

# Annexes

## BIS Statistics: Charts

The statistics published by the BIS are a unique source of information about the structure of and activity in the global financial system. BIS statistics are presented in graphical form in this annex and in tabular form in the *BIS Statistical Bulletin*, which is published concurrently with the *BIS Quarterly Review*. For introductions to the BIS statistics and a glossary of terms used in this annex, see the *BIS Statistical Bulletin*.

The data shown in the charts in this annex can be downloaded from the *BIS Quarterly Review* page on the BIS website ([www.bis.org/publ/quarterly.htm](http://www.bis.org/publ/quarterly.htm)). Data may have been revised or updated subsequent to the publication of this annex. For the latest data and to download additional data, see the statistics pages on the BIS website ([www.bis.org/statistics/index.htm](http://www.bis.org/statistics/index.htm)). A release calendar provides advance notice of publication dates ([www.bis.org/statistics/relcal.htm](http://www.bis.org/statistics/relcal.htm)).

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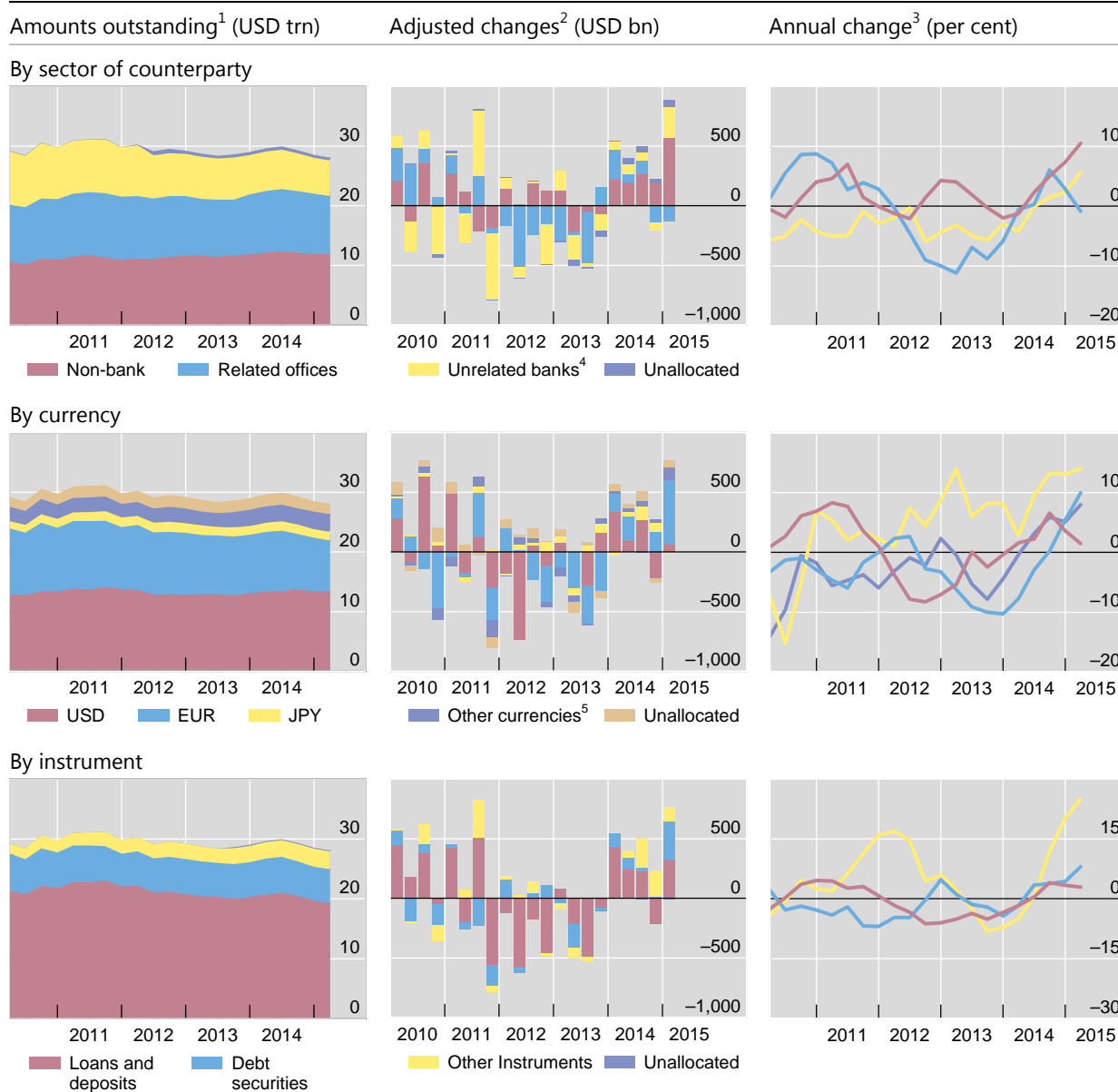
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## A Locational banking statistics

Cross-border claims, by sector, currency and instrument

Graph A.1



Further information on the BIS locational banking statistics is available at [www.bis.org/statistics/bankstats.htm](http://www.bis.org/statistics/bankstats.htm).

<sup>1</sup> At quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. <sup>2</sup> Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. <sup>3</sup> Geometric mean of quarterly percentage adjusted changes. <sup>4</sup> Includes central banks and banks unallocated by subsector between intragroup and unrelated banks. <sup>5</sup> Other reported currencies, calculated as all currencies minus USD, EUR, JPY and unallocated currencies. The currency is known but reporting is incomplete.

# Cross-border claims, by borrowing region

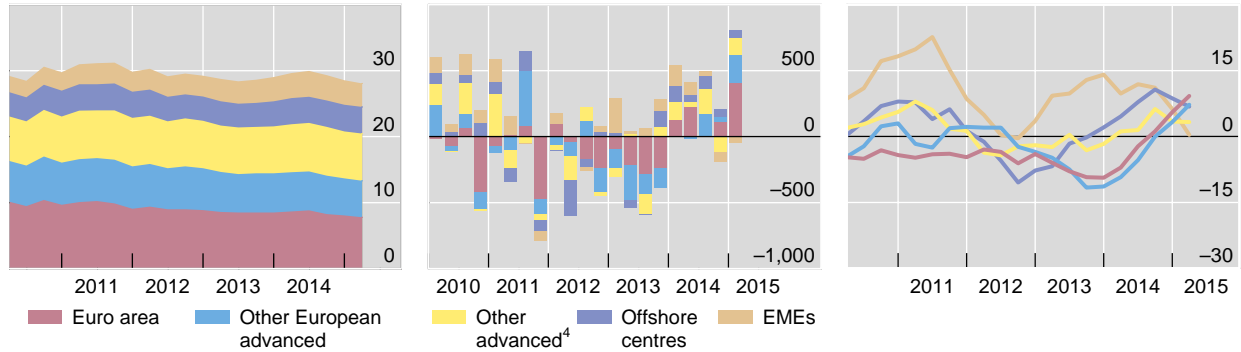
Graph A.2

Amounts outstanding<sup>1</sup> (USD trn)

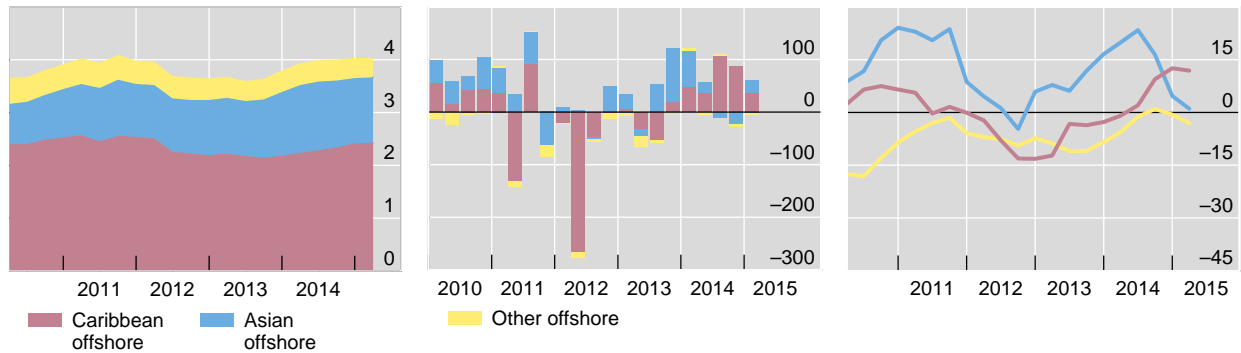
Adjusted changes<sup>2</sup> (USD bn)

Annual change<sup>3</sup> (per cent)

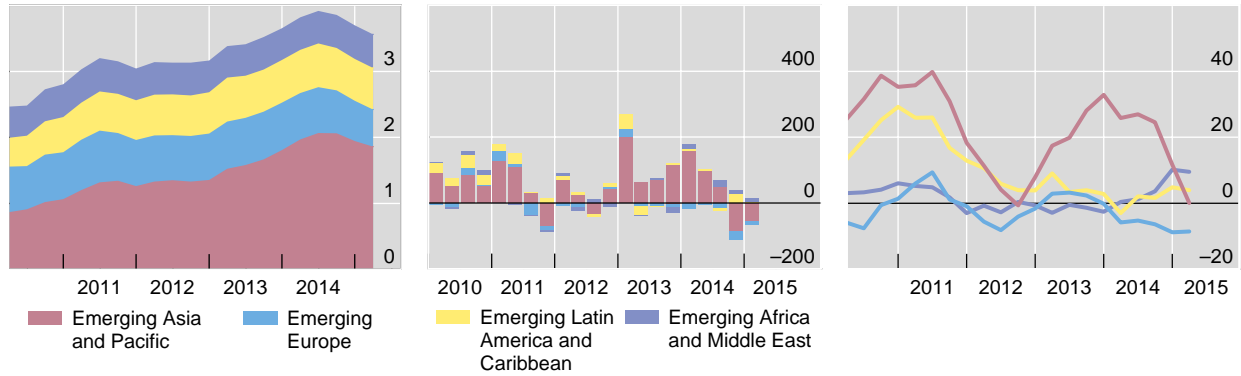
On all countries



On offshore centres



On emerging market economies

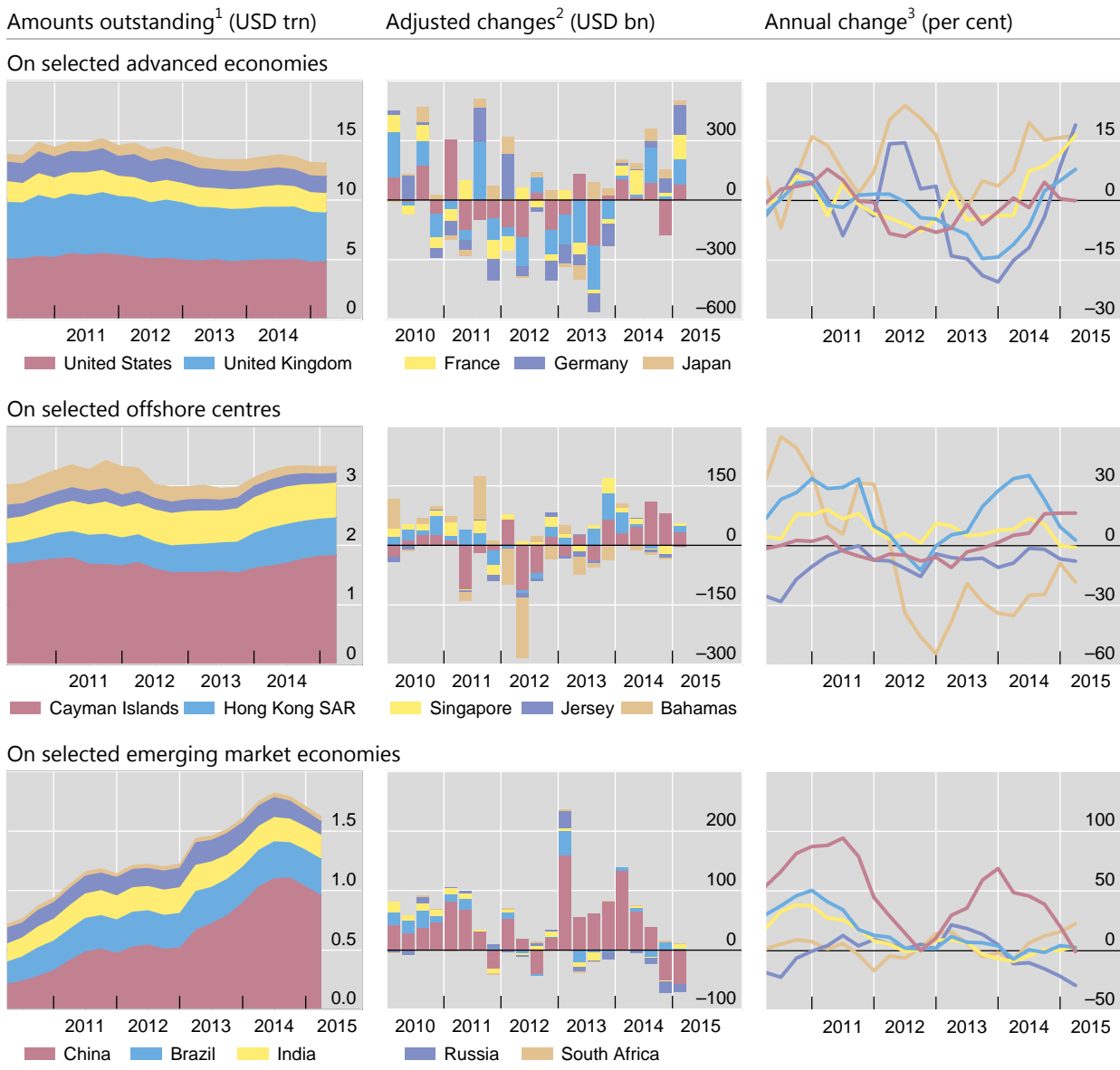


Further information on the BIS locational banking statistics is available at [www.bis.org/statistics/bankstats.htm](http://www.bis.org/statistics/bankstats.htm).

<sup>1</sup> At quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. <sup>2</sup> Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. <sup>3</sup> Geometric mean of quarterly percentage adjusted changes. <sup>4</sup> Includes international organisations and cross-border amounts unallocated by residence of counterparty.

Cross-border claims, by borrowing country

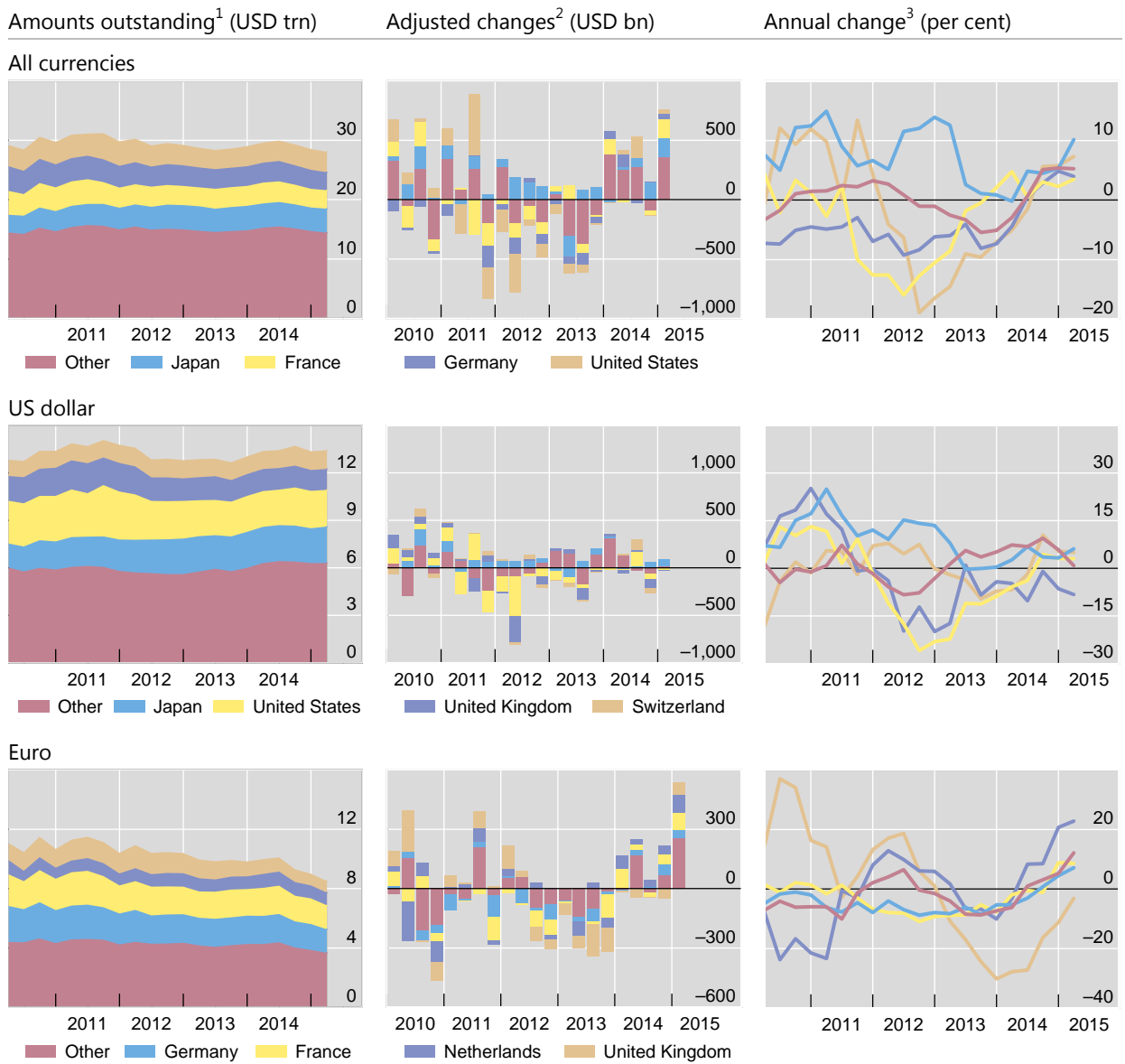
Graph A.3



Further information on the BIS locational banking statistics is available at [www.bis.org/statistics/bankstats.htm](http://www.bis.org/statistics/bankstats.htm).

<sup>1</sup> At quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. <sup>2</sup> Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. <sup>3</sup> Geometric mean of quarterly percentage adjusted changes.

Cross-border claims, by nationality of reporting bank and currency of denomination Graph A.4

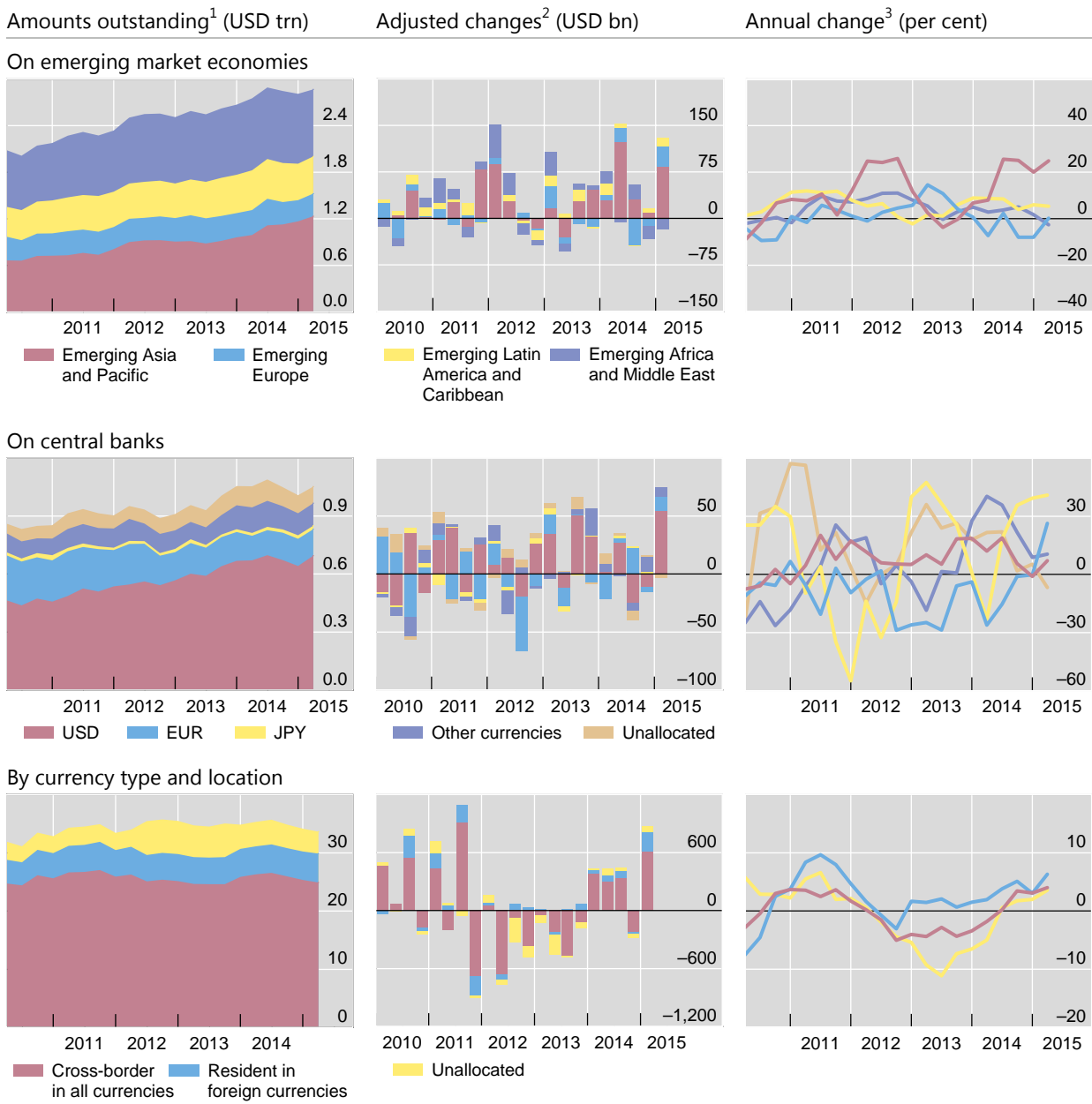


Further information on the BIS locational banking statistics is available at [www.bis.org/statistics/bankstats.htm](http://www.bis.org/statistics/bankstats.htm).

<sup>1</sup> At quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. <sup>2</sup> Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. <sup>3</sup> Geometric mean of quarterly percentage adjusted changes.

# Cross-border liabilities of reporting banks

Graph A.5



Further information on the BIS locational banking statistics is available at [www.bis.org/statistics/bankstats.htm](http://www.bis.org/statistics/bankstats.htm).

<sup>1</sup> At quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. <sup>2</sup> Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. <sup>3</sup> Geometric mean of quarterly percentage adjusted changes.

## B Consolidated banking statistics

### Consolidated claims of reporting banks on advanced economies

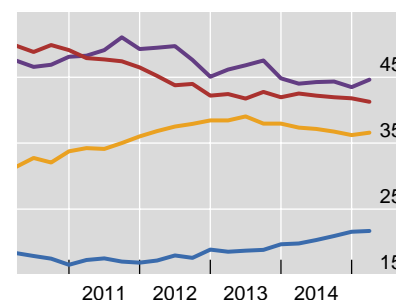
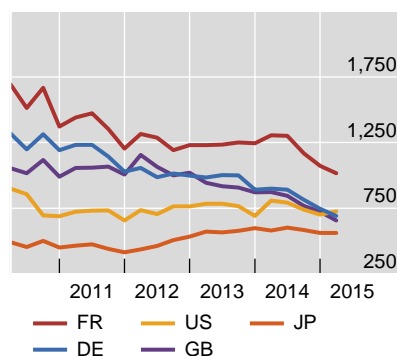
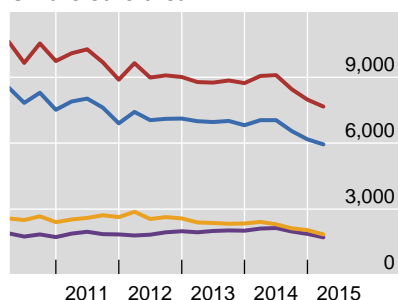
Graph B.1

Foreign claims and local positions<sup>1,2</sup>  
(USD bn)

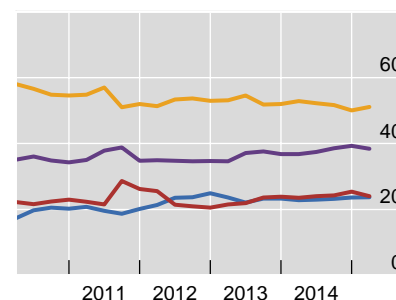
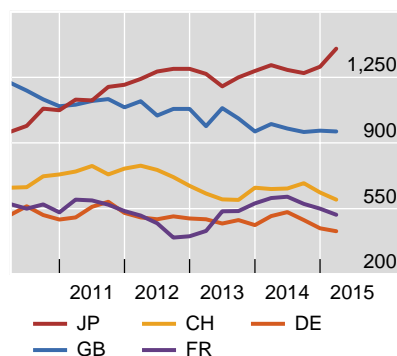
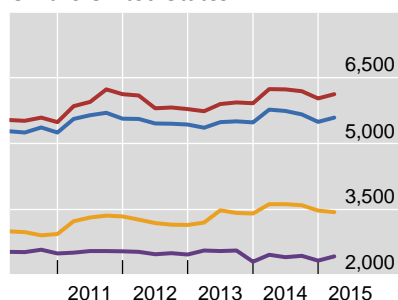
Foreign claims of selected  
creditors<sup>1,3</sup> (USD bn)

International claims, by sector and  
maturity<sup>4</sup> (per cent)

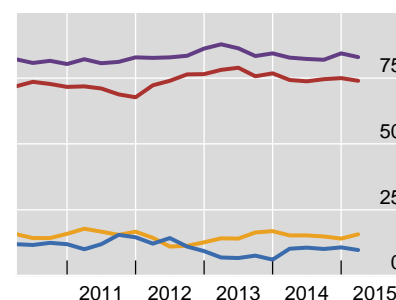
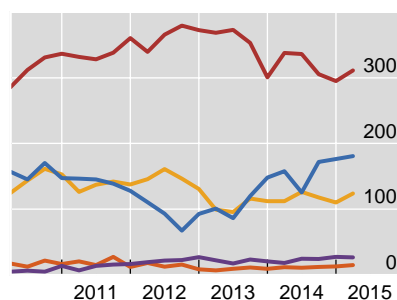
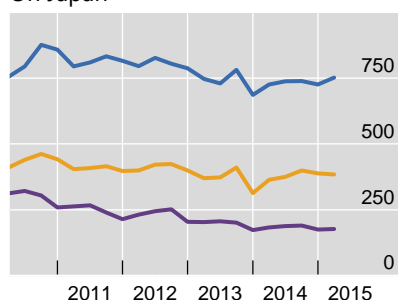
On the euro area



On the United States



On Japan



— Foreign claims (ultimate)<sup>5</sup>  
— Foreign claims (immediate)<sup>6</sup>  
— Local claims in local currency  
— Local liabilities in local currency

— US — GB — NL  
— FR — AU

— Banks  
— Official sector  
— Non-bank private sector  
— Up to and including 1 year

Further information on the BIS consolidated banking statistics is available at [www.bis.org/statistics/bankstats.htm](http://www.bis.org/statistics/bankstats.htm).

AU = Australia; CH = Switzerland; DE = Germany; FR = France; GB = United Kingdom; JP = Japan; NL = Netherlands; US = United States.

<sup>1</sup> Amounts outstanding at quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. <sup>2</sup> Excludes domestic claims, ie claims on residents of a bank's home country. <sup>3</sup> Foreign claims on an ultimate risk basis, by nationality of reporting bank. The banking systems shown are not necessarily the largest foreign bank creditors on each reference date. <sup>4</sup> As a percentage of international claims outstanding. <sup>5</sup> On an ultimate risk basis. <sup>6</sup> On an immediate counterparty basis. Includes the unconsolidated claims of banks headquartered outside but located inside CBS-reporting countries.



## Consolidated claims of reporting banks on emerging market economies

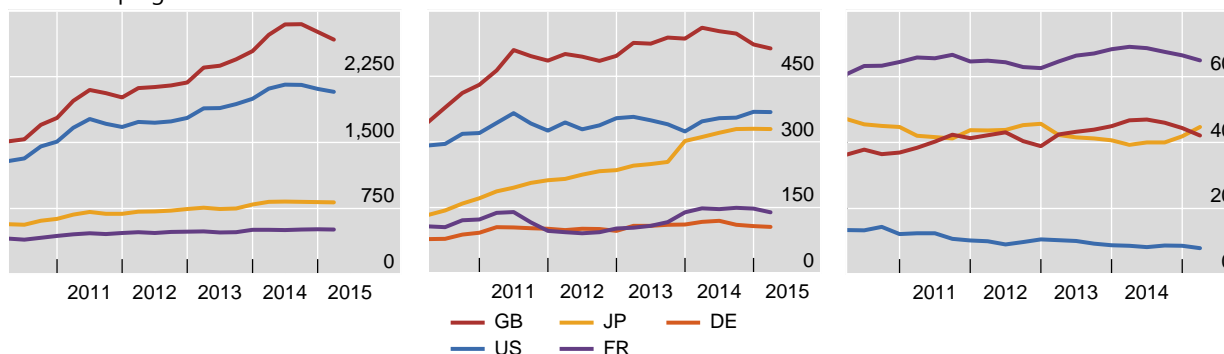
Graph B.2

Foreign claims and local positions<sup>1,2</sup>  
(USD bn)

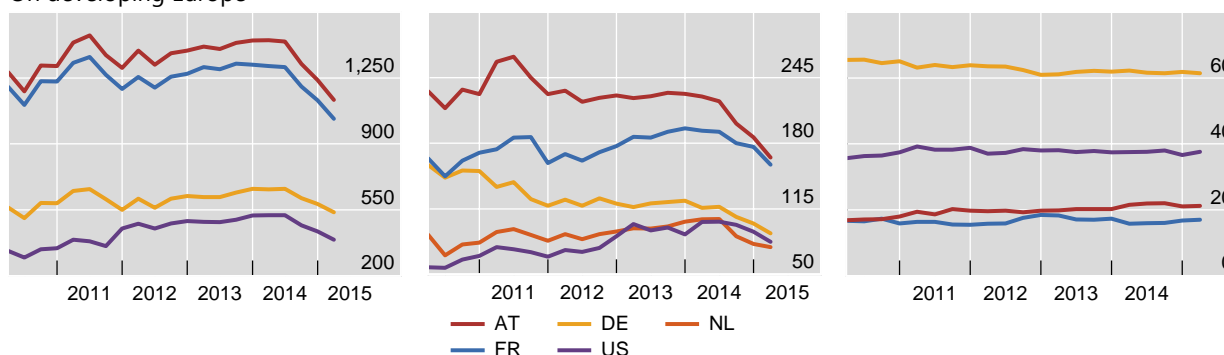
Foreign claims of selected  
creditors<sup>1,3</sup> (USD bn)

International claims, by sector and  
maturity<sup>4</sup> (per cent)

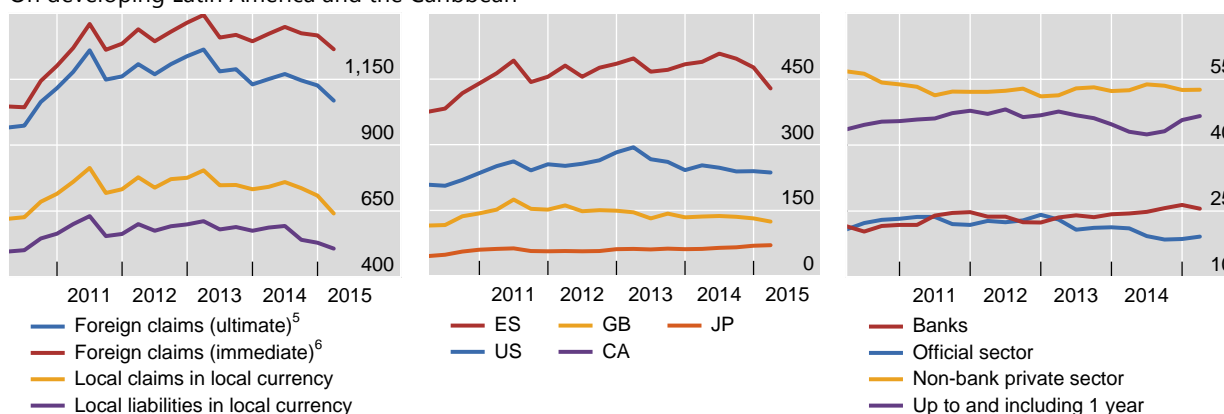
### On developing Asia and the Pacific



### On developing Europe



### On developing Latin America and the Caribbean



Further information on the BIS consolidated banking statistics is available at [www.bis.org/statistics/bankstats.htm](http://www.bis.org/statistics/bankstats.htm).

AT = Austria; CA = Canada; DE = Germany; ES = Spain; FR = France; GB = United Kingdom; JP = Japan; NL = Netherlands; US = United States.

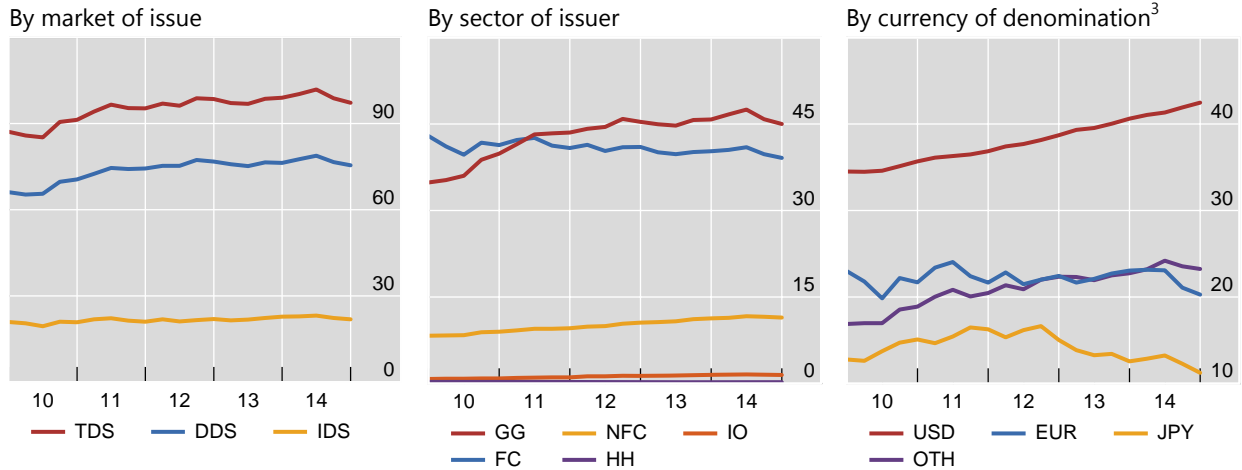
<sup>1</sup> Amounts outstanding at quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. <sup>2</sup> Excludes domestic claims, ie claims on residents of a bank's home country. <sup>3</sup> Foreign claims on an ultimate risk basis, by nationality of reporting bank. The banking systems shown are not necessarily the largest foreign bank creditors on each reference date. <sup>4</sup> As a percentage of international claims. <sup>5</sup> On an ultimate risk basis. <sup>6</sup> On an immediate counterparty basis. Includes the unconsolidated claims of banks headquartered outside but located inside CBS-reporting countries.

## C Debt securities statistics

### Global debt securities markets<sup>1</sup>

Amounts outstanding, in trillions of US dollars<sup>2</sup>

Graph C.1



Further information on the BIS debt securities statistics is available at [www.bis.org/statistics/secstats.htm](http://www.bis.org/statistics/secstats.htm).

TDS = total debt securities; DDS = domestic debt securities; IDS = international debt securities; GG = general government; NFC = non-financial corporations; IO = international organisations; FC = financial corporations; HH = households and non-profit institutions serving households; USD = US dollar; EUR = euro; JPY = yen; OTH = other currencies.

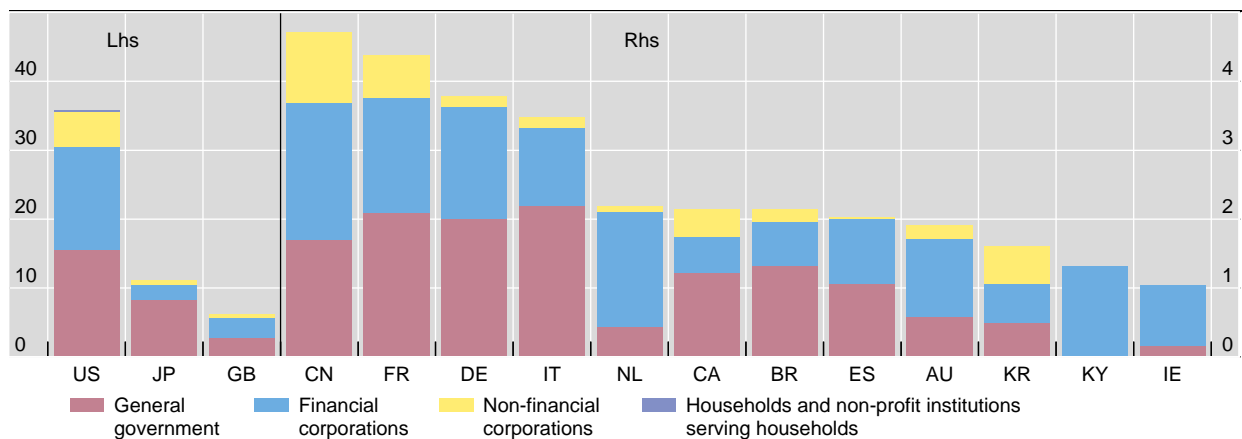
<sup>1</sup> Sample of countries varies across breakdowns shown. For countries that do not report TDS, data are estimated by the BIS as DDS plus IDS. For countries that do not report either TDS or DDS, data are estimated by the BIS as IDS. <sup>2</sup> At quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. <sup>3</sup> Where a currency breakdown is not available, DDS are assumed to be denominated in the local currency.

Sources: IMF; Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; national data; BIS debt securities statistics; BIS calculations.

### Total debt securities, by residence and sector of issuer<sup>1</sup>

Amounts outstanding at end-December 2014, in trillions of US dollars<sup>2</sup>

Graph C.2



Further information on the BIS debt securities statistics is available at [www.bis.org/statistics/secstats.htm](http://www.bis.org/statistics/secstats.htm).

AU = Australia; BR = Brazil; CA = Canada; CN = China; DE = Germany; ES = Spain; FR = France; GB = United Kingdom; IE = Ireland; IT = Italy; JP = Japan; KR = Korea; KY = Cayman Islands; NL = Netherlands; US = United States.

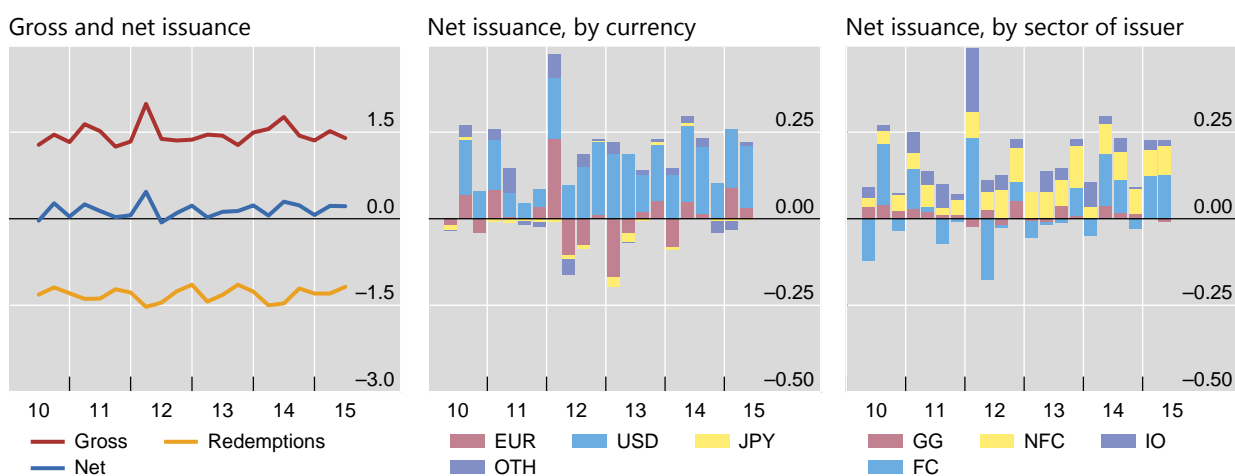
<sup>1</sup> For countries that do not report TDS, data are estimated by the BIS as DDS plus IDS. <sup>2</sup> Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

Sources: National data; BIS debt securities statistics.

## International debt securities, by currency and sector

In trillions of US dollars

Graph C.3



Further information on the BIS debt securities statistics is available at [www.bis.org/statistics/secstats.htm](http://www.bis.org/statistics/secstats.htm).

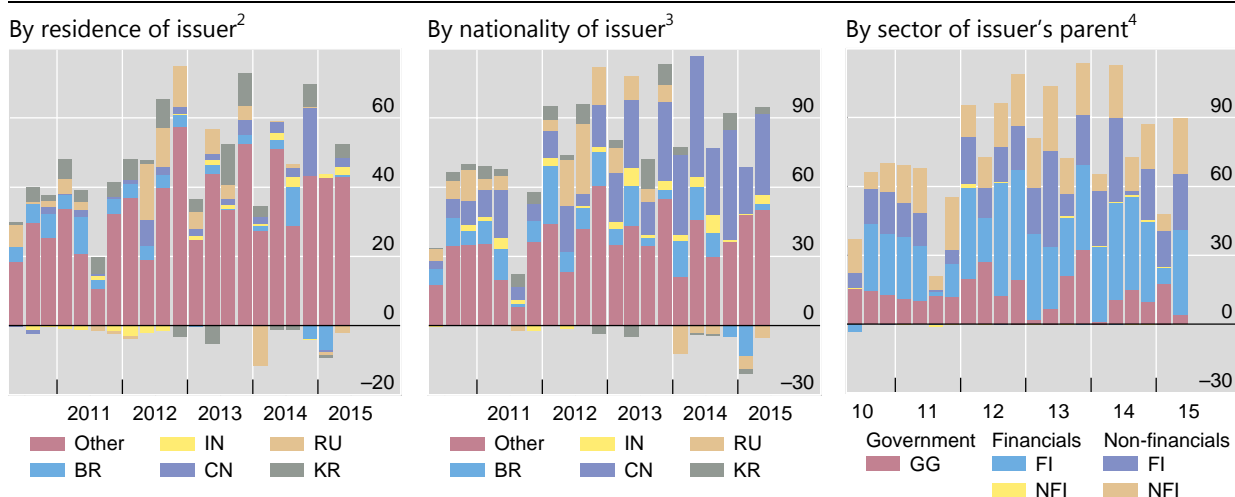
EUR = euro; USD = US dollar; JPY = yen; OTH = other currencies; GG = general government; FC = financial corporations; NFC = non-financial corporations; IO = international organisations.

Sources: IMF; Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; BIS debt securities statistics.

## International debt securities issued by borrowers from emerging market economies<sup>1</sup>

Net issuance, in billions of US dollars

Graph C.4



Further information on the BIS debt securities statistics is available at [www.bis.org/statistics/secstats.htm](http://www.bis.org/statistics/secstats.htm).

BR = Brazil; CN = China; IN = India; KR = Korea; RU = Russia; GG = general government; FI = financial corporations; NFI = non-financial corporations.

<sup>1</sup> For the sample of countries comprising emerging market economies, see the glossary to the *BIS Statistical Supplement*. <sup>2</sup> Country where issuer resides. <sup>3</sup> Country where issuer's controlling parent is located. Includes issuance by financing vehicles incorporated in offshore financial centres with parents based in an emerging market economy. <sup>4</sup> By nationality, ie issuers with parents based in an emerging market economy. Issuers are grouped by sector of their parent.

Sources: IMF; Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; BIS debt securities statistics.

## D Derivatives statistics

### Exchange-traded derivatives

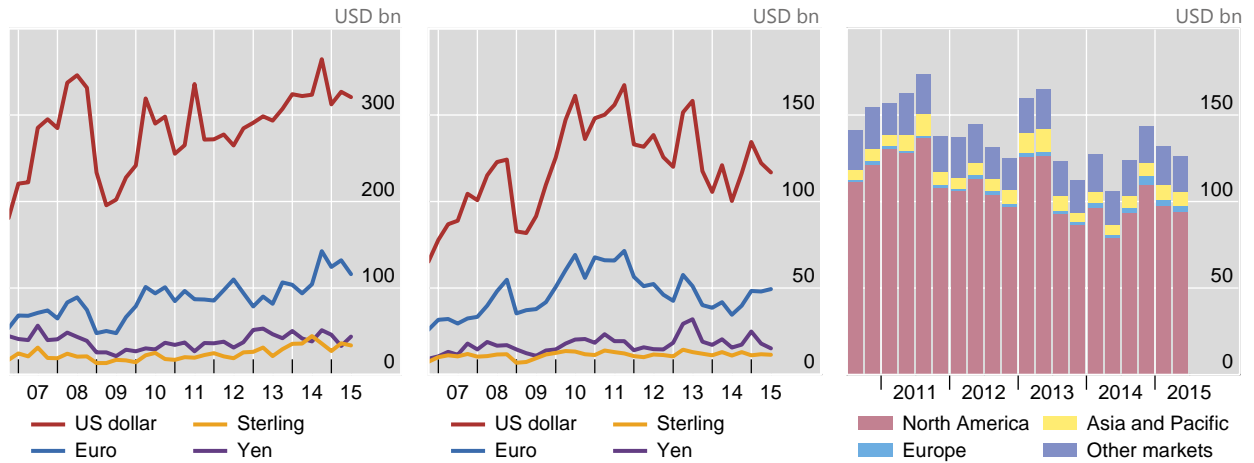
Graph D.1

Open interest, by currency<sup>1</sup>

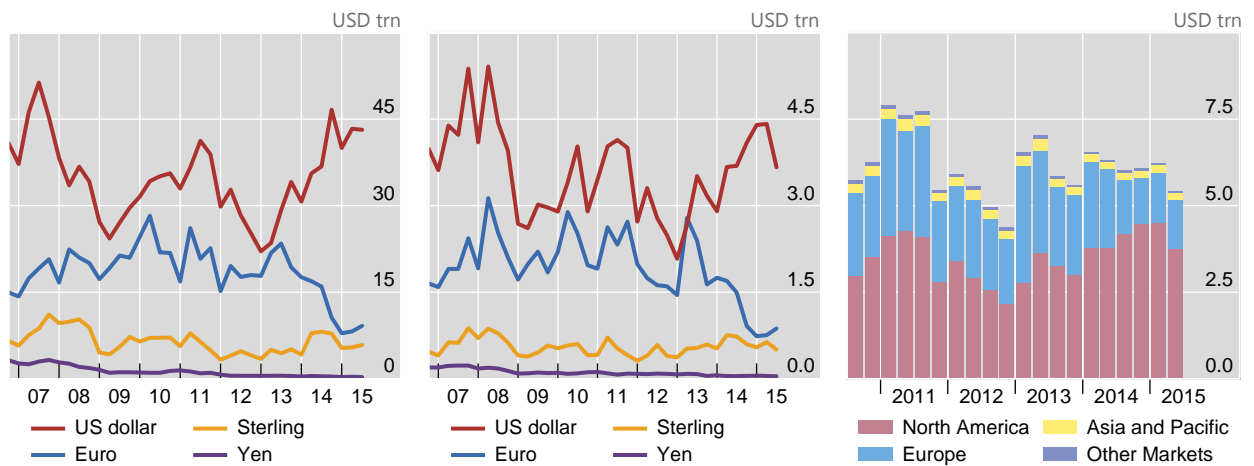
Daily average turnover, by currency<sup>2</sup>

Daily average turnover, by location of exchange<sup>2</sup>

Foreign exchange derivatives<sup>3</sup>



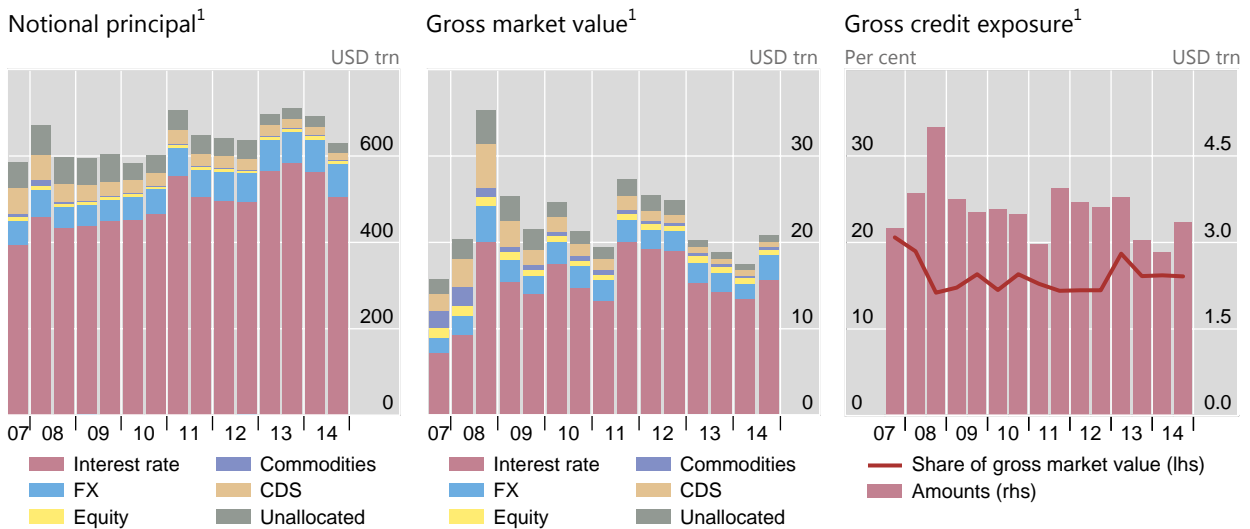
Interest rate derivatives<sup>3</sup>



Further information on the BIS derivatives statistics is available at [www.bis.org/statistics/extderiv.htm](http://www.bis.org/statistics/extderiv.htm).

<sup>1</sup> At quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. <sup>2</sup> Daily turnover averaged over the quarter. <sup>3</sup> Futures and options.

Sources: FOW; Futures Industry Association; BIS derivatives statistics.

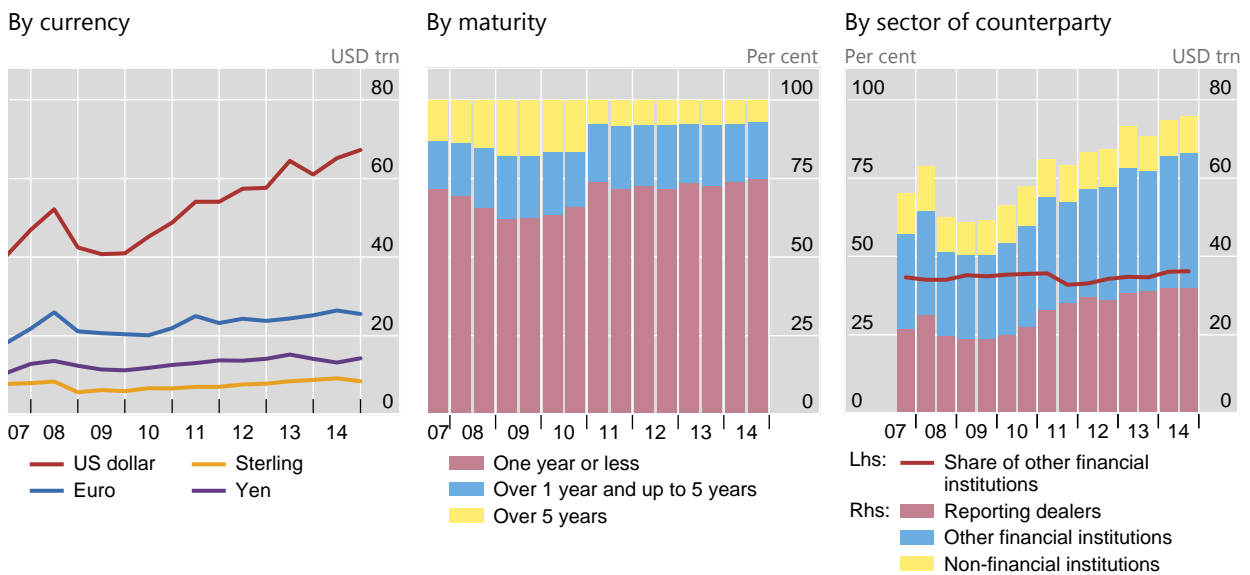


Further information on the BIS derivatives statistics is available at [www.bis.org/statistics/derstats.htm](http://www.bis.org/statistics/derstats.htm).

<sup>1</sup> At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

OTC foreign exchange derivatives

Notional principal<sup>1</sup> Graph D.3



Further information on the BIS derivatives statistics is available at [www.bis.org/statistics/derstats.htm](http://www.bis.org/statistics/derstats.htm).

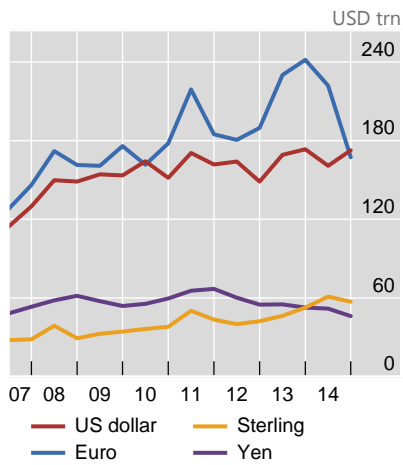
<sup>1</sup> At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

## OTC interest rate derivatives

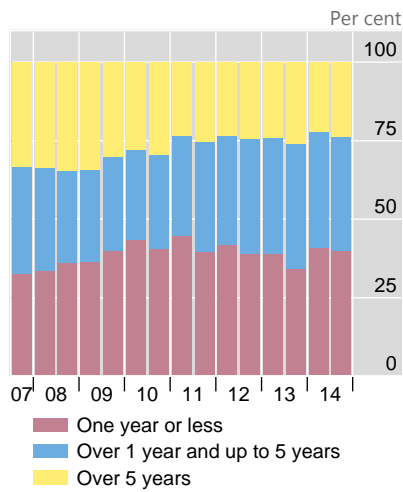
Notional principal<sup>1</sup>

Graph D.4

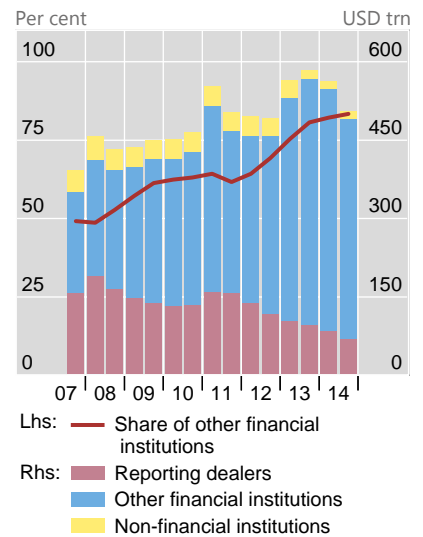
By currency



By maturity



By sector of counterparty



Further information on the BIS derivatives statistics is available at [www.bis.org/statistics/derstats.htm](http://www.bis.org/statistics/derstats.htm).

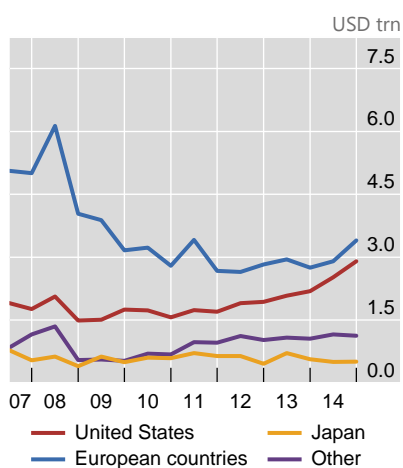
<sup>1</sup> At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

## OTC equity-linked derivatives

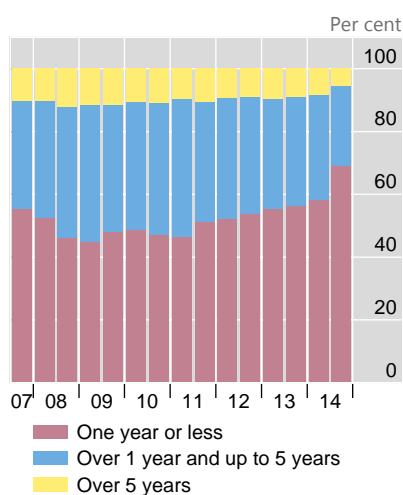
Notional principal<sup>1</sup>

Graph D.5

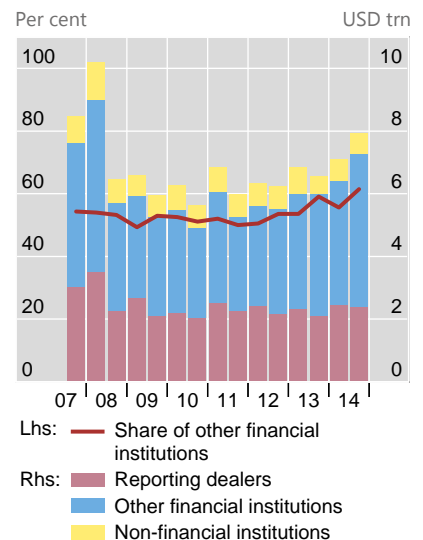
By equity market



By maturity



By sector of counterparty



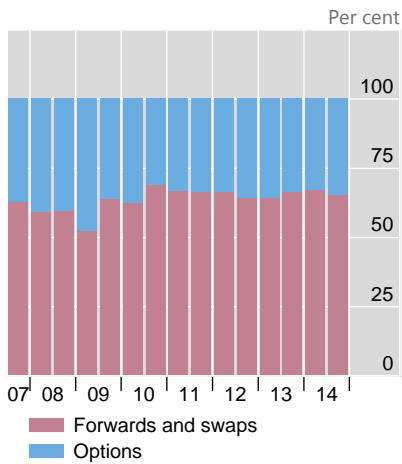
Further information on the BIS derivatives statistics is available at [www.bis.org/statistics/derstats.htm](http://www.bis.org/statistics/derstats.htm).

<sup>1</sup> At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

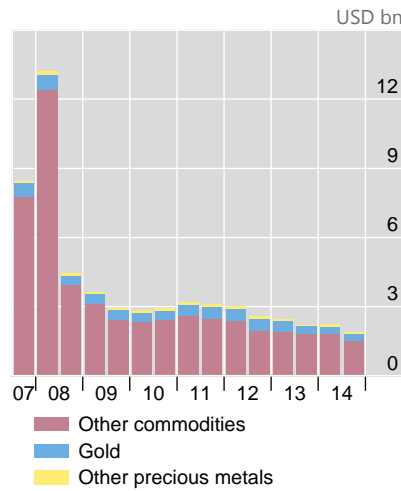
OTC commodity derivatives

Graph D.6

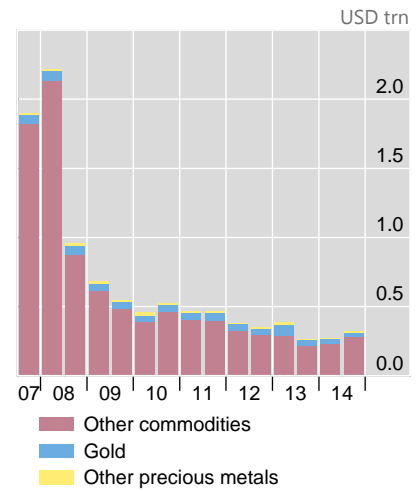
Notional principal, by instrument<sup>1</sup>



Notional principal, by commodity<sup>1</sup>



Gross market value, by commodity<sup>1</sup>



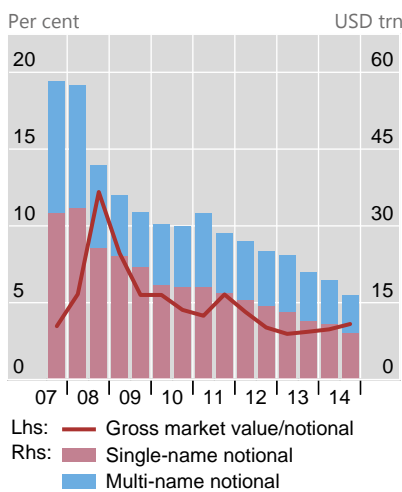
Further information on the BIS derivatives statistics is available at [www.bis.org/statistics/derstats.htm](http://www.bis.org/statistics/derstats.htm).

<sup>1</sup> At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

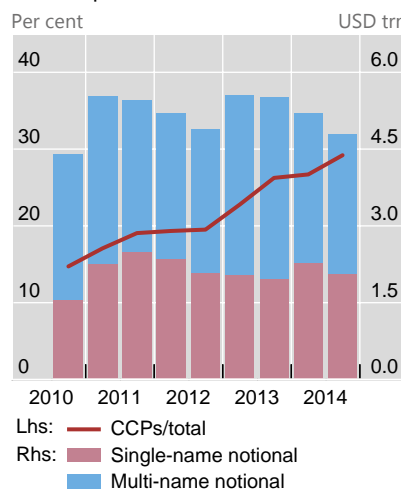
Credit default swaps<sup>1</sup>

Graph D.7

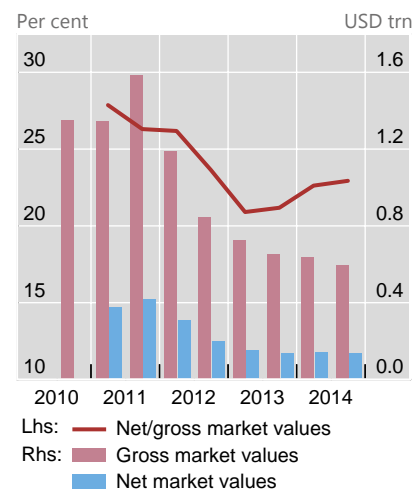
Notional principal



Notional principal with central counterparties (CCPs)



Impact of netting



Further information on the BIS derivatives statistics is available at [www.bis.org/statistics/derstats.htm](http://www.bis.org/statistics/derstats.htm).

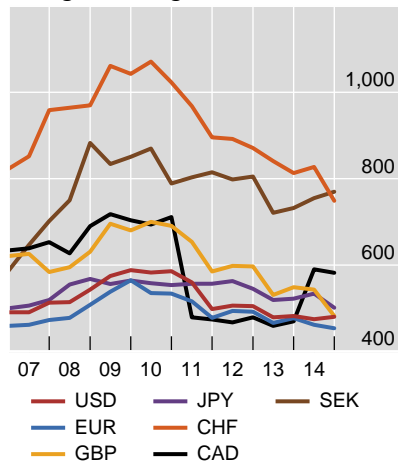
<sup>1</sup> At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

## Concentration in global OTC derivatives markets

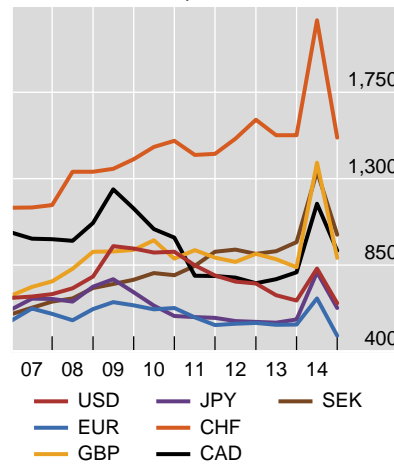
Herfindahl index<sup>1</sup>

Graph D.8

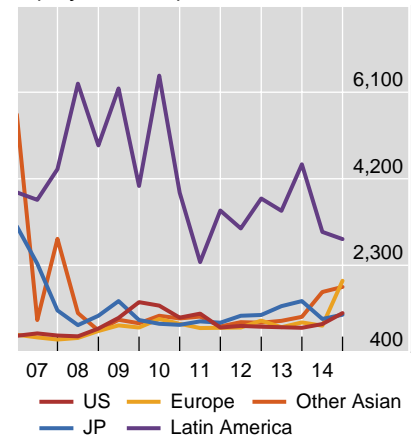
Foreign exchange derivatives<sup>2</sup>



Interest rate swaps



Equity-linked options



Further information on the BIS derivatives statistics is available at [www.bis.org/statistics/derstats.htm](http://www.bis.org/statistics/derstats.htm).

CAD = Canadian dollar; CHF = Swiss franc; EUR = euro; GBP = pound sterling; JPY = Japanese yen; SEK = Swedish krona; USD = US dollar. JP = Japan; US = United States.

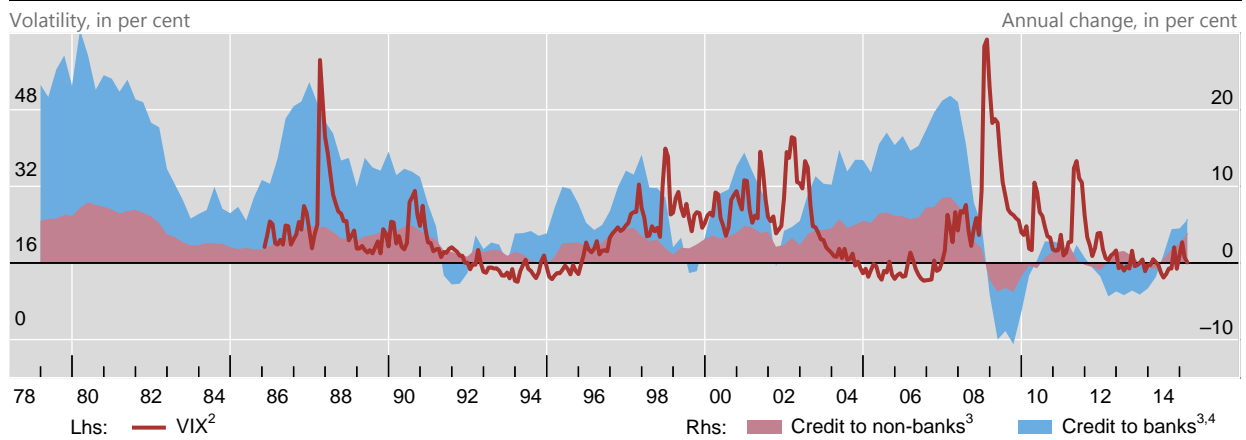
<sup>1</sup> The index ranges from 0 to 10,000, where a lower number indicates that there are many dealers with similar market shares (as measured by notional principal) and a higher number indicates that the market is dominated by a few reporting dealers. <sup>2</sup> Foreign exchange forwards, foreign exchange swaps and currency swaps.



## E Global liquidity indicators

Growth of international bank credit<sup>1</sup>

Graph E.1



Further information on the BIS global liquidity indicators is available at [www.bis.org/statistics/gli.htm](http://www.bis.org/statistics/gli.htm).

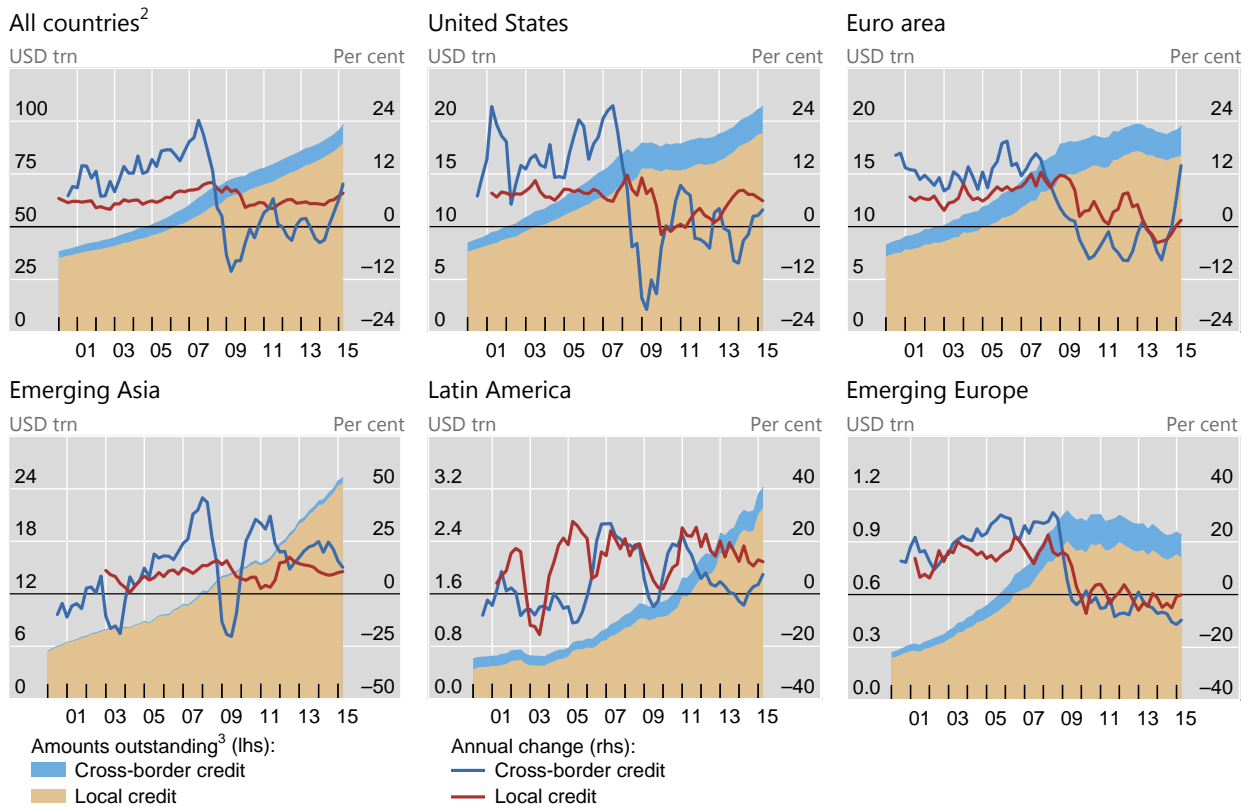
<sup>1</sup> LBS reporting banks' cross-border claims plus local claims in foreign currencies. <sup>2</sup> VIX refers to the Chicago Board Options Exchange Market Volatility Index. It measures the implied volatility of S&P 500 index options. <sup>3</sup> Contribution to the annual percentage change in credit to all sectors. <sup>4</sup> Including intragroup transactions.

Sources: Bloomberg; BIS locational banking statistics.

## Global bank credit to the non-bank sector, by residence of borrower

Banks' cross-border credit plus local credit in all currencies<sup>1</sup>

Graph E.2



Further information on the BIS global liquidity indicators is available at [www.bis.org/statistics/gli.htm](http://www.bis.org/statistics/gli.htm).

<sup>1</sup> Cross-border claims of LBS reporting banks plus local claims of all banks. Local claims are from national financial accounts and include credit extended by the central bank to the government. <sup>2</sup> Sample of 52 countries. <sup>3</sup> Amounts outstanding at quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing at end-March 2015.

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

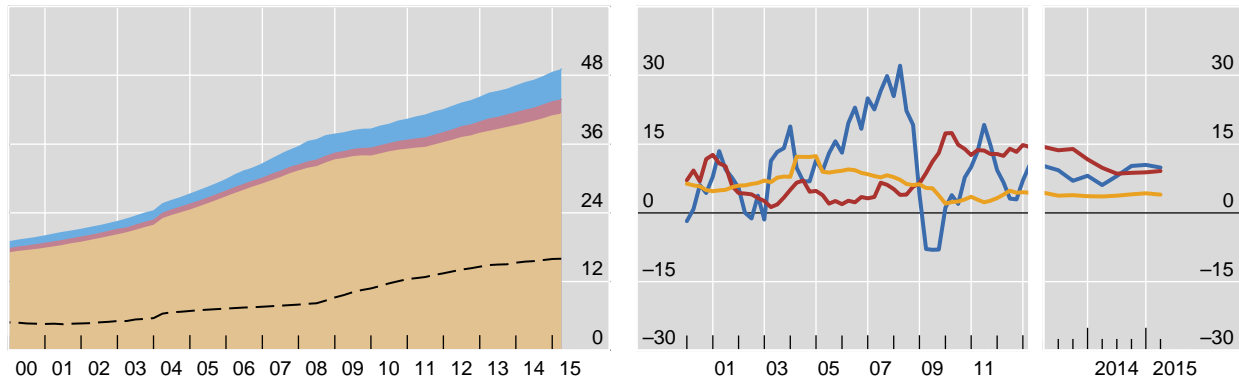
Global credit to the non-financial sector, by currency

Graph E.3

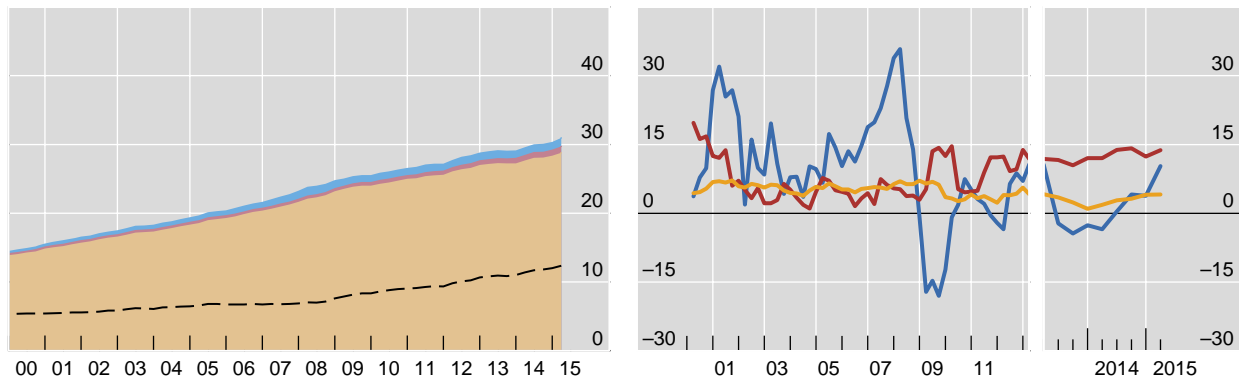
Amounts outstanding<sup>1</sup> (USD trn)

Annual change (per cent)

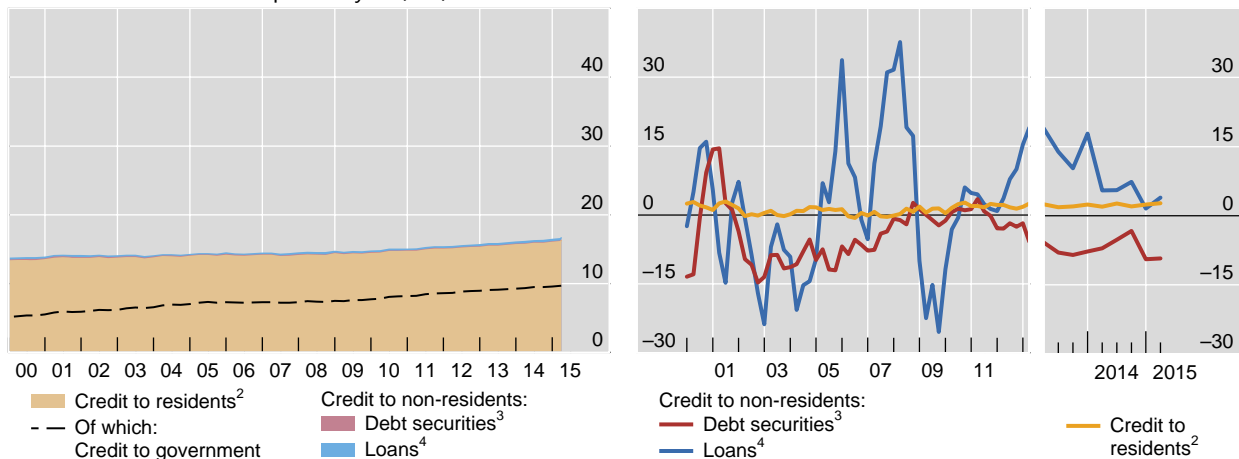
Credit denominated in US dollars (USD)



Credit denominated in euros (EUR)



Credit denominated in Japanese yen (JPY)



Further information on the BIS global liquidity indicators is available at [www.bis.org/statistics/gli.htm](http://www.bis.org/statistics/gli.htm).

<sup>1</sup> Amounts outstanding at quarter-end. Amounts denominated in currencies other than USD are converted to USD at the exchange rate prevailing at end-March 2015. <sup>2</sup> Credit to non-financial borrowers residing in the United States/euro area/Japan. National financial accounts are adjusted using BIS banking and securities statistics to exclude credit denominated in non-local currencies. <sup>3</sup> Excluding debt securities issued by special purpose vehicles and other financial entities controlled by non-financial parents. EUR-denominated debt securities exclude those issued by institutions of the European Union. <sup>4</sup> Loans by LBS reporting banks to non-bank borrowers, including non-bank financial entities, comprises cross-border plus local loans. For countries that are not LBS reporting countries, local loans in USD/EUR/JPY are estimated as follows: for China, local loans in foreign currencies are from national data and assumed to be composed of 80% USD, 10% EUR and 10% JPY; for other non-reporting countries, local loans to non-banks are set equal to LBS reporting banks' cross-border loans to banks in the country (denominated in USD/EUR/JPY), on the assumption that these funds are on-lent to non-banks.

Sources: IMF, *International Financial Statistics*; Datastream; BIS debt securities statistics; BIS locational banking statistics.

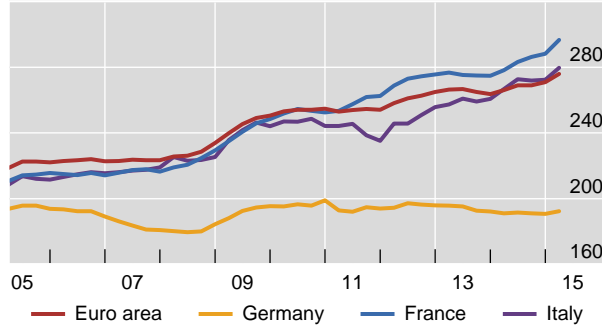
## F Statistics on total credit to the non-financial sector

### Total credit to the non-financial sector (core debt)

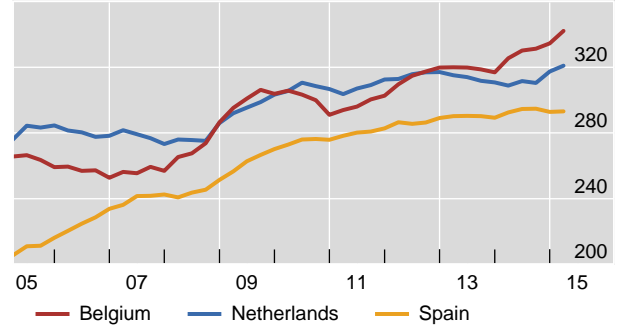
As a percentage of GDP

Graph F.1

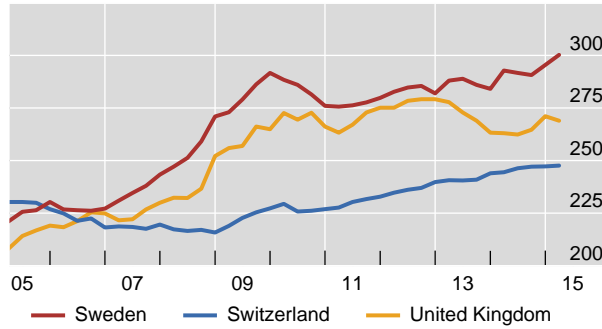
Euro area: aggregate and major countries



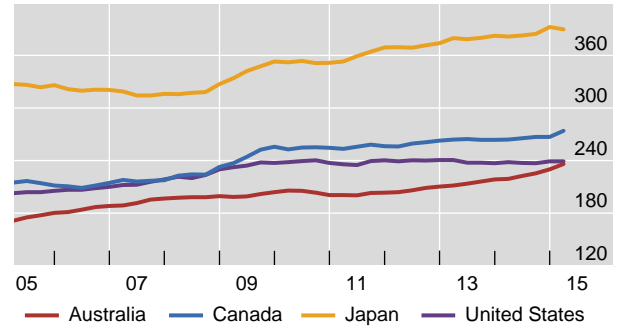
Euro area: other countries



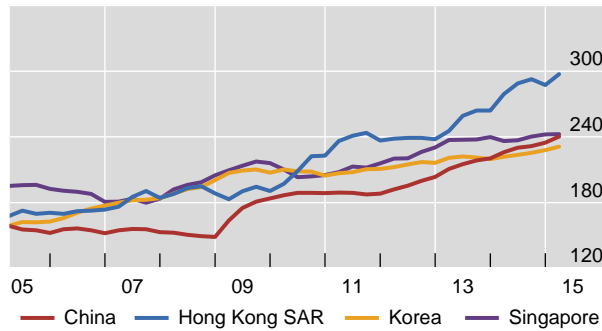
Other European countries



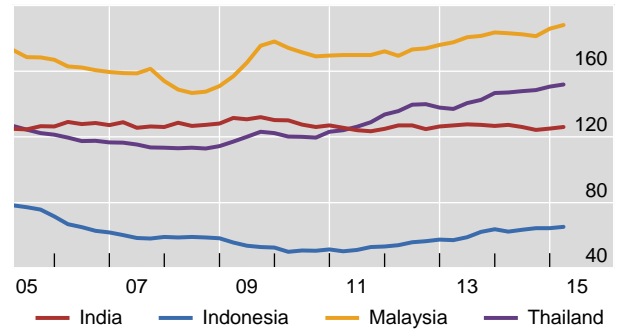
Major advanced economies



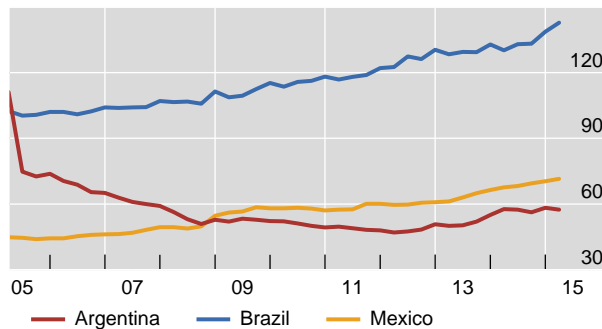
Emerging Asia



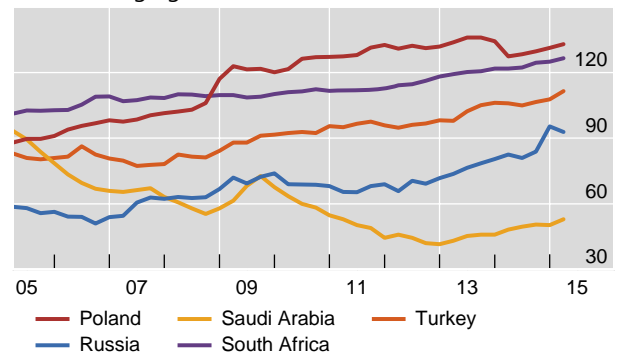
Other emerging Asia



Latin America



Other emerging market economies



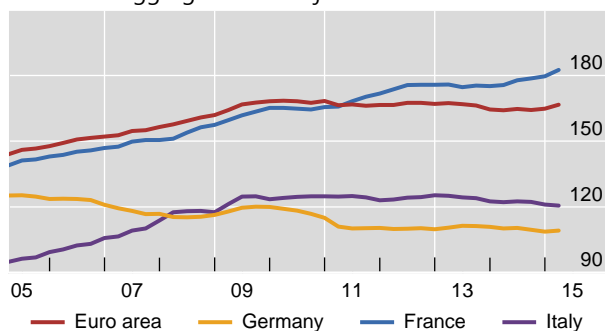
Further information on the BIS credit statistics is available at [www.bis.org/statistics/totcredit.htm](http://www.bis.org/statistics/totcredit.htm).

# Total credit to the private non-financial sector (core debt)

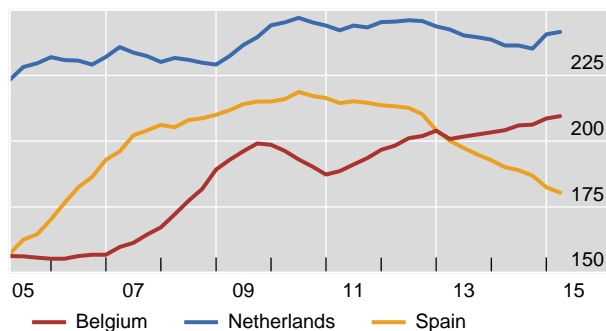
As a percentage of GDP

Graph F.2

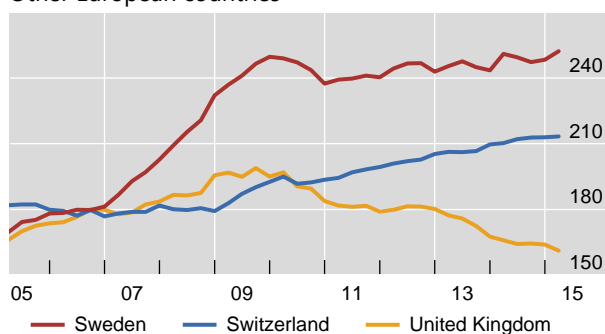
Euro area: aggregate and major countries



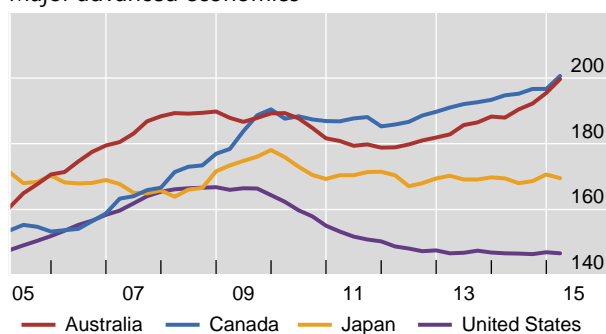
Euro area: other countries



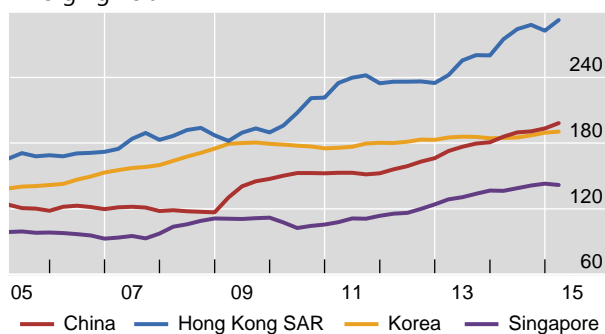
Other European countries



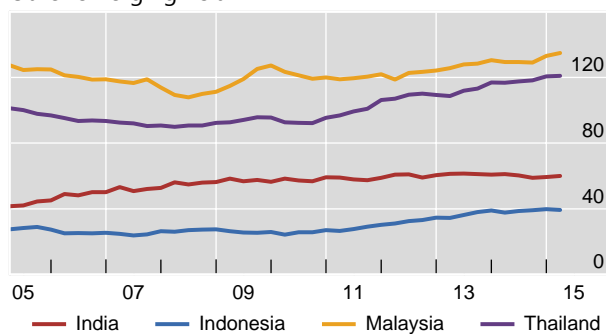
Major advanced economies



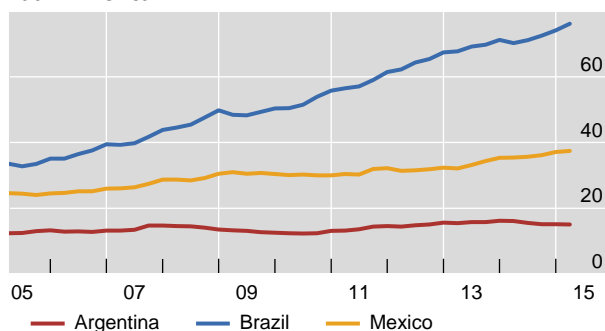
Emerging Asia



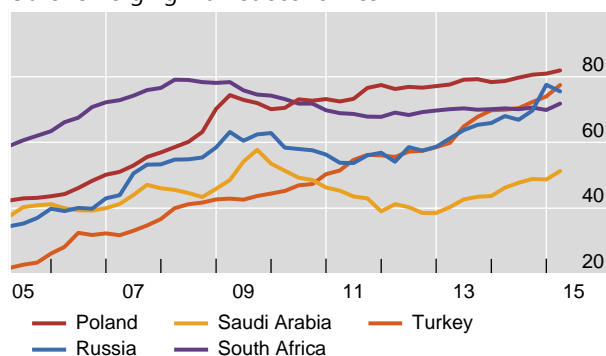
Other emerging Asia



Latin America



Other emerging market economies



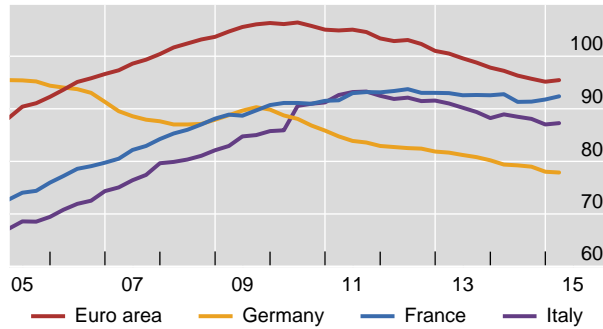
Further information on the BIS credit statistics is available at [www.bis.org/statistics/totcredit.htm](http://www.bis.org/statistics/totcredit.htm).

# Bank credit to the private non-financial sector (core debt)

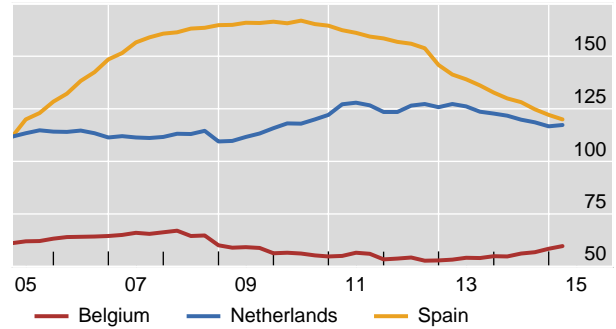
As a percentage of GDP

Graph F.3

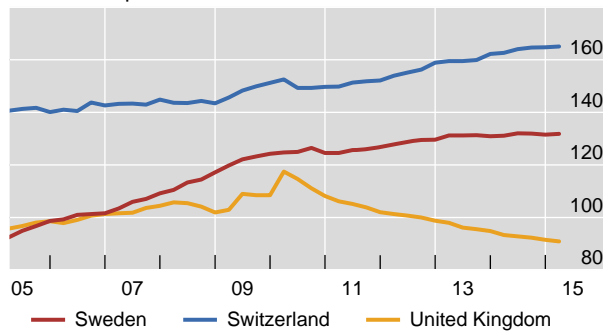
Euro area: aggregate and major countries



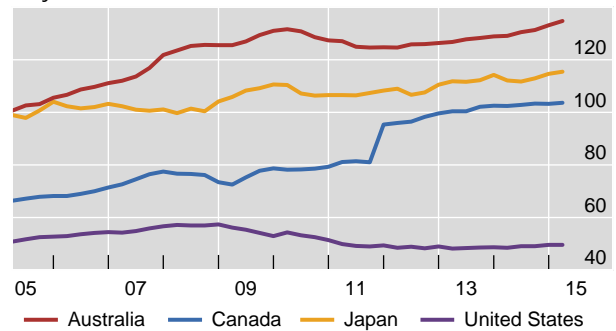
Euro area: other countries



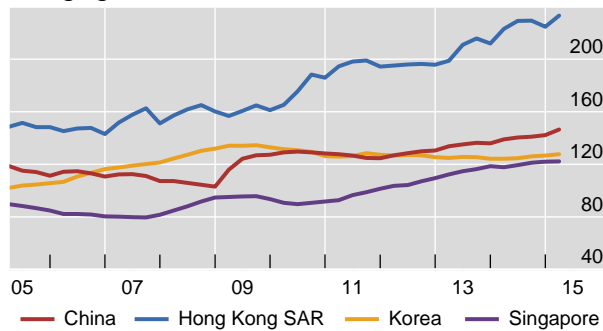
Other European countries



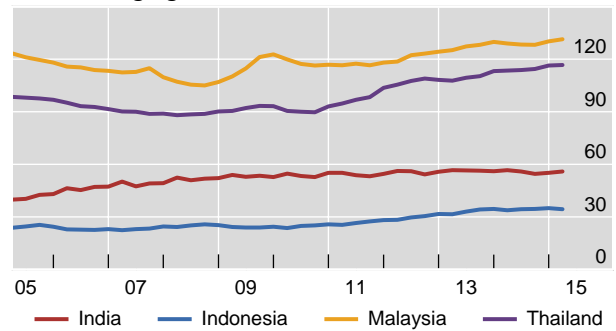
Major advanced economies



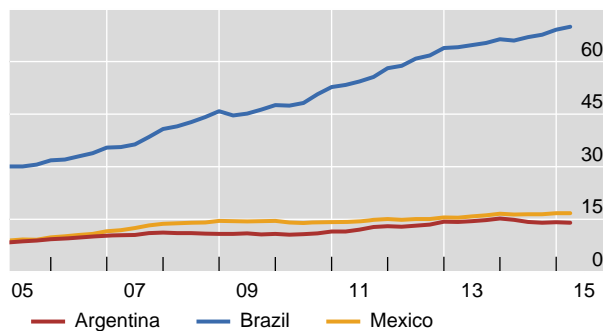
Emerging Asia



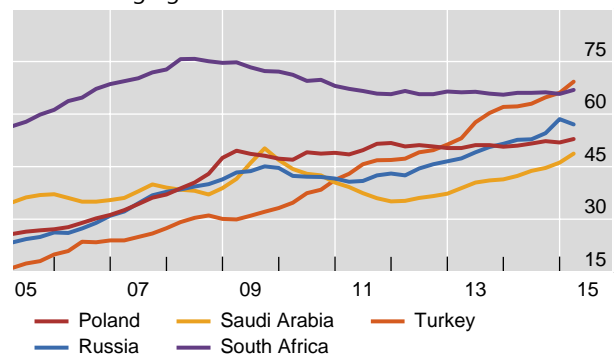
Other emerging Asia



Latin America



Other emerging market economies



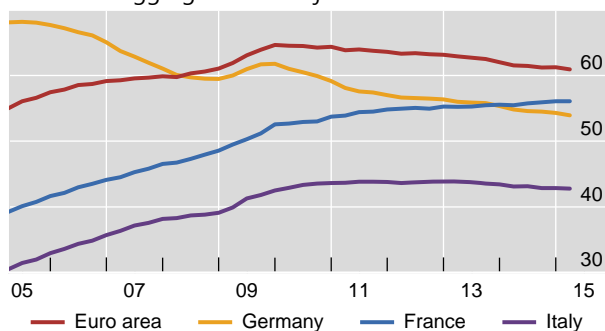
Further information on the BIS credit statistics is available at [www.bis.org/statistics/totcredit.htm](http://www.bis.org/statistics/totcredit.htm).

# Total credit to households (core debt)

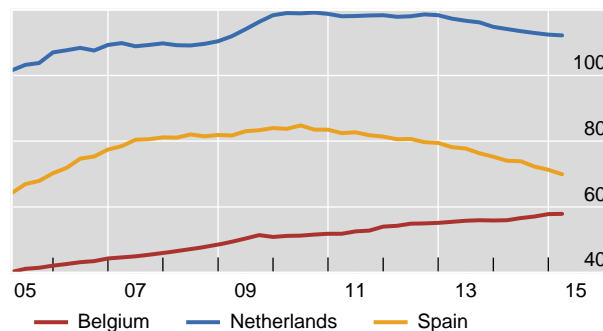
As a percentage of GDP

Graph F.4

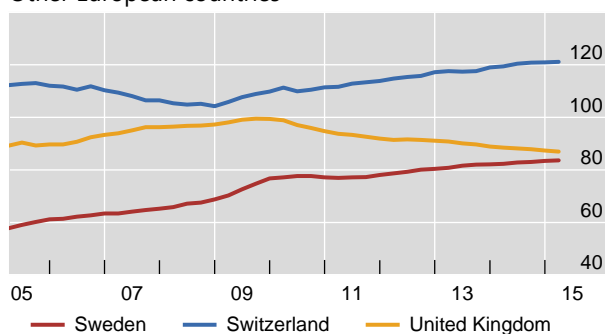
Euro area: aggregate and major countries



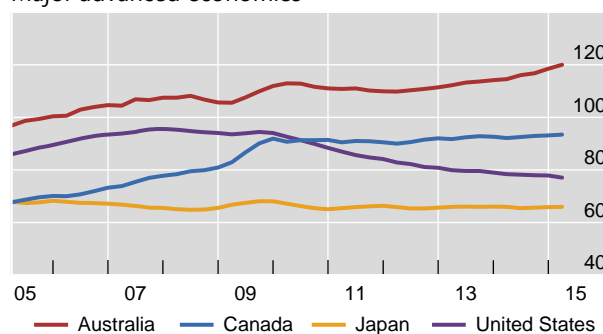
Euro area: other countries



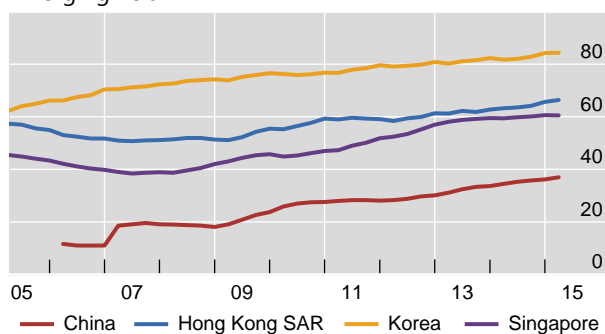
Other European countries



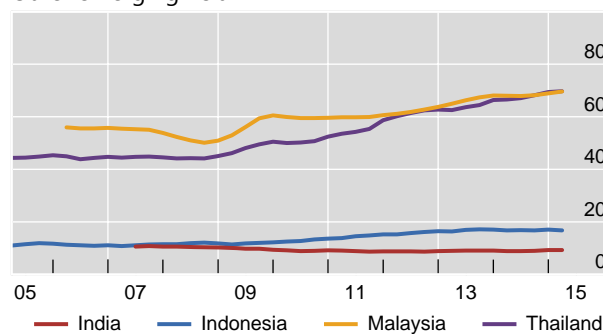
Major advanced economies



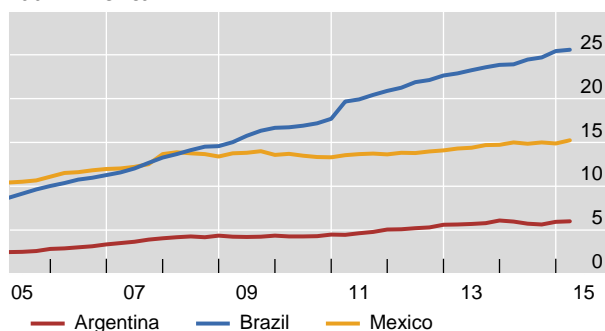
Emerging Asia



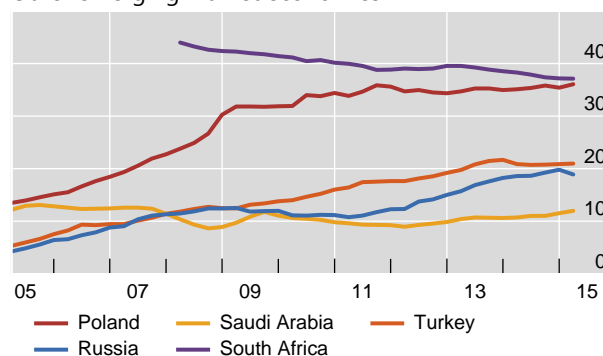
Other emerging Asia



Latin America



Other emerging market economies



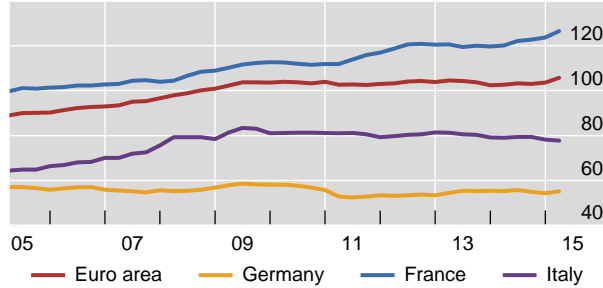
Further information on the BIS credit statistics is available at [www.bis.org/statistics/totcredit.htm](http://www.bis.org/statistics/totcredit.htm).

# Total credit to non-financial corporations (core debt)

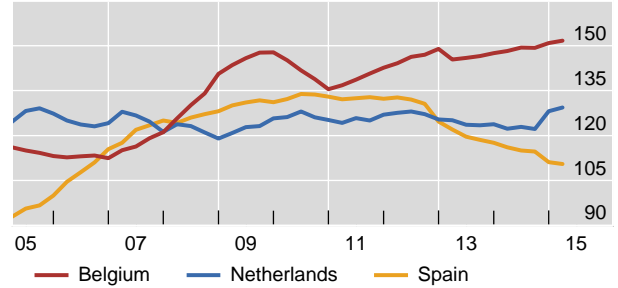
As a percentage of GDP

Graph F.5

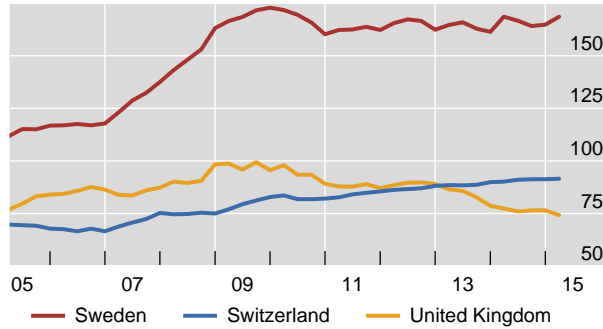
Euro area: aggregate and major countries



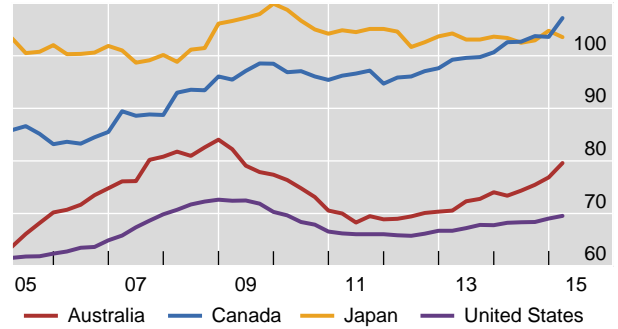
Euro area: other countries



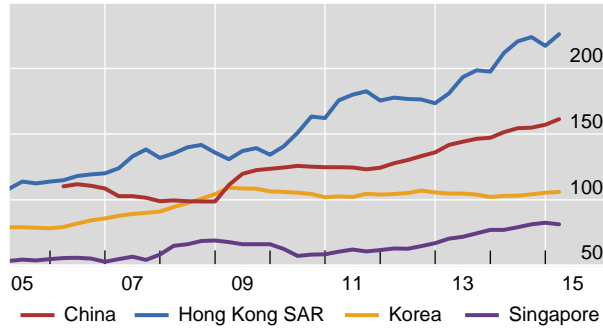
Other European countries



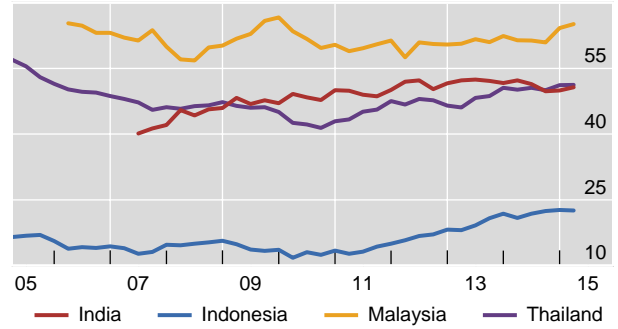
Major advanced economies



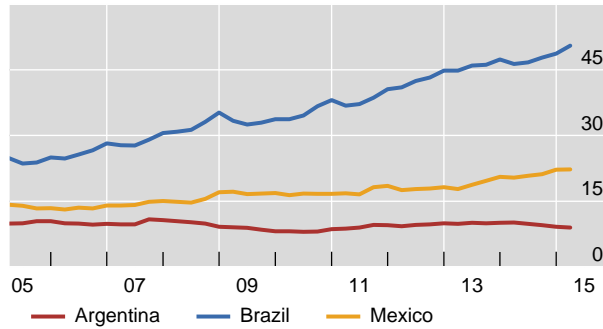
Emerging Asia



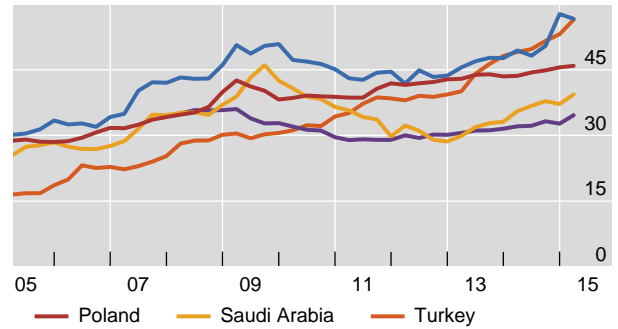
Other emerging Asia



Latin America



Other emerging market economies



Further information on the BIS credit statistics is available at [www.bis.org/statistics/totcredit.htm](http://www.bis.org/statistics/totcredit.htm).

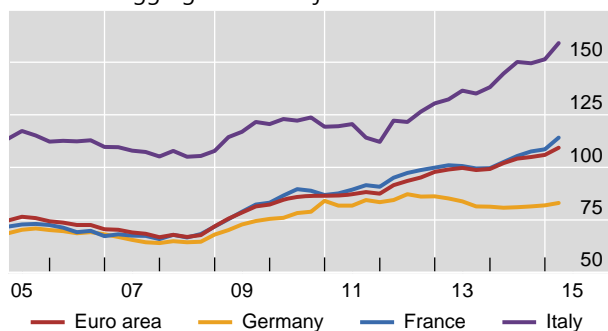


# Total credit to the government sector at market value (core debt)<sup>1</sup>

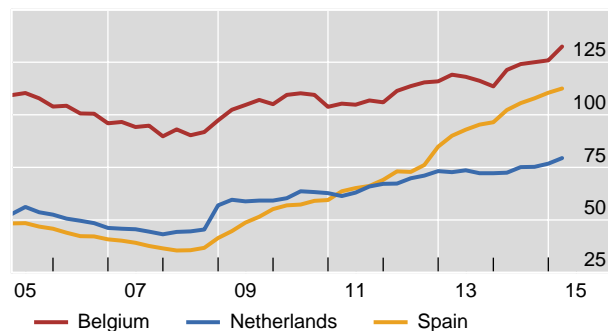
As a percentage of GDP

Graph F.6

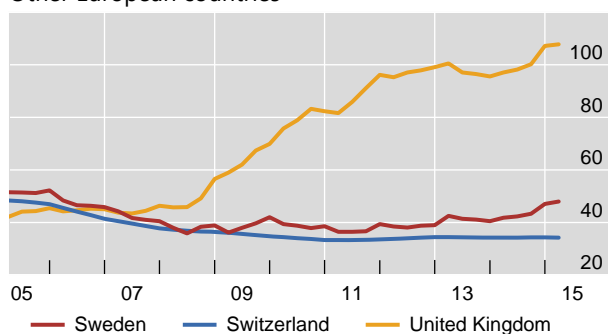
Euro area: aggregate and major countries



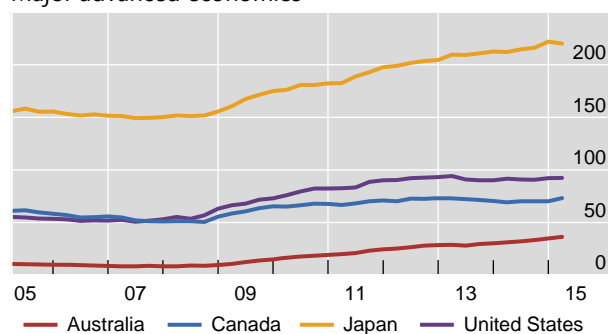
Euro area: other countries



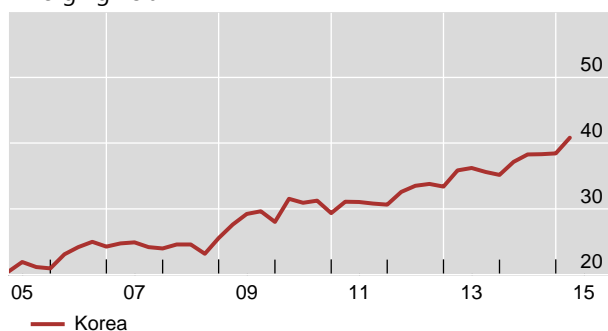
Other European countries



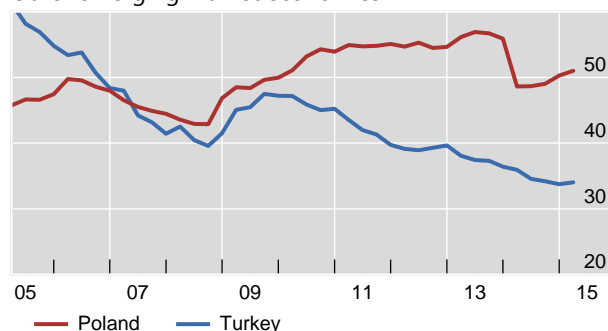
Major advanced economies



Emerging Asia



Other emerging market economies



Further information on the BIS credit statistics is available at [www.bis.org/statistics/totcredit.htm](http://www.bis.org/statistics/totcredit.htm).

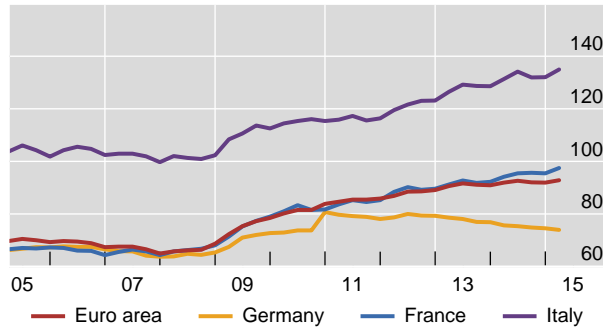
<sup>1</sup> Consolidated data for the general government sector.

# Total credit to the government sector at nominal value (core debt)<sup>1</sup>

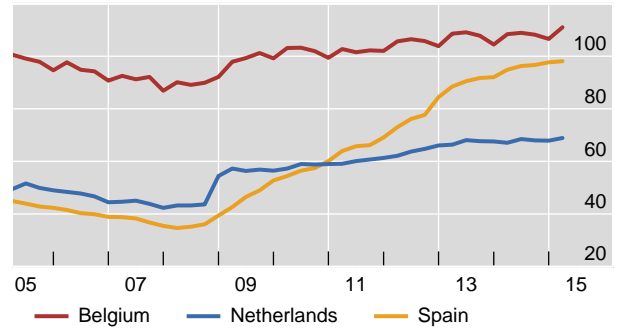
As a percentage of GDP

Graph F.7

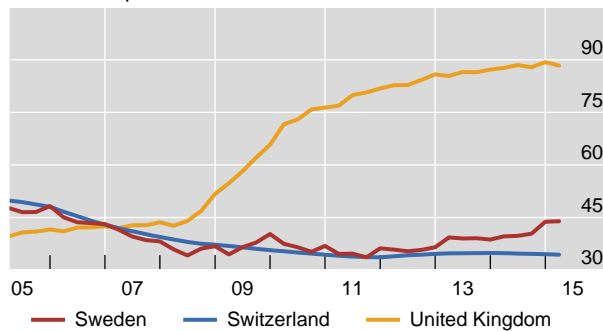
Euro area: aggregate and major countries



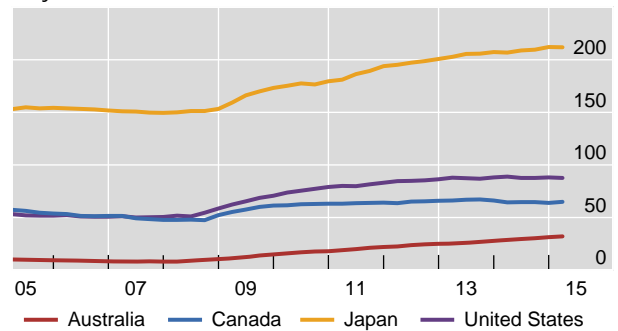
Euro area: other countries



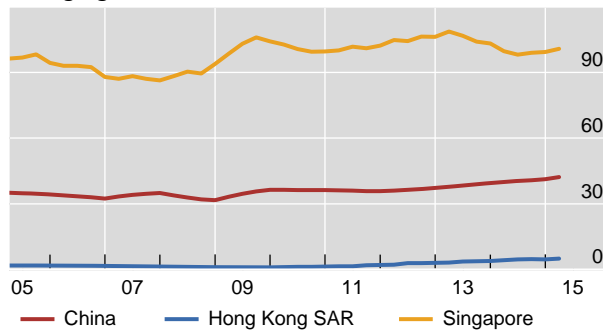
Other European countries



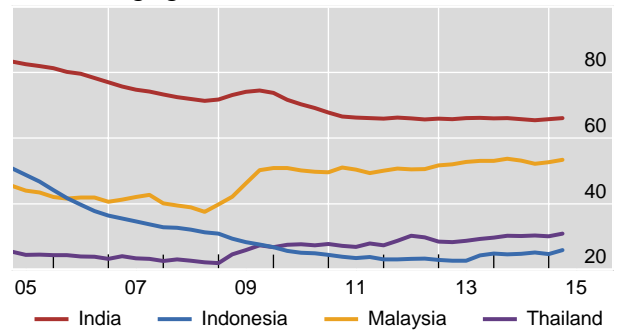
Major advanced economies



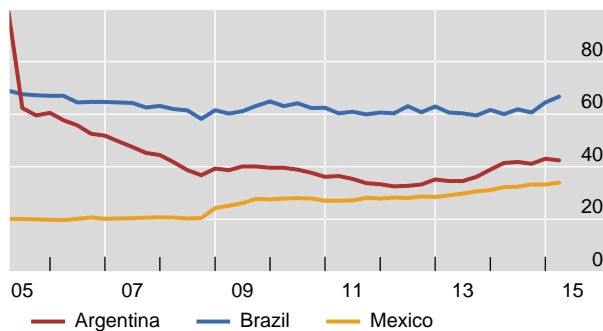
Emerging Asia



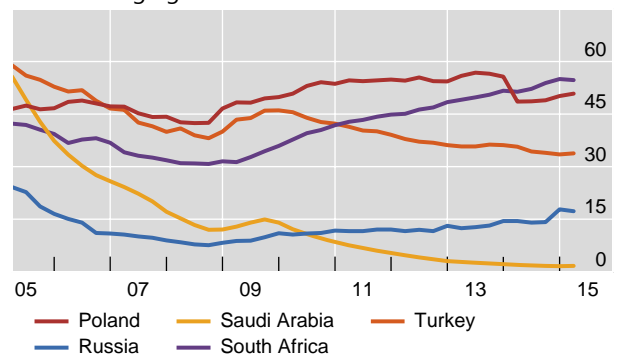
Other emerging Asia



Latin America



Other emerging market economies



Further information on the BIS credit statistics is available at [www.bis.org/statistics/totcredit.htm](http://www.bis.org/statistics/totcredit.htm).

<sup>1</sup> Consolidated data for the general government sector; central government for Argentina, Indonesia, Malaysia, Mexico, Saudi Arabia and Thailand.

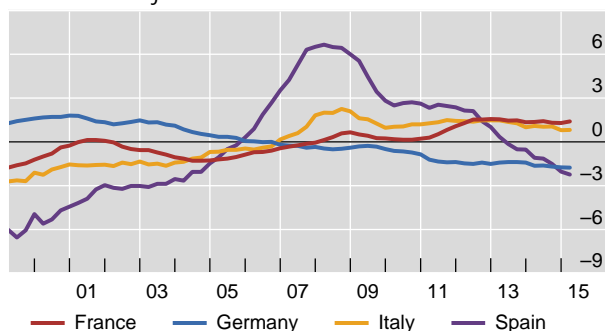
## G Debt service ratios for the private non-financial sector

### Debt service ratios of the private non-financial sector

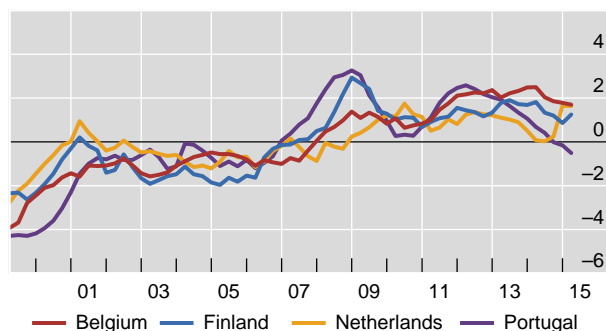
Deviation from country-specific mean; in percentage points<sup>1</sup>

Graph G.1

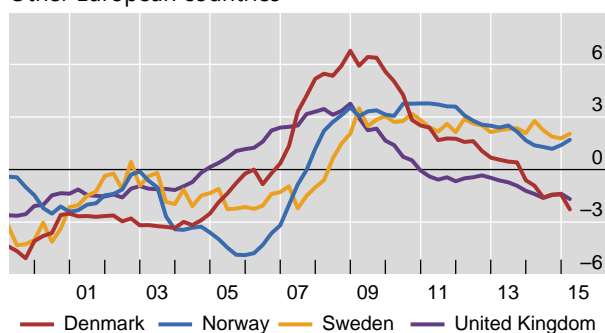
Euro area: major countries



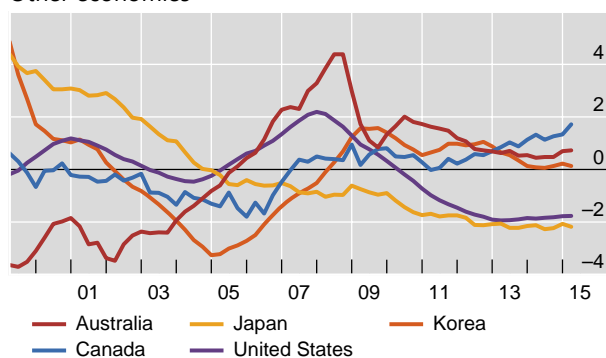
Euro area: other countries



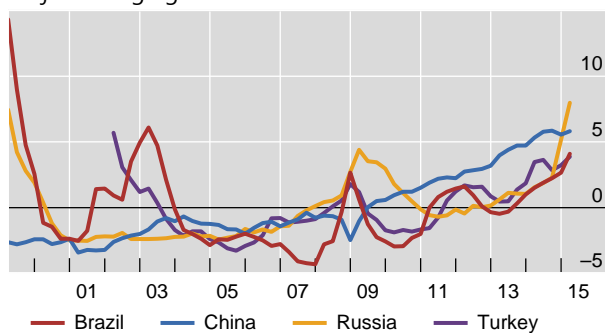
Other European countries



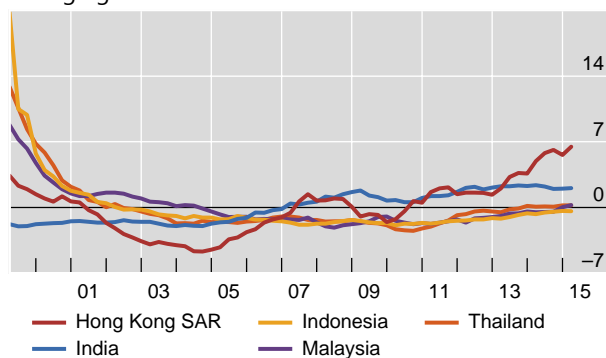
Other economies



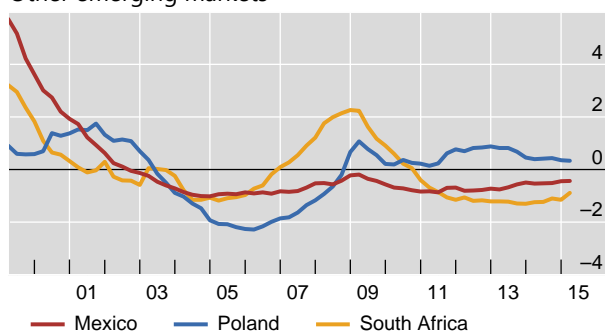
Major emerging markets<sup>2</sup>



Emerging Asia<sup>2</sup>



Other emerging markets<sup>2</sup>



<sup>1</sup> Country-specific means are based on all available data from 1999 onwards. <sup>2</sup> Countries which are using alternative measures of income and interest rates. Further information is available under "Data documentation" at [www.bis.org/statistics/dsr.htm](http://www.bis.org/statistics/dsr.htm).

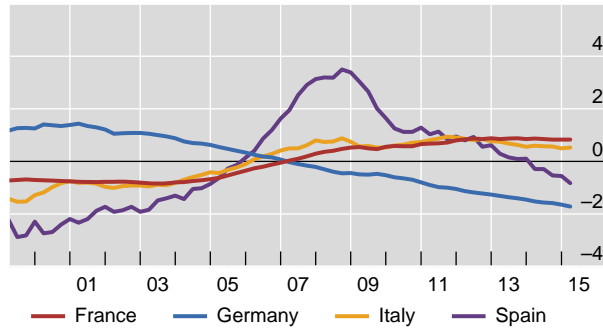
Further information on the BIS debt service ratio statistics is available at [www.bis.org/statistics/dsr.htm](http://www.bis.org/statistics/dsr.htm).

## Debt service ratios of households

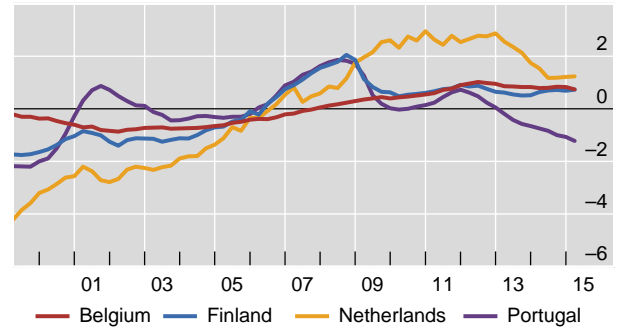
Deviation from country-specific mean; in percentage points<sup>1</sup>

Graph G.2

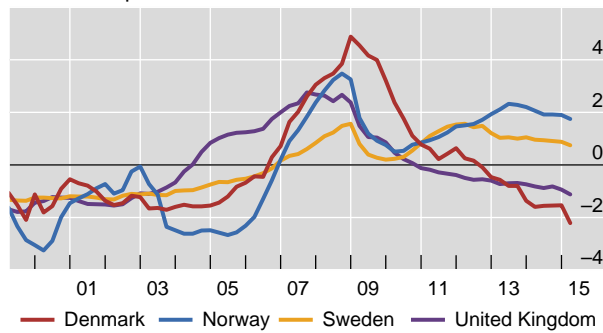
Euro area: major countries



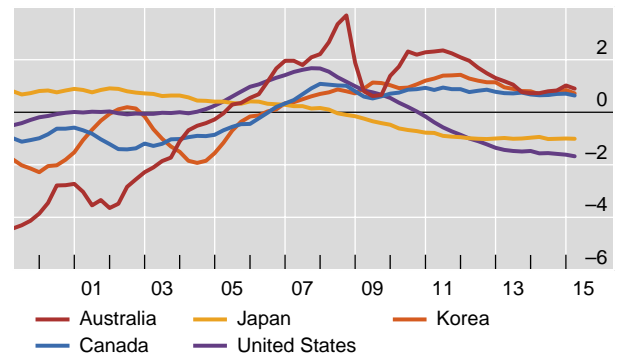
Euro area: other countries



Other European countries



Other economies



Further information on the BIS debt service ratio statistics is available at [www.bis.org/statistics/dsr.htm](http://www.bis.org/statistics/dsr.htm).

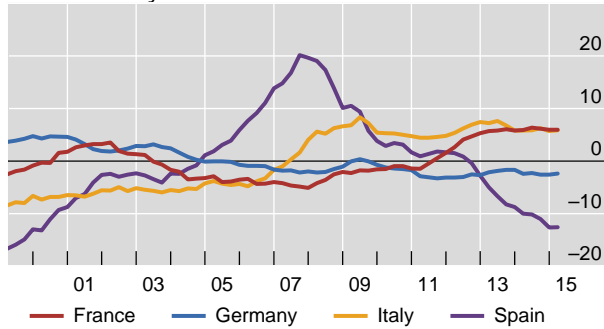
<sup>1</sup> Country-specific means are based on all available data from 1999 onwards.

## Debt service ratios of non-financial corporations

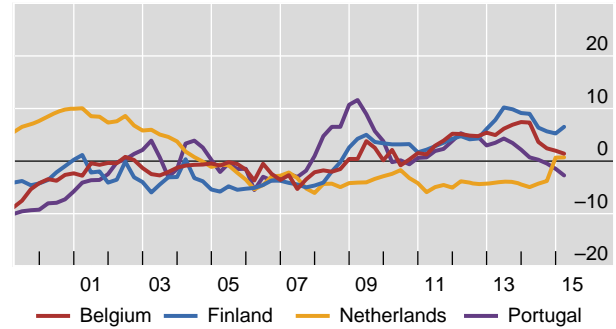
Deviation from country-specific mean; in percentage points<sup>1</sup>

Graph G.3

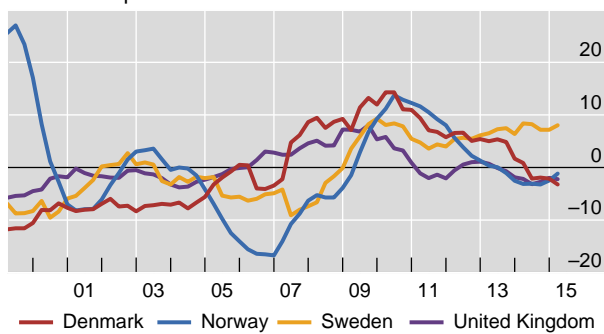
Euro area: major countries



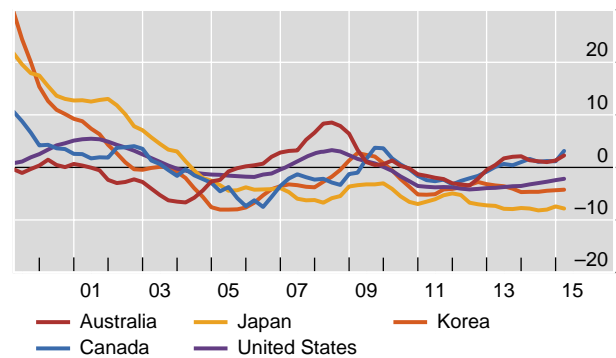
Euro area: other countries



Other European countries



Other economies



Further information on the BIS debt service ratio statistics is available at [www.bis.org/statistics/dsr.htm](http://www.bis.org/statistics/dsr.htm).

<sup>1</sup> Country-specific means are based on all available data from 1999 onwards.

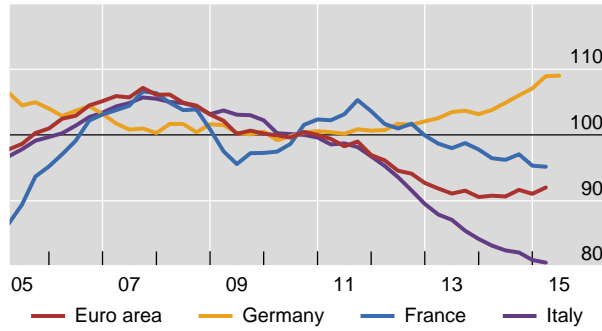
## H Property price statistics

### Real residential property prices

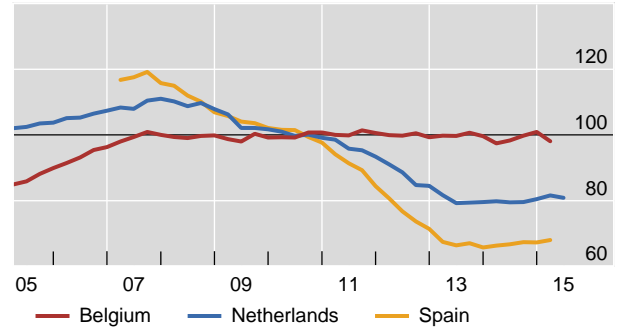
CPI-deflated; 2010 = 100

Graph H.1

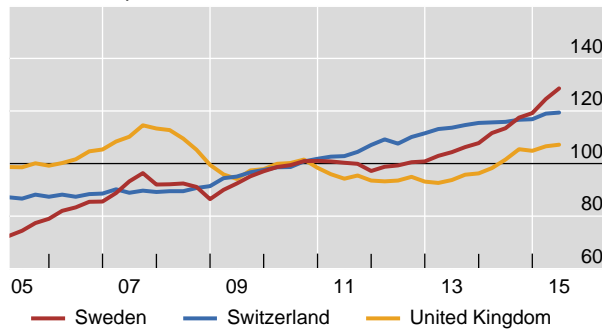
Euro area: aggregate and major countries



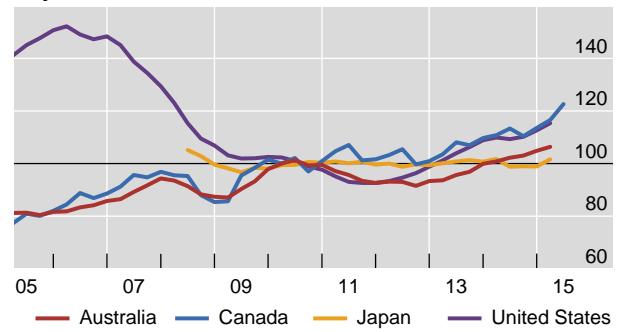
Euro area: other countries



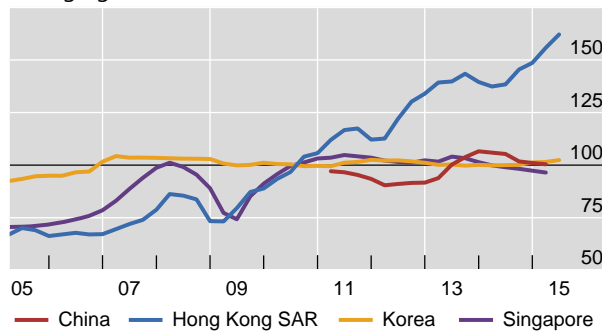
Other European countries



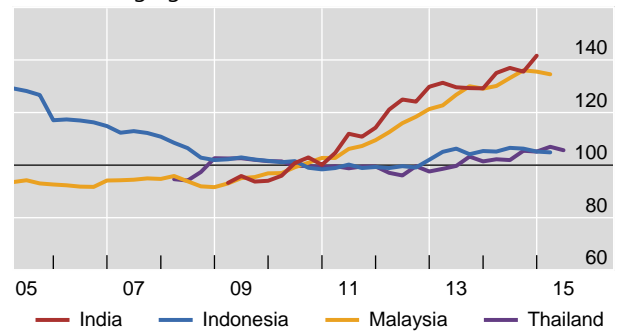
Major advanced economies



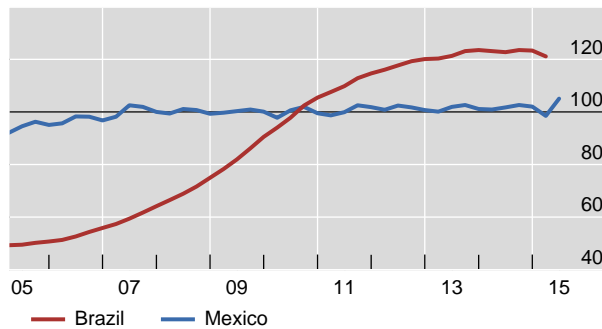
Emerging Asia



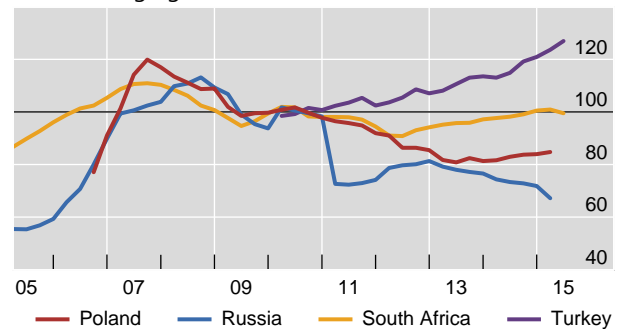
Other emerging Asia



Latin America



Other emerging market economies



Further information on the BIS property price statistics is available at [www.bis.org/statistics/pp.htm](http://www.bis.org/statistics/pp.htm).

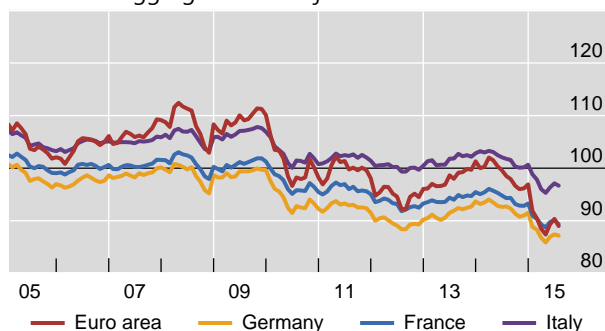
## I Effective exchange rate statistics

### Real effective exchange rates

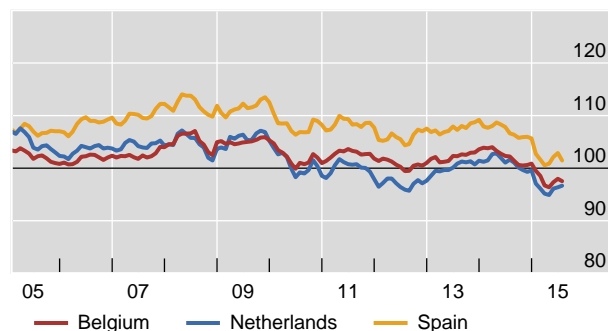
CPI-based; 1995–2005 = 100<sup>1</sup>

Graph I.1

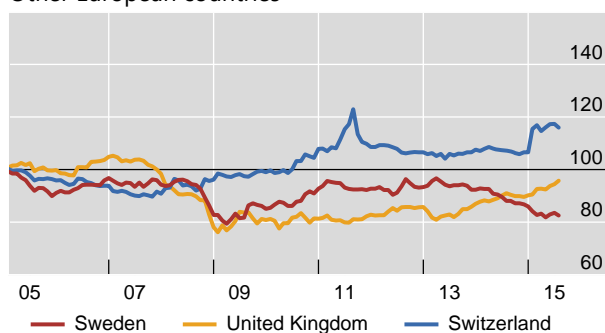
Euro area: aggregate and major countries



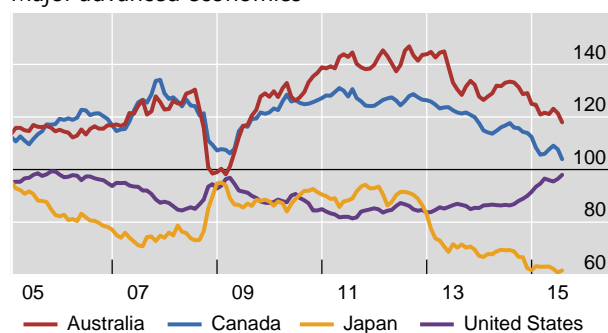
Euro area: other countries



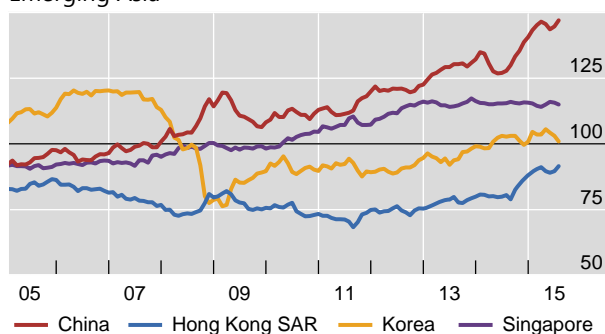
Other European countries



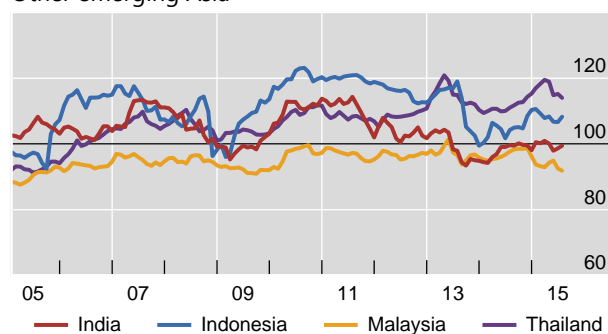
Major advanced economies



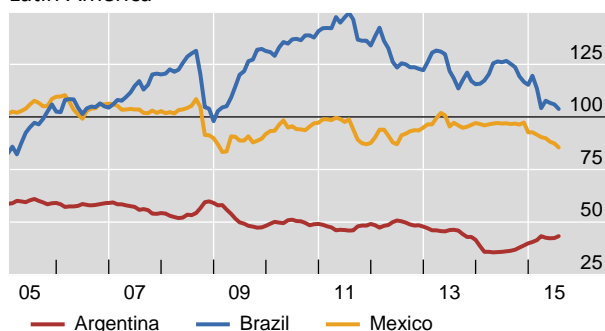
Emerging Asia



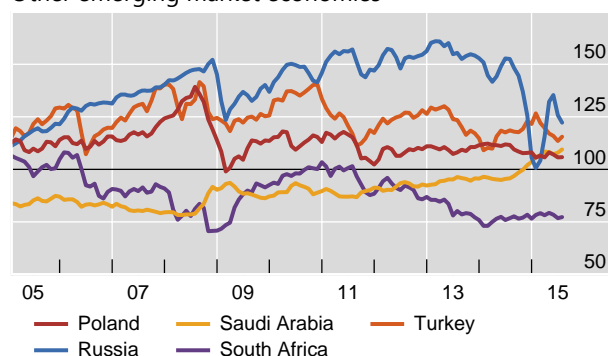
Other emerging Asia



Latin America



Other emerging market economies



Further information on the BIS effective exchange rate statistics is available at [www.bis.org/statistics/eer.htm](http://www.bis.org/statistics/eer.htm).

<sup>1</sup> An increase indicates an appreciation in the economy's currency in real terms against a broad basket of currencies.

## Special features in the BIS Quarterly Review

March 2015	The costs of deflations: a historical perspective	Claudio Borio, Magdalena Erdem, Andrew Filardo & Boris Hofmann
March 2015	Oil and debt	Dietrich Domanski, Jonathan Kearns, Marco Jacopo Lombardi & Hyun Song Shin
March 2015	(Why) Is investment weak?	Ryan Banerjee, Jonathan Kearns & Marco Lombardi
March 2015	Financial inclusion - issues for central banks	Aaron Mehrotra & James Yetman
March 2015	Shifting tides - market liquidity and market-making in fixed income instruments	Ingo Fender & Ulf Lewrick
December 2014	Currency movements drive reserve composition	Robert N McCauley & Tracy Chan
December 2014	Securitisations: tranching concentrates uncertainty	Adonis Antoniadis & Nikola Tarashev
December 2014	Bank business models	Rungporn Roengpitya, Nikola Tarashev & Kostas Tsatsaronis
December 2014	Non-financial corporations from emerging market economies and capital flows	Stefan Avdjiev, Michael Chui & Hyun Song Shin
September 2014	Asset managers in emerging market economies	Ken Miyajima & Ilhyock Shim
September 2014	Risks related to EME corporate balance sheets: the role of leverage and currency mismatch	Michael Chui, Ingo Fender & Vladyslav Sushko
September 2014	Cross-border bank lending during the taper tantrum: the role of emerging market fundamentals	Stefan Avdjiev & Előd Takáts
September 2014	Residential property price statistics across the globe	Michela Scatigna, Robert Szemere & Kostas Tsatsaronis
March 2014	Financial structure and growth	Leonardo Gambacorta, Jing Yang & Kostas Tsatsaronis
March 2014	Forward guidance at the zero lower bound	Andrew Filardo & Boris Hofmann



# Recent BIS publications<sup>1</sup>

## BIS Working Papers

### **Higher bank capital requirements and mortgage pricing: evidence from the Countercyclical Capital Buffer (CCB)**

**Christoph Basten and Catherine Koch**

How has the CCB affected mortgage pricing after Switzerland became the first country to activate this Basel III macroprudential tool? By analysing a database with several offers per mortgage request, we construct a picture of mortgage supply and demand. We find, first, that the CCB changes the composition of mortgage supply, as relatively capital-constrained and mortgage-specialized banks raise prices more than their competitors do. Second, risk-weighting schemes linked to borrower risk do not amplify the CCB's effect. To conclude, changes in the supply composition suggest that the CCB has achieved its intended effect in shifting mortgages from less resilient to more resilient banks, but stricter capital requirements do not appear to have discouraged less resilient banks from risky mortgage lending.

### **Global dollar credit and carry trades: a firm-level analysis**

**Valentina Bruno and Hyun Song Shin**

We conduct a firm-level analysis of borrowing in US dollars by non-financial corporates from outside the United States. The dataset combines bond issuance data with firm-level financial information. We find that firms with already high cash holdings are more likely to issue US dollar-denominated bonds, and that the proceeds of the bond issue add to cash holdings. The tendency to add cash is more pronounced during periods when the dollar carry trade is more favourable and is prevalent for emerging market firms.

### **Investor redemptions and fund manager sales of emerging market bonds: how are they related?**

**Jimmy Shek, Ilhyock Shim and Hyun Song Shin**

Lending to emerging market economies (EMEs) through bond purchases has surged since 2009. What are the risks of a sudden stop? Bond mutual funds may curtail credit through two channels. The first is redemptions by ultimate investors. The second is additional discretionary sales by fund managers, over and above any sales implied by redemptions. In an empirical analysis of EME bond funds, we find that discretionary sales tend to reinforce the sales due to investor redemptions, and that 100 dollars' worth of bond sales due to investor redemptions is accompanied by roughly 10 dollars' worth of discretionary bond sales. We also find that 100 dollars' worth of EME international bond sales is associated with around 4 dollars' worth of valuation losses. Finally, a 1 percentage point increase in the yield of local currency bonds is associated with a 10% decline in the dollar value of bond holdings.

### **Bond markets and monetary policy dilemmas for the emerging markets**

**Jhuvesh Sobrun and Philip Turner**

Financial conditions in the emerging markets (EMs) have become more dependent on the 'world' long-term interest rate, which has been driven down by monetary policies in the advanced economies - notably Quantitative Easing (QE) - and by several non-monetary factors. This paper analyses some new mechanisms that link global long-term rates to

<sup>1</sup> Requests for publications should be addressed to Bank for International Settlements, Press & Communications, Centralbahnplatz 2, CH-4002 Basel. These publications are also available on the BIS website ([www.bis.org](http://www.bis.org)).

monetary policy and to domestic bank lending in the EMs. Understanding these mechanisms could help EM central banks prepare for the exit from QE and higher (and perhaps divergent) policy rates in advanced economies. Although monetary policy in the EMs has continued to be guided by domestic objectives, it has nevertheless lost some traction. Difficult trade-offs now confront central banks.

### **Macroeconomic effects of banking sector losses across structural models**

**Luca Guerrieri, Matteo Iacoviello, Francisco Covas, John C. Driscoll, Mohammad Jahan-Parvar, Michael Kiley, Albert Queralto and Jae Sim**

The macro spillover effects of capital shortfalls in the financial intermediation sector are compared across five dynamic equilibrium models for policy analysis. Although all the models considered share antecedents and a methodological core, each model emphasizes different transmission channels. This approach delivers "model-based confidence intervals" for the real and financial effects of shocks originating in the financial sector. The range of outcomes predicted by the five models is only slightly narrower than confidence intervals produced by simple vector autoregressions.

### **Macroprudential policies in a commodity exporting economy**

**Andrés González, Franz Hamann and Diego Rodríguez**

Colombia is a small open and commodity exporter economy, sensitive to international commodity price fluctuations. During the surge in commodity prices, as income from the resource sector increases total credit expands, boosting demand for tradable and nontradable goods, appreciating the currency and shifting resources from the tradable sector to the non-tradable. Although this adjustment is efficient, the presence of financial frictions in the economy exacerbates the resource allocation process through credit. In this phase, as total credit expands, the appreciation erodes the net worth of the tradable sector and boosts the non-tradable one, and thus credit gets concentrated in that sector. A sudden reversal of commodity prices causes a rapid adjustment of resources in the opposite direction. However, the ability of the tradable sector to absorb the freed resources is limited by its financial capacity. In this scenario, macroprudential policies may help to restrain aggregate credit dynamics and thus prevent or act prudently in anticipation to the effects of large oil price shock reversals. In this work we write a model that accounts for these facts and quantify the role of three policy instruments: short term interest rate, FX intervention and financial regulation. We explore this issues in a DSGE model estimated for the Colombian economy and find that both FX intervention and regulation policies complement the short-term interest rates in smoothing the business cycle by restraining credit, raising market interest rates and smoothing economic activity. However, these additional instruments have undesirable sectoral implications. In particular, the use of these policies implies that credit to the tradable sector dries and becomes more expensive, weakening its financial position, which in turn implies a sharper fall of this sector during the price reversal and a longer recovery. These effects, nonetheless, appear to be quantitatively small according to the estimated model.

### **Phases of global liquidity, fundamentals news, and the design of macroprudential policy**

**Javier Bianchi and Enrique G Mendoza**

The unconventional shocks and non-linear dynamics behind the high volatility of financial markets present a challenge for the implementation of macroprudential policy. This paper introduces two of these unconventional shocks, news shocks about future fundamentals and regime changes in global liquidity, into a quantitative non-linear model of financial crises. The model is then used to examine how these shocks affect the design and effectiveness of optimal macroprudential policy. The results show that both shocks contribute to strengthen the amplification mechanism driving financial crisis dynamics. Macroprudential policy is effective for reducing the likelihood and magnitude of financial crises, but the optimal policy requires significant variation across regimes of global liquidity and realizations of news shocks. Moreover, the effectiveness of the policy improves as the precision of news rises from low levels, but at high levels of precision it becomes less effective (financial crises are less likely, but the optimal policy does not weaken them significantly).

### **Credit and macroprudential policy in an emerging economy: a structural model assessment**

**Horacio A Aguirre and Emilio F Blanco**

We build a small structural open economy model, augmented to depict the credit market and interest rate spreads (distinguishing by credit to firms and families); monetary policy with sterilized intervention in the foreign exchange market; and macroprudential policy as capital requirements. We estimate the model using Bayesian techniques with quarterly data for Argentina in 2003-2011; it can be extended to other emerging economies, allowing for comparative empirical analysis. Results indicate that shocks to lending rates and spread weigh on macroeconomic variables; likewise, the credit market is affected by macroeconomic shocks. Capital requirements, beyond their strictly prudential role, appear to have contributed to lower volatility of key variables such as output, prices, credit and interest rates. The interaction of monetary policy, foreign exchange intervention and prudential tools appears to be synergic: counting on a larger set of tools helps dampen volatility of both macroeconomic and financial system variables, taking into account the type of shocks faced during the estimation period.

### **Inflation targeting and financial stability: providing policymakers with relevant information**

**Anders Vredin**

Experience from financial crises and central bank policies in the past decade has led to an intensified debate about the relationship between monetary policy and financial stability. Since there is no established theoretical framework for analysing the links between financial stability and monetary policy, it is very difficult to deliver precise recommendations for policy. The primary purpose of this paper is to present suggestions for how risks of financial instability can be taken into account in the information provided to central bank decision makers, despite the considerable uncertainty about the appropriate analytical approach. The paper starts with a discussion of the strategy of "flexible inflation targeting", which, in fact, does not provide any "simple rules" for policymakers. The next section contains a review of theoretical and empirical analyses of links between financial stability and monetary policy. Insights from inflation targeting, and more recent views on the role of financial stability, lead to suggestions regarding the type of information that should be presented to monetary policy decision makers, and how it can be organised, to help them understand the links between financial stability and monetary policy.

### **Comparative assessment of macroprudential policies**

**Valentina Bruno, Ilhyock Shim and Hyun Song Shin**

This paper provides a comparative assessment of the effectiveness of macroprudential policies in 12 Asia-Pacific economies, using comprehensive databases of domestic macroprudential policies and capital flow management (CFM) policies. We find that banking sector CFM policies and bond market CFM policies are effective in slowing down banking inflows and bond inflows, respectively. We also find some evidence of spillover effects of these policies. Finally, regarding the interaction of monetary policy and macroprudential policies, our empirical findings suggest that macroprudential policies are more successful when they complement monetary policy by reinforcing monetary tightening, than when they act in opposite directions.

## **Basel Committee on Banking Supervision**

### **Basel III: The standardised approach for measuring counterparty credit risk exposures: Frequently asked questions**

**August 2015**

The Basel Committee on Banking Supervision has received a number of interpretation questions related to the Standardised Approach for measuring counterparty credit risk (SA-CCR), as published in March 2014 (and revised in April 2014). The SA-CCR will replace both

current non-internal model approaches, the Current Exposure Method (CEM) and the Standardised Method (SM). To help ensure consistent global implementation of its standards, the Committee has agreed to periodically review frequently asked questions and publish answers along with any technical elaboration of the standards and interpretative guidance that may be necessary. This document presents a set of frequently asked questions that relate to the SA-CCR.

### **Criteria for identifying simple, transparent and comparable securitisations July 2015**

The Basel Committee on Banking Supervision and the International Organization of Securities Commissions (IOSCO) today released final Criteria for identifying simple, transparent and comparable securitisations. The criteria are available on the websites of the Bank for International Settlements and IOSCO.

The purpose of these criteria is to assist in the financial industry's development of simple, transparent and comparable securitisation structures. They are not intended to serve as a substitute for investors' due diligence.

These criteria apply only to term securitisations and are non-exhaustive and non-binding. Additional and/or more detailed criteria may be necessary based on specific needs and applications.

Criteria promoting simplicity refer to the homogeneity of underlying assets with simple characteristics, and a transaction structure that is not overly complex.

Criteria on transparency provide investors with sufficient information on the underlying assets, the structure of the transaction and the parties involved in the transaction, thereby promoting a more thorough understanding of the risks involved. The form in which the information is available should not hinder transparency, but instead it should support investors in their assessment.

Criteria promoting comparability could assist investors in their understanding of such investments and enable more straightforward comparison between securitisation products within an asset class.

### **General guide to account opening - consultative document July 2015**

The Basel Committee on Banking Supervision has today issued for public consultation a revised version of the General guide to account opening, which was first published in February 2003.

Most bank-customer relationships start with an account opening procedure. The customer information collected and verified at this stage is crucial in order for the bank to fulfil its obligations under anti-money laundering and counter-financing of terrorism (AML/CFT) rules. As a result, banks' policies and procedures for account opening must fully reflect applicable AML/CFT legislation.

When finalised, the proposed revised version of the General guide to account opening will be added as an annex to the Committee's Sound management of risks related to money laundering and financing of terrorism, published in January 2014. The proposed guide expands on, and should be read in conjunction with, the 2014 guidelines.

The proposed guide is in no way intended to strengthen, weaken or otherwise modify the existing Financial Action Task Force (FATF) standards. Rather, it aims to support banks in implementing the FATF standards and guidance, which requires the adoption of specific policies and procedures, in particular on account opening.

The Committee welcomes comments on this consultative document. Comments should be uploaded here by Thursday 22 October 2015 or they may be sent by post to: Secretariat of the Basel Committee on Banking Supervision, Bank for International Settlements, CH-4002 Basel, Switzerland. All comments will be published on the website of the Bank for International Settlements unless a respondent requests confidential treatment.

## **Guidelines for identifying and dealing with weak banks**

### **July 2015**

The Basel Committee on Banking Supervision today published the final Guidelines for identifying and dealing with weak banks.

Weak banks are a worldwide phenomenon. They pose a continuing challenge for bank supervisors and resolution authorities in all countries, regardless of the political structure, financial system and level of economic and technical development. All bank supervisors should be prepared to mitigate the incidence of weak banks and deal with them when they occur.

In the light of the significant post-crisis developments in financial markets and the regulatory landscape, the Committee has updated its 2002 Supervisory guidance on dealing with weak banks. Key changes include:

- emphasising the need for early intervention and the use of recovery and resolution tools, and updating supervisory communication policies for distressed banks;
- providing further guidance for improving supervisory processes, such as incorporating macroprudential assessments, stress testing and business model analysis, and reinforcing the importance of sound corporate governance at banks;
- highlighting the issues of liquidity shortfalls, excessive risk concentrations, misaligned compensation and inadequate risk management; and
- expanding guidelines for information-sharing and cooperation among relevant authorities.

Part I of the report discusses the underlying supervisory preconditions for dealing with weak banks and techniques that will allow the supervisor to identify problems. These phases include preparatory work on recovery and resolution issues. Part II concerns the corrective measures available to turn around a weak bank and, for resolution authorities, tools for dealing with failing or failed banks.

A consultative version of this paper was published for comment in June 2014. The guidelines published today supersede the Committee's 2002 guidance on the topic.

French translation to be published soon

## **Progress report on the implementation of principles for effective supervisory colleges**

### **July 2015**

The Basel Committee on Banking Supervision has today issued a Progress report on the implementation of principles for effective supervisory colleges.

The Basel Committee first published good practice principles on supervisory colleges in 2010 and issued a revised set of Principles for effective supervisory colleges in 2014. The Committee continues to monitor the implementation of the principles and to review the effectiveness of colleges. This progress report sets out the detailed findings, based on the monitoring initiatives undertaken by the Basel Committee, and highlights challenges faced by supervisors in running effective supervisory colleges as well as the practical approaches taken to address them.

The key findings of the colleges' monitoring can be summarised as follows:

While there is room for improvement in several areas, the broad sense of supervisors - from both a home and a host perspective - is that the functioning of supervisory colleges has continued to improve and that supervisors have made considerable advances in implementing the college principles.

Colleges play a key role in assisting supervisors by giving both home and host supervisors a comprehensive view of risks and vulnerabilities to a firm and identifying emerging risks on a timely basis.

Colleges have evolved into key forums for rigorous discussion of broader issues that enhance supervision of global firms and contribute to the planning of supervisory assessments.

A wide range of college structures has been developed by home supervisors to reflect the differing size, complexity and global reach of internationally active banks, and home supervisors have a greater sensitivity to host supervisor concerns in developing criteria for college membership.

Legal and institutional arrangements are important contributors to successful colleges and have been enhanced in recent years, but trust and mutual understanding among members are at least as important.

The collaborative work among college members contributes to improving the effectiveness of the oversight of cross-border banking groups.

While supervisors report that interaction with firms has improved in supervisory colleges, particularly in terms of a higher-quality engagement with management, many firms have indicated that they would like to receive more feedback on college discussions.

Although some progress has been made as regards the role of colleges in crisis preparedness, this principle has also been cited as the area with the most implementation challenges, in part because crisis management groups have assumed some of the responsibilities formerly undertaken in supervisory colleges.

### **Corporate governance principles for banks July 2015**

The Basel Effective corporate governance is critical to the proper functioning of the banking sector and the economy as a whole. While there is no single approach to good corporate governance, the Basel Committee's revised principles • provide a framework within which banks and supervisors should operate to achieve robust and transparent risk management and decision-making and, in doing so, promote public confidence and uphold the safety and soundness of the banking system.

The Committee's revised set of principles supersedes guidance published by the Committee in 2010. The revised guidance emphasises the critical importance of effective corporate governance for the safe and sound functioning of banks. It stresses the importance of risk governance as part of a bank's overall corporate governance framework and promotes the value of strong boards and board committees together with effective control functions. More specifically, the revised principles:

- expand the guidance on the role of the board of directors in overseeing the implementation of effective risk management systems;
- emphasise the importance of the board's collective competence as well as the obligation of individual board members to dedicate sufficient time to their mandates and to keep abreast of developments in banking;
- strengthen the guidance on risk governance, including the risk management roles played by business units, risk management teams, and internal audit and control functions (the three lines of defence), as well as underline the importance of a sound risk culture to drive risk management within a bank;
- provide guidance for bank supervisors in evaluating the processes used by banks to select board members and senior management; and
- recognise that compensation systems form a key component of the governance and incentive structure through which the board and senior management of a bank convey acceptable risk-taking behaviour and reinforce the bank's operating and risk culture.

A consultative version of the Corporate governance principles for banks was published in October 2014. The Basel Committee wishes to thank all those who contributed time and effort to express their views during the consultation process.

## **Frequently asked questions on the Basel III leverage ratio framework July 2015**

In January 2014, the Basel Committee on Banking Supervision published the Basel III leverage ratio framework and disclosure requirements together with the public disclosure requirements applicable as of 1 January 2015. To promote consistent global implementation of those requirements, the Committee has agreed to periodically review frequently asked questions (FAQs) and publish answers along with any technical elaboration of the standards text and interpretative guidance that may be necessary.

The document published today sets out the first and second set of FAQs that relate to the Basel III leverage ratio framework. The questions and answers are grouped according to different relevant areas:

- (i) criteria for the recognition of cash variation margin associated with derivative exposures;
- (ii) centrally cleared client derivative exposures;
- (iii) exposures and netting of securities financing transactions (SFTs);
- (iv) the treatment of netting of SFTs and derivatives under a cross-product netting agreement;
  
- (v) the exposure measure under the additional treatment for credit derivatives; and
- (vi) the treatment of long settlement transactions and failed trades.

## **Report on the impact and accountability of banking supervision July 2015**

The Report on impact and accountability of banking supervision presents a range-of-practice study on how supervisors around the world define and evaluate the impact of their policies and actions, manage against that impact and then account for it to their external stakeholders.

In response to the global financial crisis, standard-setting bodies and national authorities initiated a broad overhaul of the regulatory framework. The implementation of Basel III makes a necessary and important contribution to strengthening regulation and increasing the resilience of banks. However, regulatory reforms alone cannot assure the soundness and stability of financial institutions; they must be supported by effective supervision.

In recent years, supervisors have revised and strengthened their strategy and practice. Supervision has become more comprehensive and intrusive, taking additional dimensions of a bank's business into account. Supervisors have also taken steps to gain more insight into the impact of their activities.

Measuring the impact of supervision is a relatively new area. Jurisdictions have nevertheless developed various practices to show how their activities contribute to the soundness and stability of financial institutions and of the financial system. That said, no analysis is straightforward, because supervisors have to deal with methodological challenges and because there is no unique method or indicator that can be singled out in response to these challenges. Thus, current experience must be discussed while practices are still evolving.

Finally, the report shows how a well-designed system of accountability can support operational independence and enhance transparency, while safeguarding confidential, institution-specific information.

## **Review of the Credit Valuation Adjustment (CVA) risk framework - consultative document July 2015**

A Review of the Credit Valuation Adjustment Risk Framework • is being undertaken by the Basel Committee. The objectives of the review are to (i) ensure that all important drivers of credit valuation adjustment (CVA) risk and CVA hedges are covered in the Basel regulatory

capital standard; (ii) align the capital standard with the fair value measurement of CVA employed under various accounting regimes; and (iii) ensure consistency with the proposed revisions to the market risk framework under the Basel Committee's Fundamental review of the trading book.

The Basel III capital framework already establishes a minimum capital charge to capture the potential mark-to-market losses faced by a bank from the deterioration in a counterparty's creditworthiness. This capital treatment addresses any variability in CVA that arises due to changes in credit spreads but does not take account of variability arising from daily changes in market risk factors (ie account exposure variability).

This consultative paper envisages a CVA risk framework that takes into account the market risk exposure component of CVA along with its associated hedges. The regulatory capital requirement for CVA risk would be based on exposure models that banks also use to determine their accounting CVA, subject to conditions intended to reduce potential variability due to risk-weighted asset (RWA) calculations or remaining discrepancies in financial reporting practices across banks and jurisdictions.

For a broad range of internationally active banks, accounting CVA is fair-valued through the profit and loss (P&L) account and is sensitive to the same risk factors as instruments held in the trading book. The consultative paper therefore proposes an internal models approach and a standardised approach for CVA risk that have been adapted from the revised market risk framework under the Committee's Fundamental review of the trading book. A basic approach for CVA risk is also proposed for banks that are less likely to regularly compute CVA sensitivities to a large set of market risk factors, owing to the nature of their trading operations.

#### **Net Stable Funding Ratio disclosure standards June 2015**

Disclosure requirements for the Net Stable Funding Ratio ("NSFR") have been developed to improve the transparency of regulatory funding requirements, reinforce the Principles for sound liquidity risk management and supervision, strengthen market discipline, and reduce uncertainty in the markets as the NSFR standard is implemented.

Similar to the LCR disclosure framework, and to promote the consistency and usability of disclosures related to the NSFR, internationally active banks in all Basel Committee member jurisdictions will be required to publish their NSFRs according to a common template. This NSFR disclosure template includes the major categories of sources and uses of stable funding.

In parallel with the implementation of the NSFR standard, supervisors will give effect to these disclosure requirements, and banks will be required to comply with them from the date of the first reporting period after 1 January 2018.

#### **Interest rate risk in the banking book - consultative document June 2015**

The consultative document on the risk management, capital treatment and supervision of interest rate risk in the banking book • (IRRBB) expands upon and is intended to ultimately replace the Basel Committee's 2004 Principles for the management and supervision of interest rate risk.

The Committee's review of the regulatory treatment of interest rate risk in the banking book is motivated by two objectives: First, to help ensure that banks have appropriate capital to cover potential losses from exposures to changes in interest rates. This is particularly important in the light of the current exceptionally low interest rate environment in many jurisdictions. Second, to limit capital arbitrage between the trading book and the banking book, as well as between banking book portfolios that are subject to different accounting treatments. The paper presents two options for the capital treatment of interest rate risk in the banking book:

- (i) the adoption of a uniformly applied Pillar 1 measure for calculating minimum capital requirements, which would have the benefit of promoting greater



consistency, transparency and comparability, thereby promoting market confidence in banks' capital adequacy and a level playing field internationally; and

- (ii) a Pillar 2 option, which includes quantitative disclosure of interest rate risk in the banking book based upon the proposed Pillar 1 approach, which would better accommodate differing market conditions and risk management practices across jurisdictions.

### **Developments in credit risk management across sectors: current practices and recommendations**

**June 2015**

The report provides insight into the current supervisory framework around credit risk, the state of credit risk management at firms and implications for the supervisory and regulatory treatments of credit risk.

It is based on a survey that the Joint Forum conducted with supervisors and firms in the banking, securities and insurance sectors globally in order to understand the current state of credit risk management given the significant market and regulatory changes since the 2008 financial crisis. Fifteen supervisors and 23 firms from Europe, North America and Asia responded to the survey.

The report updates previous Joint Forum work on this topic, particularly Regulatory and market differences: issues and observations (2006), and used the date of that report as the benchmark when analysing changes in the field of credit risk management.

The report includes the following recommendations for consideration by supervisors.

Recommendation 1: Supervisors should be cautious against over-reliance on internal models for credit risk management and regulatory capital. Where appropriate, simple measures could be evaluated in conjunction with sophisticated modelling to provide a more complete picture.

Recommendation 2: With the current low interest rate environment possibly generating a "search for yield" through a variety of mechanisms, supervisors should be cognisant of the growth of such risk-taking behaviours and the resulting need for firms to have appropriate risk management processes.

Recommendation 3: Supervisors should be aware of the growing need for high-quality liquid collateral to meet margin requirements for OTC derivatives sectors, and if any issues arise in this regard they should respond appropriately. The Joint Forum's Parent Committees (BCBS, IAIS and IOSCO) should consider taking appropriate steps to promote the monitoring and evaluation of the availability of such collateral in their future work while also considering the objective of reducing systemic risk and promoting central clearing through collateralisation of counterparty credit risk exposures that stems from non-centrally cleared OTC derivatives.

Recommendation 4: Supervisors should consider whether firms are accurately capturing central counterparty exposures as part of their credit risk management.

## **Committee on the Global Financial System**

### **Regulatory change and monetary policy**

**May 2015**

Financial regulation is evolving, as policymakers seek to strengthen the financial system in order to make it more robust and resilient. Changes in the regulatory environment are likely to have an impact on financial system structure and on the behaviour of financial intermediaries that central banks will need to take into account in how they implement monetary policy.

Against this background, this report assesses the combined impact of key new regulations on monetary policy. It is based on information from a range of sources, including central bank

case studies as well as structured interviews with private sector market participants. It argues that the likely impacts of the new financial regulations on financial institutions and markets should have only limited and manageable effects on monetary policy operations and transmission. Hence, as necessary, central banks should be able to make adjustments within their existing policy frameworks and in ways that preserve policy effectiveness. These adjustments will tend to differ across jurisdictions according to the financial systems and policy frameworks in place. Specific implications, and examples of potential policy responses, are set out and elaborated in more detail in the report.

## Committee on Payments and Market Infrastructures

### **Harmonisation of key OTC derivatives data elements (other than UTI and UPI) – first batch, consultative report issued by CPMI-IOSCO September 2015**

G20 Leaders agreed in 2009 that all over-the-counter (OTC) derivatives contracts should be reported to trade repositories (TRs) as part of their commitment to reform OTC derivatives markets in order to improve transparency, mitigate systemic risk and protect against market abuse. Aggregation of the data reported across TRs is necessary to help ensure that authorities are able to obtain a comprehensive view of the OTC derivatives market and activity.

Following the 2014 FSB *Feasibility study on approaches to aggregate OTC derivatives data*, the FSB asked the CPMI and IOSCO to develop global guidance on the harmonisation of data elements reported to TRs and important for the aggregation of data by authorities, including Unique Transaction Identifier (UTIs) and Unique Product Identifiers (UPIs).

This consultative report is one part of the CPMI-IOSCO Harmonisation Group's response to its mandate. It focuses on a first batch of key data elements (other than UTI and UPI) that are considered important for consistent and meaningful aggregation on a global basis.

The report seeks comments on these proposals as well as responses to the general and specific questions by 9 October 2015, to be sent to both the CPMI secretariat and the IOSCO secretariat.

Besides this consultative report, the CPMI and IOSCO have already issued a consultative report on *Harmonisation of the Unique Transaction Identifier*, and plan to issue consultative reports on global UPIs and on further batches of key data elements (other than UTI and UPI) in the coming months.

### **Harmonisation of the Unique Transaction Identifier - consultative report August 2015**

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This consultative report is one part of the CPMI-IOSCO Harmonisation Group's response to its mandate. It focuses on the harmonised global UTI, whose purpose is to uniquely identify each OTC derivative transaction required by authorities to be reported to TRs. The final objective is to produce clear guidance as to UTI definition, format and usage that meets the

needs of UTI users, is global in scale, and is jurisdiction-agnostic, thus enabling the consistent global aggregation of OTC derivatives transaction data.

### **Application of the "Principles for financial market infrastructures" to central bank FMIs August 2015**

Collateral The Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) have issued this short note providing guidance on how the Principles for financial market infrastructures (PFMI) applies to financial market infrastructures that are owned and operated by central banks. It develops what is said in the PFMI itself and further clarifies the interaction between the PFMI and central bank policies.

### **Implementation monitoring of PFMIs: Second update to Level 1 assessment report June 2015**

The Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) continue to closely monitor the implementation of the Principles for financial market infrastructures (PFMIs). The PFMIs are international standards for payment, clearing and settlement systems, and trade repositories. They are designed to ensure that the infrastructure supporting global financial markets is robust and well placed to withstand financial shocks.

This report provides jurisdictions' updated self-assessments on progress towards adopting the legislation, regulations and other policies that will enable them to implement the 24 Principles for FMIs and four of the five Responsibilities for authorities included in the PFMIs. It shows that good progress has been made by the 28 participating jurisdictions since the previous update in May 2014. In particular, the gap in the progress on implementation measures applicable to central securities depositories and securities settlement systems vis-à-vis other FMI types has now been closed. The next update of the Level 1 assessments will be conducted in 2016.

## Speeches

### **On the centrality of the current account in international economics**

*Keynote speech by Mr Claudio Borio, Head of Monetary and Economic Department of the BIS, at the ECB-Central Bank of Turkey conference "Balanced and sustainable growth - operationalising the G20 framework", Frankfurt, 28 August 2015.*

The current account occupies a central position in international economics and policy debates. Indeed, in G20 policy debates the term "global imbalances" is treated as almost synonymous with "current account imbalances". Current account imbalances do matter and they can be a problem. But this speech argues that this centrality is not that helpful in understanding how the global economy works, especially in a world of free and huge capital flows. And it may even lead to the wrong policy prescriptions, including not paying sufficient attention to potentially more disruptive financial imbalances. A key reason is that, analytically, the current account is asked to shed light on issues for which it is ill-suited, such as the amount of financing a country gets from, or provides to, others, the direction of that financing (who lends to whom) and financial instability.

### **Credit booms and credit busts**

*Interview with Claudio Borio, Head of the Monetary and Economic Department, and the Institute for New Economic Thinking (INET), 10 July 2015*

There is now a growing consensus among policymakers and academics that a key element to improve safeguards against financial instability is to strengthen the "macroprudential" orientation of regulatory and supervisory frameworks. Claudio Borio speaks with INET's Marshall Auerback on this topic.

## **The role of the CPMI as part of the Basel Process**

*Presentation Keynote speech by Mr Jaime Caruana, General Manager of the BIS, at the CPMI 25th Anniversary Conference, Basel, 30 June 2015.*

Today we are celebrating a birthday, a happy event. At a still youthful 25, the CPMI does not yet have to worry about the problems of old age. Congratulations are therefore in order. So let me begin by complimenting the Committee on one fundamental accomplishment that we know but is perhaps not enough publicly recognised.

The crisis that erupted in 2008 revealed the financial sector's many shortcomings. But the infrastructure that supports payment, clearing and settlement was not among them. On the contrary, the various financial market infrastructures - or FMIs - withstood the battering they received while the markets around them were in turmoil, and continued to function smoothly, with little or no damage.

If in 2008, the market infrastructure had been in the same state as it was back in 1990, then the outcome could have been rather different. It has been said many times before, but it bears repeating: FMIs are fundamental to the ability of markets to work. A weak infrastructure can turn a small crisis into a huge one. The fact that the infrastructure was strong enough in 2008 is in large part thanks to the many efforts of this committee since its inception. The introduction of improvements such as real-time gross settlement (RTGS) for payments, delivery-versus-payment (DVP) for securities, and payment-versus-payment (PVP) for foreign exchange has made a real and substantial difference. So, congratulations!

In the rest of my remarks, I shall first highlight three snapshots from the Committee's history, corresponding to the three sessions of this conference. Then, I shall talk about how the Committee has been working in the context of what we at the BIS call the Basel Process. Finally, I shall share with you a few thoughts on one of the outcomes of the financial crisis, namely the growing role of centralised counterparties or CCPs.

### The history of the CPMI

First, some history and its relation to the three sessions of this conference. To preserve the chronology of the actual events, I will take the sessions in a different order, starting with Session 2.

Session 2 is about the resilience, recovery and resolution of FMIs. As I mentioned earlier, one of the CPMI's most significant contributions is the promotion of PVP as a safer way to settle foreign exchange. Many of you in this audience would know that the history behind this goes back to 1974 and the so-called Herstatt crisis. The direct consequence of that for us here in Basel was in fact the creation of the Basel Committee on Banking Supervision (BCBS), not the Committee on Payment and Settlement Systems (CPSS). It was only some years later that people recognised the need for a more specialised group to work on settlement issues. Nevertheless, despite its later start, the CPSS embraced FX settlement as one of its initial, defining projects together to produce the BCBS's 2013 Supervisory guidance for managing risks associated with the settlement of foreign exchange transactions. In the coming years, this cooperation will bear fruit as risks are better recognised and addressed.

Session 3 of this conference is about disruptive innovations. Here I'd like to refer to what might be called the prehistory of the Committee. In a way, the Committee can be considered to be not 25 but 35 years old, given that its predecessor, the Group of Experts on Payment Systems, was set up in 1980. What led to the formation of that group was a major innovation that, as it happened, was highly disruptive, namely the conversion of paper-based large-value payment systems to electronic ones. This was a change driven by technology. And it occurred at a time when financial markets were starting to grow rapidly in size. The combination - new technology and bigger markets - led central banks to wonder, quite rightly, what the risk implications might be. And it turned out that what was relatively harmless when payments were slow and small became potentially disastrous when they were fast and large. Back in those days, banks received information about incoming payments in real time during the day and credited their customers' accounts immediately based on that information. But settlement between banks took place only at the end of the day. The result: large amounts of

intraday interbank credit, that was hardly visible, understood or controlled by the banks. This development led to what was, thankfully, only a brief era of electronic large-value deferred settlement arrangements, before real-time settlement came to dominate.

Session 1 is about the evolution of standard setting. For many years, some of the most influential norms in the payment and settlement area came in the report that was, in effect, the father of the CPSS - that is, the Lamfalussy report of 1990, published just as the CPSS was created. This report was a key response both to that disruptive innovation of electronic deferred settlement and to the problem of Herstatt. The first reports issued by the CPSS itself were statistical in nature, very different from standard setting. But soon thereafter, the Committee started producing a wide range of normative statements. The terms used to describe these statements varied, but curiously, the term "standards" was rare. It appeared in the 1990 Lamfalussy report, and then again this year when "disclosure standards" for CCPs were published. But in between, the Committee used a bewildering variety of terms: principles, core principles, general principles, recommended actions, recommendations, responsibilities, propositions, and guidelines. In the last couple years, under the initiative of Paul Tucker and concluded under Benoît Cœuré, the CPSS's international standard -setting role was explicitly confirmed by its governance bodies: the Economic Consultative Committee (ECC) and the Global Economy Meeting. The CPSS became the CPMI.

### The Basel Process

Now let me turn to the second part of my remarks. In this birthday event, a lot is bound to be said about what the Committee has accomplished to date. These accomplishments depend not only on the hard work of successive generations of committee chairmen and members as well as secretariat staff, but also the Committee's cooperation with others, in particular, in the context of the Basel Process.

We use the term Basel Process to refer to the active cooperation among the committees and organisations hosted by the BIS and their interaction with the BIS to support their work in prudential standard setting or, more generally, in the pursuit of financial stability. Currently, six committees and three associations find their homes at the BIS. The process is based on three key features: synergies, flexibility and openness, and support from the BIS itself. Each of these is relevant in the case of the CPMI.

First, on synergies. The physical proximity of the BIS-based committees and associations facilitates contact and exchange of ideas across groups. In addition, these groups share a common goal of promoting financial stability. It therefore makes sense for them to work together. Good infrastructure is only valuable if it is used, and used appropriately. It is therefore not surprising that there has been a long history of cooperation between the CPMI and the BCBS, in particular. Of course, the CPMI and IOSCO also have a close relationship - so much so that, over the past five years, roughly half of the CPMI's publications have been joint publications with IOSCO. Indeed, in an increasingly complex financial system, no committee or group can expect to work by itself in isolation. Cooperation across disciplines and across jurisdictions is essential - as is taking a systemic approach to financial stability. The CPMI should be commended for extending this cooperative spirit and systemic view globally.

Another feature of the Basel Process is flexibility and openness. The BIS-based committees are by design limited in size. This kind of setup makes discussion, coordination and cooperation easier, with corresponding benefits to the quality of the output. At the same time, this output can be much larger than the size of the committees would suggest, as they can leverage the expertise of the international community of central bankers, financial regulators and supervisors, and other public authorities. The committees' output needs legitimacy if it is to be effective. International standards are not laws. Jurisdictions have to agree to implement them, and that is more likely to happen if the standards are respected not just for the quality of the product but also for the nature of the process by which they are produced. In the latter respect, governance is crucial. An important change in this regard for the CPMI - and some of its sister committees - came in 2009, when the Committee started to report not to the G10 Governors but to the ECC and the Global Economy Meeting, which consists of the Governors of 30 BIS member central banks. Accompanying this change was an expansion of the membership of the Committee itself. Both changes have made the

Committee more representative of the world economy and its financial centres. There was indeed some concern at the time that an expanded membership might make the Committee unwieldy and thus less effective. Happily, that proved to be a misplaced concern, and the friendly and cooperative spirit of the committee is undiminished.

Finally, the third key feature of the Basel Process is support from the BIS itself. The work of the Basel-based groups is informed by the BIS's research and analysis, its work in international financial statistics and the practical experience it gains from its banking activities. Given the very specialised - or some may even say esoteric - nature of the CPMI's work, most of the interaction has been in the form of BIS statistical support, whether for the Committee's regular statistics - which are still the most downloaded CPMI publications - or for ad hoc topics. Some of these ad hoc projects, such as the 1998 FX survey, were very large-scale and would have been difficult to carry out if the Committee had not collaborated with BIS colleagues in the statistics area.

Into the limelight?

Let me now proceed to the final part of my remarks and look to the future. I referred a moment ago to the perception that CPMI work was technical or even esoteric. That perception can have certain advantages. By focusing on technical issues, Committee members can have relatively cool-headed discussions of difficult topics without being too much impinged upon by political considerations. The mainly technical and not so political nature of the discussions also means that the CPMI has traditionally been shielded from the limelight - in stark contrast to the BCBS, for example.

But the financial crisis may have changed this to some extent. As I mentioned earlier, by and large, FMIs performed well during the crisis. Nevertheless, there were lessons to be learnt - for both the private and public sectors - and sounder standards were proven necessary. Without the vast public sector support seen during the crisis, for instance, there would surely have been more failures of banks, and thus more stress on infrastructures. FMIs might not have withstood such added stress with so little damage. And as noted earlier, FMIs have to be robust even in the worst crises.

In this respect, let me share a few thoughts on the growing role of CCPs. As you know, one important element of the regulatory agenda to reduce systemic risk is to encourage the use of CCPs, not least by making the clearing of standardised OTC derivatives mandatory.

The benefits of CCPs are qualitatively different from the benefits of the other major infrastructure changes I have mentioned. Mechanisms such as RTGS, DVP and PVP remove what are, in effect, unnecessary frictions in the settlement process. By and large, they remove risks that were due only to poor design or poor processes. And arguably, the safer infrastructure was introduced even before banks themselves fully realised what those risks were.

But this is not the case with clearing, where banks are well aware of counterparty risk. Moreover, such risk is not merely an unnecessary friction of settlement; it is an inevitable feature of trading. CCPs can do a lot both to reduce that risk, for example through multilateral netting, and to ensure that the residual risk is managed effectively by the market as a whole. That is why CCPs are potentially so valuable. However, as CCPs have grown in prominence - and as there is greater awareness of the responsibility put on them to manage risk effectively - there have also been legitimate questions about whether CCPs are safe enough to cope with that responsibility. At the same time, competition between CCPs has brought significant political elements into the picture.

Against this background, the CPMI may be moving into the limelight. Such a move may be uncomfortable at times. But, at least on this occasion, it is helpful. It is helping us to ask the right questions and find the right answers. The substance of this issue will, no doubt, be discussed in the second session, so I will not say much here. But I will note the following: it is certainly important that high standards are set for CCP safety, but it is not enough. CCPs also need to be supervised and overseen with rigour. Supervisors and overseers need to make sure that CCP managers are internalising the economic and social costs that instability in the infrastructure can entail. In other words, competent authorities need to do this work with a

systemic view. Again, good infrastructure is only valuable if it is used, and used properly. CCPs cannot magically remove all the risk. Ultimately, banks themselves must be responsible for the risks they take and manage them effectively. CCPs can be an enormous help, but they are by no means a complete solution.

### Conclusion

Now let me conclude by simply saying, once again, happy birthday CPMI. And thank you for the great work you have done, and will no doubt continue to do. Thanks also to Benoît, the Secretariat and Klaus Löber, former members and former chairs, Bill and Paul, who are here today.

### **General Manager's speech: Taking a longer-term perspective**

*Speech and presentation of the key messages of the BIS Annual Report delivered by Mr Jaime Caruana, General Manager of the BIS, on the occasion of the Bank's Annual General Meeting, Basel, 28 June 2015.*

The speech highlights four observations from the Annual Report. All of them derive from taking a longer-term perspective that highlights the role of financial and global factors. Persistent unusually low interest rates are not inevitable: they should not be accepted as the new normal. It is important to recognise the long-term damage that financial booms and busts do to productivity growth, mainly by misallocating resources. Persistent very low rates pose risks to the financial sector's strength. And the blind spot of the current international monetary and financial system is its inability to constrain the build-up and transmission of financial imbalances. Fully developing this longer-term perspective and translating its insights into policymaking will require deeper analysis and closer international cooperation.

### **Persistent unusually low interest rates. Why? What consequences?**

*Presentation on the BIS Annual Report by Claudio Borio, Head of the Monetary and Economic Department, on the occasion of the Bank's Annual General Meeting, Basel, 28 June 2015.*

The presentation develops a core theme of the Annual Report. It argues that persistent unusually low interest rates are not necessarily "equilibrium" or "natural rates", conducive to sustainable and balanced global expansion. The dominant analytical perspective defines equilibrium rates too narrowly in terms of the behaviour of inflation. As a result, it does not properly integrate financial instability and its large output costs, notably through the impact of resource misallocations on productivity growth. The broader perspective proposed in the Report casts new light on the long-term decline in real interest rates, helps us better understand possible risks for the global economy and calls for a role to be assigned to monetary policy alongside macroprudential policy in preserving financial stability.

### **Three BIS research themes in the Annual Report**

*Presentation on the BIS Annual Report by Hyun Song Shin, Economic Adviser and Head of Research, on the occasion of the Bank's Annual General Meeting, Basel, 28 June 2015*

The Annual Report reflects the three research themes that have guided our work at the BIS: characteristics of financial intermediation; global liquidity and spillovers; and monetary and financial stability policy frameworks. This presentation describes how findings from research on these themes inform recent changes in long-term interest rates, exchange rates and financial conditions more broadly in the global financial system.