Monitoring global financial stability with the BIS international banking statistics[1]

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[1] The views presented are those of the author and do not necessarily represent those of the BIS.

I. An Overview of the BIS International Banking Statistics (IBS)

The BIS International Banking Statistics (IBS)

- Reported by internationally active banks (via central banks)
- Published at www.bis.org/statistics/
- Only publicly available source of data that gives insights on the interaction between:
  - international financing and
  - characteristics of the international banking system.
- Powerful tool for spotting trends that other statistics cannot capture.
- Recent data enhancements have addressed previously existing data gaps

Two main types of BIS IBS data

1. Locational Banking Statistics

    - Data on banks' non-consolidated international positions (assets and liabilities)

    - Banks classified according to their residence (as in the balance of payments statistics)

    - Bank offices located in 44 jurisdictions

2. Consolidated Banking Statistics

    - Data on banks' consolidated foreign assets

    - Banks classified according to their nationality (i.e. according to the location of their headquarters)

    - Banks headquartered in 31 countries

Four BIS IBS Datasets

- Four different BIS IBS datasets:

  - Locational Banking Statistics
    1. by Residency (LBS/R)
    2. by Nationality (LBS/N)

  - Consolidated Banking Statistics
    3. on Immediate Borrower basis (CBS/IB)
    4. on Ultimate Risk basis (CBS/UR)

II. Enhancements to the BIS IBS

Enhancements to the BIS IBS (summary)

- Stage 1: Based on existing data

  - Focuses on the LBS

  - Domestic-currency positions vis-à-vis reporting country (LBS/R and LBS/N)

  - Counterparty-country breakdown (LBS/N)

  - GBP and CHF added to currency breakdown (LBS/N)

- Stage 2: Requires collection of additional data from commercial banks

  - Enhanced counterparty-sector breakdown (LBS and CBS)

  - Instrument breakdown for total liabilities (CBS/IB)

  - Maturity breakdown for debt securities liabilities (LBS and CBS/IB)

  - Positions vis-à-vis reporting country (CBS/IB and CBS/UR)

  - Separate reporting of positions for *subsidiaries* and *branches* (LBS/R)

  - Data on total assets, risk-weighted assets, equity and Tier 1 capital (CBS/IB)

Table A1

Simplified overview of the BIS international banking statistics

Data reported from Q2 2012 are shown in blue (Stage 1) and from Q4 2013 in red (Stage 2)

	Locational banking statistics		Consolidated banking statistics	
	By residence (LBS/R)	By nationality (LBS/N)	Immediate risk basis (CBS/IR)	Ultimate risk basis (CBS/UR)
Reporting countries	44	43	31	24
Business reported	Financial assets and liabilities (incl derivatives)		Financial assets (excl derivatives), total assets and liabilities (incl derivatives), capital, risk transfers	Financial assets (excl derivatives), other potential exposures (incl derivatives)
Breakdowns reported				
Bank type	All reporting banks, domestic banks, foreign subsidiaries, foreign branches, consortium banks	not available	All reporting banks, domestic banks, inside-area foreign banks[1], outside-area foreign banks[2]	Domestic banks
Bank nationality	not available	≥43	≥31	≥24
Type of position	Cross-border, local		Total, international (cross-border plus local in FX), local in LC	Total, cross-border, local in all currencies
Currency	Local, USD, EUR, JPY, GBP, CHF, others (optional)		For local in LC positions: >160	not available
Maturity	For liabilities: debt securities (of which: ≤1 year)		For international claims: ≤1 year, 1–2 years, >2 years	not available
Instrument	Loans and deposits, debt securities, other instruments	For liabilities: debt securities	For assets: claims, total assets, risk-weighted assets For liabilities: deposits, debt securities (of which: ≤1 year), derivatives, other liabilities For capital: total equity, Tier 1 capital	For other potential exposures: derivatives, credit commitments, guarantees extended
Counterparty country	>200 (incl reporting country)	≥76 (incl reporting country)	>200 (incl reporting country)	
Counterparty sector	Banks[3] (of which: related offices, central banks), non-banks[4], non-bank financial institutions, non-financial sector (general government, non-financial corporations, households)		Official sector (incl central banks), banks (excl central banks), non-bank private sector, non-bank financial institutions, non-financial private sector (non-financial corporations, households)	

[1] Inside-area foreign banks not consolidated by their parent are encouraged to report the same breakdowns as domestic banks. [2] Report international claims only. [3] Prior to Q4 2013, reported for LBS/N only. [4] Prior to Q4 2013, reported for LBS/R only.

What has become available after enhancements?

1. Currency-sector-country breakdown of *aggregated* positions (stage 1)
   - For first time, counterparty-country breakdown of banks' aggregated _liabilities_
   - Asset/liability positions proper FX adjustment ➔ proper growth rates

2. Foreign _and_ domestic positions (stage 1)
   - Judge importance of foreign claims for national banking systems
   - Provides missing counterparty sector for LCLC and LLLC in CBS/IB

3. Refined counterparty-sector breakdown of exposures (stage 2)
   - Track reporting banks' exposures to non-bank financial sector

4. Full consolidated balance sheet and funding instruments (stage 2)
   - Balance sheet size (including non-financial assets)
   - Capital and equity information

1a. Country breakdown of banks' *aggregated* liabilities

- **Until now:**
  - ✓ Cross-border claims on country X   (LBS/R)
  - ✓ Cross-border liabilities to country X   (LBS/R)
  - ✓ Foreign claims of bank X   (CBS/IB and CBS/UR)
  - ✗ Total foreign liabilities of bank X   (estimate using LBS/N and CBS/IB)
  - ✗ Foreign liabilities of bank X to country Y

- **After Stage 1:**
  - ✓ Total foreign liabilities of bank X
    - Inclusion of positions vis-à-vis RC is statistical check across CBS/IB and LBS/N

  - ✓ "Identified" foreign liabilities of bank X to country Y
    - Bank X (eg "UK banks") formed as sum across reporting countries (excl. interoffice)
    - Difficult to track country/sector of debt securities liabilities

1b. Asset/liability positions *by currency and vis-à-vis country*

- Until now: FX adjustment of flows "cleanly" possible for ....

    - ✓ *Total* cross-border positions vis-à-vis country Y   (LBS/R)
    - ✓ *Total* foreign claims *of* bank X   (CBS/IB and LBS/N combination)
    - ✗ Foreign claim of bank X on country Y
        - ➔ eg "FX-adjusted growth in UK banks' foreign claims on Germany"
        - ➔ Can't easily track deleveraging

- After Stage 1: new LBS/N ➔ currency underlay for CBS/IB claims

    - ✓ FX-adjusted foreign claim flows of bank X to country Y

Details jointly reported in the BIS international banking statistics[1]

Table 2

	Residence of reporting bank	Nationality of reporting bank	Residence of counterparty	Currency of denomination	Instrument
Consolidated banking statistics[2]	No	Yes	Yes	No[3]	No
Locational banking statistics					
Data by residence	Yes	No	Yes	Yes	Yes
Historical data by nationality[4]	Yes	Yes	No	Yes	No
Enhanced data by nationality[5]	Yes	Yes	**<u>Yes</u>**	Yes	No

[1] Yes indicates breakdowns that are jointly and synchronously reported, ie matrix of details that are crossed with each other. [2] Details reported for claims and other potential exposures. [3] Except local positions of foreign affiliates denominated in local currencies. [4] Reported prior to end-June 2012. [5] Reported since end-June 2012.

2. Foreign _and_ domestic positions

- Until now:
  - ✓ Foreign claims and liabilities (CBS/IB)
  - ✗ No domestic positions ➔ difficult to judge if foreign positions are "large"
- After Stage 1:
  - ✓ All financial claims/liabilities, including domestic positions vis-à-vis reporting country
  - ✓ LBS/N also provides counterparty sector breakdown for domestic positions
    - ➔ Consistency check for CBS/IB and LBS/N

3. Refined counterparty-sector breakdown of exposures

- Until now:
  - ✓ Bank, non-bank private sector, public sector (CBS/IB)
  - ✗ Mortgage lending and exposure to households
  - ✗ Exposure to non-bank financials and "shadow banking"
- After Stage 2:
  - ✓ Reporting banks' exposures to households and non-bank financials

4. Full consolidated balance sheet and funding instruments

- ● Until now:
  - ✓ Foreign claims   (CBS/IB)
  - ✓ Cross-border claims on home country ("inside area consolidated" bank type 3)
  - ✗ Domestic positions and, thus, importance of foreign claims
  - ✗ Funding instruments in consolidated liabilities

- ● After Stage 2:
  - ✓ Domestic positions ➔ total financial claims
  - ✓ Non-financial assets ➔ "full balance sheet" (TA = TL +E)
  - ✓ Instrument breakdown of liabilities

III. Using the BIS IBS data for policy analysis

BIS Global Liquidity Indicators

Global bank credit aggregates, by borrower region

At constant end-Q3 2014 exchange rates

Graph I.2
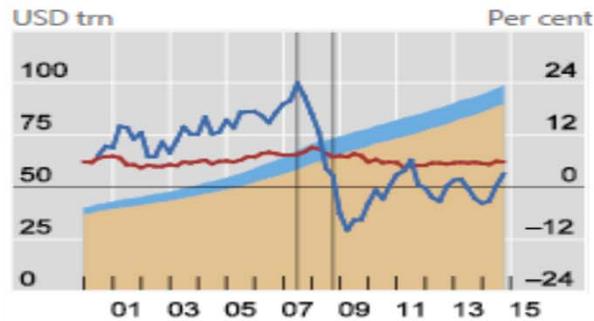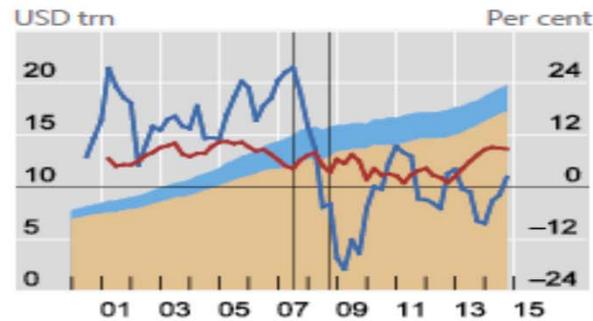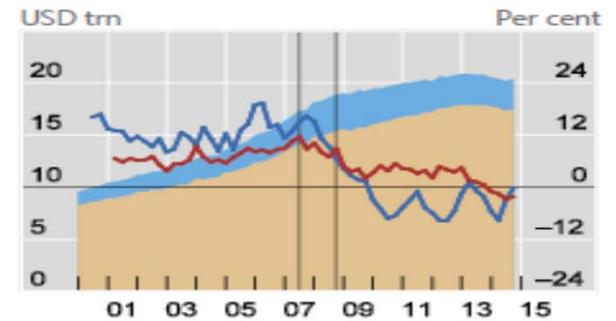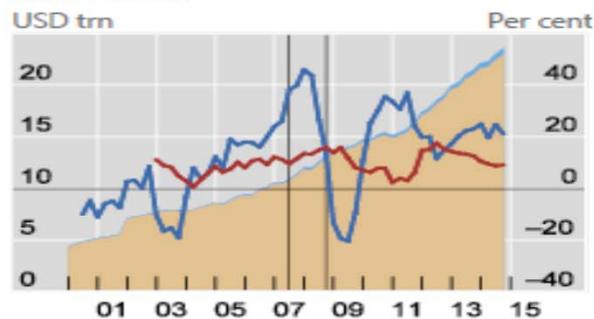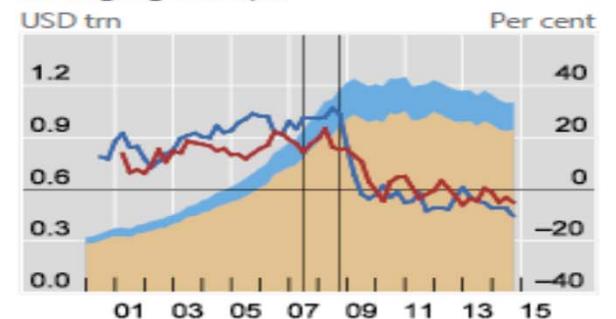
The vertical lines indicate the 2007 beginning of the global financial crisis and the 2008 collapse of Lehman Brothers.

[1] Aggregate for a sample of 56 reporting countries. [2] Total bank credit to non-bank borrowers (including governments), adjusted using various components of the BIS banking statistics to produce a breakdown by currency for both cross-border credit and domestic credit.

Sources: IMF, *International Financial Statistics*; BIS international banking statistics; BIS calculations.

BIS Global Liquidity Indicators

Global credit in US dollars, euro and Japanese yen to the non-financial sector — Graph I.3

Stocks, in trillions of US dollars | Year-on-year growth, in per cent

US dollar credit
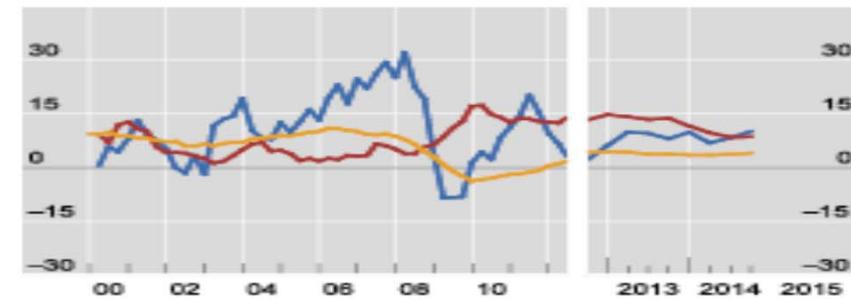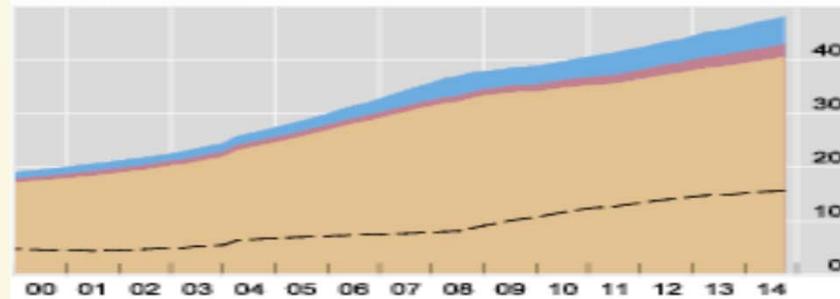
Euro credit[1]
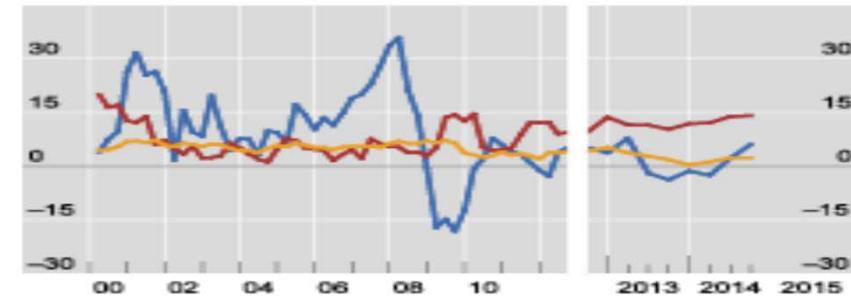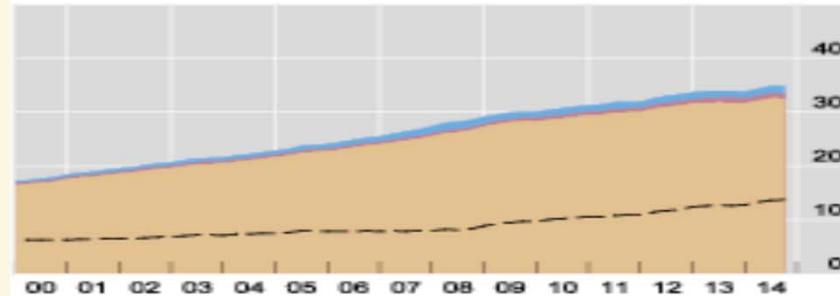
Japanese yen credit[1]
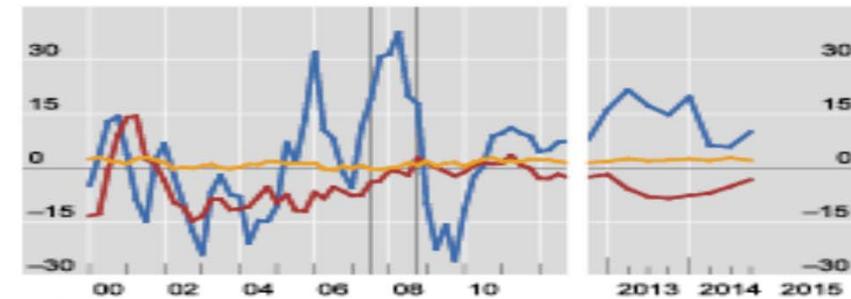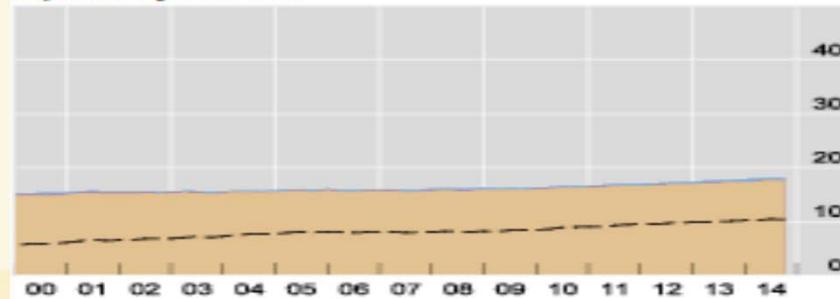
Credit to residents[2]
Of which: credit to government
Credit to non-residents:
Debt securities
Bank loans[3]

Credit to non-residents:
Debt securities
Bank loans

Credit to residents

EME capital flow vulnerability measures

- The BIS international banking statistics can be used to construct four measures of the degree to which a country is vulnerable to sudden capital withdrawals through the banking system.

   1. The fraction of <u>short-term international claims</u> relative to total international lending

      - measures the degree to which an economy is exposed to a non-renewal of short-term foreign bank credit to its residents.

   2. The share of <u>cross-border lending</u> in total foreign lending

      - sends a signal about the stability of funding from foreign banks since cross-border claims tend to be much more volatile than their locally booked counterparts.

EME capital flow vulnerability measures

3. The proportion of cross-border claims held in the form of <u>tradable debt securities</u> (as opposed to non-tradable loans)

   - quantifies the ease with which foreign creditors could dispose of the claims they have on the residents of a given country.

4. The <u>foreign bank participation rate</u>

   - gives an indication of the fraction of total credit to non-banks in a given economy that is provided by foreign-owned banks.

While none of these four indicators is perfect on its own, taken as a group they can paint a fairly informative picture of the vulnerability of various emerging market economies to sudden capital withdrawals.

Vulnerability measures for selected EMEs

Measures of vulnerability to sudden capital withdrawals through the banking system

End-Q2 2011, selected emerging market economies
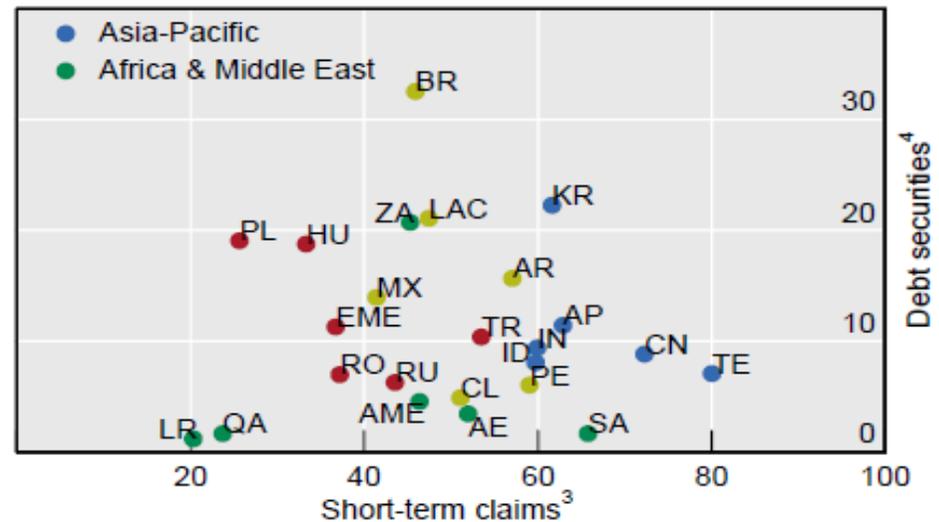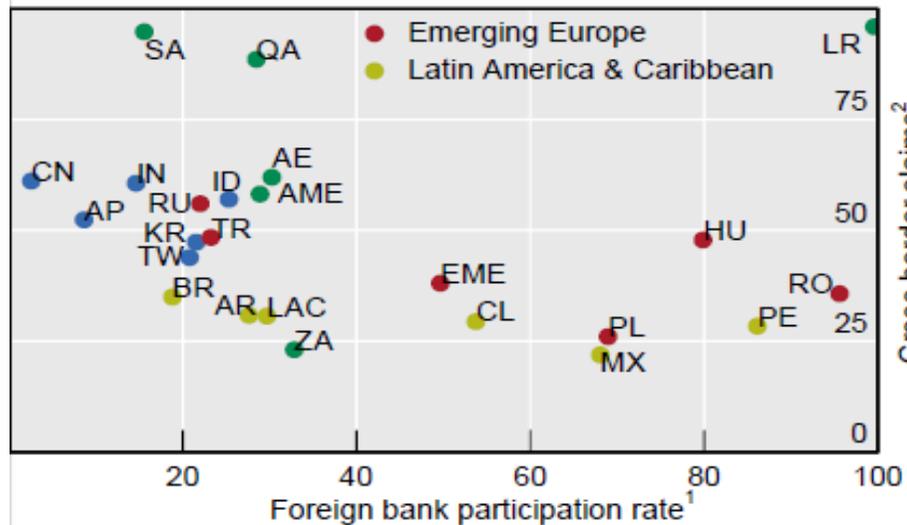
AE = United Arab Emirates; AME = emerging Africa & Middle East; AP = emerging Asia-Pacific; AR = Argentina; BR = Brazil; CL = Chile; CN = China; EME = emerging Europe; HU = Hungary; ID = Indonesia; IN = India; KR = Korea; LAC = emerging Latin America & Caribbean; LR = Liberia; MX = Mexico; PE = Peru; PL = Poland; QA = Qatar; RO = Romania; RU = Russia; SA = Saudi Arabia; TR = Turkey; TW = Chinese Taipei; ZA = South Africa.

[1] BIS reporting banks' foreign claims on non-banks as a percentage of total credit to non-banks.   [2] BIS reporting banks' cross-border claims as a percentage of their total foreign claims.   [3] BIS reporting banks' international claims with remaining maturity of up to one year as a percentage of their total international claims.   [4] BIS reporting banks' debt securities as a percentage of their total cross-border claims.

Sources: IMF; BIS consolidated banking statistics (immediate borrower basis and ultimate risk basis); BIS locational banking statistics by residence.

Graph A

Cross-border bank lending during the 2013 taper tantrum

- During the 2013 taper tantrum, cross-border bank lending to EMEs slowed sharply.
  - The growth rate of cross-border claims dropped from 10% to 2.5%
  - The intensity of the deceleration varied considerably across lenders and borrowers.
- This raises important questions for policymakers:
  - What drove this variation?
  - Were the factors that drove it mainly on:
    - the borrower side?
    - the lender side?

The analysis of the above questions was facilitated by the BIS IBS enhancements

Data availability in the BIS International Banking Statistics

By data dimension

Table 1

	Nationality of lending bank (A)	Residence of borrower (B)	Currency composition[3] (C)
Consolidated data[1]	Yes	Yes	No
Locational data[2]			
by residence	No	Yes	Yes
by nationality	Yes	No	Yes
Stage 1 data	Yes	Yes	Yes

[1] The BIS consolidated banking statistics group claims according to the nationality of banks (ie according to the location of banks' headquarters), netting out inter-office positions. [2] The BIS locational banking statistics define creditors and debtors according to their residence, consistently with national accounts and balance of payments principles. [3] In addition to exchange rate fluctuations, the quarterly flows in the locational datasets are corrected for breaks in the reporting population.

Changes in growth rate of cross-border bank lending during the taper tantrum[1]

By nationality of lending bank (columns)[2] and residence of borrower (rows)[3]

Graph 1

Legend:

- Less than −50%
- Between −50% and −10%
- Between −10% and −0%
- Between 0% and 10%
- Between 10% and 50%
- Greater than 50%
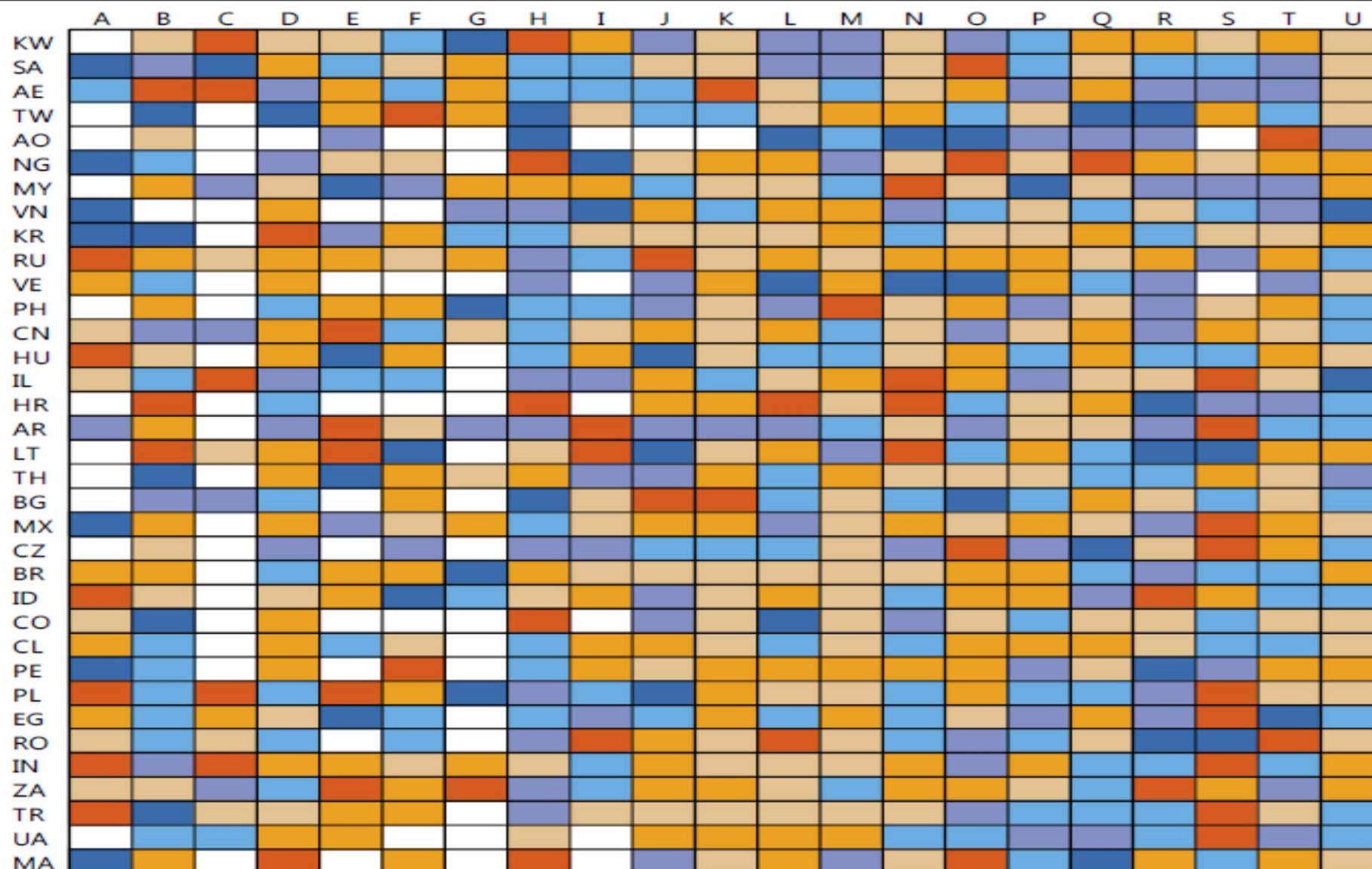
Main drivers of the slow-down: a decomposition analysis

- Factors associated with borrower EMEs accounted for the bulk of the explained variation in cross-border lending

  - **EME factors** account for around **70%** of the explained variation.

    - The US dollar share of cross-border lending: 45%

    - The current account balance: 25%.

  - **Lender factor** (banks' CDS spreads): **30%** of the explained variation.

Decomposition of the change in growth rate of cross-border bank lending to EMEs [1]   Graph 2

Selected lender banking systems[2]
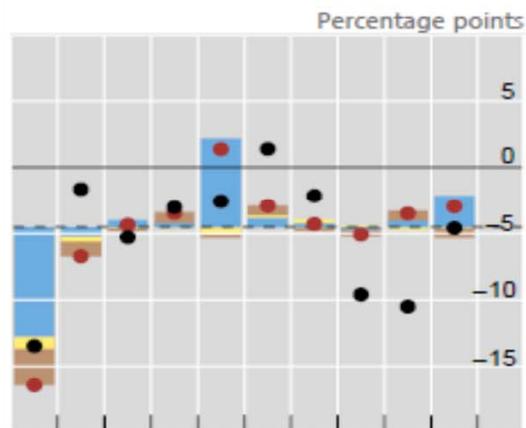
Selected borrower EMEs[2]
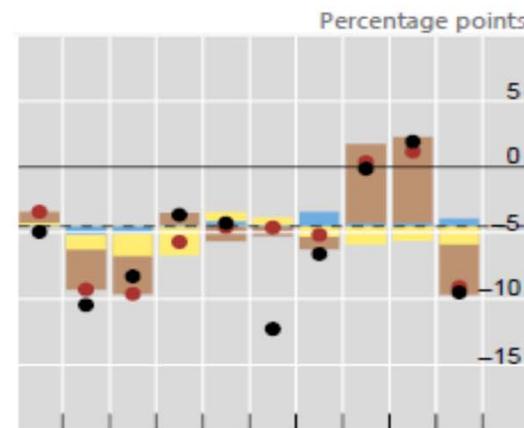
Share of economic factors
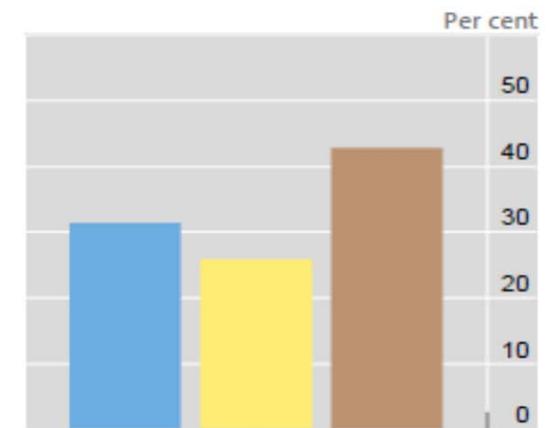
BR CA CH DE ES FR GB JP NL US

CN BR IN TR KR RU MX PL CZ PE

- Actual change in the growth rate
- Estimated change in the growth rate

Banks' CDS spread change[3]

Current account balance[3]
USD share of lending[3]

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