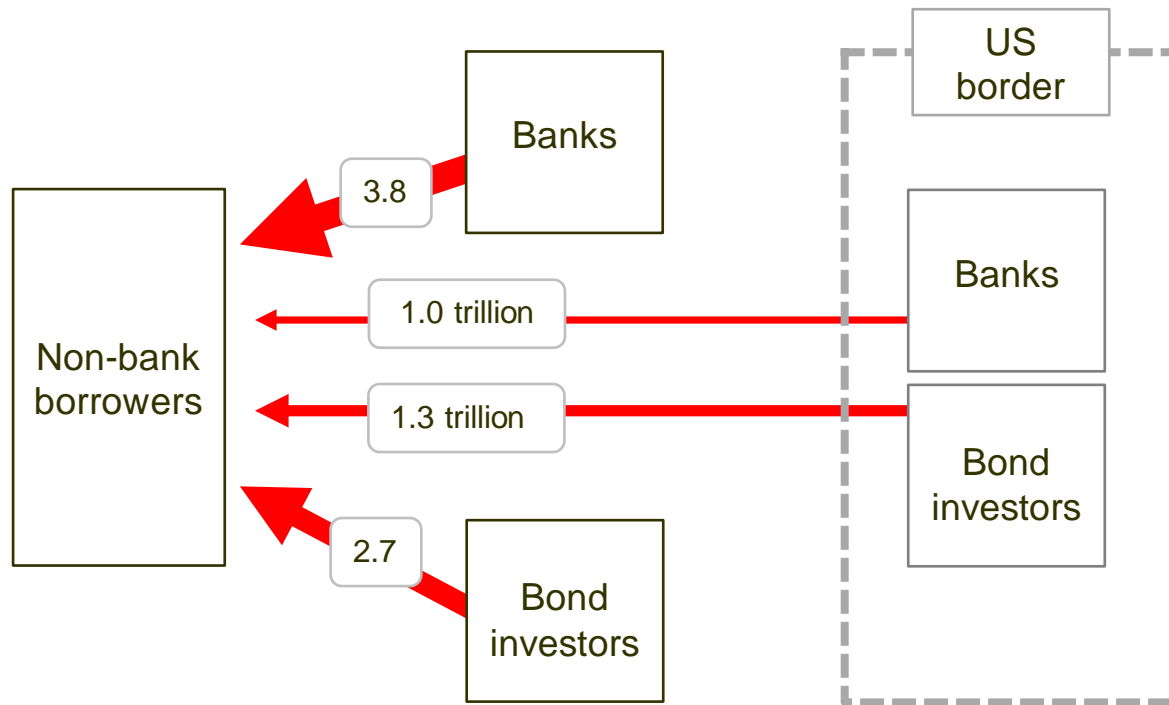
# McCauley, McGuire and Sushko (2014): US yield curve flattening associated with US dollar offshore bond issuance



Estimates based on 16-quarter rolling regressions for growth in offshore US dollar bond market credit on lagged term premium; controlling for the financial market conditions using lag VIX; the dependent variable persistency is controlled for via the lag term. All the variables enter in first-differences or in log-differences, expressed in per cent. The ten-year real term premium is estimated using term structure models as the deviation in nominal yield from the sum of expected growth rate, expected inflation, and inflation risk premium.

Sources: Bloomberg; Consensus Economics; BIS international debt statistics; BIS locational banking statistics by residence; authors' calculations

# US dollar-denominated credit to borrowers outside US

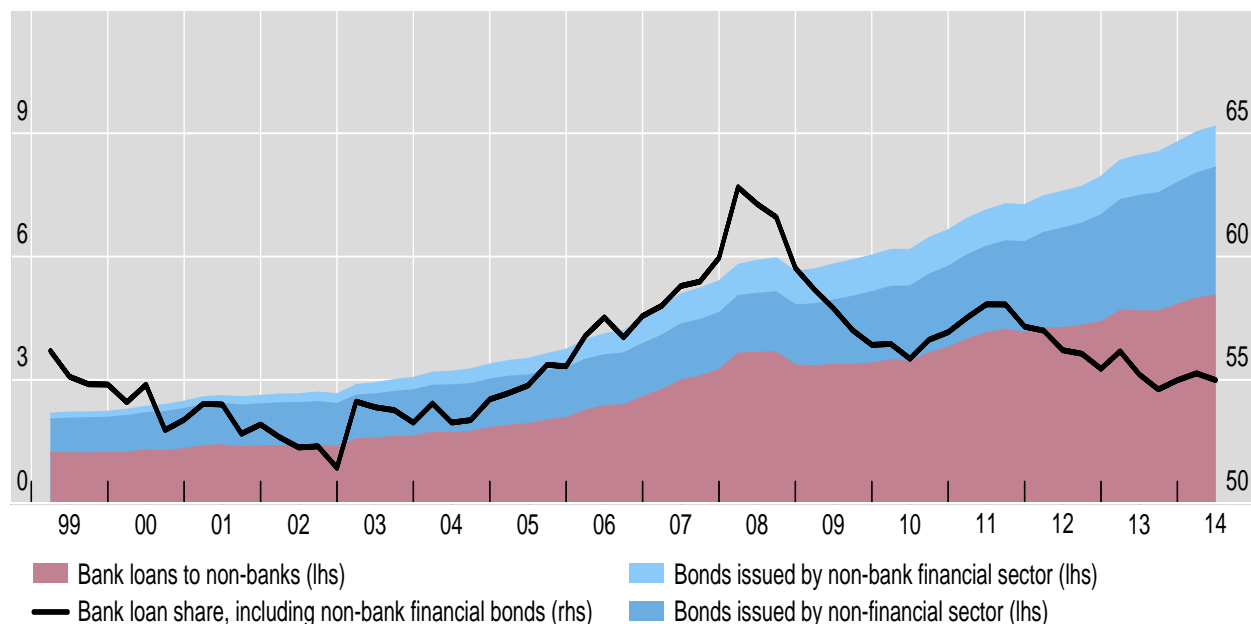


Source: McCauley, McGuire and Sushko (BIS 2014); data as of Dec 2013.

# US dollar credit to non-banks outside the United States

Outstanding stocks (USD trillion)

Per cent

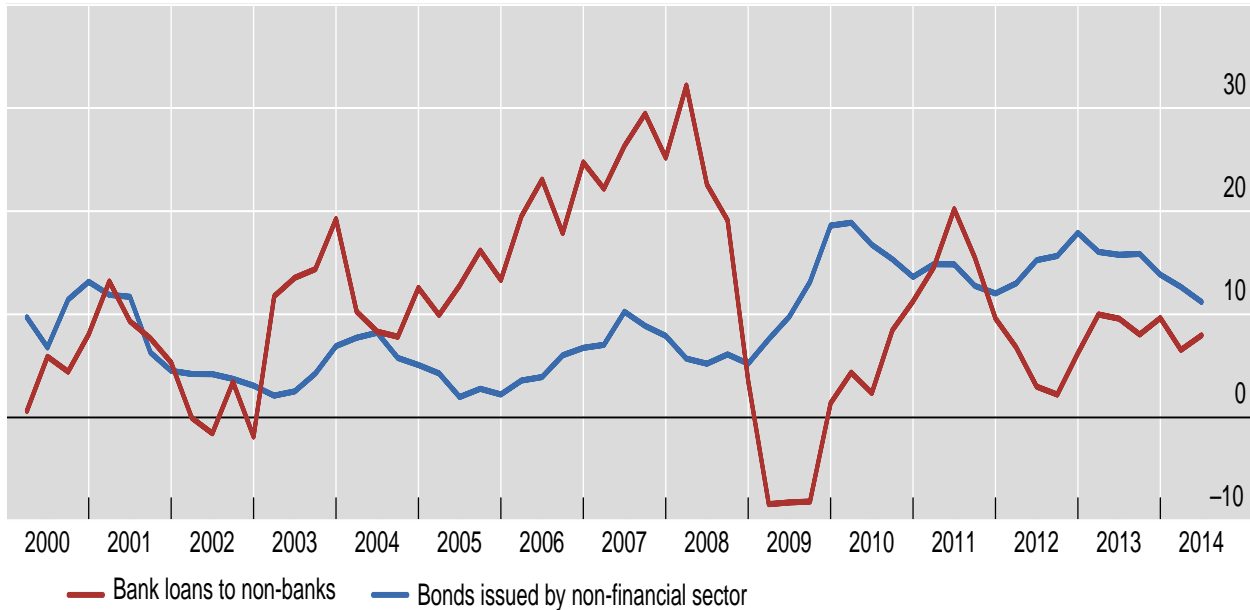


Notes: Bank loans include cross-border and locally extended loans to non-banks outside the United States. For China and Hong Kong SAR, locally extended loans are derived from national data on total local lending in foreign currencies on the assumption that 80% are denominated in US dollars. For other non-BIS reporting countries, local US dollar loans to non-banks are proxied by all BIS reporting banks' gross cross-border US dollar loans to banks in the country. Bonds issued by US national non-bank financial sector entities resident in the Cayman Islands have been excluded.

Sources: IMF, *International Financial Statistics*; Datastream; BIS international debt statistics and locational banking statistics by residence; authors' calculations.

# US dollar credit to non-banks outside the United States

Year-on-year growth rate, in per cent

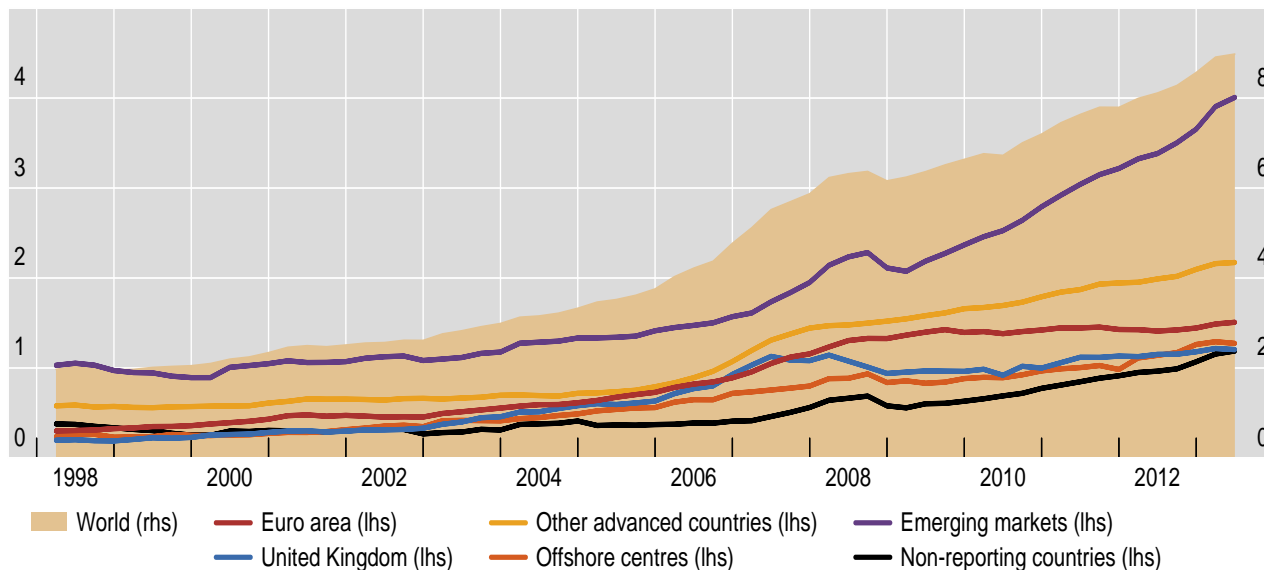


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## US dollar credit to non-banks outside the United States

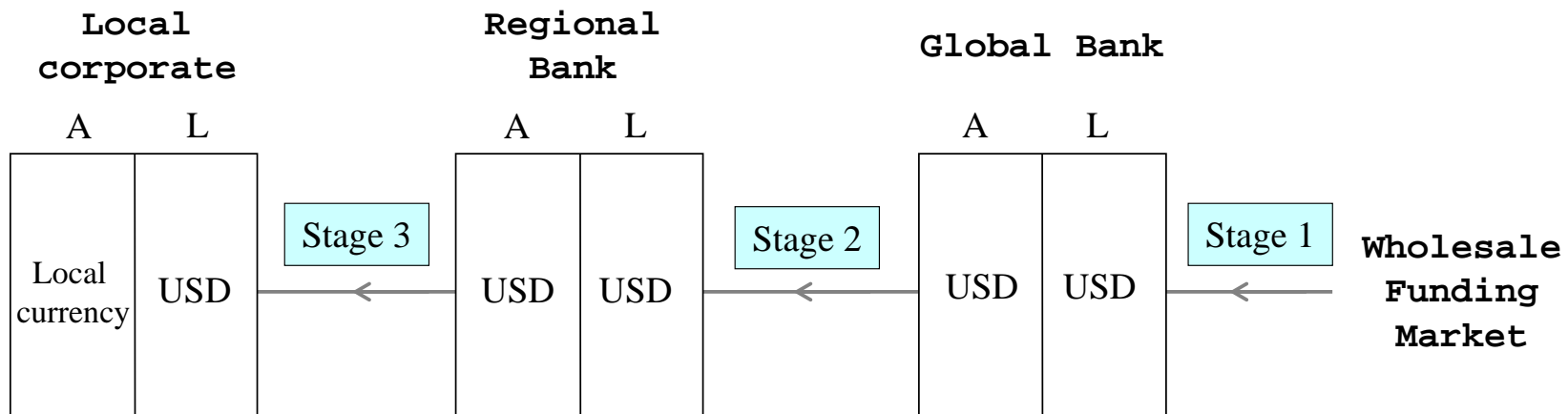
By counterparty country, in trillions of US dollars



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# Local currency appreciation leads to lending boom



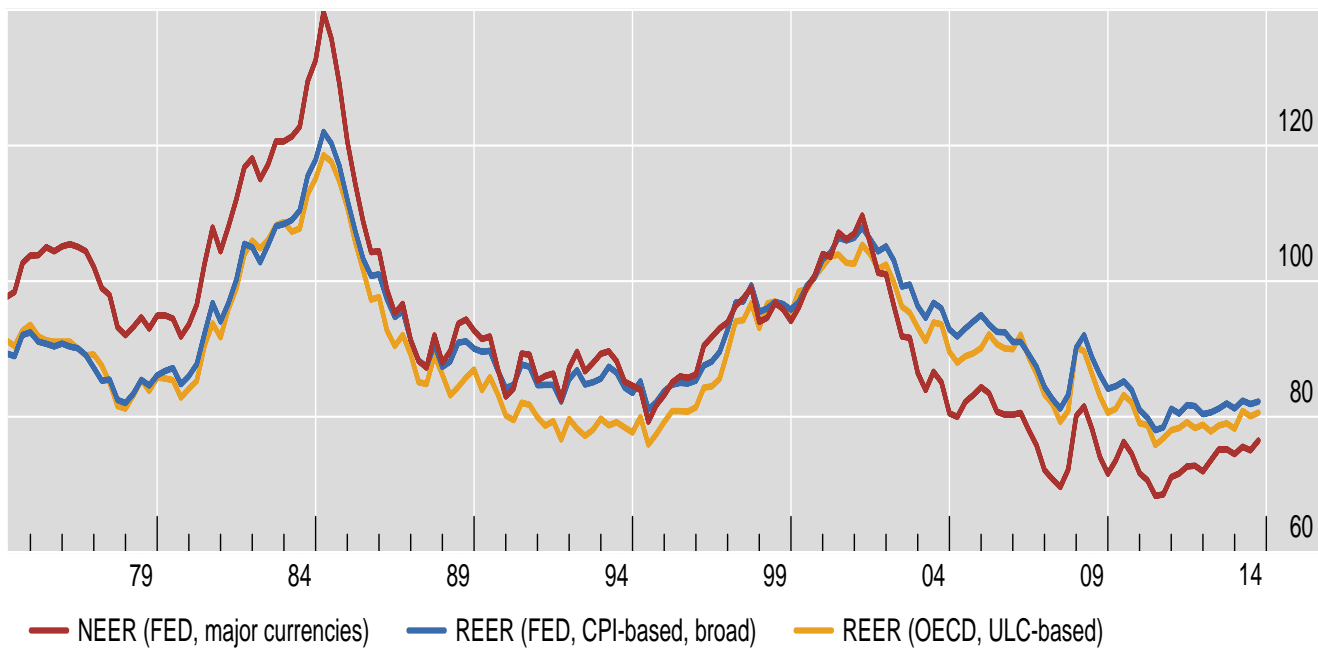
- Local currency appreciation strengthens borrower balance sheet
- Creates slack in lending capacity of local banks; creates slack in global bank lending capacity; local and global banks drive credit boom
- Higher interest rate differential vis-à-vis the dollar amplifies boom

Source: Bruno and Shin (2014) <http://www.bis.org/publ/work458.pdf>



## USD effective exchange rates

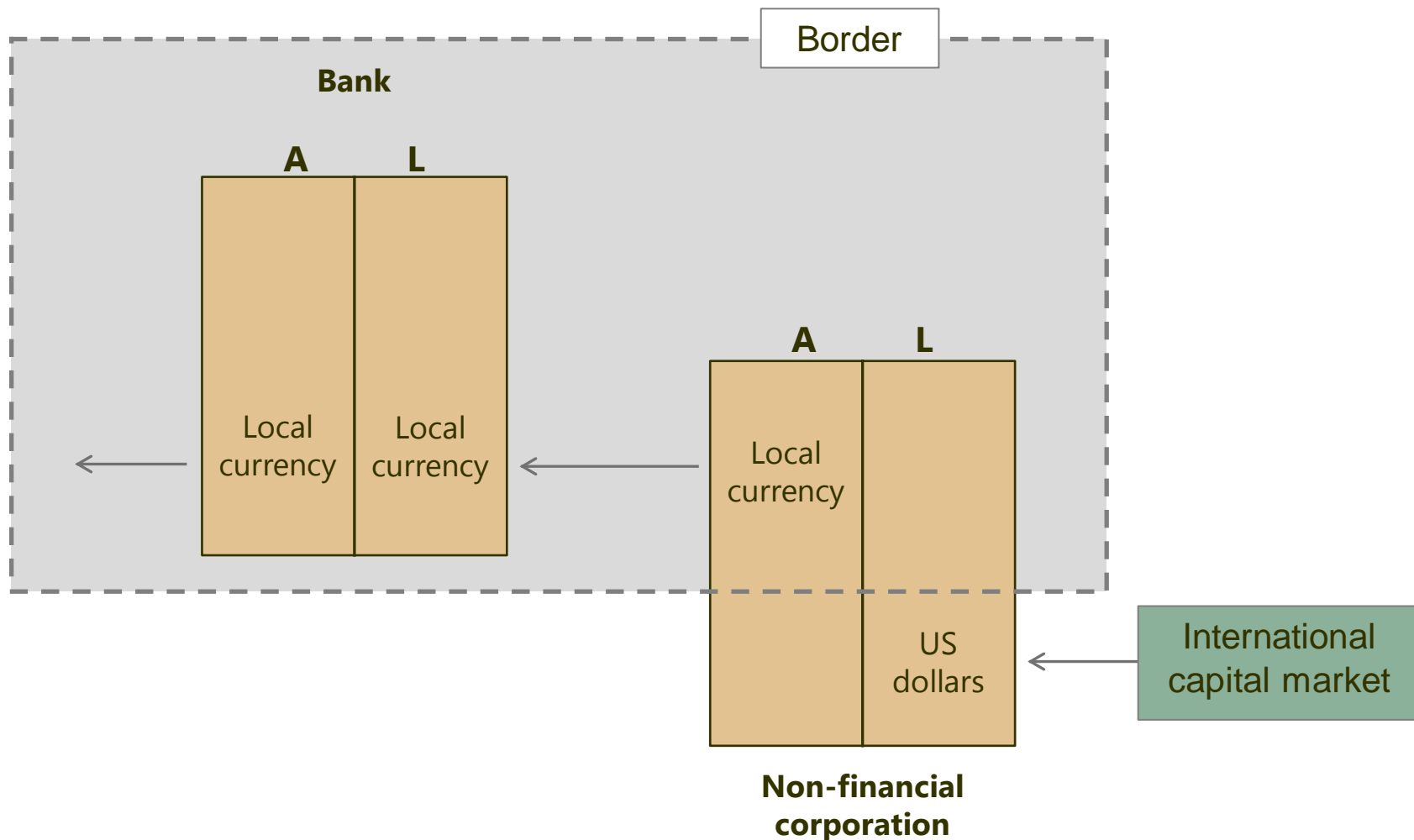
2000=100, quarterly averages, an increase indicates appreciation of the US dollar.



Sources: FED; OECD, *Economic Outlook and Main Economic Indicators*; national data.

# Traditional boundaries ...

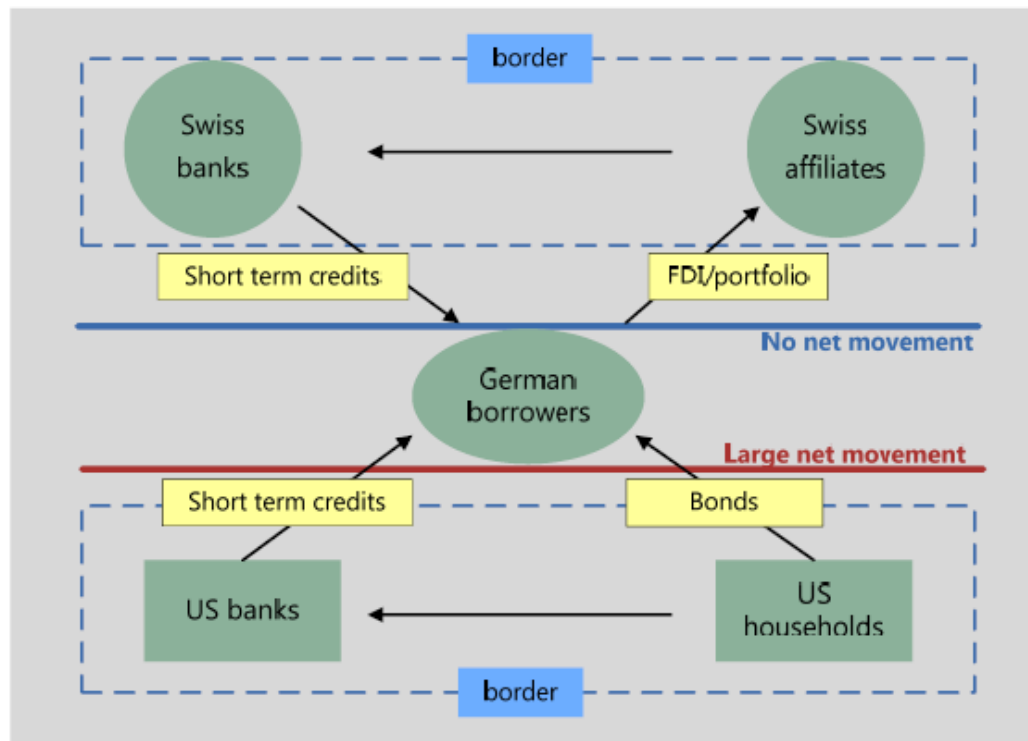
... are not sufficient in understanding the second phase of global liquidity



# Using overseas subsidiaries as financial vehicles: case from the 1920s

The geography of capital flows in the interwar years

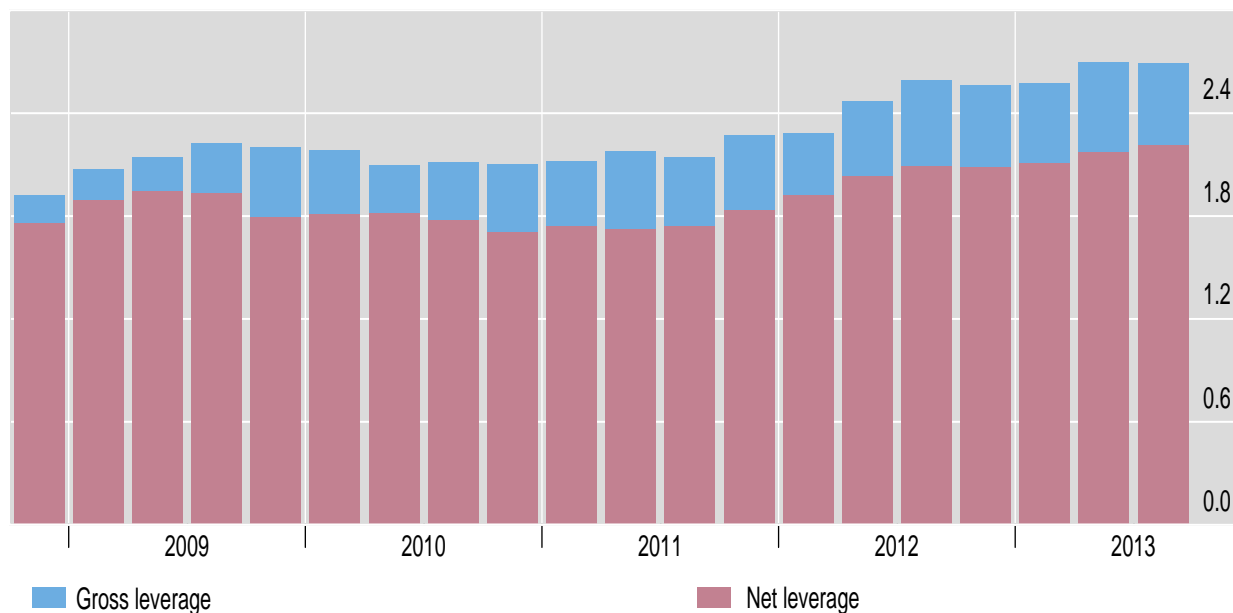
Figure 1



Source: Borio, James and Shin (2014) <http://www.bis.org/publ/work457.pdf>

## Surrogate intermediation: borrowing and holding deposit claims

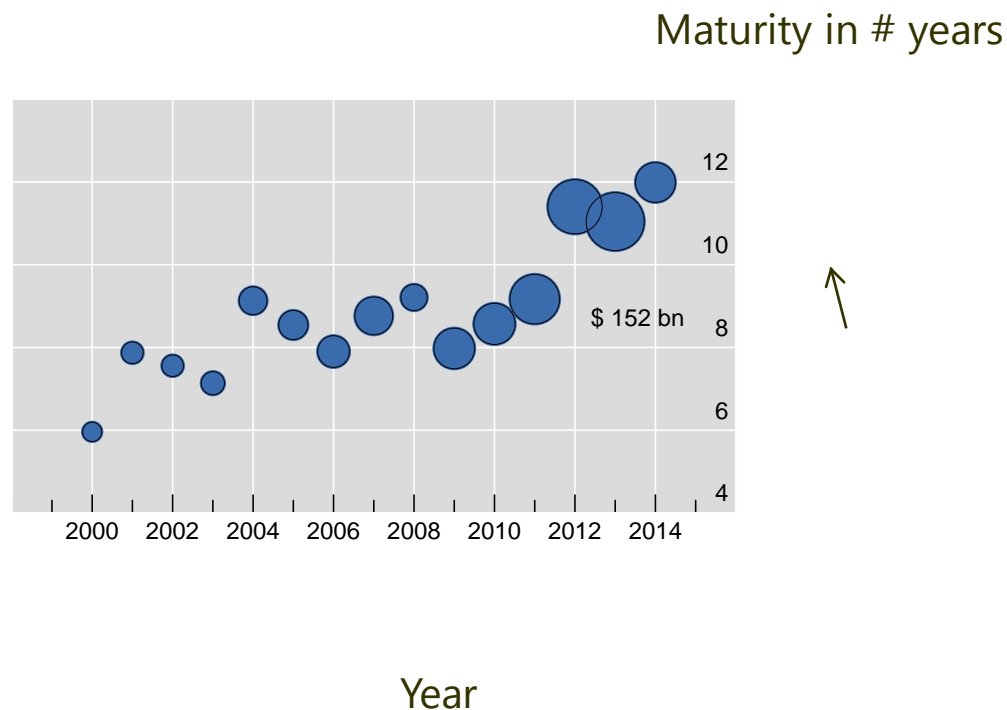
Leverage ratio of EME corporations<sup>1</sup>, ratio to earnings



<sup>1</sup> Firm-level data from S&P Capital IQ for 900 companies in seven EMEs; simple average across countries; gross leverage = total debt/earnings; net leverage = (total debt-cash)/earnings.

# Annual gross issuance of international debt securities by EM non-bank corporations: residence basis

Emerging market economies<sup>1</sup> (weighted average)



<sup>1</sup> Bulgaria, Brazil, Chile, China, Colombia, Czech Republic, Estonia, Hong Kong SAR, Hungary, Indonesia, India, Iceland, Korea, Lithuania, Latvia, Mexico, Malaysia, Peru, Philippines, Poland, Romania, Russia, Singapore, Slovenia, Thailand, Turkey, Venezuela and South Africa.

Sources: Dealogic; Euroclear; Thomson Reuters; Xtrakter; BIS.

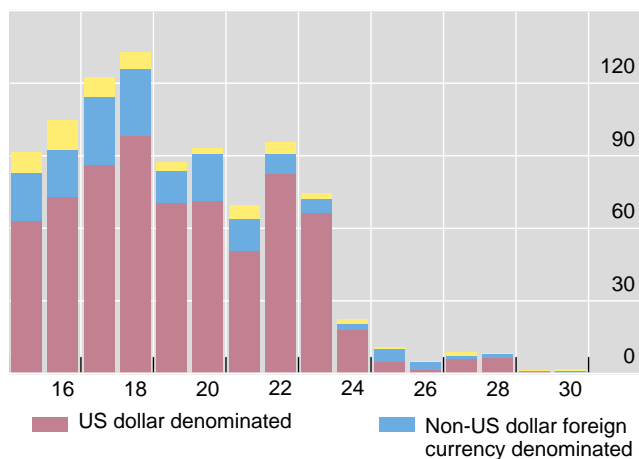
# Longer maturity of outstanding debt securities

- Maturity of debt securities has been increasing
- Average maturity of outstanding EME non-bank corporate international debt securities now exceeds 8 years
- Longer maturities have two effects
  - Mitigates roll-over risk for borrowers
  - But only at expense of increased duration risk for investors
- Longer duration may exacerbate potential for non-linear market disruptions due to flight by investors
- Possibility of perverse impact of increased maturity on roll-over risk if non-linear disruptions shut down dollar bond market for extended period

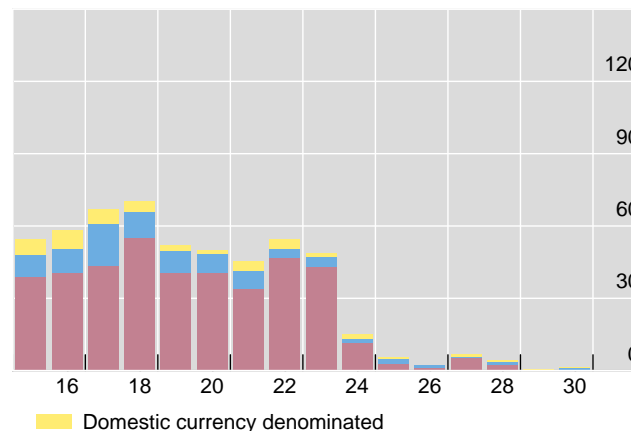
# Projected redemptions on international debt securities of EM non-bank corporations

Emerging market economies, in billions of US dollars

## Nationality basis

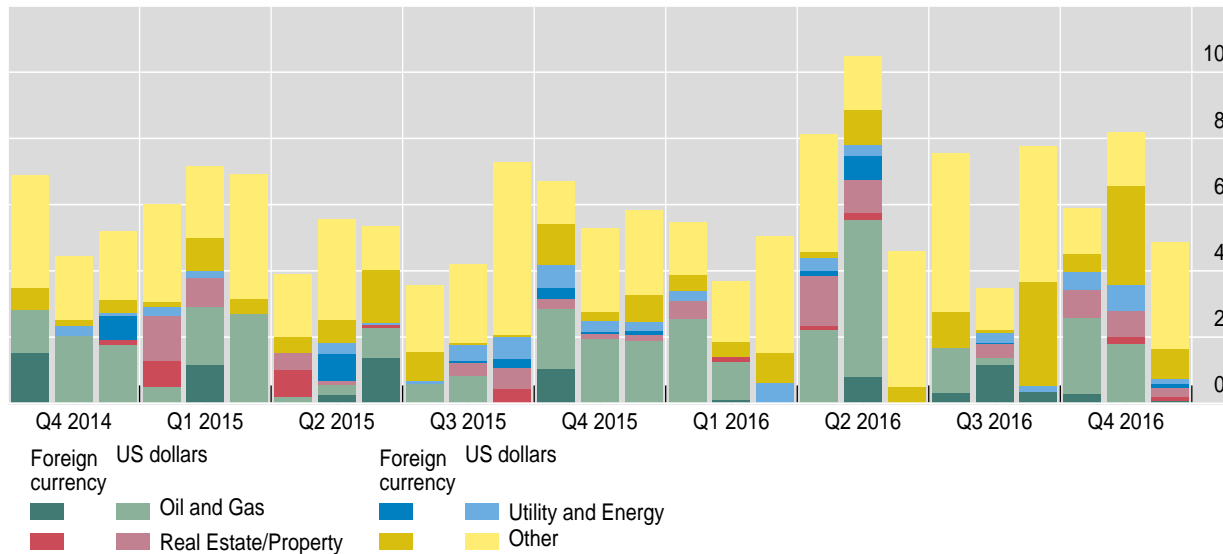


## Residence basis



# Projected redemption of foreign currency denominated EME corporate bonds

In billions of US dollars



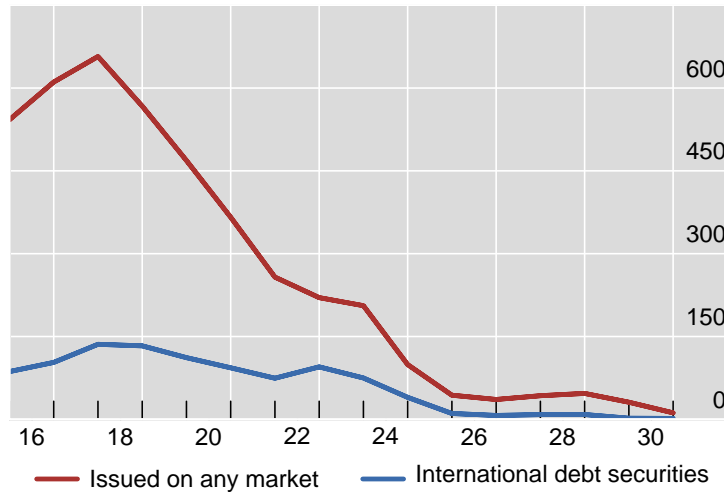
Country sample: Bulgaria, Brazil, Chile, China, Colombia, Czech Republic, Estonia, Hong Kong SAR, Hungary, Indonesia, India, Iceland, Korea, Lithuania, Latvia, Mexico, Malaysia, Peru, Philippines, Poland, Romania, Russia, Singapore, Slovenia, Thailand, Turkey, Venezuela and South Africa. Source: Dealogic.



# Projected redemptions of securities of EM non-bank corporations: by nationality basis

Emerging market economies<sup>1</sup> (weighted average)

USD bn

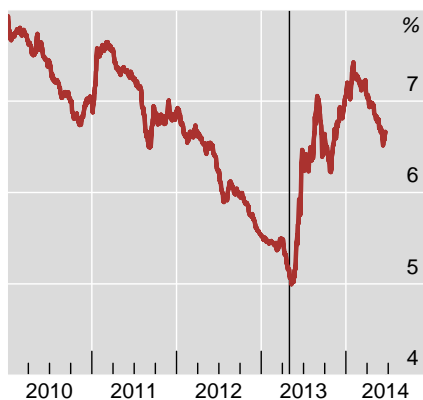


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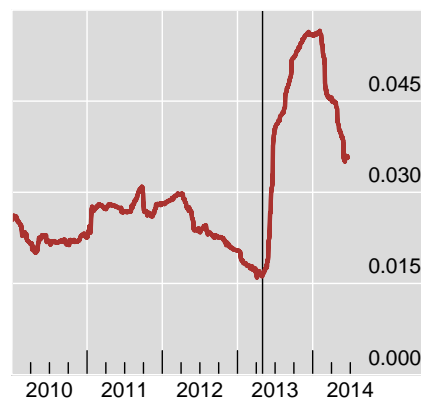
Sources: Dealogic; Euroclear; Thomson Reuters; Xtrakter; BIS.

# Yields of local EM government bonds and the EM exchange rates

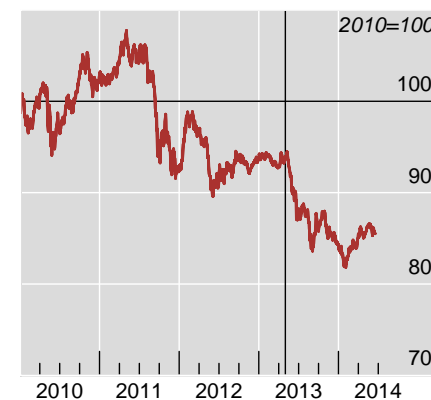
## Five-year govt bond yields



## Volatility of yields



## The exchange rate



The black vertical line corresponds to 1 May 2013 (FOMC statement changing the wording on asset purchases).

Countries included: Brazil, India, Indonesia, Malaysia, Mexico, the Philippines, Poland, South Africa and Turkey.

## Elements in possible distress loop

1. Steepening of local currency yield curve
2. Currency depreciation, corporate distress, freeze in corporate CAPEX, slowdown in growth
3. Runs of wholesale corporate deposits from domestic banking sector
4. Asset managers cut back positions in EME corporate bonds citing slower growth in EMEs
5. Back to Step 1, and repeat...

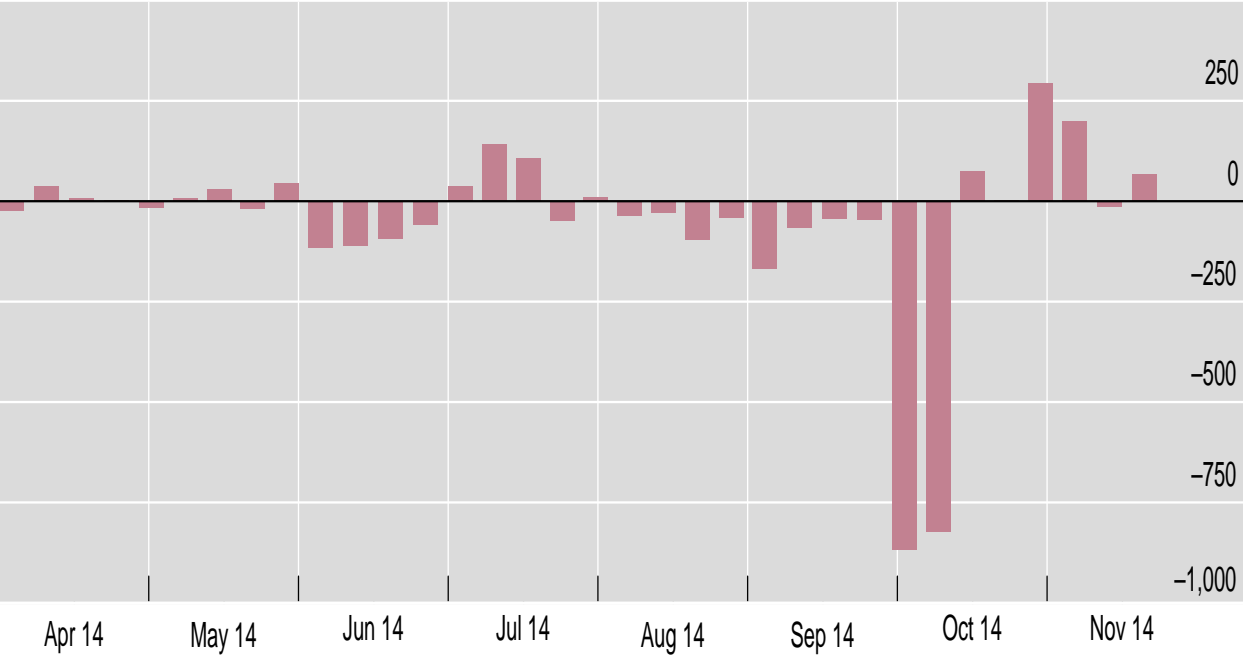
Shin (2013) <http://www.frbsf.org/economic-research/events/2013/november/asia-economic-policy-conference/Shin-AEPC2013.pdf>

# “Leverage-like” behaviour without leverage

- Relative performance evaluation
  - Ranking influences asset gathering ability (La Spada (2014))  
*“The real business of money management is not managing money, it is getting money to manage”* [WSJ 16/11/95]
  - Selling volatility through writing straddles and then hedging price moves with delta hedging
- Marking to market with thin secondary market
- Risk limits and mandates on minimum credit quality
  - What scope for feedback loop with real economy?
- What scope for interactions with other regulatory/accounting restrictions in place for governance motives?

# Asset managers' derivatives positions

Weekly change in institutional asset managers' net long positions; '000 3-month Eurodollar futures contracts



Source: Bloomberg.

# Unfamiliar problems

- Asset managers (not banks) are at the heart of transmission mechanism in the Second Phase of Global Liquidity
- Textbooks say long-term investors are benign, not a force for destabilization
- How do we adjust to the new world?