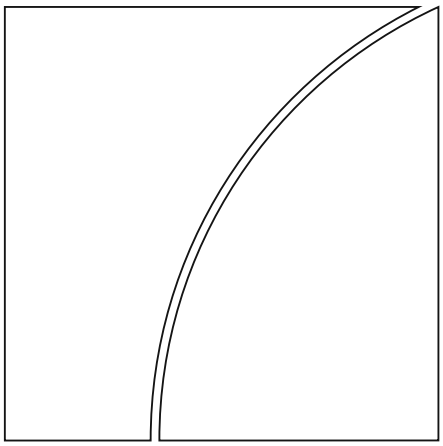
BANK FOR INTERNATIONAL SETTLEMENTS

BIS Quarterly Review

June 2017



International banking and financial market developments

BIS Quarterly Review
Monetary and Economic Department

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Notations used in this Review

billion	thousand million
e	estimated
lhs, rhs	left-hand scale, right-hand scale
$	US dollar unless specified otherwise
...	not available
.	not applicable
–	nil or negligible

Differences in totals are due to rounding.

The term "country" as used in this publication also covers territorial entities that are not states as understood by international law and practice but for which data are separately and independently maintained.

Abbreviations

Currencies

ARS	Argentine peso	LTL	Lithuanian litas
AUD	Australian dollar	LVL	Latvian lats
BGN	Bulgarian lev	MXN	Mexican peso
BHD	Bahraini dinar	MYR	Malaysian ringgit
BRL	Brazilian real	NOK	Norwegian krone
CAD	Canadian dollar	NZD	New Zealand dollar
CHF	Swiss franc	OTH	all other currencies
CLP	Chilean peso	PEN	Peruvian new sol
CNY (RMB)	Chinese yuan (renminbi)	PHP	Philippine peso
COP	Colombian peso	PLN	Polish zloty
CZK	Czech koruna	RON	Romanian leu
DKK	Danish krone	RUB	Russian rouble
EEK	Estonian kroon	SAR	Saudi riyal
EUR	euro	SEK	Swedish krona
GBP	pound sterling	SGD	Singapore dollar
HKD	Hong Kong dollar	SKK	Slovak koruna
HUF	Hungarian forint	THB	Thai baht
IDR	Indonesian rupiah	TRY	Turkish lira
ILS	Israeli new shekel	TWD	New Taiwan dollar
INR	Indian rupee	USD	US dollar
JPY	Japanese yen	ZAR	South African rand
KRW	Korean won		

Countries

AR	Argentina	KR	Korea
AU	Australia	LT	Lithuania
BG	Bulgaria	LV	Latvia
BH	Bahrain	MX	Mexico
BR	Brazil	MY	Malaysia
CA	Canada	NO	Norway
CH	Switzerland	NZ	New Zealand
CL	Chile	PE	Peru
CN	China	PH	Philippines
CO	Colombia	PL	Poland
CZ	Czech Republic	RO	Romania
DK	Denmark	RU	Russia
EA	Euro Area	SA	Saudi Arabia
EE	Estonia	SE	Sweden
GB	United Kingdom	SG	Singapore
HK	Hong Kong SAR	SK	Slovakia
HU	Hungary	TH	Thailand
ID	Indonesia	TR	Turkey
IL	Israel	TW	Chinese Taipei
IN	India	US	United States
JP	Japan	ZA	South Africa

Highlights of the BIS international statistics[1]

The BIS, in cooperation with central banks and monetary authorities worldwide, compiles and disseminates data on activity in international financial markets. This chapter summarises the latest data for the international banking and over-the-counter (OTC) derivatives markets and for residential property prices, available up to end-2016.

Takeaways

- International banking activity weakened in Q4 2016. Cross-border claims dropped by $281 billion in the quarter (view data), but were nevertheless up 1.9% in the year to end-December 2016. The decline was driven primarily by reduced lending to non-banks and unrelated banks, while intragroup positions picked up (view data).
- Trends diverged between advanced economies and emerging market economies (EMEs). The weakness in Q4 2016 mainly reflected a fall in cross-border lending to advanced economies, while aggregated claims on EMEs remained relatively stable.
- The latest $16 billion quarterly rise in claims on China supported a moderate recovery that had started in Q2 2016 but stalled in the third quarter.
- The on-balance sheet dollar funding of non-US banks grew in 2016, despite the loss of funding associated with the implementation of the money market fund reform in the United States.
- Against the backdrop of two of the three largest debt securities offerings in the history of EME sovereign debt, cross-border claims on oil-producing economies in the Middle East also expanded during 2016. Over the same period, deposits from those economies in the international banking system dropped, driven by a $43 billion decline in US dollar-denominated deposits.

[1] This article was prepared by Iñaki Aldasoro (inaki.aldasoro@bis.org) and Cathérine Koch (catherine.koch@bis.org). Statistical support was provided by Swapan-Kumar Pradhan.

The international banking market weakened in Q4 2016

According to the BIS locational banking statistics (LBS), the cross-border claims of BIS reporting banks fell by $281 billion between end-September and end-December 2016, after adjustment for exchange rate movements and methodological breaks (Graph 1, top panels).[2] This represented the second consecutive quarterly decline in 2016. Nevertheless, reflecting strong growth in the first half of 2016, the year-on-year growth rate remained positive at 1.9%, resulting in an increase of $504 billion during 2016.

As regards currency composition, reduced euro-denominated lending led the decline in Q4 2016. A contraction of $208 billion in euro-denominated claims over the last quarter took the year-on-year growth rate to –1% (Graph 1, middle panels). While lending denominated in US dollars also fell, by $81 billion, cross-border claims in yen rose by $68 billion. Both US dollar- and yen-denominated credit were up on an annual basis at end-2016, by 3% and 5%, respectively.

Claims fell across all instrument categories in Q4 2016. Banks' holdings of debt securities dropped by $105 billion, slowing the pace of increase from 3% at end-September to 2% at end-December 2016 (Graph 1, bottom panels). Loans declined by $157 billion and other instruments by $30 billion; nevertheless, their annual growth rates were still positive, at 1% and 4%, respectively.

The fourth quarter downturn was driven primarily by lower lending to non-banks, which decreased for the first time in a year. Claims on non-banks fell by $210 billion, due mainly to a $120 billion contraction in lending to non-bank financial institutions, which include hedge funds, money market funds, pension funds and insurance companies.[3] Meanwhile, interbank activity remained broadly unchanged, reflecting offsetting changes in claims on related offices and unrelated banks.

On a consolidated basis, bank credit to the official sector remained roughly constant. As of end-December 2016, foreign claims on the official sector – which include not only claims on governments but also deposits with central banks – amounted to 26% of total outstanding foreign claims, down 1 percentage point from the previous quarter.[4]

The $287 billion Q4 2016 contraction in lending to advanced economies primarily reflected a $143 billion fall in cross-border claims on the United Kingdom (Graph 2, top panels). As in the previous quarter, euro-denominated claims accounted for the largest share of the fall in cross-border claims on the United Kingdom (96% in Q3 and

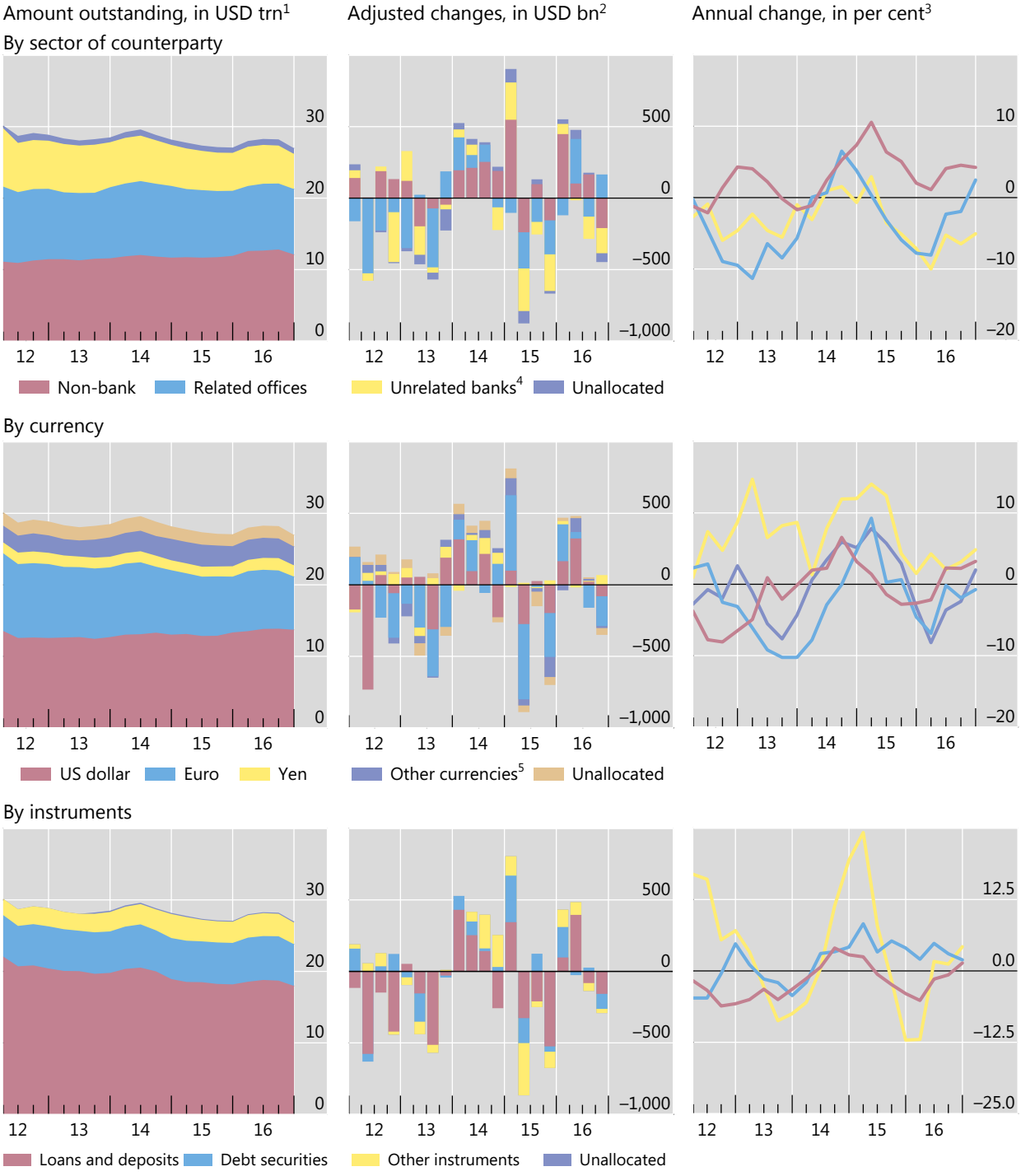
[2] The locational banking statistics are structured according to the location of banking offices and capture the activity of all internationally active banking offices in the reporting country regardless of the nationality of the parent bank. Banks record their positions on an unconsolidated basis, including those vis-à-vis their own offices in other countries. Quarterly changes in outstanding amounts are adjusted for the impact of exchange rate movements between the ends of the respective quarters and for methodological breaks in the data series.

[3] For more information on sector definitions and other technical terms, see the Glossary on the BIS website.

[4] These figures draw on the BIS consolidated statistics on an ultimate risk basis, which exclude intragroup positions and take into account risk transfers. The inclusion of claims on central banks in the aggregate for government claims represents a different approach from that used in the System of National Accounts.

Cross-border claims, by sector and currency

Graph 1



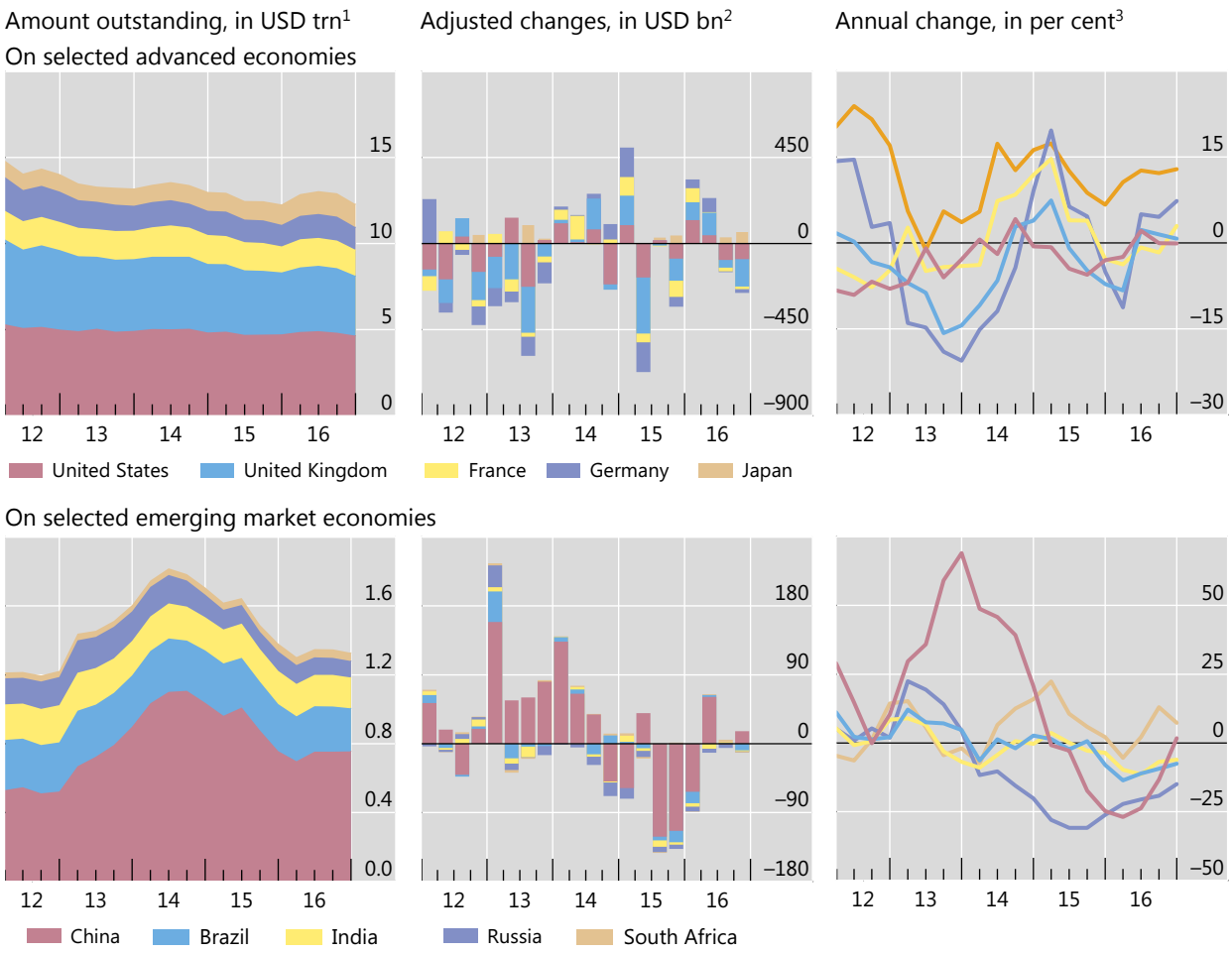
Further information on the BIS locational banking statistics is available at www.bis.org/statistics/bankstats.htm.

[1] 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. [2] Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. [3] Geometric mean of quarterly percentage-adjusted changes. [4] Includes central banks and banks unallocated by subsector between intragroup and unrelated banks. [5] Other reported currencies, calculated as all currencies minus the US dollar, euro, yen and unallocated currencies. The currency is known but reporting is incomplete.

Source: BIS locational banking statistics.

Cross-border claims, by borrowing region and country

Graph 2



Further information on the BIS locational banking statistics is available at www.bis.org/statistics/bankstats.htm.

[1] 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. [2] Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. [3] Geometric mean of quarterly percentage-adjusted changes.

Source: BIS locational banking statistics.

almost 80% in Q4 2016). All counterparty sectors shared in the overall decline. Cross-border claims on banks in the United Kingdom shrank by $72 billion and those on non-banks by $47 billion, while the remaining $24 billion contraction could not be allocated to a specific sector. Cross-border lending to the United States (–$82 billion) and several euro area countries also fell, whereas cross-border claims on Japan grew by $60 billion (Graph 2, top panels).

Cross-border claims on EMEs relatively stable

Cross-border bank claims on EMEs were relatively stable in Q4 2016, declining by $9 billion. The growth rate for 2016 as a whole was slightly positive (1%), representing a reversal of the annual decline experienced during 2015 and the first year-on-year increase since early 2015. Cross-border claims on Latin America and the Caribbean (–$16 billion) and emerging Europe (–$13 billion) contracted during Q4 2016, while

claims on Africa and the Middle East and emerging Asia-Pacific rose by $13 billion and $7 billion, respectively.

In Latin America, a decline in claims on borrowers located in Brazil and Mexico accounted for the bulk of the overall decrease (Graph 2, bottom panels). Cross-border claims on Brazil fell by $9 billion, due primarily to a decline in claims on banks (–$15 billion). By contrast, the $6 billion fall in cross-border lending to Mexico mainly reflected a reduction in lending to non-financial sectors (–$5 billion).

Within emerging Europe, claims on Turkey fell the most in Q4 2016, declining by $9 billion. More than half of this decline reflected weaker US dollar-denominated lending. Claims on banks accounted for the quarterly fall, taking the outstanding stock of claims on this sector to $89 billion, down $17 billion in the year to end-December 2016.

The $16 billion quarterly increase in cross-border bank claims on China brought the outstanding stock of cross-border claims to $755 billion at the end of 2016. This latest quarterly rise supported a moderate recovery that had started in Q2 2016 but stalled in the third quarter. Interbank activity, especially among unrelated offices, was behind the Q4 increase. By contrast, cross-border lending to emerging Asia excluding China shrank by $9 billion. A $7 billion decline in lending to Korea and a $3 billion fall in claims on Indonesia were the main drivers, while lending to Chinese Taipei ($4 billion) grew marginally.

US money market fund reform affects international banking flows

The reform of US money market funds (MMFs), which resulted in a substantial adjustment of dollar funding patterns for non-US banks, took effect in October 2016.[5] Despite the fall in prime MMF funding, non-US banks increased their total on-balance sheet dollar funding over the adjustment period prior to the MMF reform (Q3 2015 to Q3 2016; Graph 3). Over this period, a loss of about $310 billion in US dollar funding from MMFs was compensated by increases in deposits of (ie liabilities to) non-banks in bank offices outside the United States ($467 billion) and international bonds ($179 billion). After reaching a record of $9.8 trillion in Q3 2016, on-balance sheet US dollar funding of non-US banks stood at $9.4 trillion as of end-December 2016, driven by a decline in offshore deposits.

Middle East oil exporters draw on global financing[6]

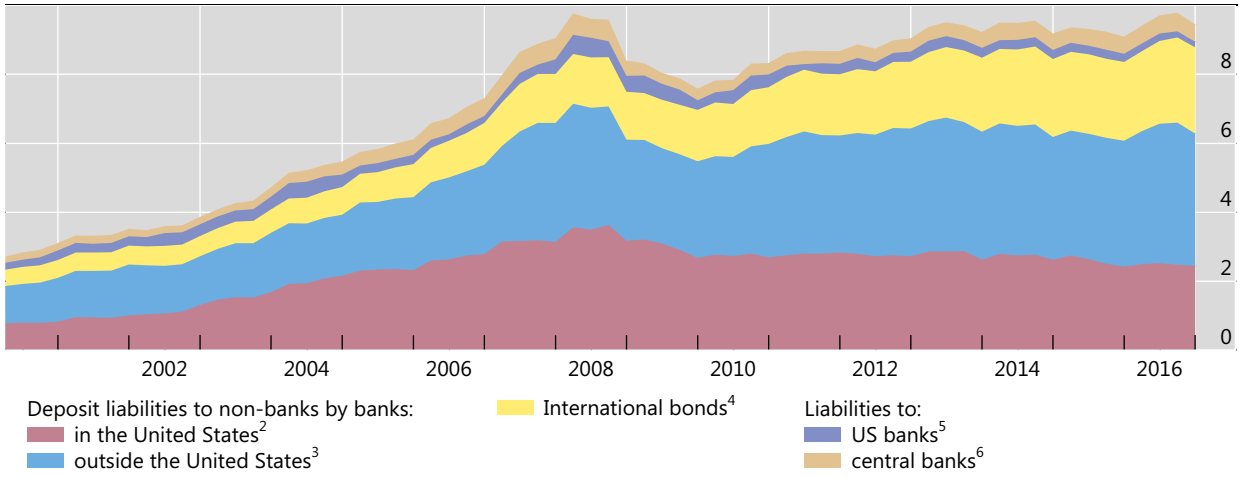
International banking and securities flows in 2016 were influenced by persistently low global oil prices, which put pressure on the fiscal position of many oil-exporting countries. Prices came down from more than $100 a barrel in 2014 to almost $30 at the beginning of 2016, before recovering partially to $54 by end-2016.

[5] See "Highlights of global financial flows", *BIS Quarterly Review*, March 2017, pp 15–23.

[6] To single out the economic aspects, this analysis focuses on the following set of oil-exporting countries in the Middle East: Egypt, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

On-balance sheet dollar funding of non-US banks[1]

Amounts outstanding, in trillions of US dollars — Graph 3



[1] Excluding positions reported by China and Russia, both of which started reporting to the locational banking statistics as from Q4 2015. [2] US dollar-denominated local liabilities (total) plus US dollar-denominated cross-border liabilities to non-banks by foreign affiliates in the United States; local liabilities are sourced from consolidated banking statistics on an immediate counterparty basis. [3] US dollar-denominated liabilities to non-banks by non-US banks located outside the United States. [4] US dollar-denominated issuances by non-US public and private banks; includes bonds, medium-term notes and money market instruments. [5] US dollar-denominated interbank claims of US banks. [6] US dollar-denominated liabilities to official monetary authorities (central banks) by non-US banks.

Sources: Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; BIS consolidated banking statistics (immediate counterparty basis); BIS locational banking statistics; BIS calculations.

As explained in Domanski et al (2015),[7] rising debt levels in the oil sector can create new linkages between certain commodity markets and the broader global economy. Further, the build-up of leverage has an impact on the responses of oil producers to lower revenues and, ultimately, oil price dynamics.

In securities markets, borrowers in oil-exporting countries carried out two of the three largest debt offerings in the history of EME sovereign debt. Saudi Arabia issued $17.5 billion in October 2016, and Qatar raised $9 billion in May 2016. The BIS international debt securities (IDS)[8] database suggests that general government net issuance in 2016 reached $30.6 billion for Saudi Arabia, $10 billion for the United Arab Emirates and $9 billion for Qatar.

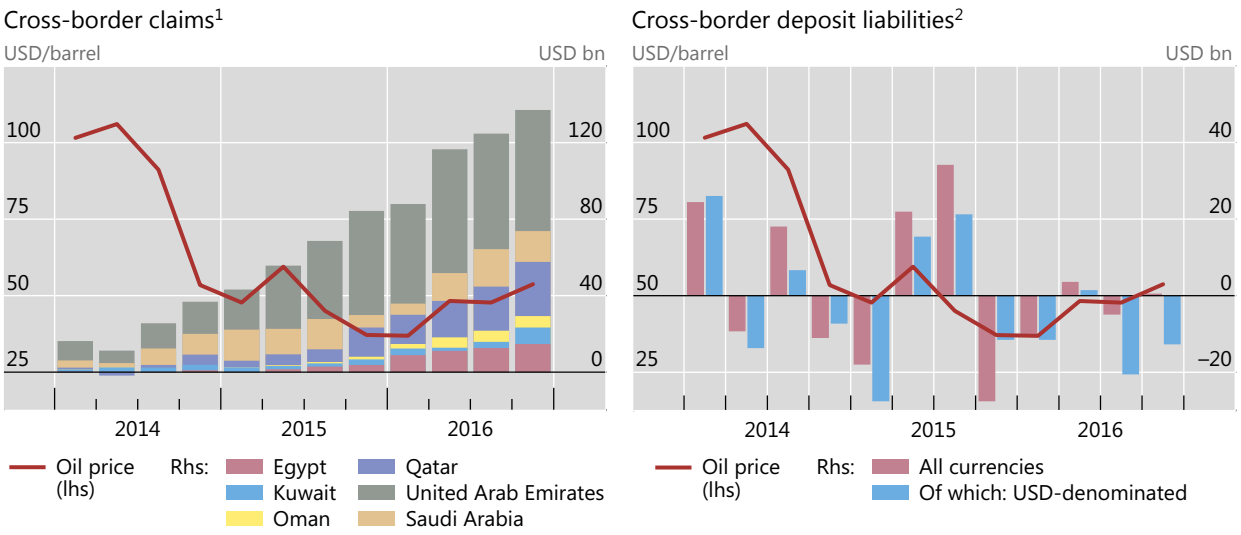
Meanwhile, bank lending to oil-exporting countries in the Middle East saw a sharp increase. The cross-border claims of BIS reporting banks, capturing loan and debt security holdings, on Saudi Arabia climbed by $10 billion (or 11% year on year at end-December 2016), by $13 billion (or 23%) on Qatar and by $11 billion (or 69%) on Egypt during 2016. Those on the United Arab Emirates rose by $9 billion (or 5%), while claims on Kuwait ($6 billion, or 29%) and Oman ($5 billion, or 41%) also went up (Graph 4, left-hand panel). From Q2 2014, when oil prices reached their most recent highs, to end-2016, the aggregate cross-border borrowing of these oil-exporting countries surged by $128 billion, taking the stock of outstanding claims to $404 billion at end-December 2016. About 77% of this new borrowing was

[7] D Domanski, J Kearns, M Lombardi and H S Shin, "Oil and debt", *BIS Quarterly Review*, March 2015, pp 55–66.

[8] IDS are debt securities issued in a market other than that of the country of residence of the borrower.

Selected oil-exporting countries in the Middle East

BIS reporting banks' claims and deposit liabilities — Graph 4



[1] Cumulative adjusted changes in amounts outstanding. [2] Aggregated adjusted changes for the set of countries listed in the left-hand panel.

Sources: Federal Reserve Economic Data (FRED); BIS locational banking statistics by residence.

denominated in US dollars, while sterling- and euro-denominated claims accounted for 9% and 7%, respectively.

A breakdown by instrument shows that traditional loans still dominate. Despite the record debt issuance observed in 2016, cross-border loans still capture 93% of the outstanding stock of total claims on the six oil producers covered in this section.

On a consolidated basis, UK banks feature as the most important single group of creditors. As of end-2016, UK banks reported the highest outstanding stock of international claims on these oil-exporting economies, at $67 billion, or 23% of the total. Euro area banks (French, German and Dutch) jointly accounted for 22%, followed by US (16%) and Japanese (14%) banks. That said, international banking activity involving banks from Asian EMEs is playing an increasingly important role.

Low oil prices also affected capital flows from Middle East oil producers into the international banking system, as those countries tend to draw down their deposits in periods of low revenues. Aggregate cross-border deposits held by residents of these oil-exporting economies with BIS reporting banks came down by $11 billion in 2016, taking the stock to $499 billion (Graph 4, right-hand panel). Deposits denominated in US dollars, in particular, dropped by $43 billion over that period. The outstanding stock of US dollar deposits, however, still made up more than two thirds of the total at end-2016. Saudi Arabia, the largest depositor country among the oil exporters under review, reduced its overall holdings the most (–$42 billion, or –22% year on year at end-2016).

As the LBS suggest, more than half of total deposits were placed with banks in advanced economies, such as the United Kingdom ($156 billion), the United States ($48 billion), France ($28 billion) and Switzerland ($26 billion).

Box A

Central clearing makes further inroads

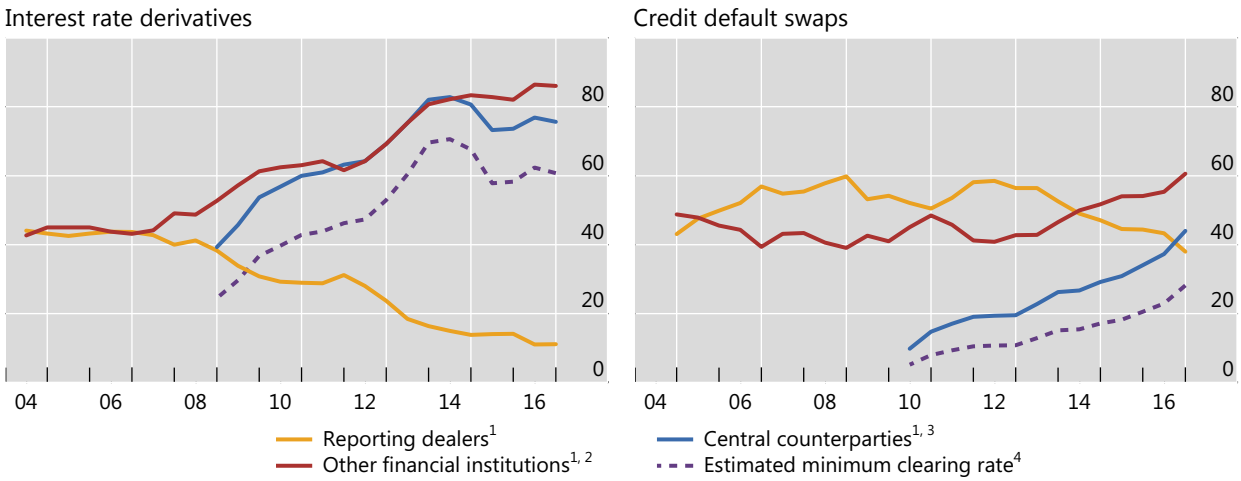
Philip Wooldridge

Central clearing – a key element in the reform agenda for over-the-counter (OTC) derivatives markets aimed at reducing systemic risks – made further inroads in the second half of 2016. When, at end-June 2016, the BIS collected comprehensive data on central counterparties (CCPs) for the first time, the numbers showed that central clearing was predominant in OTC interest rate derivatives markets but less prevalent in other OTC derivatives segments. Data at end-December 2016 indicate that central clearing is gaining in importance in these other segments too.

In OTC interest rate derivatives markets, the share of outstanding contracts centrally cleared through CCPs stood at 76% of notional amounts outstanding at end-December 2016, similar to the share observed six months earlier (Graph A, left-hand panel). If this share is adjusted to approximate the proportion of *trades* – as opposed to outstanding positions – that are cleared through CCPs, then the estimated minimum clearing rate was 61%.① The share of outstanding positions booked against CCPs was highest for forward rate agreements, at 92%, followed by interest rate swaps, at 81%. It remained less than 1% for interest rate options, although the outstanding amount of option contracts reported against CCPs quadrupled in the second half of 2016, from $53 billion to $225 billion.

Growth of central clearing

Notional amounts outstanding by counterparty, in per cent — Graph A



[1] As a percentage of notional amounts outstanding against all counterparties. [2] Including central counterparties but excluding reporting dealers. [3] For interest rate derivatives, data for CCPs prior to end-June 2016 are estimated by indexing the amounts reported at end-June 2016 to the growth since 2008 of notional amounts outstanding cleared through LCH's SwapClear service. [4] Proportion of trades that are cleared, estimated as (CCP / 2) / (1 – (CCP / 2)), where CCP represents the share of notional amounts outstanding that dealers report against CCPs. CCPs' share is halved to adjust for the potential double-counting of inter-dealer trades novated to CCPs.

Sources: LCH.Clearnet Group Ltd; BIS OTC derivatives statistics (Table D7 and Table D10.1); BIS calculations.

In credit default swap (CDS) markets, the share centrally cleared jumped from 37% of notional amounts outstanding at end-June 2016 to 44% at end-December 2016. This movement represented the largest semiannual increase in the centrally cleared share since CCP data for CDS were first collected in 2010 (Graph A, right-hand panel). It corresponds to an increase in the estimated minimum clearing rate from 23% to 28% in the second half of 2016. The proportion of outstanding CDS contracts centrally cleared increased for single-name as well as multi-name instruments, although the proportion remained much higher for the latter: 54% compared with 36%. Multi-name products tend to be more standardised than single-name products and consequently more amenable to central clearing. Notably, the increase in the proportion was driven by a sharp decline in the uncleared segment of CDS markets. Whereas the notional amount cleared through CCPs was more or less unchanged in the second half of 2016, at $4.3 trillion, the notional amount for contracts between reporting dealers fell from $5.1 trillion to $3.7 trillion.

In OTC foreign exchange derivatives markets, only 1% of notional amounts were centrally cleared at end-December 2016. That said, the outstanding amount cleared almost tripled in the second half of 2016, from $352 billion to $903 billion. While the BIS data do not break down FX derivatives into FX swaps and forwards, the growth of clearing was probably concentrated in non-deliverable forwards because they are commonly offered for clearing, whereas this is not the case for other FX instruments.

The rising importance of central clearing in OTC derivatives markets is consistent with the incentives provided by higher capital and margin requirements for non-centrally cleared derivatives. Regulators in most of the major derivatives markets require certain classes of standardised OTC derivatives, particularly interest rate swaps and CDS, to be centrally cleared. While options, FX derivatives and equity derivatives are generally not covered by these requirements, higher margin requirements for non-centrally cleared derivatives are being phased in, starting in Canada, Japan and the United States in September 2016 and in other key markets in 2017.②

① The proportion of outstanding positions against CCPs is typically larger than the proportion of trades cleared through CCPs – known as the clearing rate – because the former counts trades between dealers twice. In the BIS OTC derivatives statistics, whereas inter-dealer positions are adjusted to eliminate double-counting, inter-dealer trades that are subsequently novated to a CCP are not adjusted. When a derivatives trade is cleared by a CCP, the initial contract between counterparties A and B is replaced, in an operation called novation, by two new contracts: one between counterparty A and the CCP, and a second between the CCP and counterparty B. Under the extreme assumption that all positions with CCPs are initially inter-dealer contracts, positions with CCPs could be adjusted by dividing by two. The actual clearing rate is likely to be higher than this minimum estimate because some positions with CCPs may initially be trades with institutional investors and other financial customers, which in the BIS OTC derivatives statistics are not double-counted when novated to CCPs. For further discussion, see P Wooldridge, "Central clearing predominates in OTC interest rate derivatives markets", *BIS Quarterly Review*, December 2016, pp 22–24. ② See Financial Stability Board, "OTC derivatives market reforms: eleventh progress report on implementation", August 2016.

Residential property price developments[1]

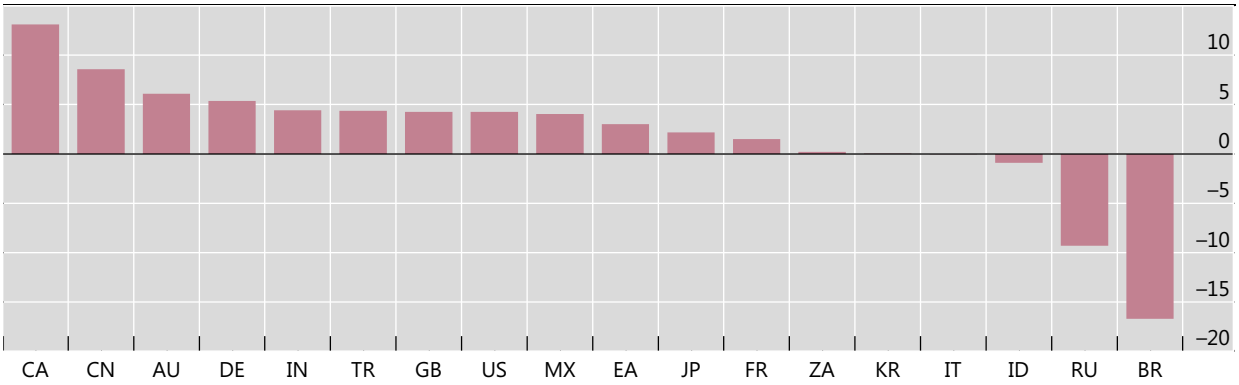
Robert Szemere

Residential property prices increased significantly in almost all advanced economies (AEs) during 2016. On average, prices grew by 4% in real terms – ie deflated by the consumer price index (CPI) – on a year-on-year basis. Their growth was particularly marked in Canada. Prices also rose strongly, though more moderately, in Australia, the United Kingdom and the United States. They grew less in Japan and in the euro area, where a significant increase in Germany was offset by stable prices in Italy (Graph B1).

Most of the emerging market economies (EMEs) also experienced strong price increases during 2016. Prices rose, for example, in China, India, Mexico and Turkey, but they fell markedly in Russia and even more so in Brazil. On average, real prices were up by 3% for EME regions as a whole (Graph B1).

Real residential property prices in selected countries in 2016

Year-on-year changes in Q4 2016, in per cent — Graph B1



Source: BIS selected residential property prices series.

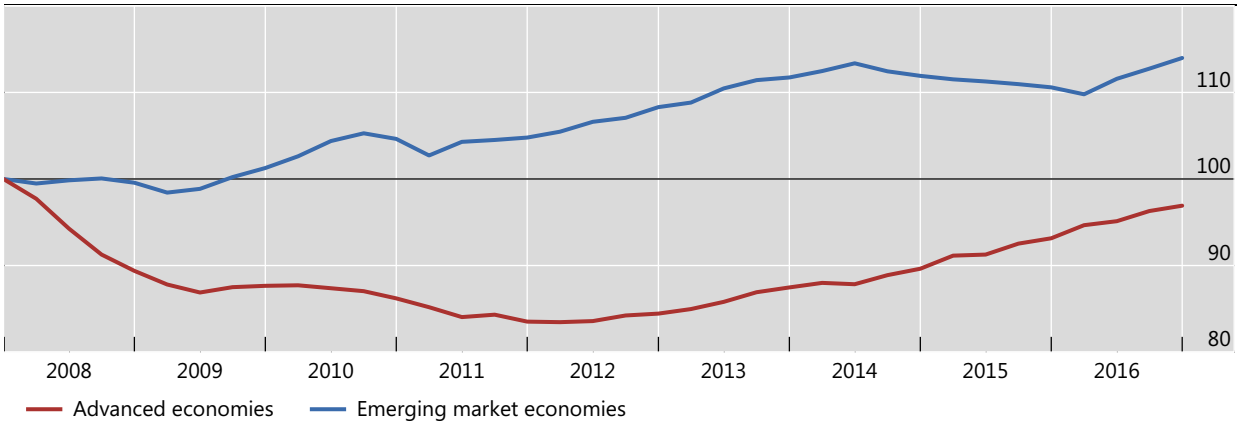
Developments since 2007[2]

After a sharp decline following the Great Financial Crisis (GFC) of 2007–09, average real residential property prices in AEs bottomed out in 2011–12. They have now almost recouped their post-GFC declines (Graph B2). At the end of 2016, real prices were only modestly below their 2007 levels in the United Kingdom and the United States (by 6–7%). The gap was slightly wider for the euro area (by 10%), with important disparities across this region: real prices are now significantly above their pre-GFC levels in Germany, but they are well below this benchmark in France and even more so in Italy. Turning to those other AEs which were much less affected by the GFC, real prices are almost comparable to their 2007 levels in Japan, whereas they are significantly above them in Canada and Australia (Graph B3).

After a marked expansion in the early 2010s, real residential property prices in EMEs have almost stabilised since 2014, at almost 15% above the levels registered in 2007 (Graph B2). Compared with the period of the GFC, prices have almost doubled in India. They are one third higher in Brazil, despite the significant downward correction observed most recently, and are also slightly higher in China, Mexico and Turkey (by around 10% in each case). By contrast, prices are still below their 2007 levels in Indonesia and South Africa, and they have roughly halved in Russia (Graph B3).

Aggregate development, in real terms, of residential property prices in advanced and emerging market economies since the Great Financial Crisis of 2007–09

Q4 2007 = 100 Graph B2

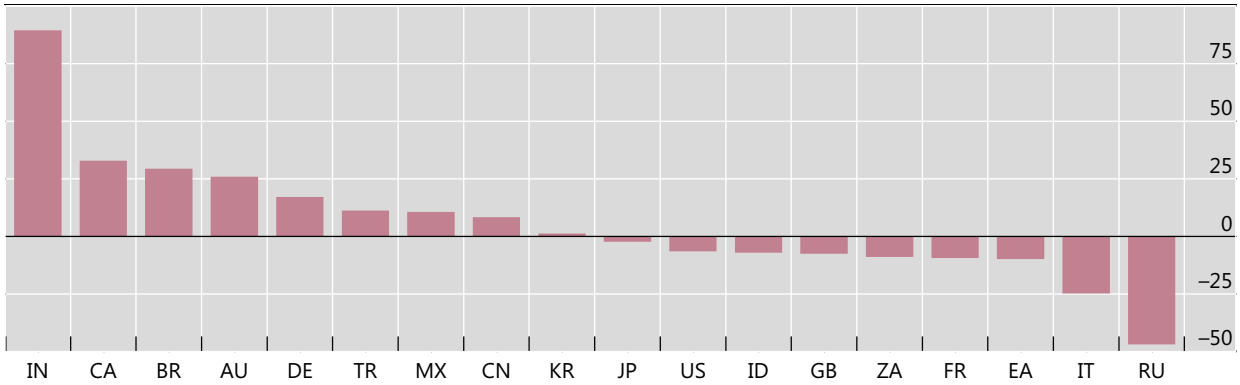


Estimated weighted averages based on rolling GDP and PPP exchange rates.

Source: BIS calculations.

Real residential property prices in selected countries[1] since 2007

Cumulative changes from end-2007 to end-2016, in per cent Graph B3



[1] For Turkey, BIS estimates based on market data; for India, cumulative change from Q1 2009; for Japan, cumulative change from Q2 2008.

Source: BIS selected residential property prices series.

① A note focusing on the most recent developments is published in February, August and November. Q1 2017 data are already available in the BIS data sets for some countries, but Q3 and Q4 2016 data are not yet available for two and three countries, respectively. ② Price developments since early 2008 for Japan and early 2009 for India. For China, BIS calculation based on the average of the prices reported for the 70 largest cities.

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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). 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). A release calendar provides advance notice of publication dates (www.bis.org/statistics/relcal.htm).

A Locational banking statistics

B Consolidated banking statistics

C Debt securities statistics

D Derivatives statistics

E Global liquidity indicators

F Statistics on total credit to the non-financial sector

G Debt service ratios for the private non-financial sector

H Property price statistics

I Effective exchange rate statistics

J Credit-to-GDP gaps

K Consumer price indices

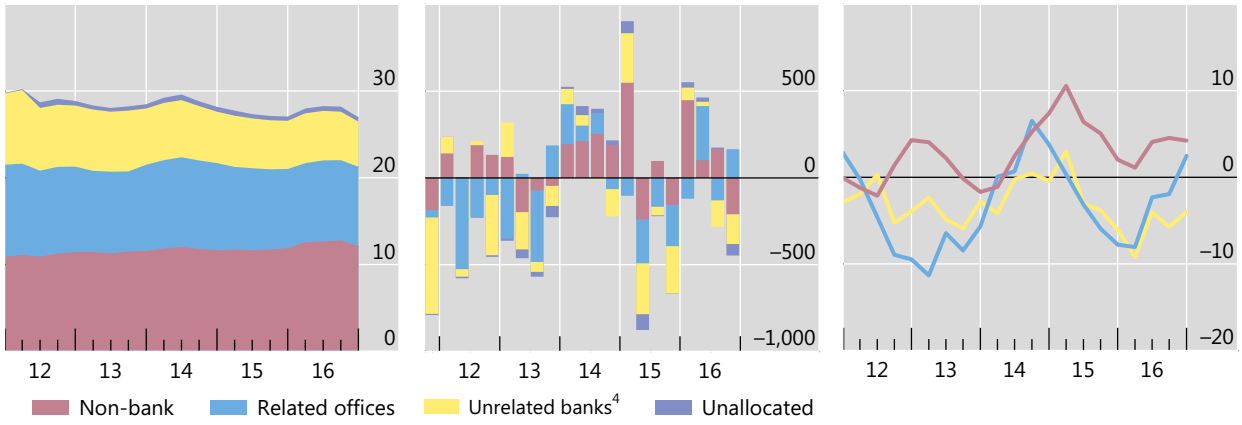
A Locational banking statistics

Cross-border claims, by sector, currency and instrument

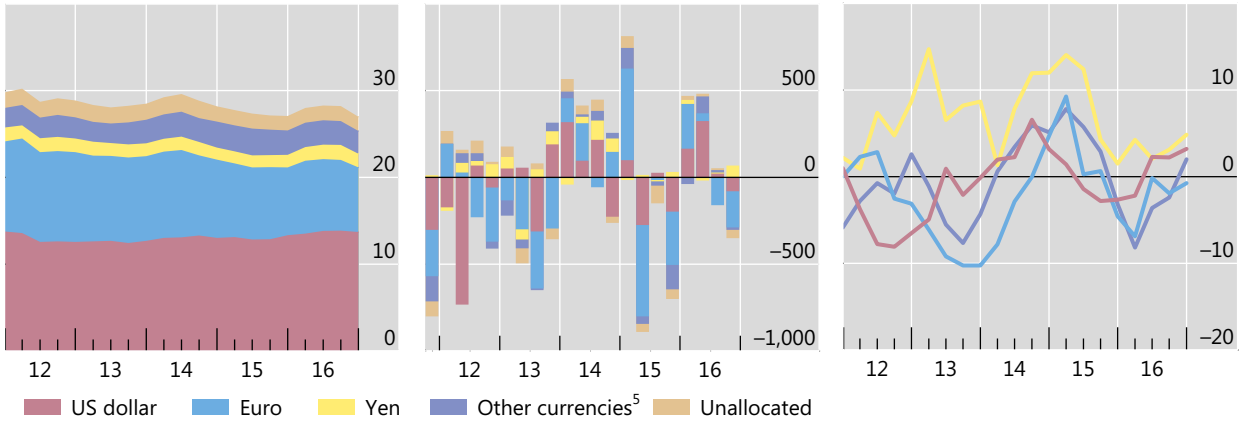
Graph A.1

Amounts outstanding, in USD trn[1] | Adjusted changes, in USD bn[2] | Annual change, in per cent[3]

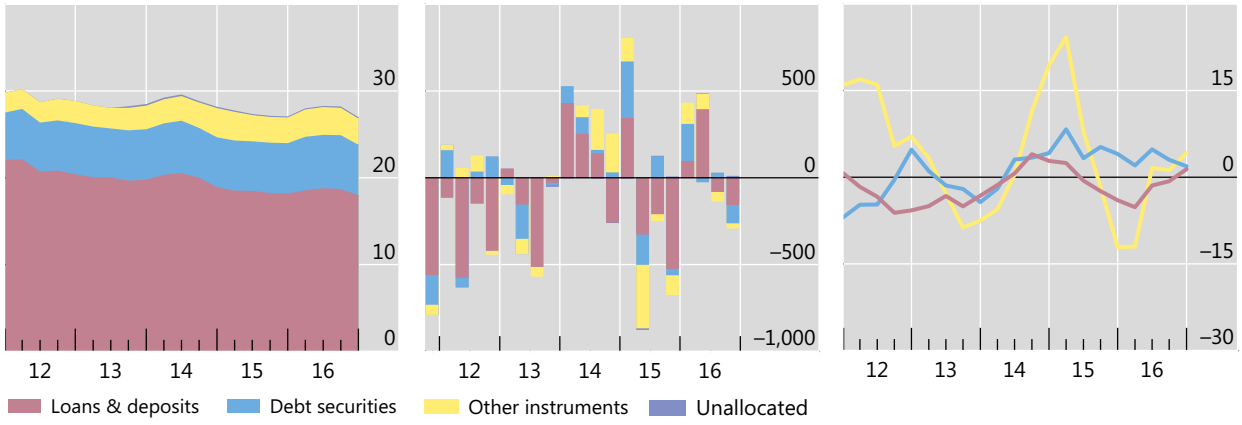
By sector of counterparty



By currency



By instrument



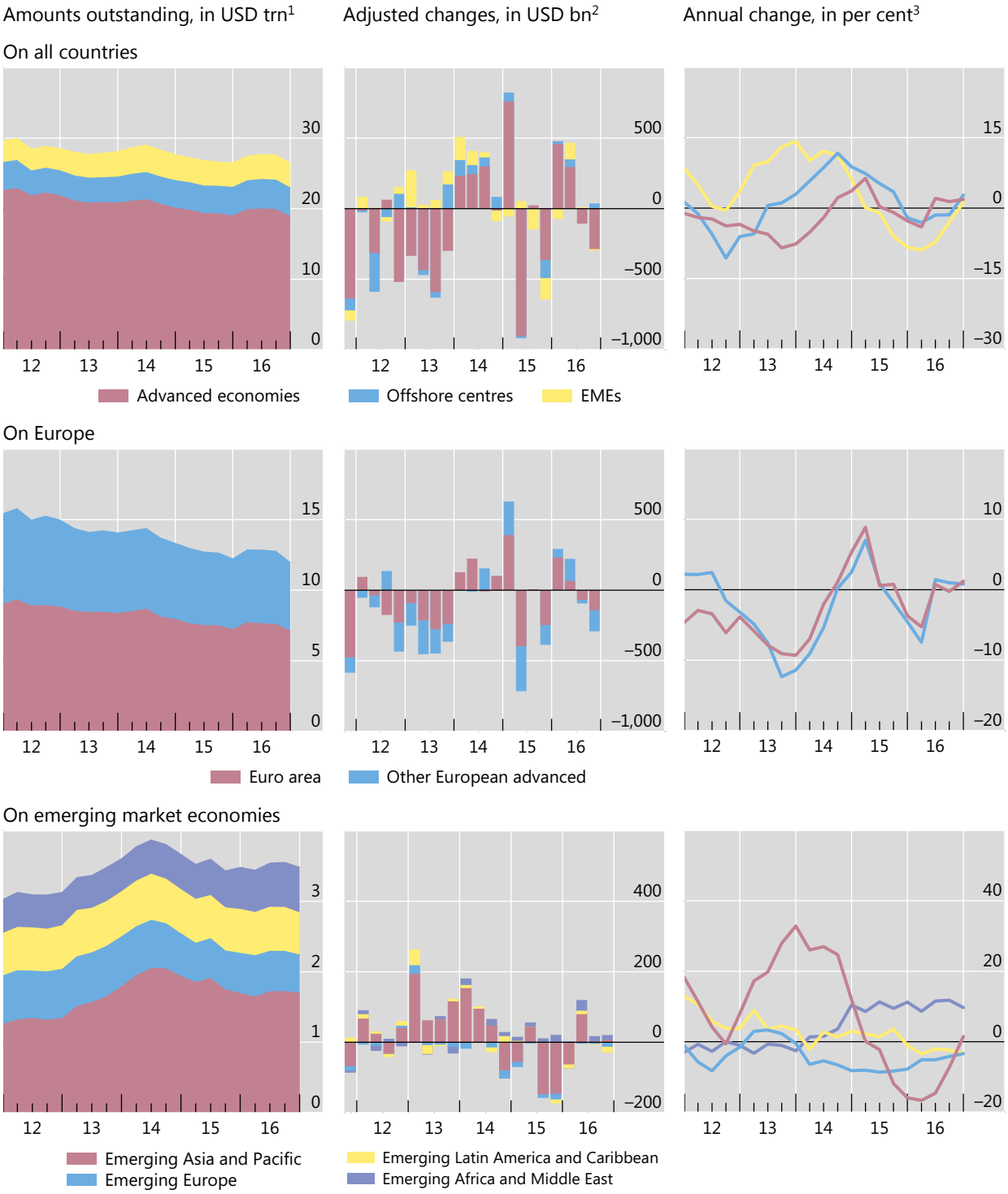
Further information on the BIS locational banking statistics is available at www.bis.org/statistics/bankstats.htm.

[1] 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. [2] Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. [3] Geometric mean of quarterly percentage adjusted changes. [4] Includes central banks and banks unallocated by subsector between intragroup and unrelated banks. [5] Other reported currencies, calculated as all currencies minus US dollar, euro, yen and unallocated currencies. The currency is known but reporting is incomplete.

Source: BIS locational banking statistics.

Cross-border claims, by borrowing region

Graph A.2



Further information on the BIS locational banking statistics is available at www.bis.org/statistics/bankstats.htm.

[1] 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. [2] Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. [3] Geometric mean of quarterly percentage adjusted changes.

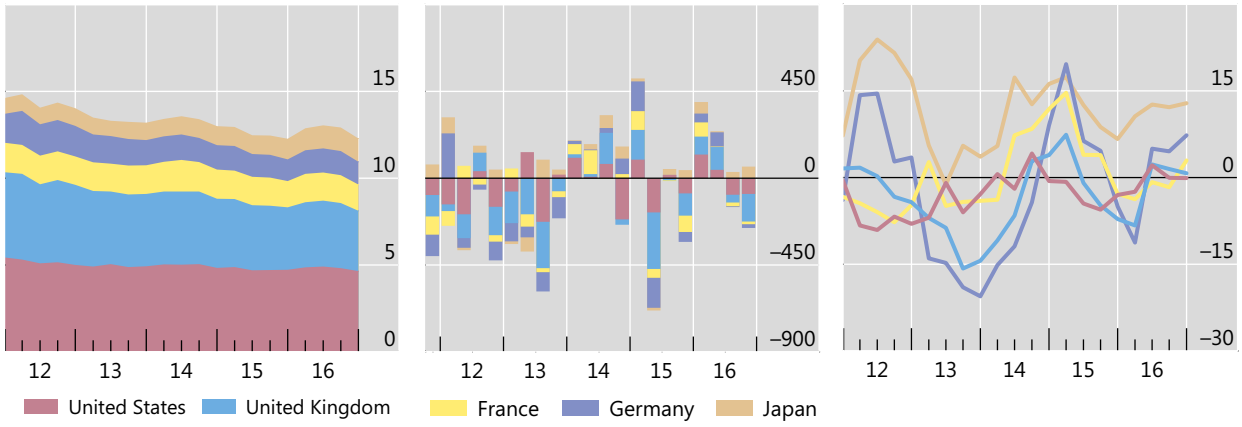
Source: BIS locational banking statistics.

Cross-border claims, by borrowing country

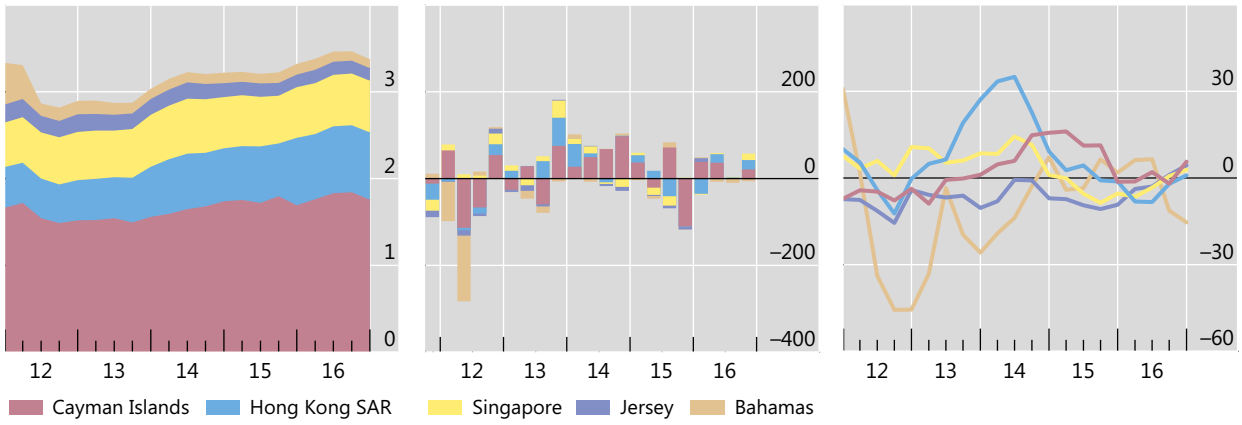
Graph A.3

Amounts outstanding, in USD trn[1] | Adjusted changes, in USD bn[2] | Annual change, in per cent[3]

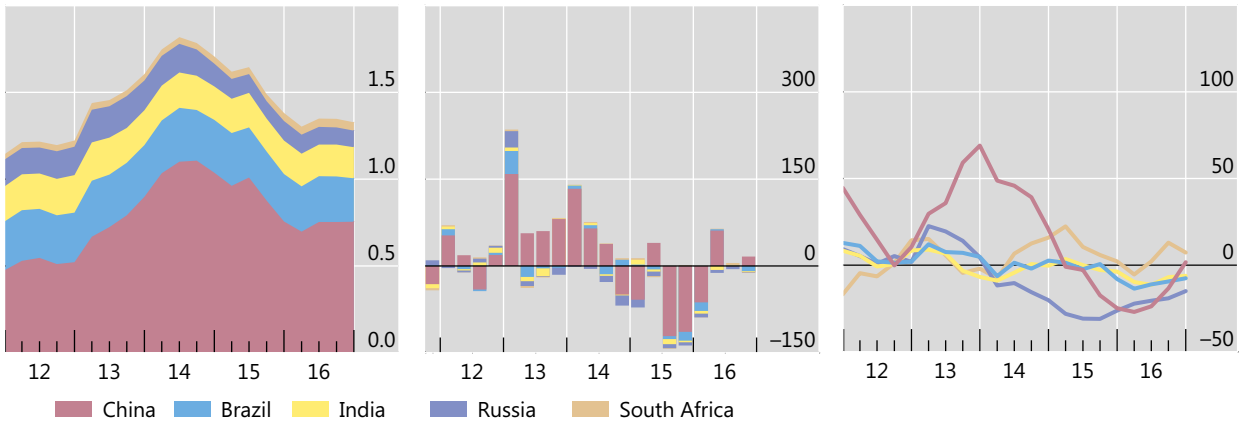
On selected advanced economies



On selected offshore centres



On selected emerging market economies



Further information on the BIS locational banking statistics is available at www.bis.org/statistics/bankstats.htm.

[1] 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. [2] Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. [3] Geometric mean of quarterly percentage adjusted changes.

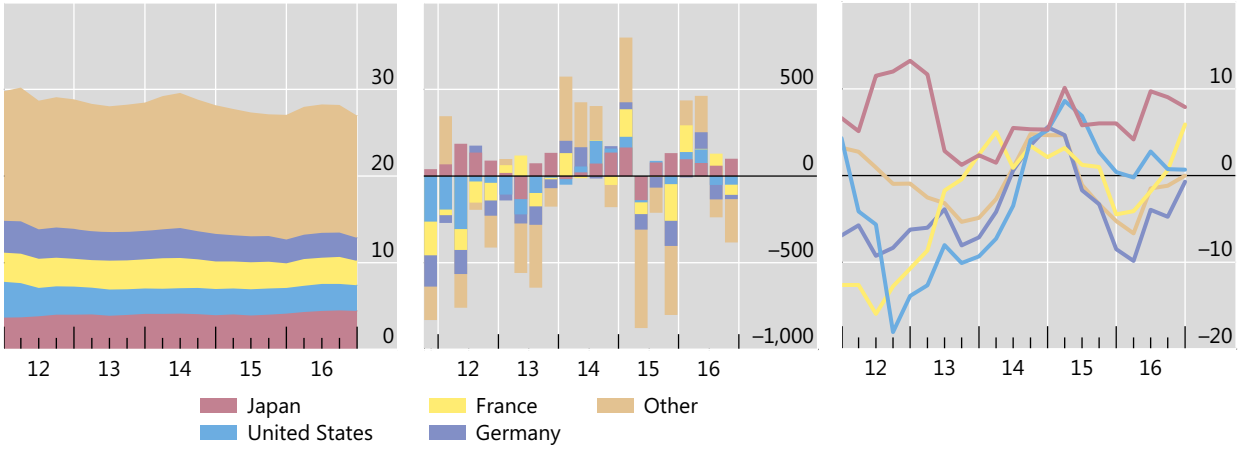
Source: BIS locational banking statistics.

Cross-border claims, by nationality of reporting bank and currency of denomination

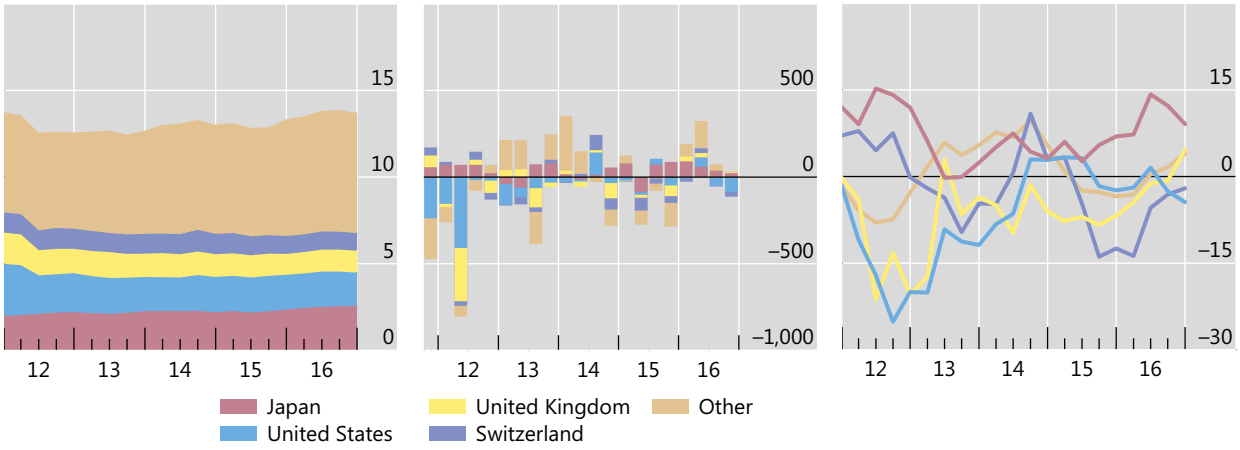
Graph A.4

Amounts outstanding, in USD trn[1] | Adjusted changes, in USD bn[2] | Annual change, in per cent[3]

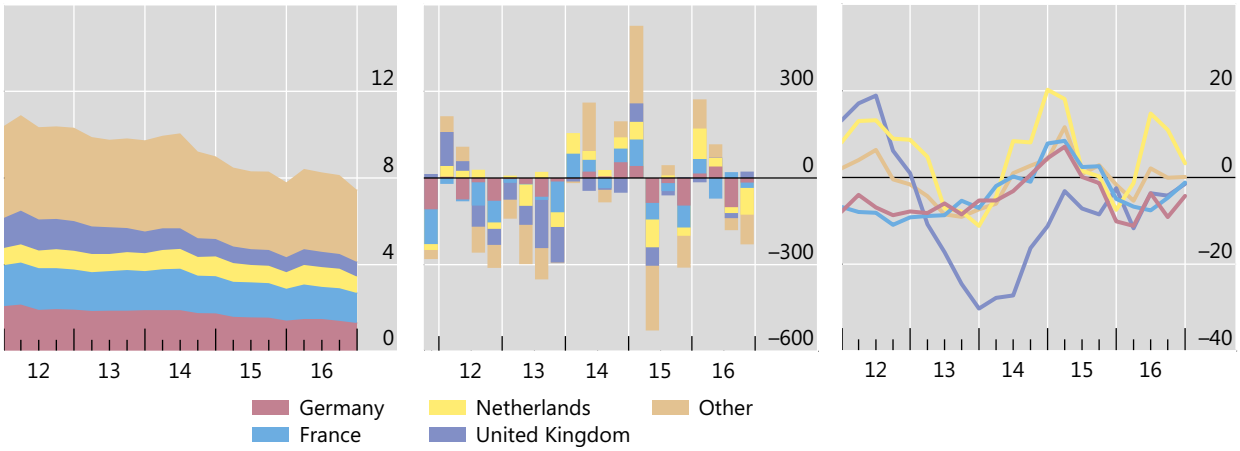
All currencies



US dollar



Euro



Further information on the BIS locational banking statistics is available at www.bis.org/statistics/bankstats.htm.

[1] 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. [2] Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. [3] Geometric mean of quarterly percentage adjusted changes.

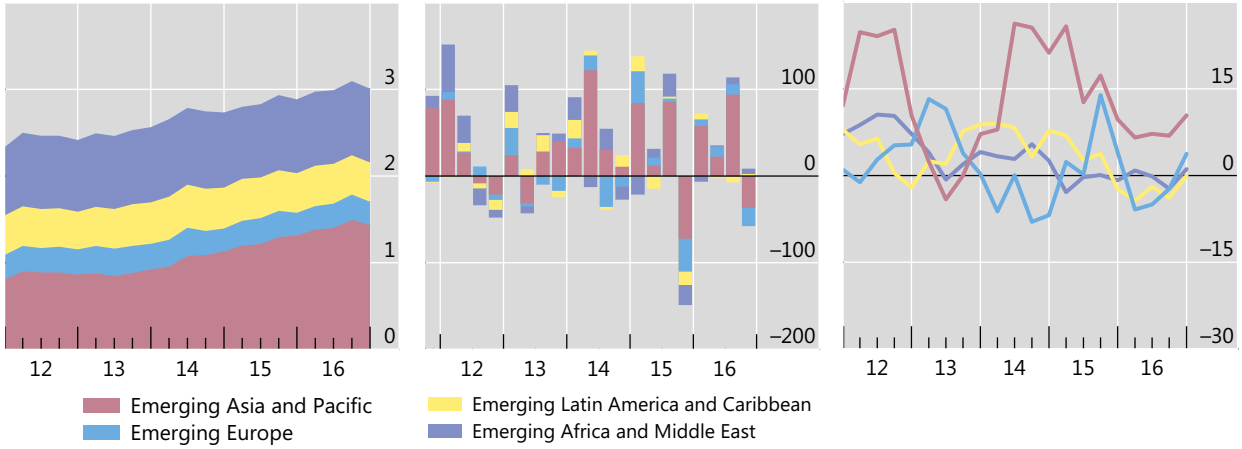
Source: BIS locational banking statistics.

Cross-border liabilities of reporting banks

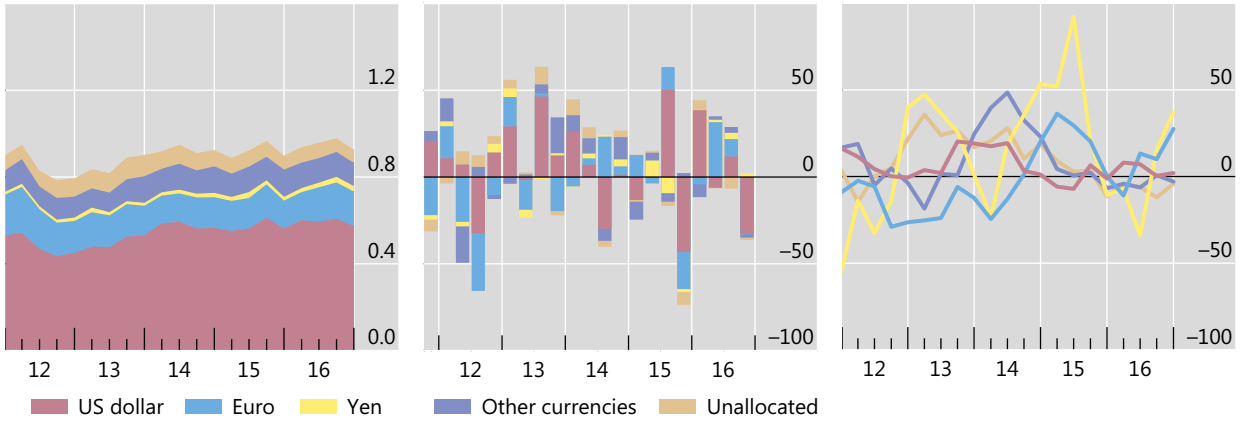
Graph A.5

Amounts outstanding, in USD trn[1] | Adjusted changes, in USD bn[2] | Annual change, in per cent[3]

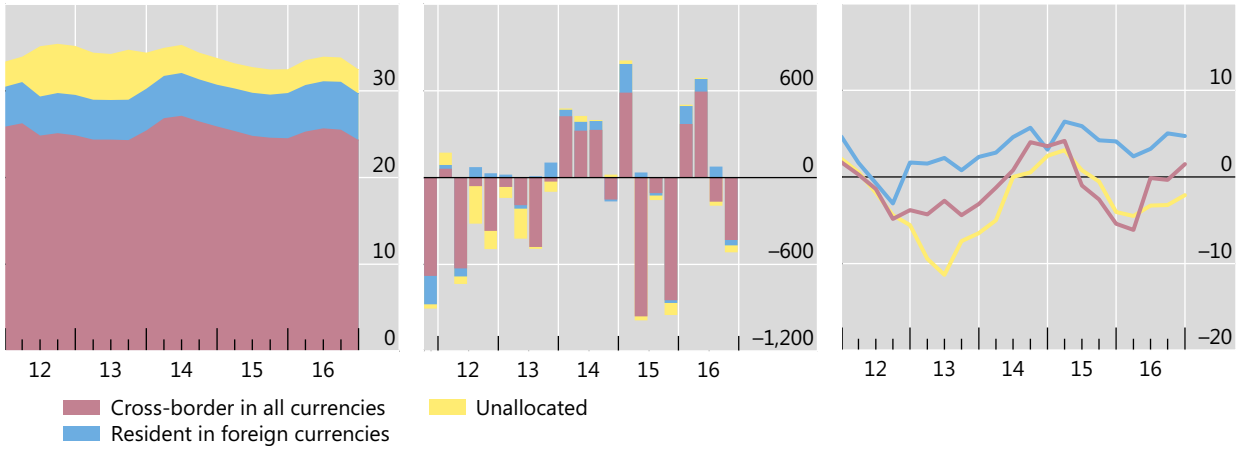
To emerging market economies



To central banks



By currency type and location



Further information on the BIS locational banking statistics is available at www.bis.org/statistics/bankstats.htm.

[1] 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. [2] Quarterly changes in amounts outstanding, adjusted for the impact of exchange rate movements between quarter-ends and methodological breaks in the data. [3] Geometric mean of quarterly percentage adjusted changes.

Source: BIS locational banking statistics.

B Consolidated banking statistics

Consolidated claims of reporting banks on advanced economies

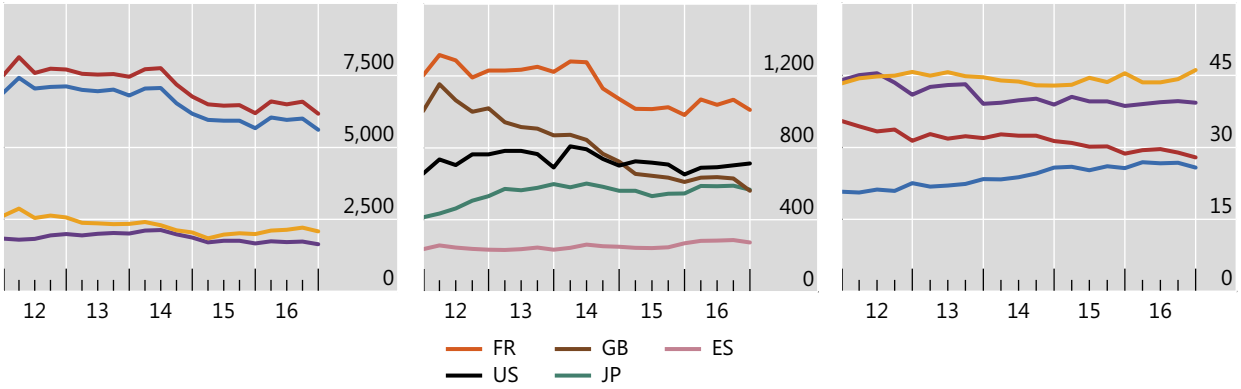
Graph B.1

Foreign claims and local positions, in USD bn[1, 2]

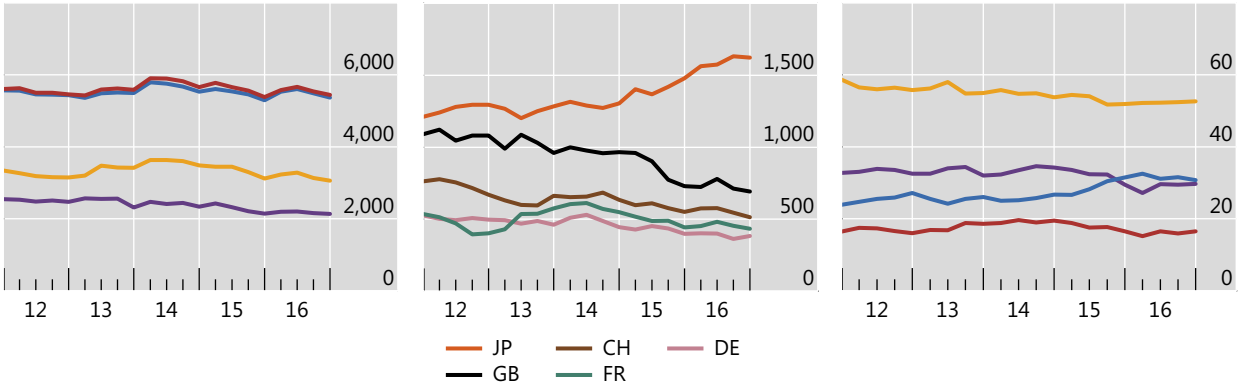
Foreign claims of selected creditors, in USD bn[1, 3]

International claims, by sector and maturity, in per cent[4]

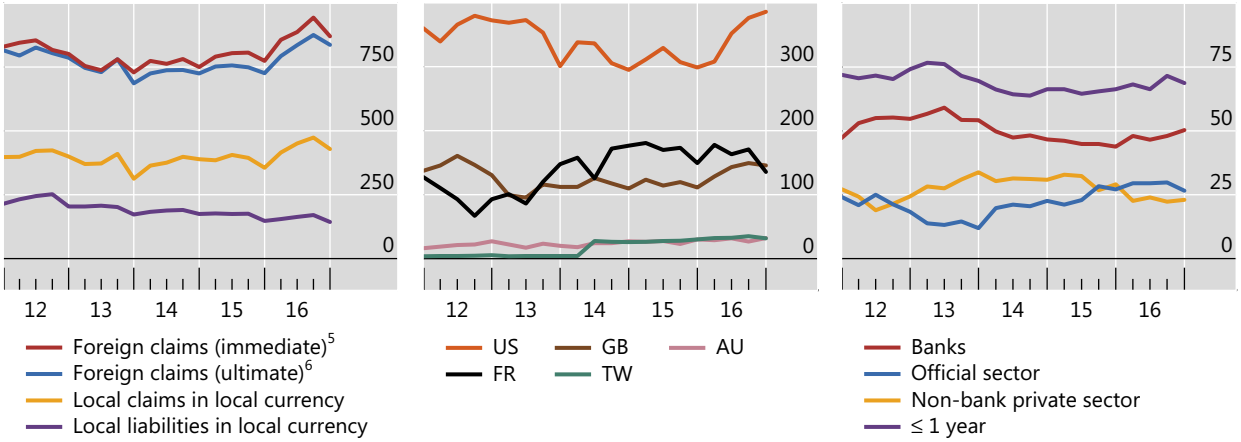
On the euro area



On the United States



On Japan



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

Further information on the BIS consolidated banking statistics is available at www.bis.org/statistics/bankstats.htm.

[1] 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. [2] Excludes domestic claims, ie claims on residents of a bank's home country. [3] 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. [4] As a percentage of international claims outstanding. [5] On an immediate counterparty basis. Includes the unconsolidated claims of banks headquartered outside but located inside CBS-reporting countries. [6] On an ultimate risk basis.

Source: BIS consolidated banking statistics (CBS).

Consolidated claims of reporting banks on emerging market economies

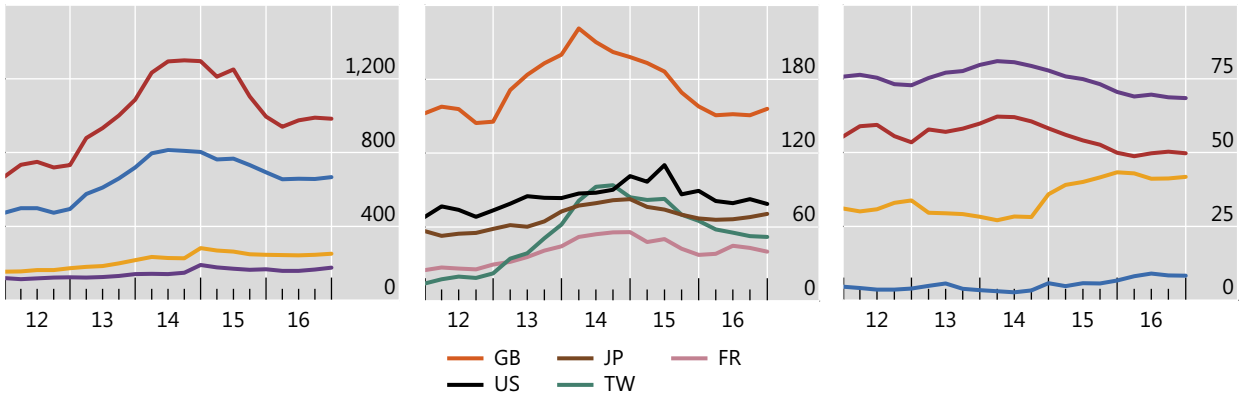
Graph B.2

Foreign claims and local positions, in USD bn[1, 2]

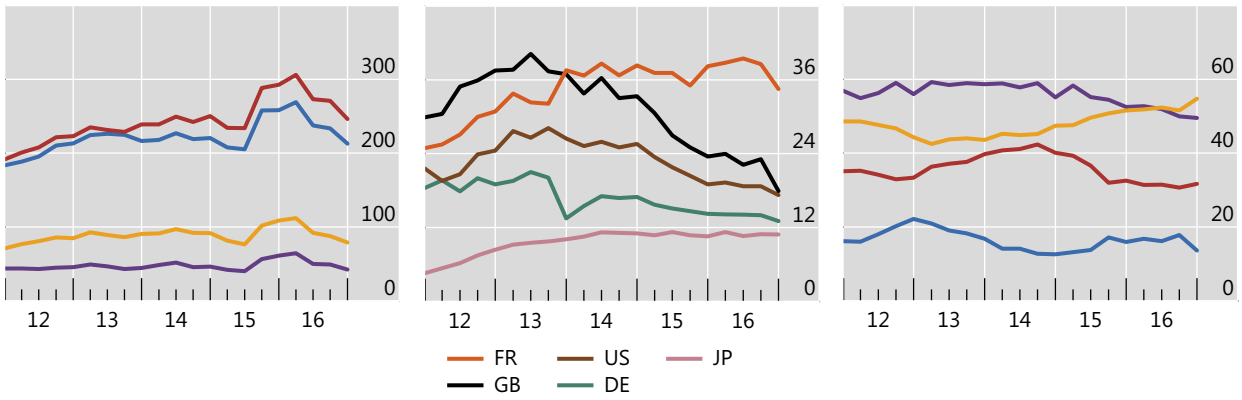
Foreign claims of selected creditors, in USD bn[1, 3]

International claims, by sector and maturity, in per cent[4]

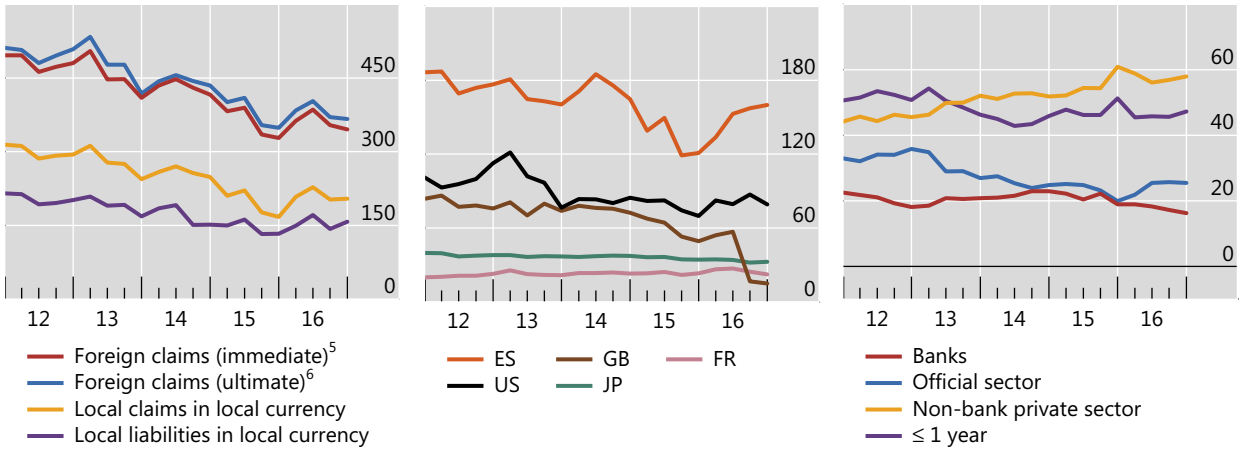
On China



On Turkey



On Brazil



AU = Australia; DE = Germany; ES = Spain; GB = United Kingdom; GR = Greece; JP = Japan; NL = Netherlands; TW = Chinese Taipei; US = United States.

Further information on the BIS consolidated banking statistics is available at www.bis.org/statistics/bankstats.htm.

[1] 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. [2] Excludes domestic claims, ie claims on residents of a bank's home country. [3] 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. [4] As a percentage of international claims. [5] On an immediate counterparty basis. Includes the unconsolidated claims of banks headquartered outside but located inside CBS-reporting countries. [6] On an ultimate risk basis.

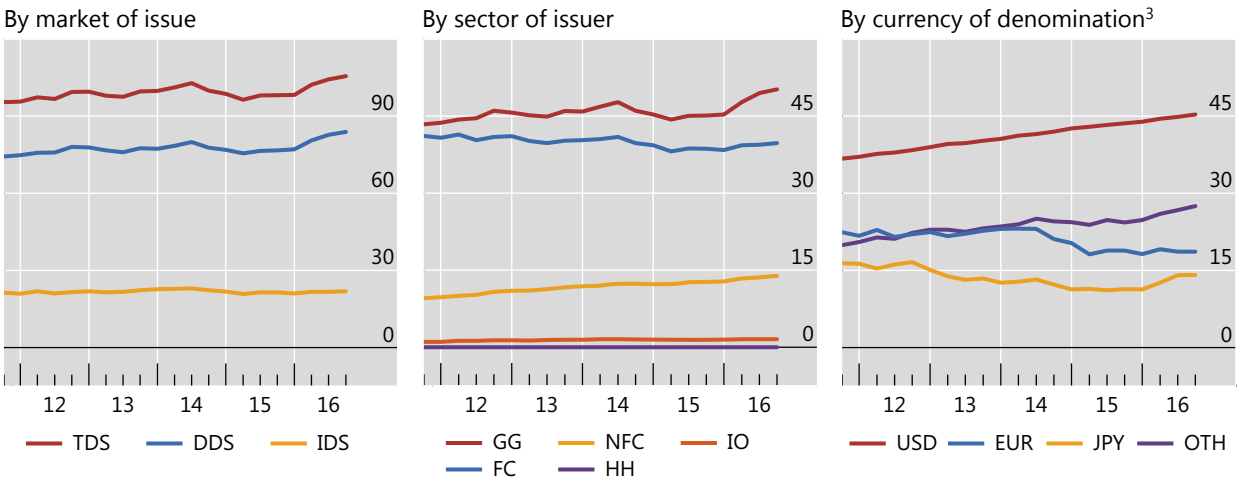
Source: BIS consolidated banking statistics (CBS).

C Debt securities statistics

Global debt securities markets[1]

Amounts outstanding, in trillions of US dollars[2]

Graph C.1



DDS = domestic debt securities; IDS = international debt securities; TDS = total debt securities.

FC = financial corporations; GG = general government; HH = households and non-profit institutions serving households; IO = international organisations; NFC = non-financial corporations.

EUR = euro; JPY = yen; OTH = other currencies; USD = US dollar.

Further information on the BIS debt securities statistics is available at www.bis.org/statistics/secstats.htm.

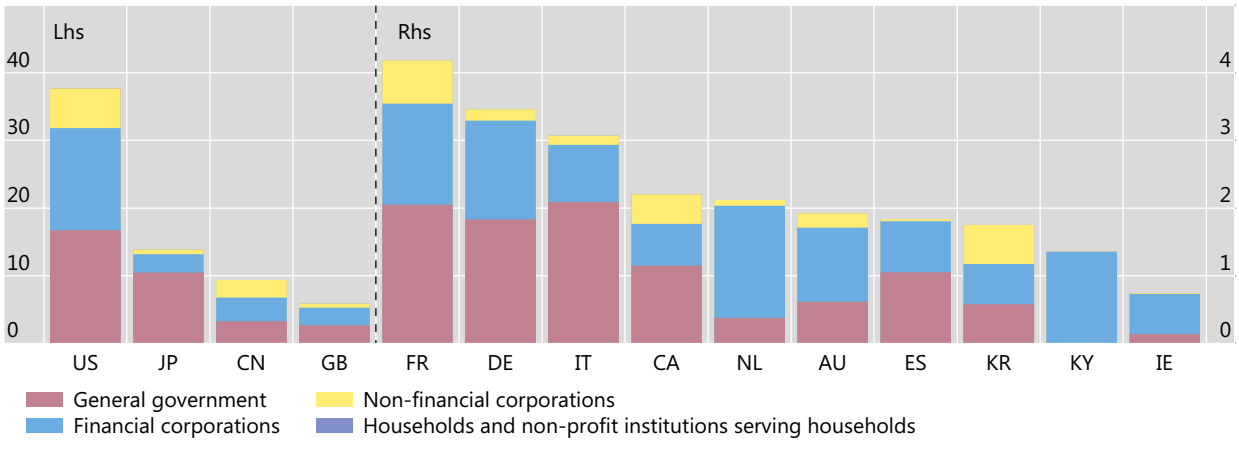
[1] Sample of countries varies across breakdowns shown. For countries that do not report TDS, data are estimated by the BIS as DDS plus IDS. For countries that do not report either TDS or DDS, data are estimated by the BIS as IDS. [2] At quarter-end. Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date. [3] 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[1]

Amounts outstanding at end-September 2016, in trillions of US dollars[2]

Graph C.2



AU = Australia; 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.

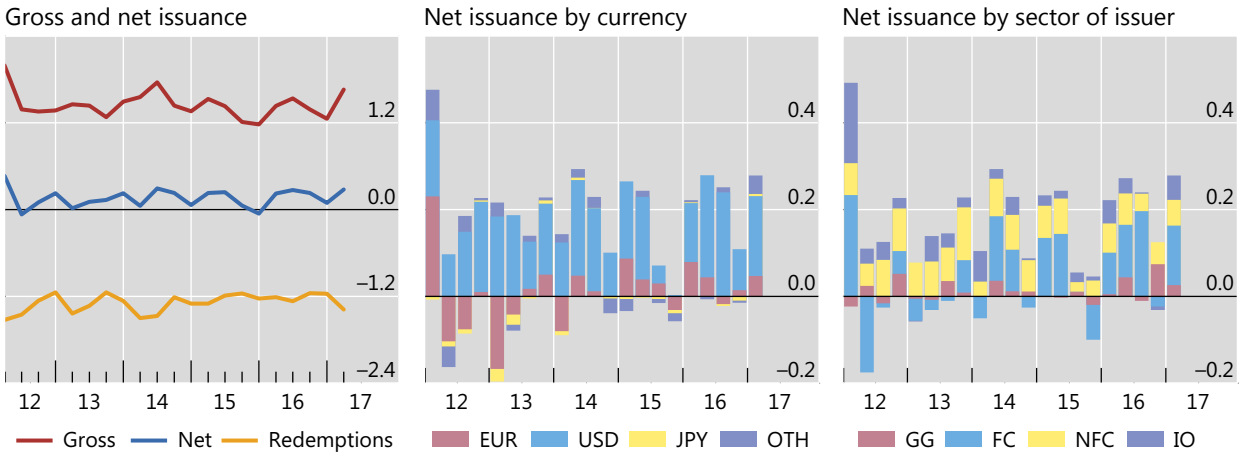
Further information on the BIS debt securities statistics is available at www.bis.org/statistics/secstats.htm.

[1] For countries that do not report TDS, data are estimated by the BIS as DDS plus IDS. [2] 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



EUR = euro; JPY = yen; OTH = other currencies; USD = US dollar.

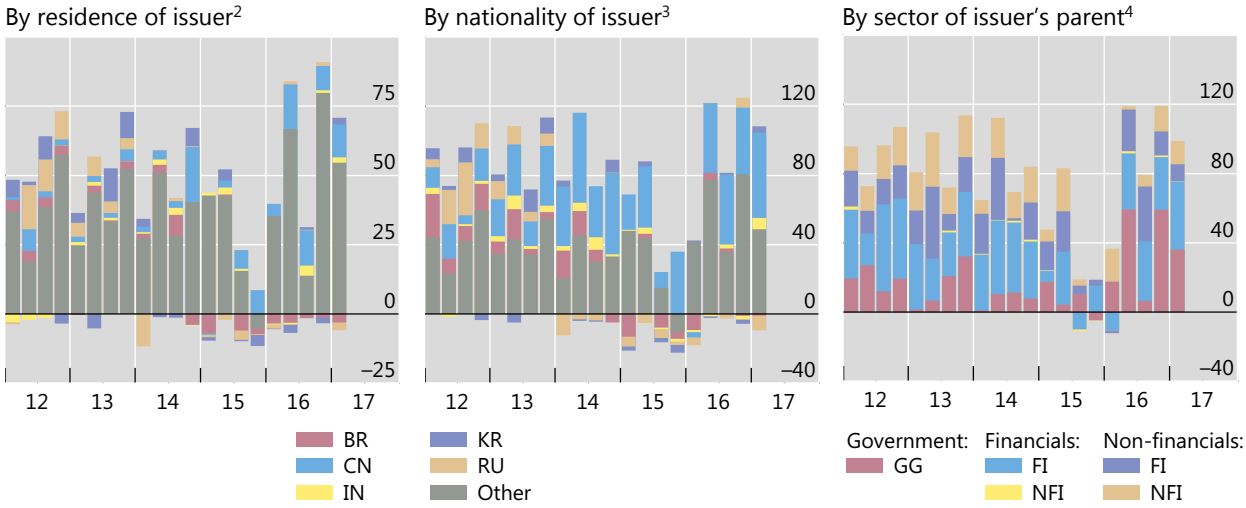
FC= financial corporations; GG = general government; IO = international organisations; NFC = non-financial corporations.

Further information on the BIS debt securities statistics is available at www.bis.org/statistics/secstats.htm.

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

International debt securities issued by borrowers from emerging market economies[1]

Net issuance, in billions of US dollars — Graph C.4



BR = Brazil; CN = China; IN = India; KR = Korea; RU = Russia.

FI = financial corporations; GG = general government; NFI = non-financial corporations.

Further information on the BIS debt securities statistics is available at www.bis.org/statistics/secstats.htm.

[1] For the sample of countries comprising emerging market economies, see the glossary to the *BIS Statistical Bulletin*. [2] Country where issuer resides. [3] 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. [4] 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

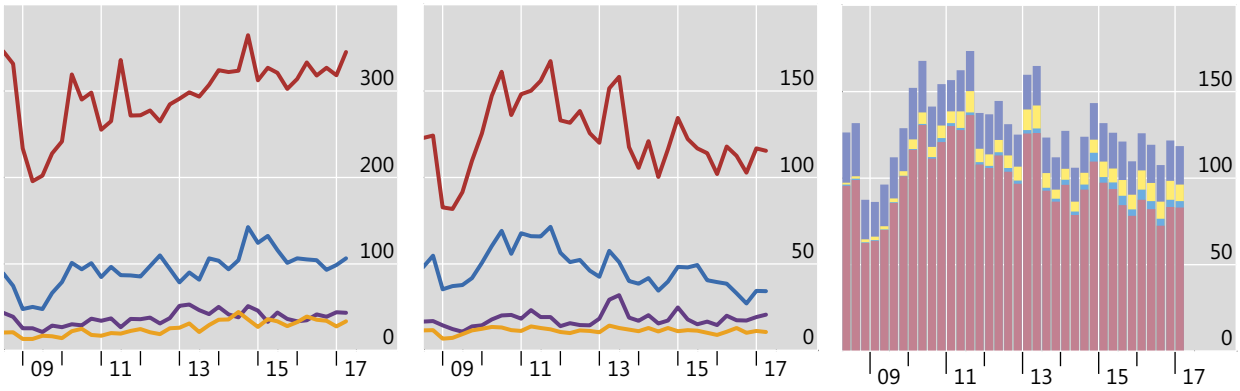
Graph D.1

Open interest, by currency[1]

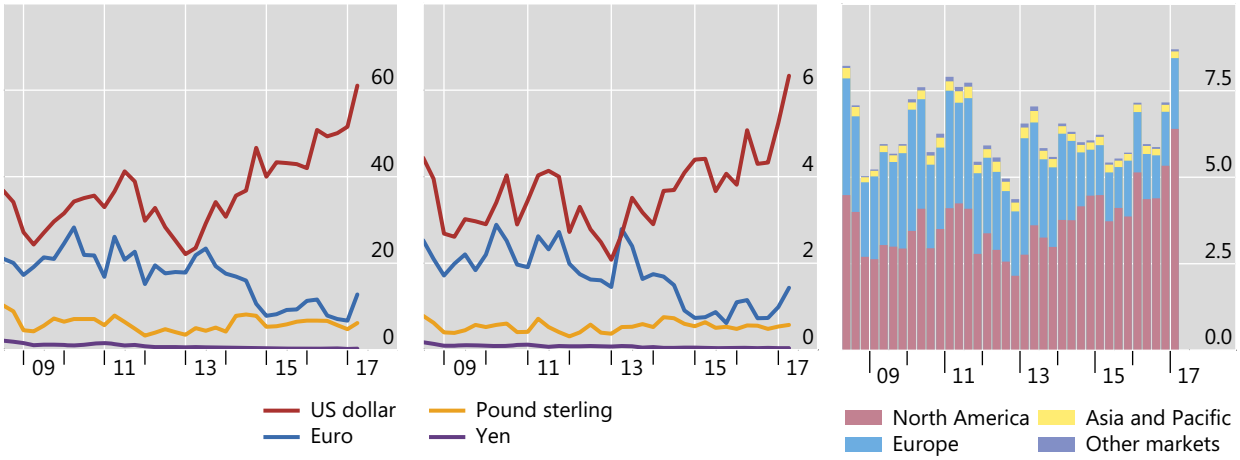
Daily average turnover, by currency[2]

Daily average turnover, by location of exchange[2]

Foreign exchange derivatives, USD bn[3]



Interest rate derivatives, USD trn[3]



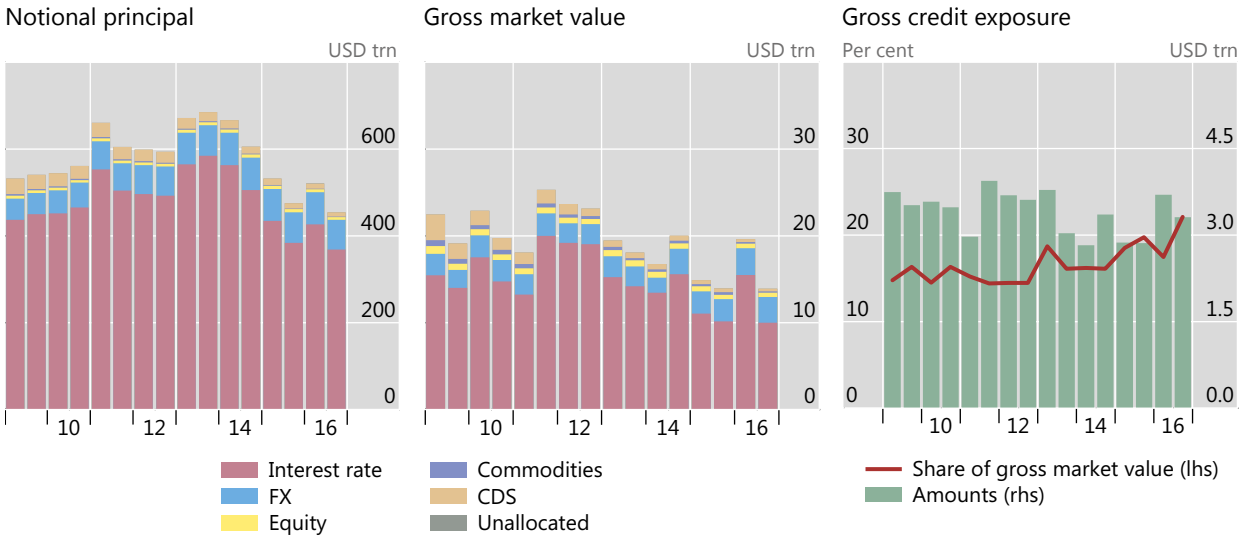
Further information on the BIS derivatives statistics is available at www.bis.org/statistics/extderiv.htm.

[1] 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. [2] Quarterly averages of daily turnover. [3] Futures and options.

Sources: Euromoney TRADEDATA; Futures Industry Association; The Options Clearing Corporation; BIS derivatives statistics.

Global OTC derivatives markets[1]

Graph D.2



Further information on the BIS derivatives statistics is available at www.bis.org/statistics/derstats.htm.

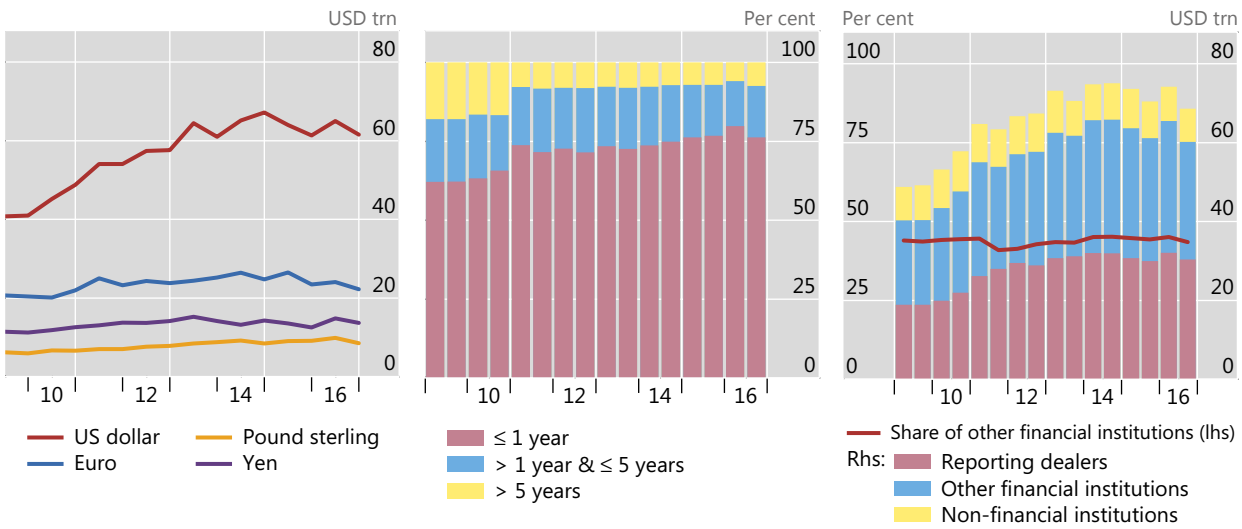
[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

Source: BIS derivatives statistics.

OTC foreign exchange derivatives

Notional principal[1]

Graph D.3



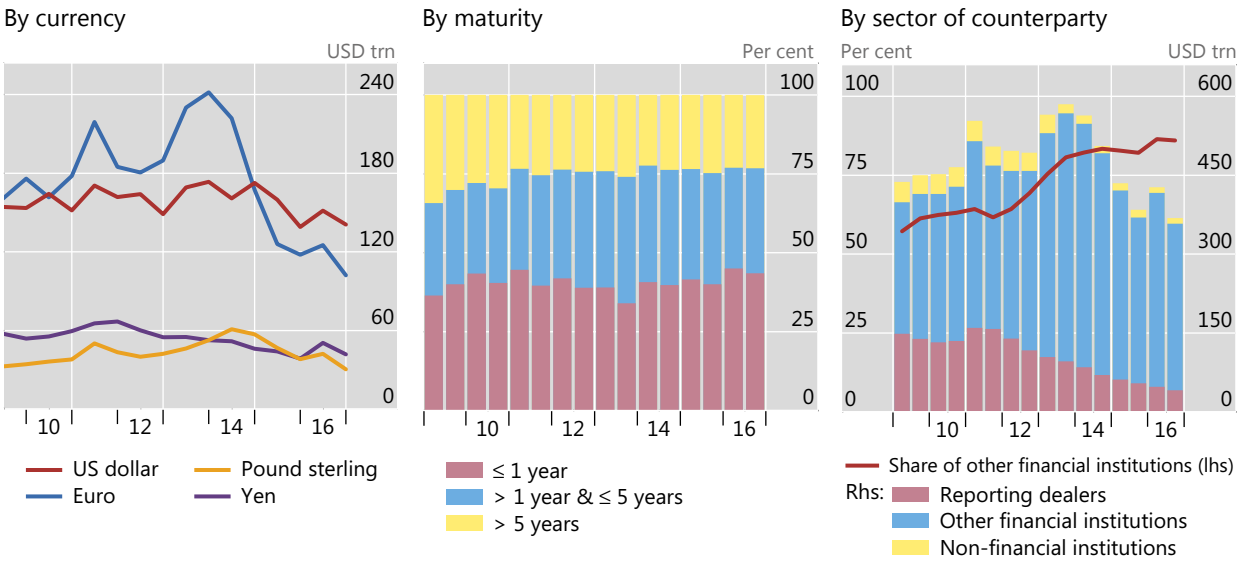
Further information on the BIS derivatives statistics is available at www.bis.org/statistics/derstats.htm.

[1] 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.

Source: BIS derivatives statistics.

OTC interest rate derivatives

Notional principal[1] Graph D.4



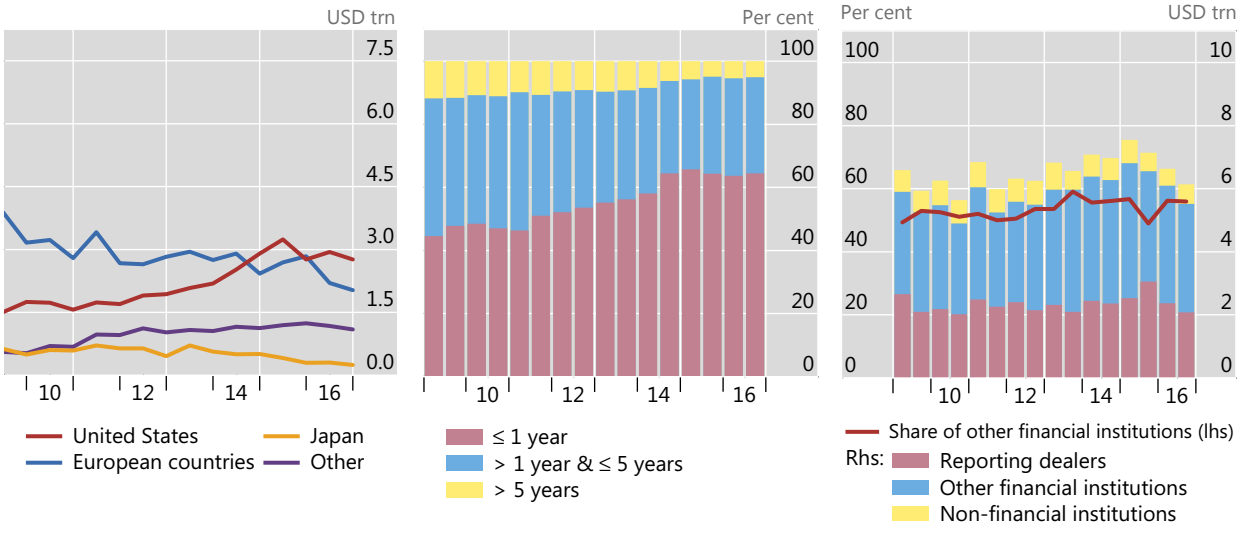
Further information on the BIS derivatives statistics is available at www.bis.org/statistics/derstats.htm.

[1] 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.

Source: BIS derivatives statistics.

OTC equity-linked derivatives

Notional principal[1] Graph D.5



Further information on the BIS derivatives statistics is available at www.bis.org/statistics/derstats.htm.

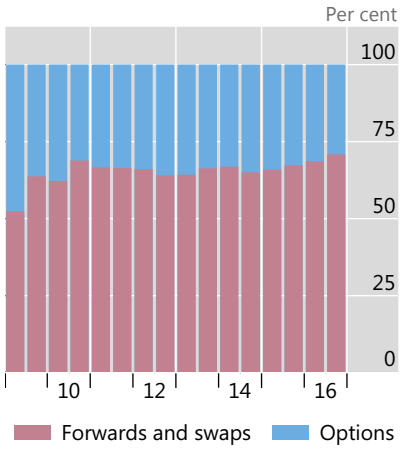
[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

Source: BIS derivatives statistics.

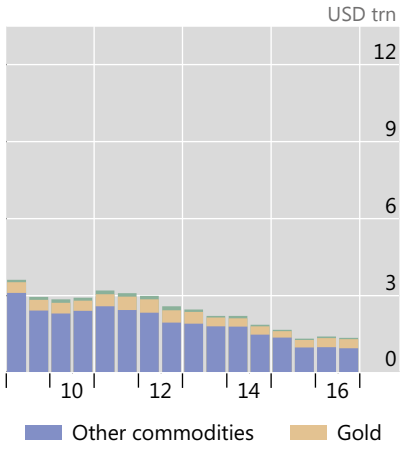
OTC commodity derivatives[1]

Graph D.6

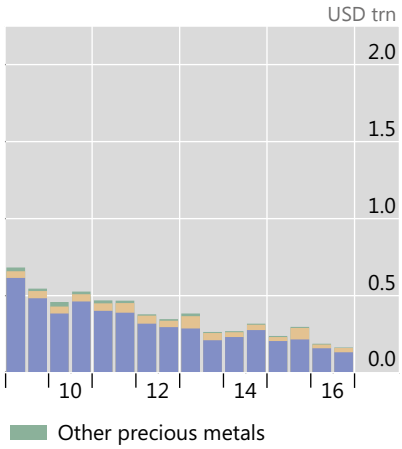
Notional principal, by instrument



Notional principal, by commodity



Gross market value, by commodity



Further information on the BIS derivatives statistics is available at www.bis.org/statistics/derstats.htm.

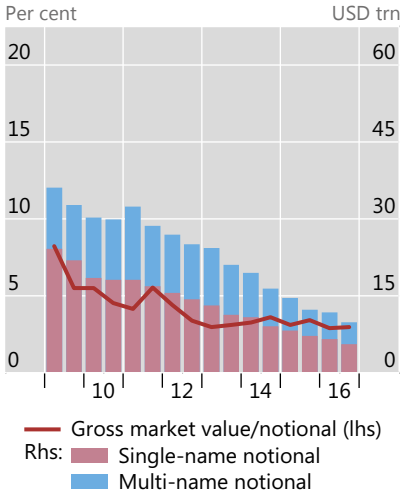
[1] At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

Source: BIS derivatives statistics.

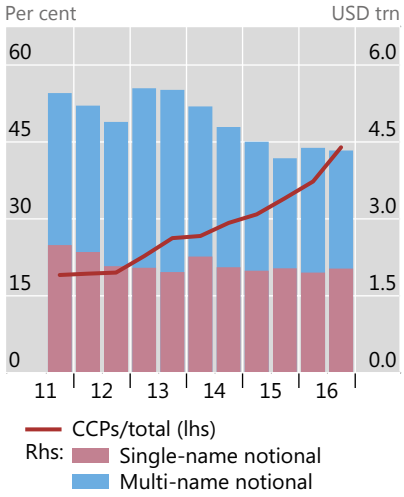
Credit default swaps[1]

Graph D.7

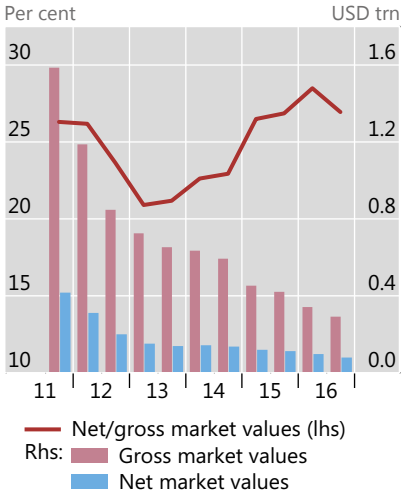
Notional principal



Notional principal with central counterparties (CCPs)



Impact of netting



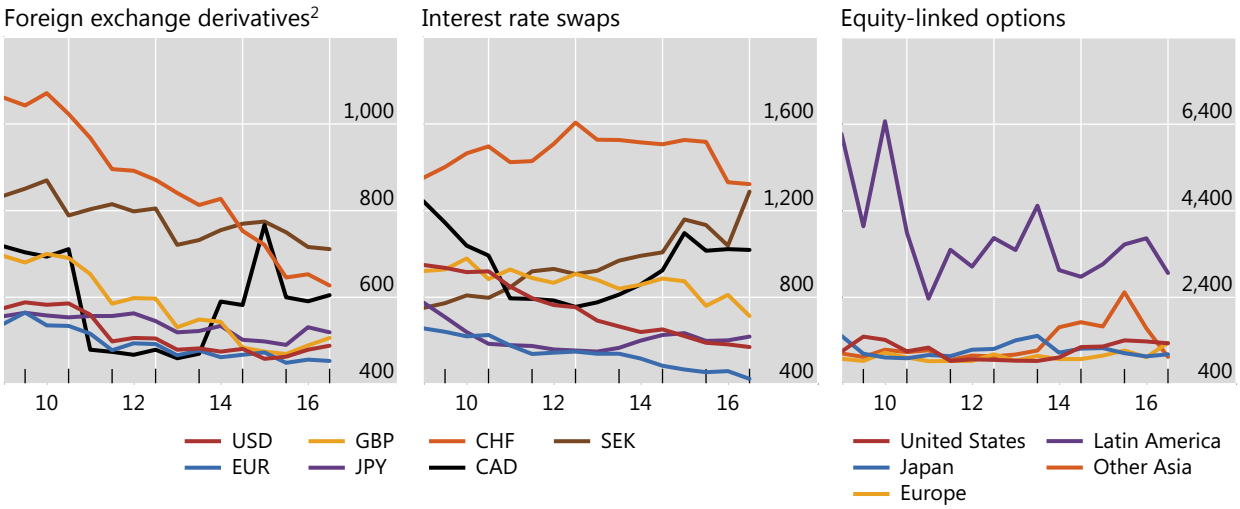
Further information on the BIS derivatives statistics is available at www.bis.org/statistics/derstats.htm.

[1] 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.

Source: BIS derivatives statistics.

Concentration in global OTC derivatives markets

Herfindahl index[1] Graph D.8



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

Further information on the BIS derivatives statistics is available at www.bis.org/statistics/derstats.htm.

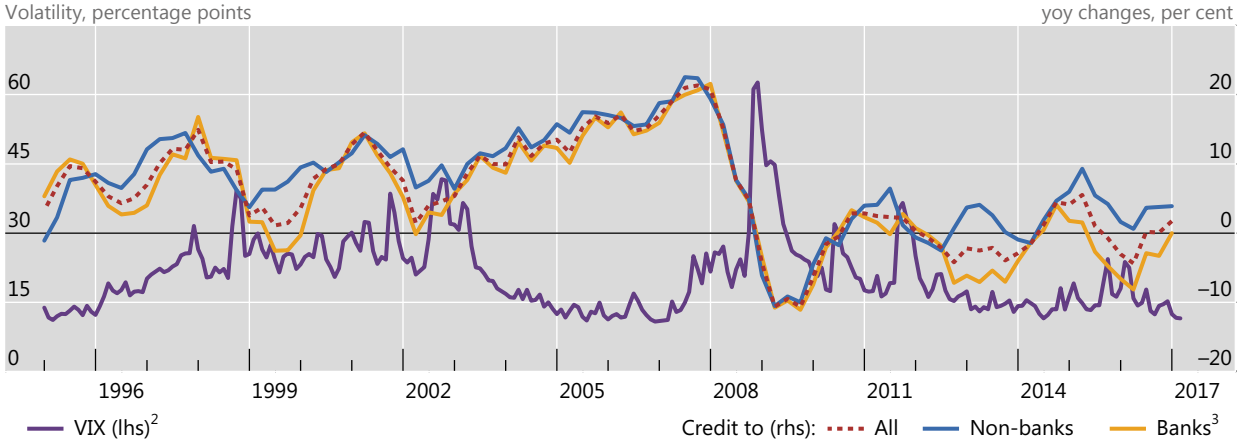
[1] The index ranges from 0 to 10,000, where a lower number indicates that there are many dealers with similar market shares (as measured by notional principal) and a higher number indicates that the market is dominated by a few reporting dealers. [2] Foreign exchange forwards, foreign exchange swaps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

Source: BIS derivatives statistics.

E Global liquidity indicators

Growth of international bank credit[1]

Graph E.1



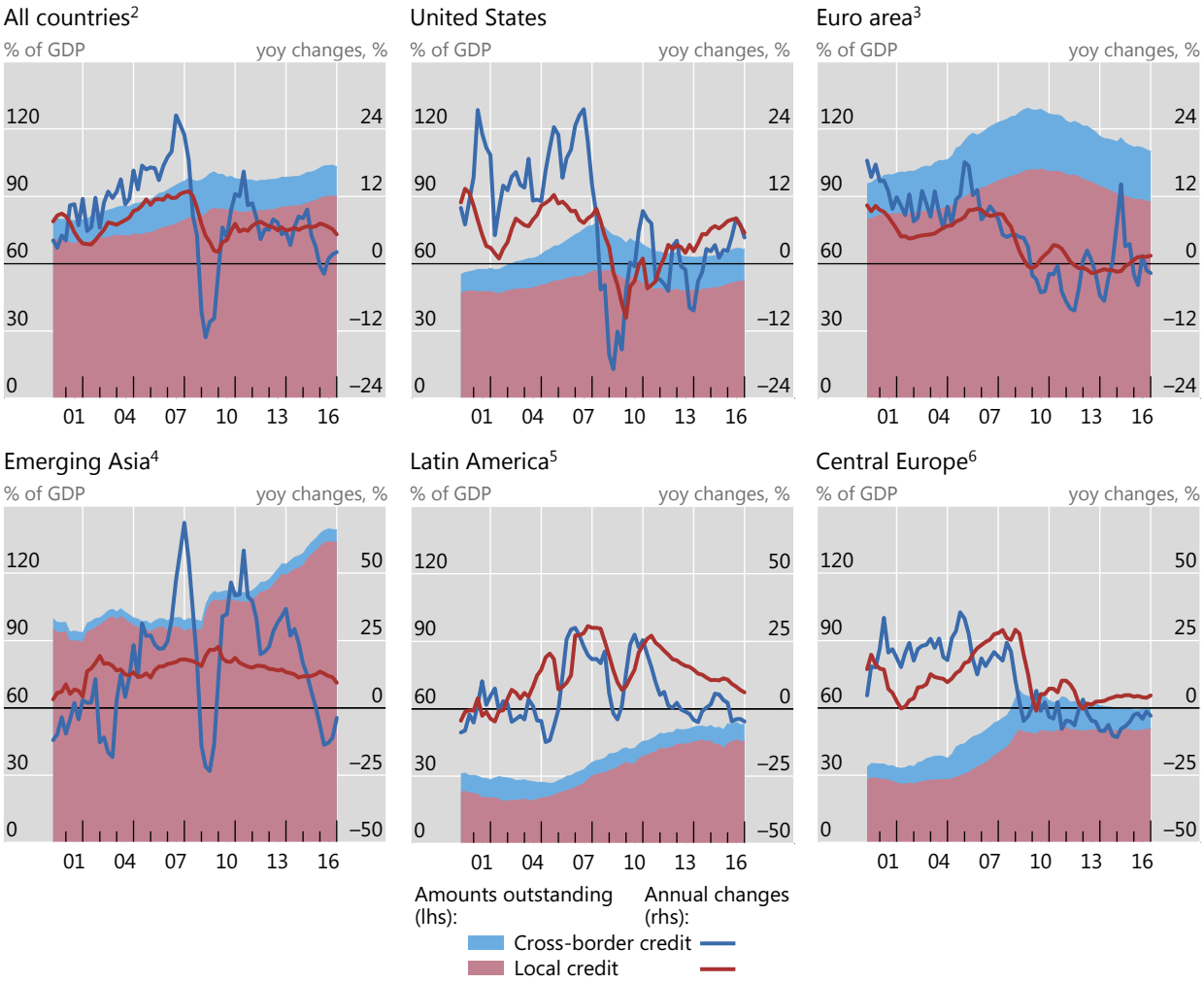
Further information on the BIS global liquidity indicators is available at www.bis.org/statistics/gli.htm.

[1] LBS-reporting banks' cross-border claims plus local claims in foreign currencies. [2] Chicago Board Options Exchange S&P 500 implied volatility index; standard deviation, in percentage points per annum. [3] Including intragroup transactions.

Sources: Bloomberg; BIS locational banking statistics.

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

Banks' cross-border credit plus local credit in all currencies[1] Graph E.2



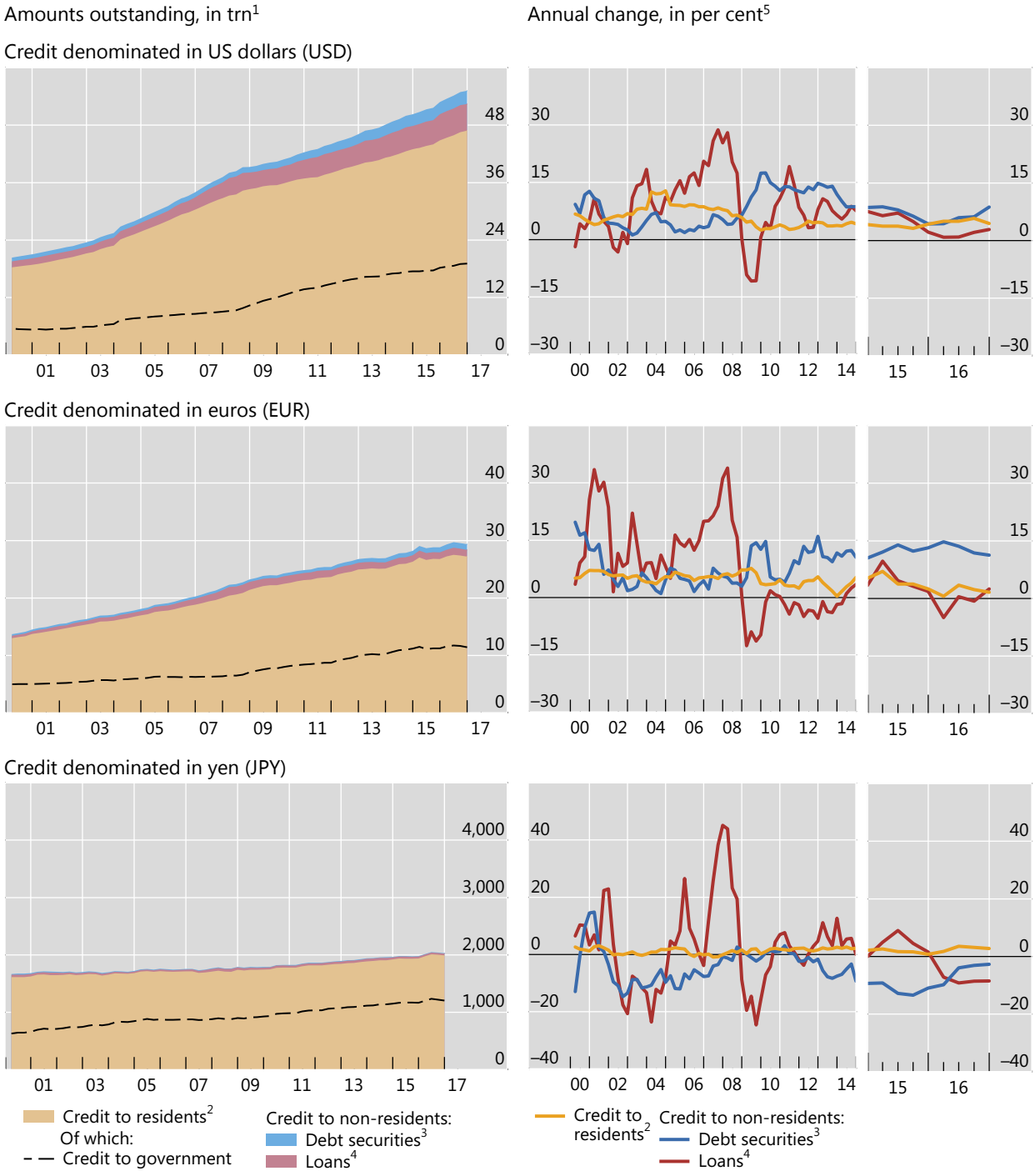
Further information on the BIS global liquidity indicators is available at www.bis.org/statistics/gli.htm.

[1] Cross-border claims of LBS reporting banks to the non-bank sector plus local claims of all banks to the private non-financial sector. Weighted averages of the economies listed, based on four-quarter moving sums of GDP. [2] Australia, Canada, Denmark, Japan, New Zealand, Norway, Russia, Saudi Arabia, South Africa, Sweden, Switzerland, Turkey and the United Kingdom, plus the countries in the other panels. [3] Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and Spain. [4] China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Singapore and Thailand. [5] Argentina, Brazil, Chile and Mexico. [6] The Czech Republic, Hungary and Poland.

Sources: BIS credit to the non-financial sector; BIS locational banking statistics; BIS calculations.

Global credit to the non-financial sector, by currency

Graph E.3



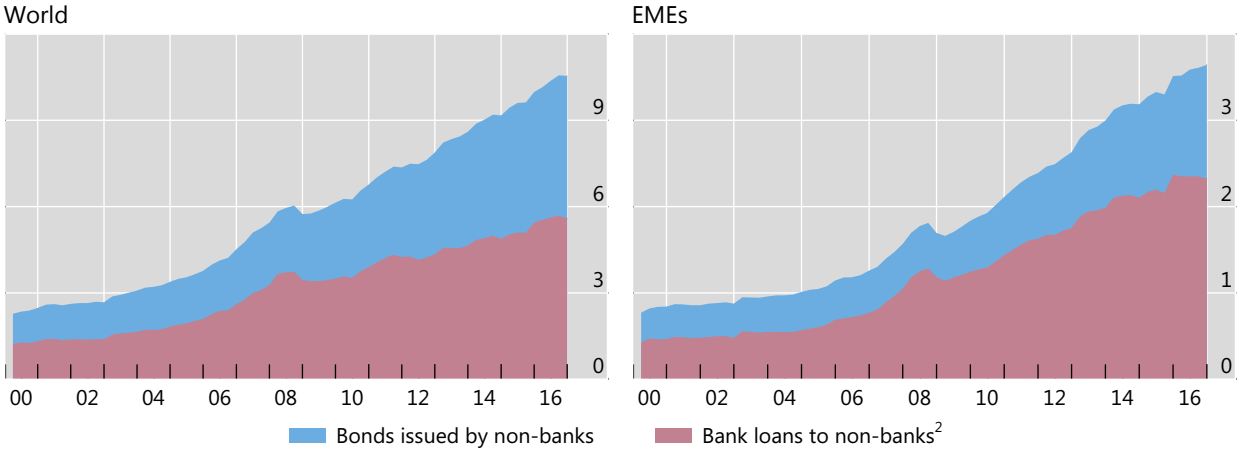
Further information on the BIS global liquidity indicators is available at www.bis.org/statistics/gli.htm.

[1] Amounts outstanding at quarter-end, in national currency. [2] 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. [3] 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. [4] Loans by LBS-reporting banks to non-bank borrowers, including non-bank financial entities, comprise cross-border plus local loans. For countries that do not report local positions, 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 onlent to non-banks. [5] Geometric mean of quarterly break- and exchange rate-adjusted changes.

Sources: Datastream; Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; national data; BIS locational banking statistics; BIS calculations.

US dollar-denominated credit to non-banks outside the United States[1]

Amounts outstanding, in trillions of US dollars — Graph E.4



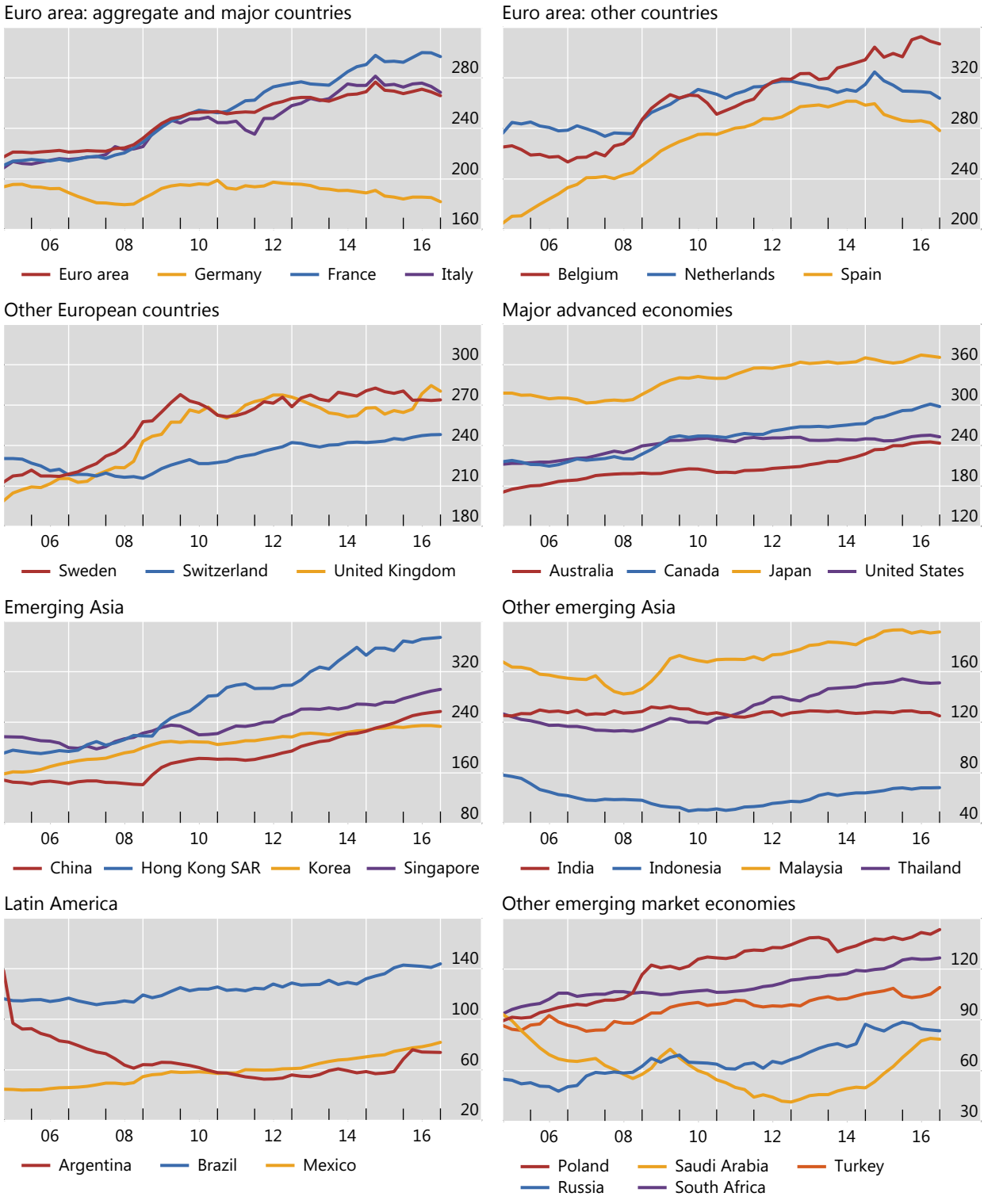
[1] Non-banks comprise non-bank financial entities, non-financial corporations, governments, households and international organisations. [2] Loans by LBS-reporting banks to non-bank borrowers, including non-bank financial entities, comprise cross-border plus local loans. For countries that do not report local positions, local loans in USD are estimated as follows: for China, local loans in foreign currencies are from national data and are assumed to be composed of 80% USD; 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), on the assumption that these funds are onlent to non-banks.

Sources: Datastream; Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; BIS locational banking statistics; BIS calculations.

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

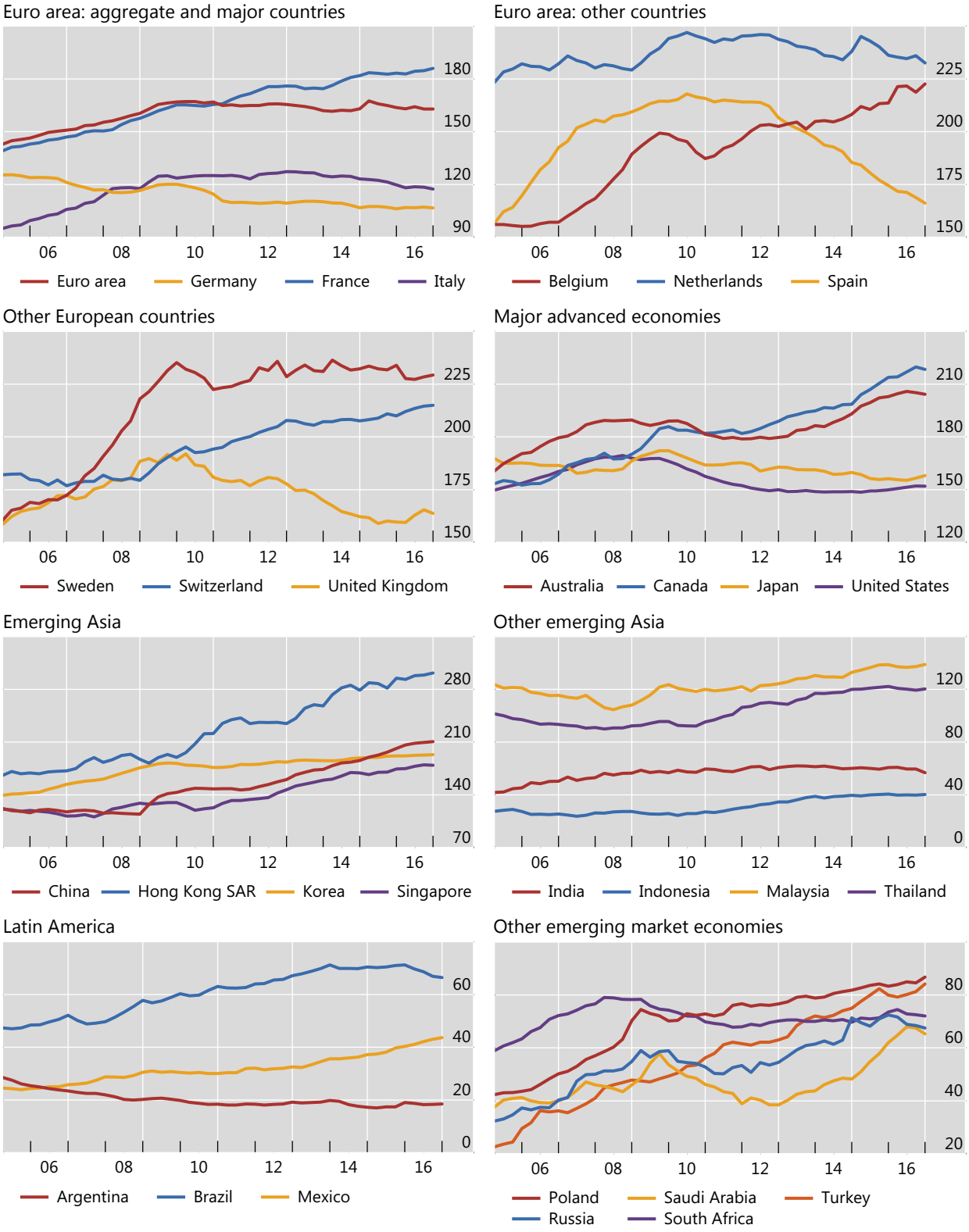


Further information on the BIS credit statistics is available at www.bis.org/statistics/totcredit.htm.

Source: BIS total credit statistics.

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

As a percentage of GDP — Graph F.2



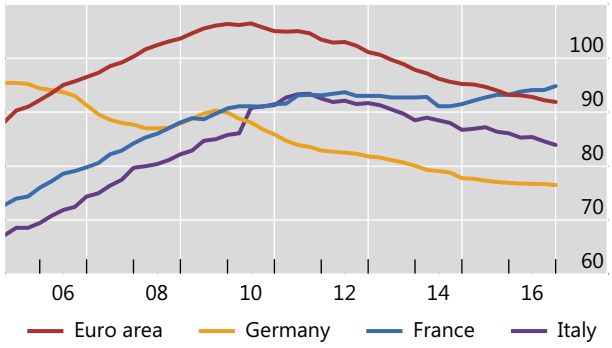
Further information on the BIS credit statistics is available at www.bis.org/statistics/totcredit.htm.

Source: BIS total credit statistics.

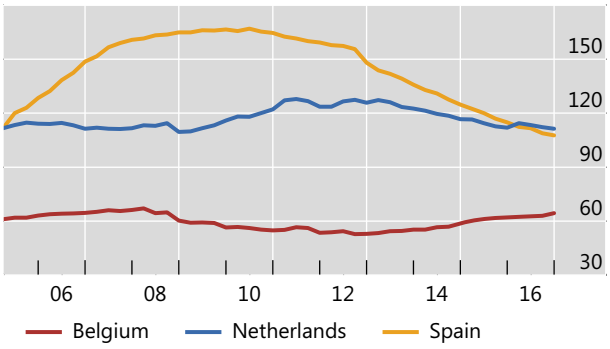
Bank credit to the private non-financial sector (core debt)

As a percentage of GDP — Graph F.3

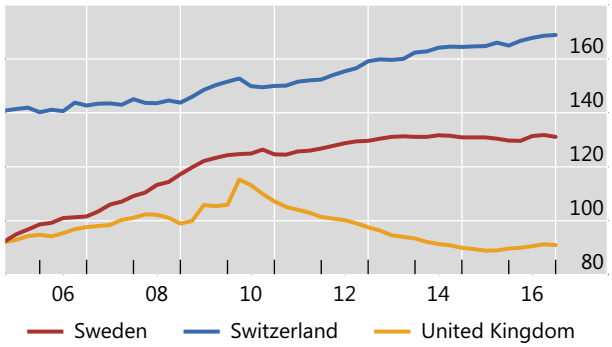
Euro area: aggregate and major countries



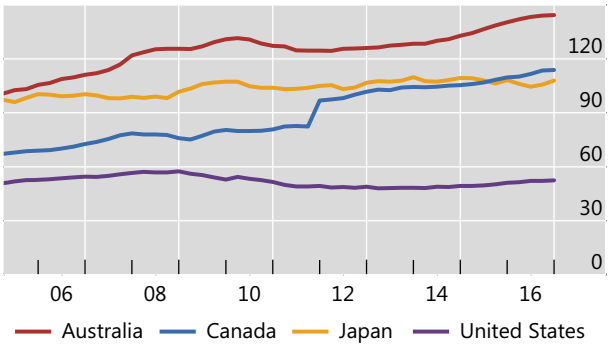
Euro area: other countries



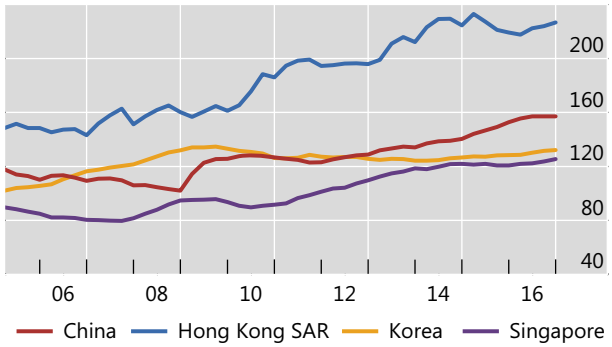
Other European countries



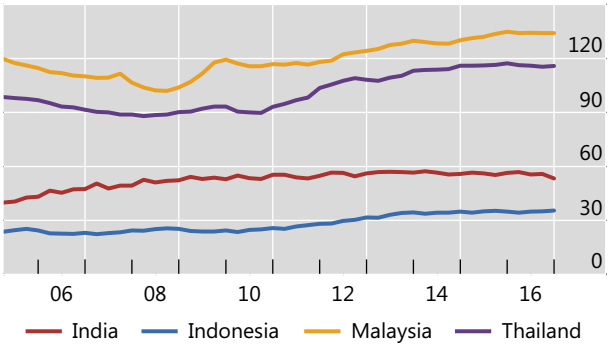
Major advanced economies



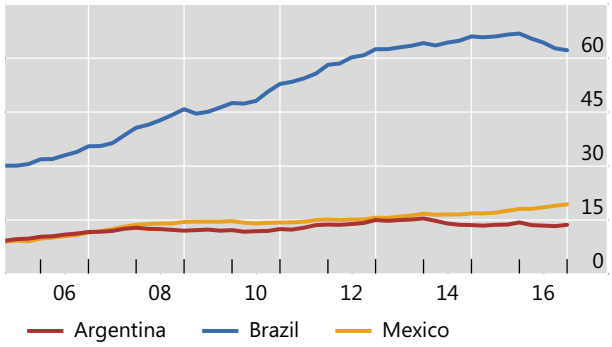
Emerging Asia



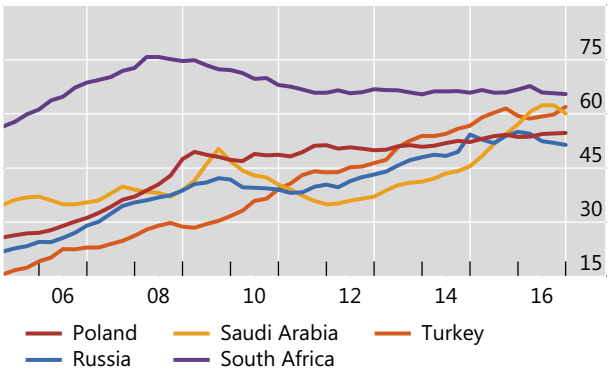
Other emerging Asia



Latin America



Other emerging market economies



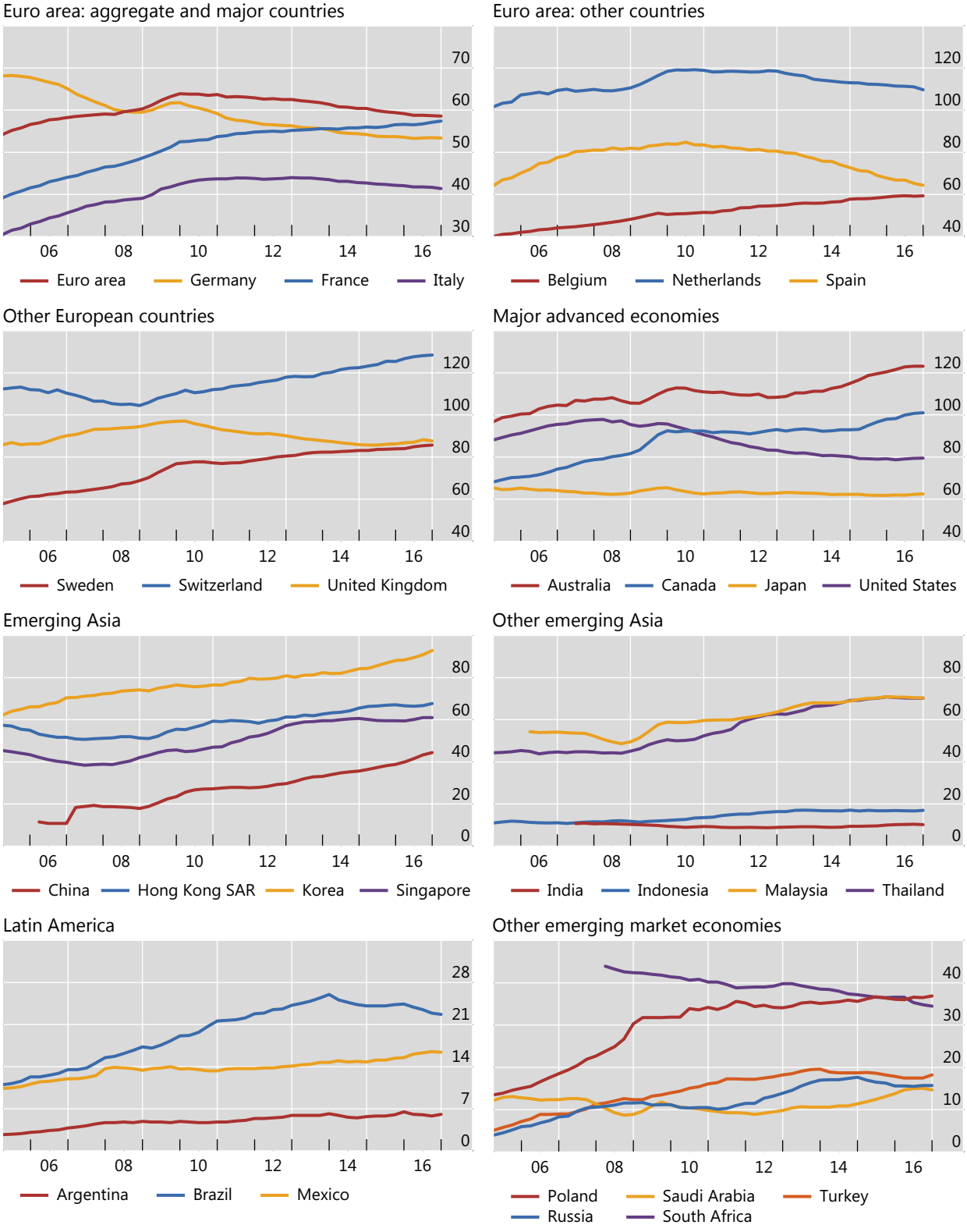
Further information on the BIS credit statistics is available at www.bis.org/statistics/totcredit.htm.

Source: BIS total credit statistics.

Total credit to households (core debt)

As a percentage of GDP

Graph F.4



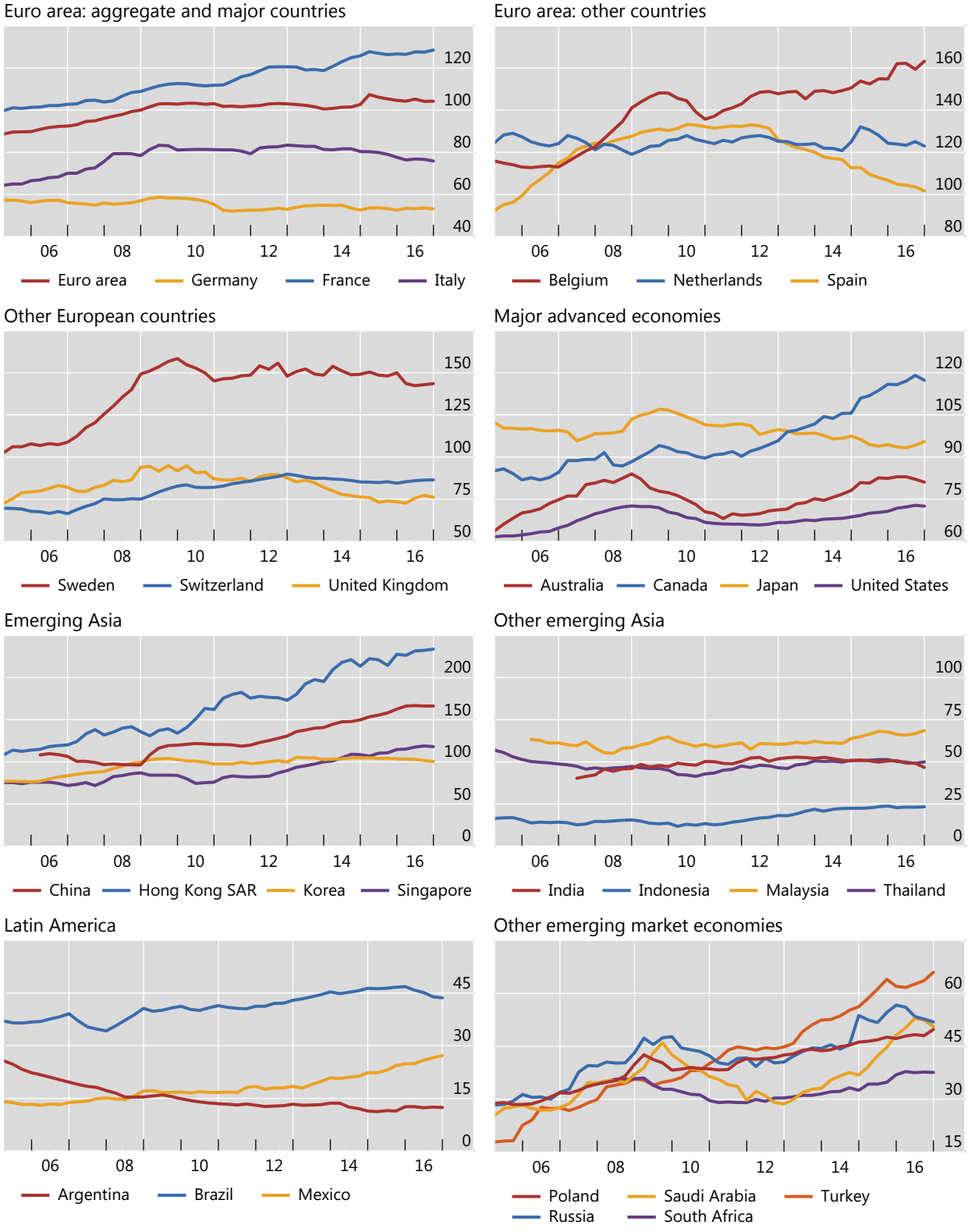
Further information on the BIS credit statistics is available at www.bis.org/statistics/totcredit.htm.

Source: BIS total credit statistics.

Total credit to non-financial corporations (core debt)

As a percentage of GDP

Graph F.5



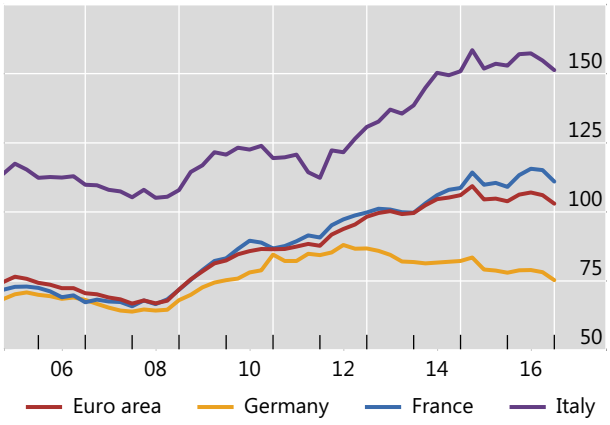
Further information on the BIS credit statistics is available at www.bis.org/statistics/totcredit.htm.

Source: BIS total credit statistics.

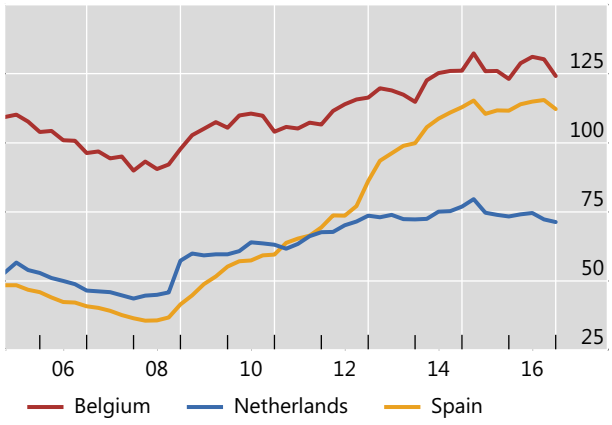
Total credit to the government sector at market value (core debt)[1]

As a percentage of GDP — Graph F.6

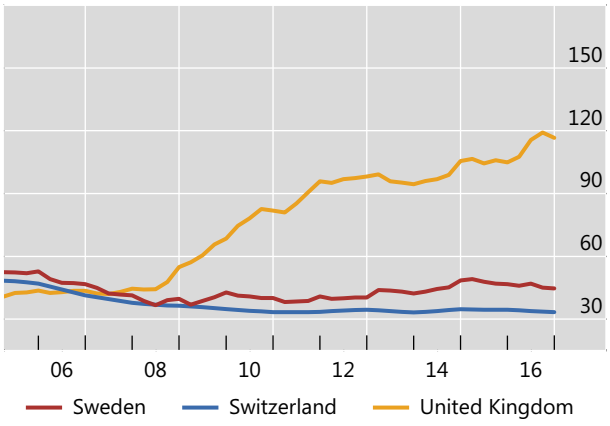
Euro area: aggregate and major countries



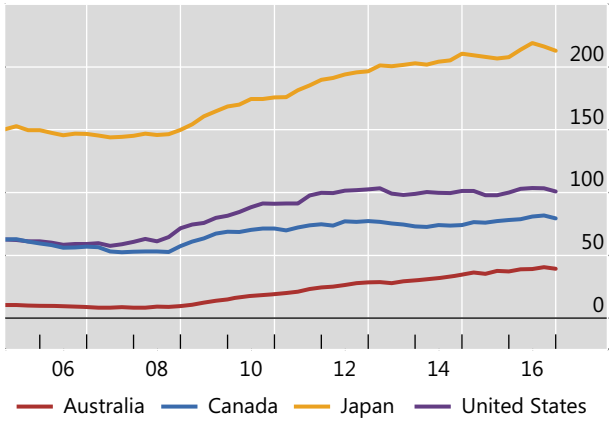
Euro area: other countries



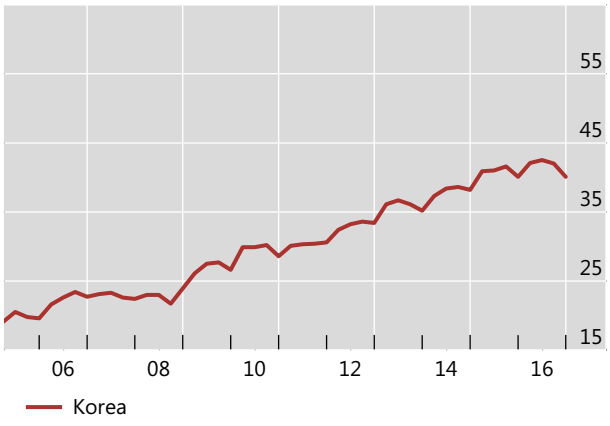
Other European countries



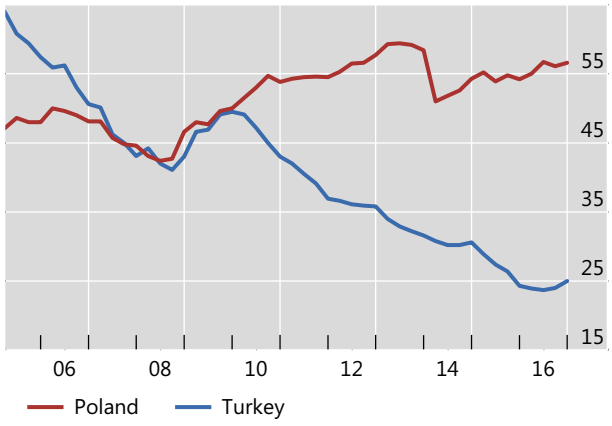
Major advanced economies



Emerging Asia



Other emerging market economies



Further information on the BIS credit statistics is available at www.bis.org/statistics/totcredit.htm.

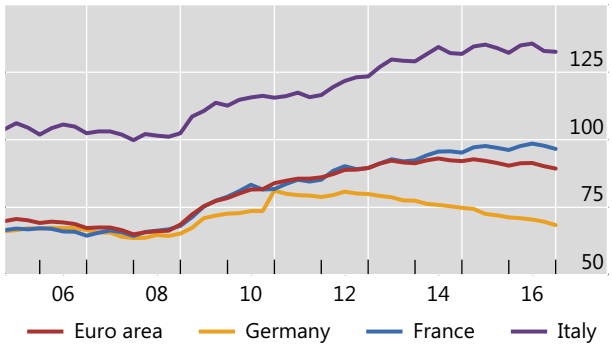
[1] Consolidated data for the general government sector.

Source: BIS total credit statistics.

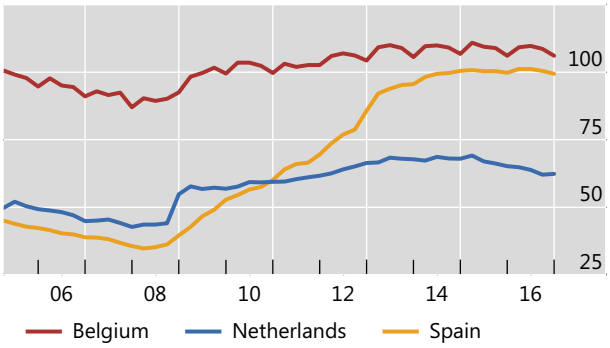
Total credit to the government sector at nominal value (core debt)[1]

As a percentage of GDP — Graph F.7

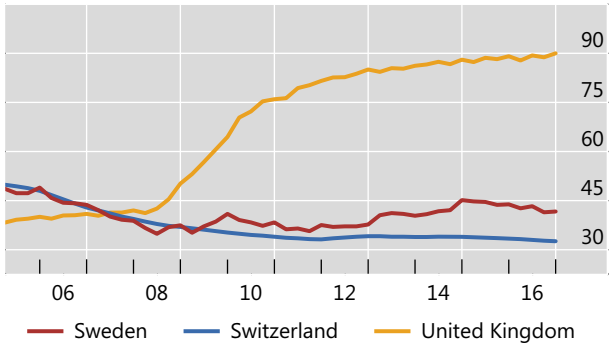
Euro area: aggregate and major countries



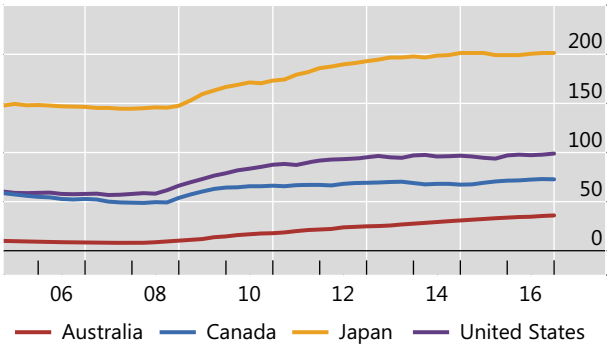
Euro area: other countries



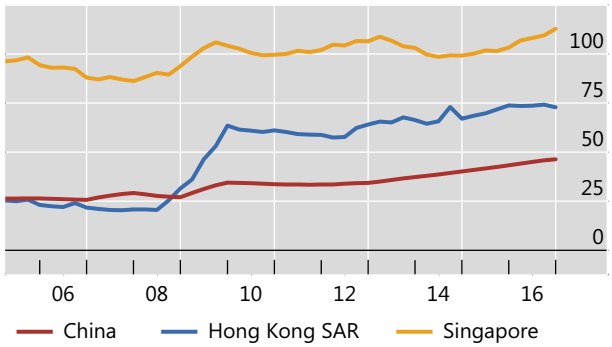
Other European countries



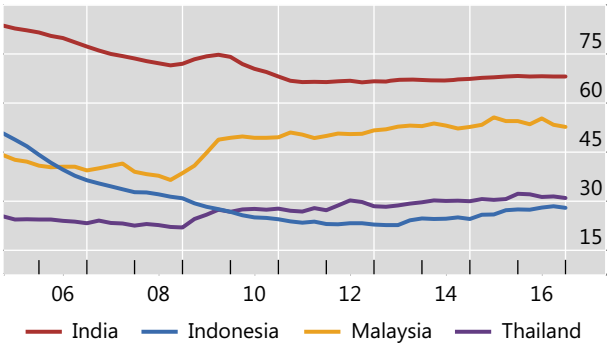
Major advanced economies



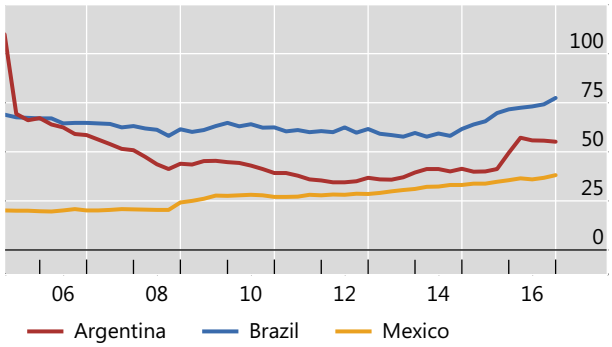
Emerging Asia



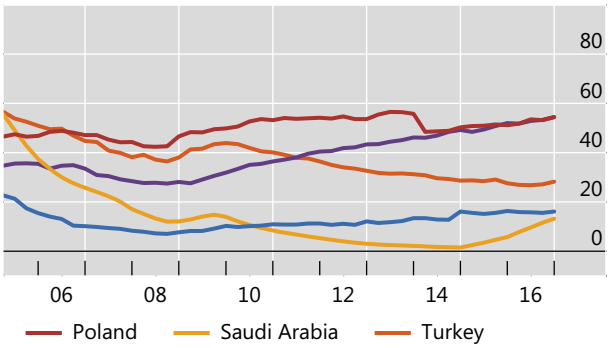
Other emerging Asia



Latin America



Other emerging market economies



Further information on the BIS credit statistics is available at www.bis.org/statistics/totcredit.htm.

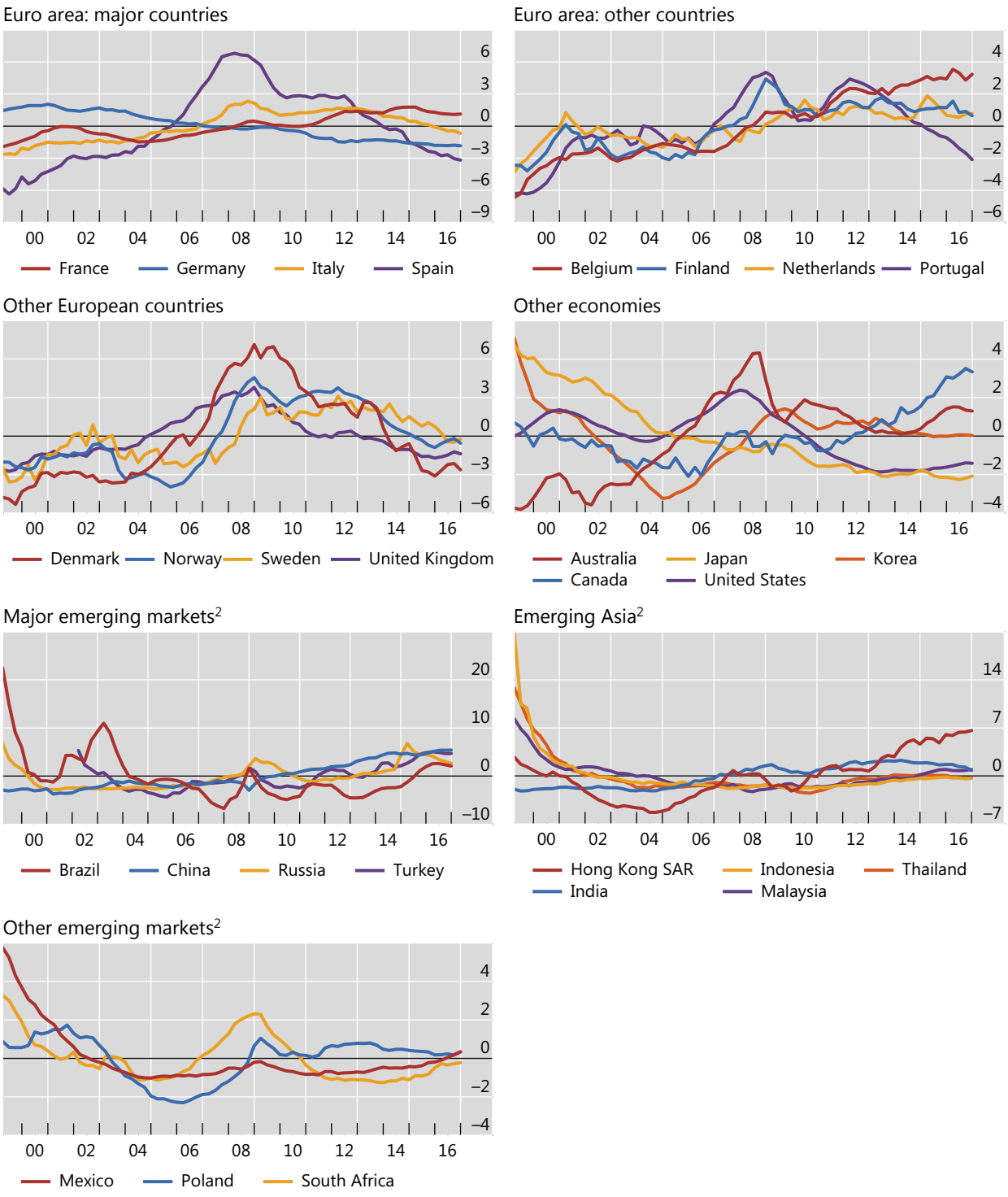
[1] Consolidated data for the general government sector; central government for Argentina, Indonesia, Malaysia, Mexico, Saudi Arabia and Thailand.

Source: BIS total credit statistics.

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[1] Graph G.1



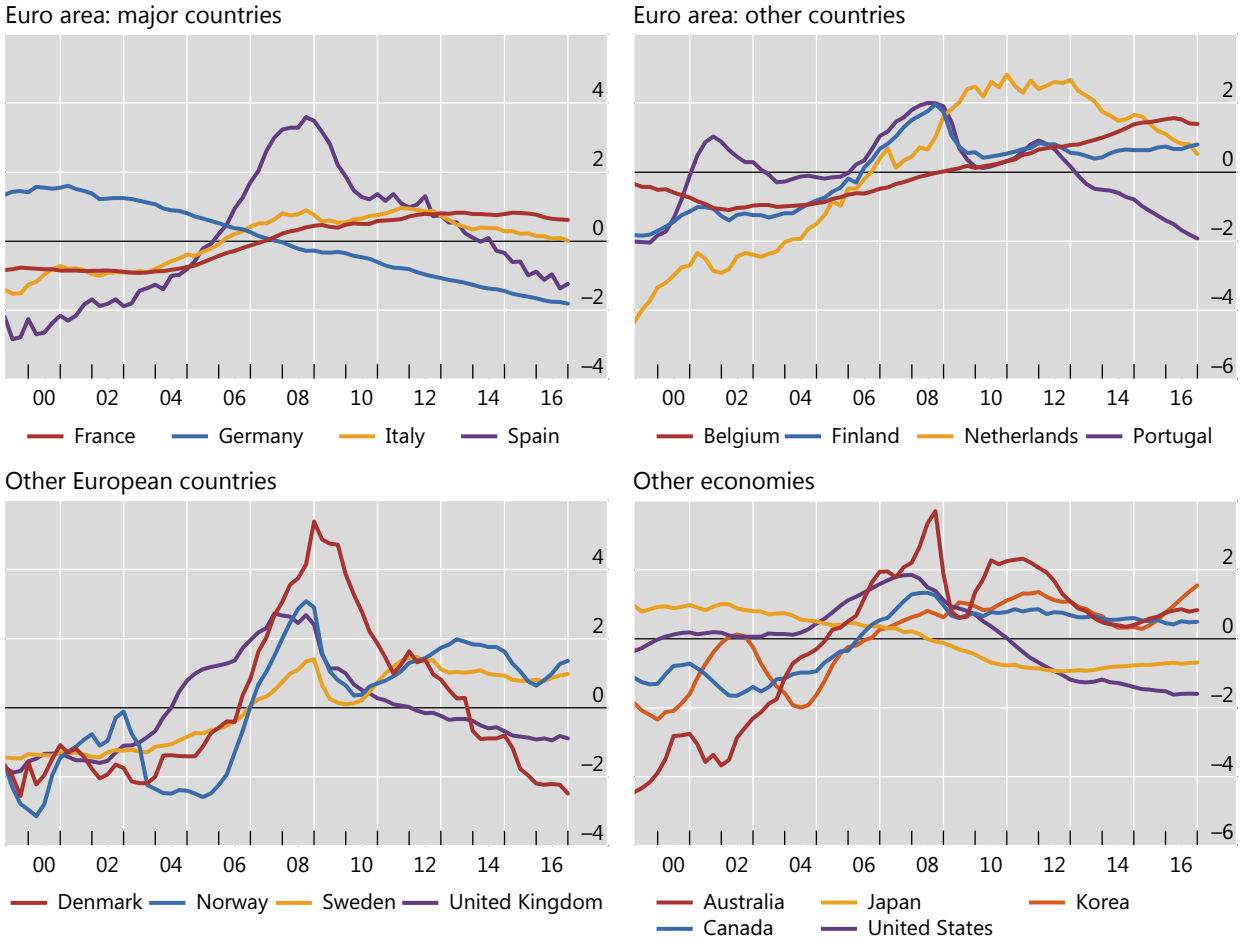
Further information on the BIS debt service ratio statistics is available at www.bis.org/statistics/dsr.htm.

[1] Country-specific means are based on all available data from 1999 onwards. [2] Countries which are using alternative measures of income and interest rates. Further information is available under "Metholodogy and data for DSR calculation" at www.bis.org/statistics/dsr.htm.

Source: BIS debt service ratios statistics.

Debt service ratios of households

Deviation from country-specific mean, in percentage points[1] Graph G.2



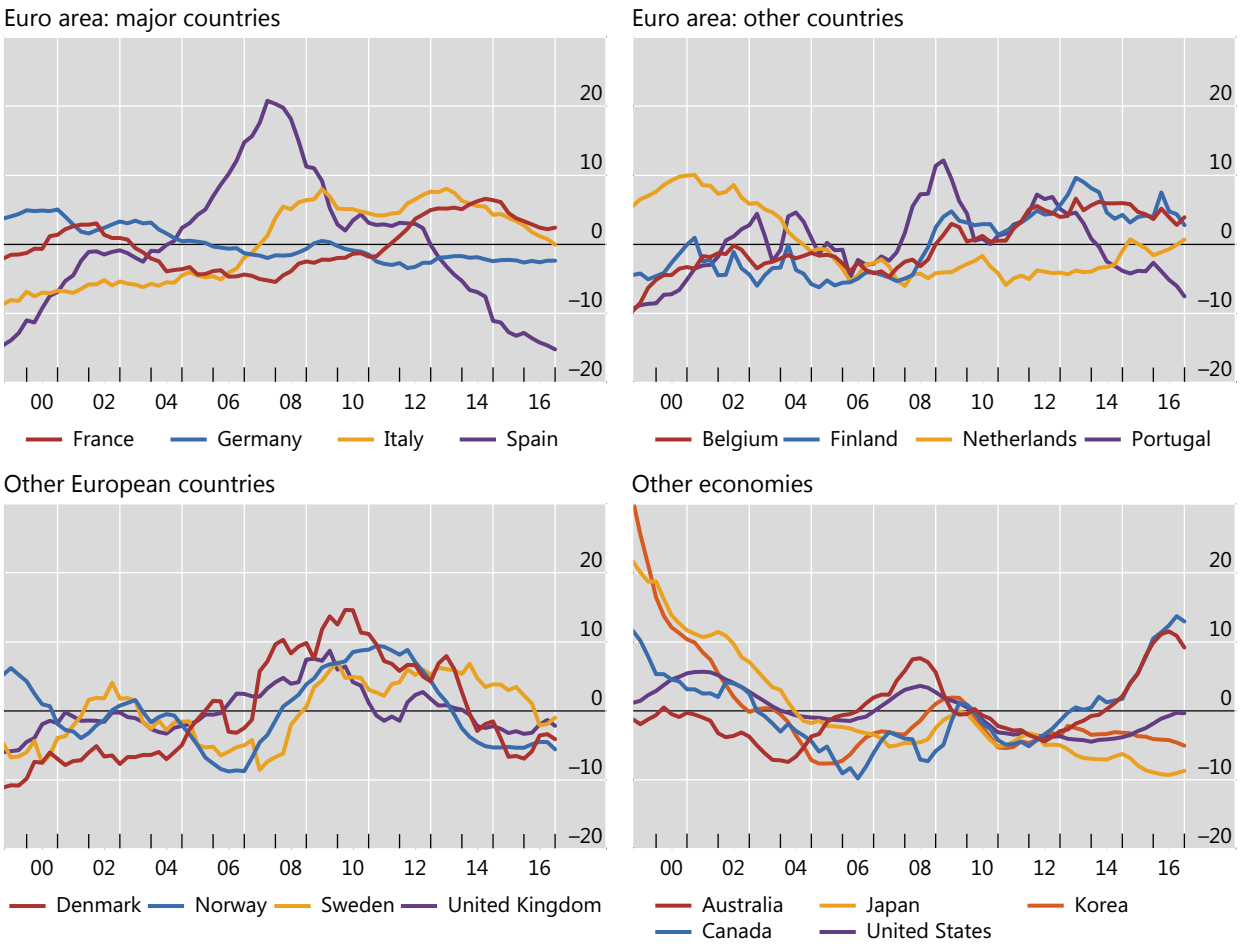
Further information on the BIS debt service ratio statistics is available at www.bis.org/statistics/dsr.htm.

[1] Country-specific means are based on all available data from 1999 onwards.

Source: BIS debt service ratios statistics.

Debt service ratios of non-financial corporations

Deviation from country-specific mean, in percentage points[1] Graph G.3



Further information on the BIS debt service ratio statistics is available at www.bis.org/statistics/dsr.htm.

[1] Country-specific means are based on all available data from 1999 onwards.

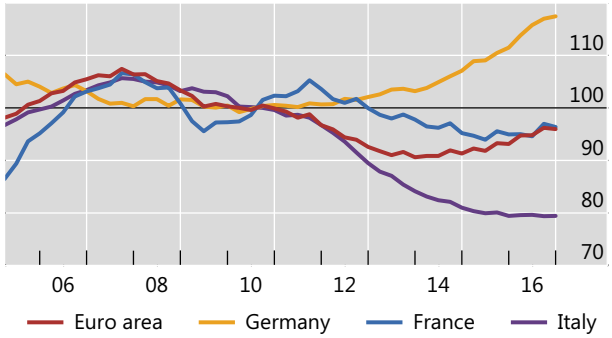
Source: BIS debt service ratios statistics.

H Property price statistics

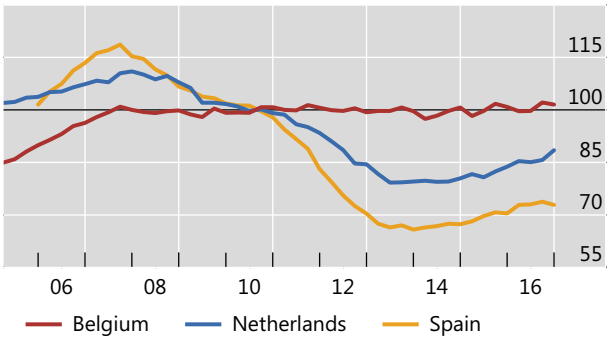
Real residential property prices

CPI-deflated, 2010 = 100 Graph H.1

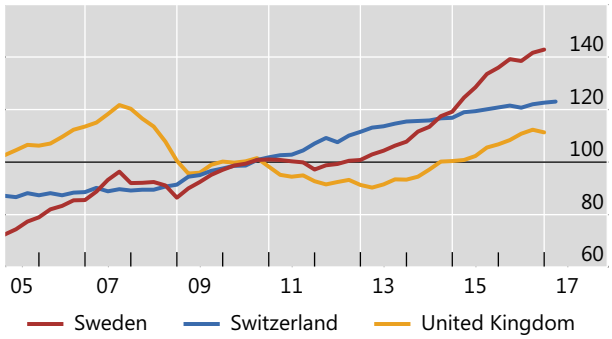
Euro area: aggregate and major countries



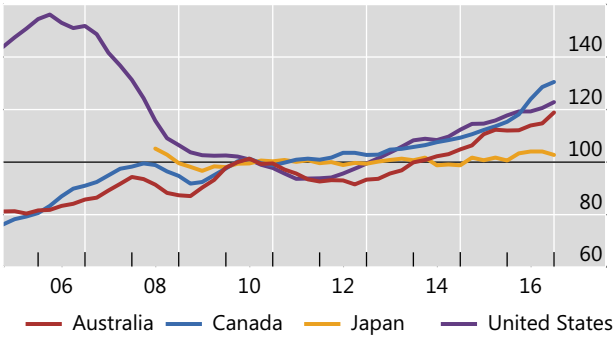
Euro area: other countries



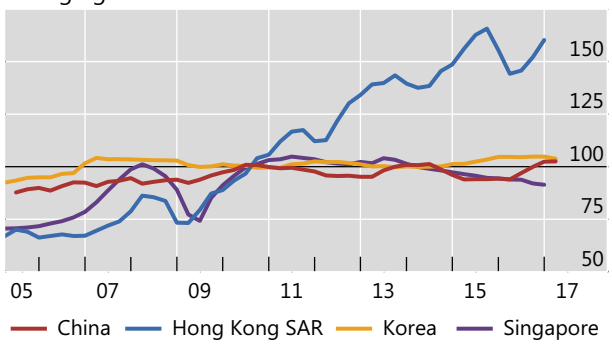
Other European countries



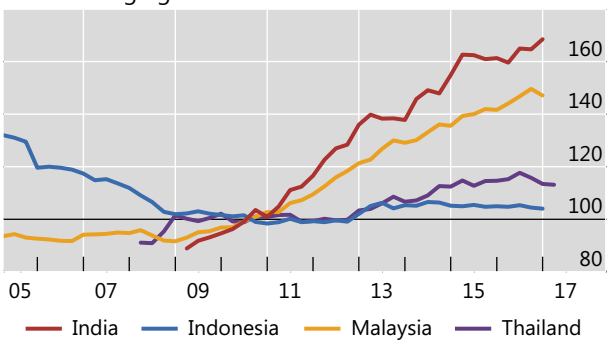
Major advanced economies



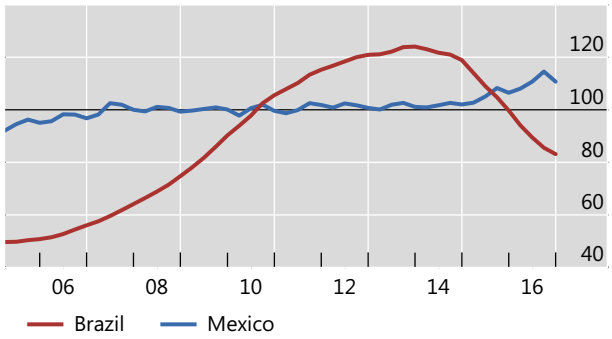
Emerging Asia



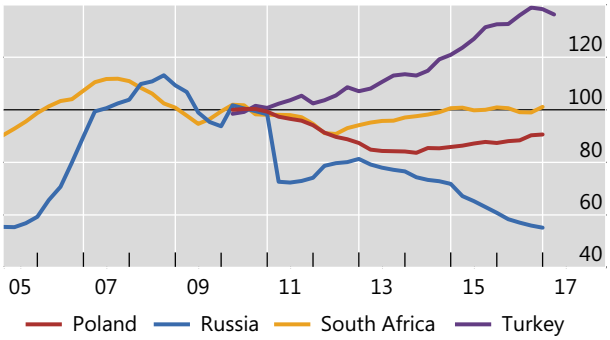
Other emerging Asia



Latin America



Other emerging market economies



Further information on the BIS property price statistics is available at www.bis.org/statistics/pp.htm.

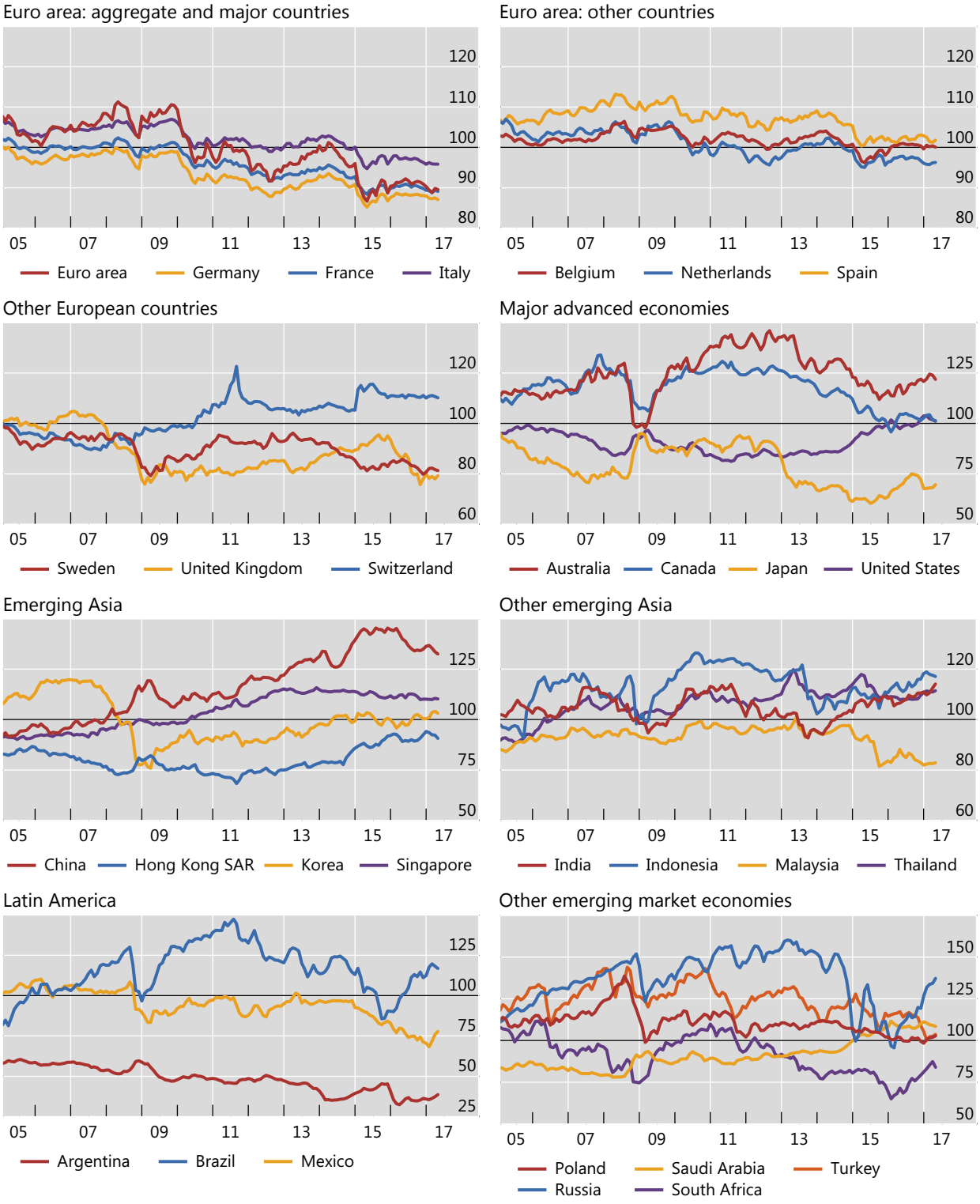
Source: BIS property prices statistics.

I Effective exchange rate statistics

Real effective exchange rates

CPI-based, 1995–2005 = 100[1]

Graph I.1



Further information on the BIS effective exchange rate statistics is available at www.bis.org/statistics/eer.htm.

[1] An increase indicates a real-term appreciation of the local currency against a broad basket of currencies.

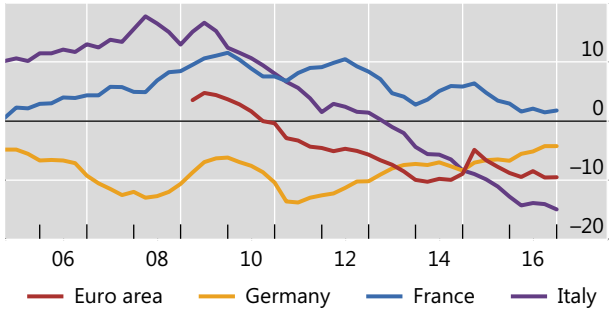
Source: BIS effective exchange rates statistics.

J Credit-to-GDP gaps

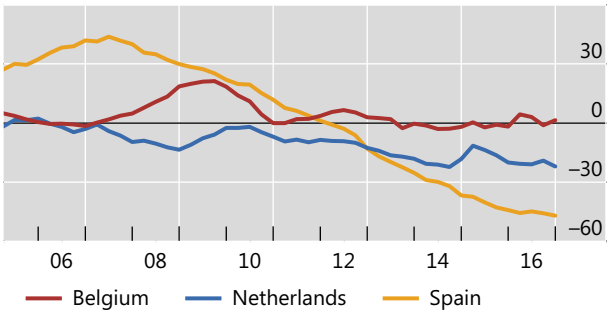
Credit-to-GDP gaps

In percentage points of GDP — Graph J.1

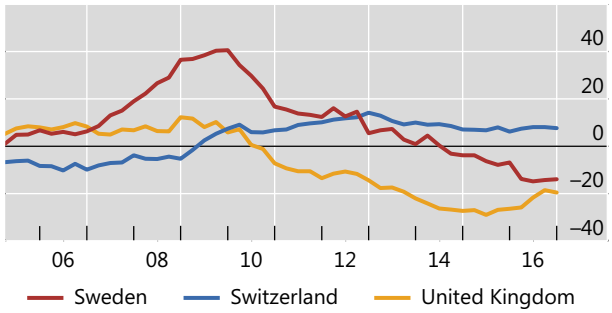
Euro area: aggregate and major countries



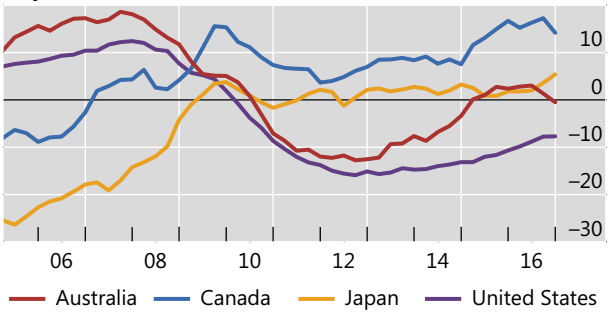
Euro area: other countries



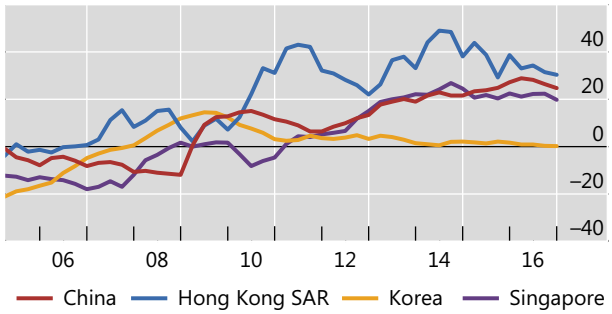
Other European countries



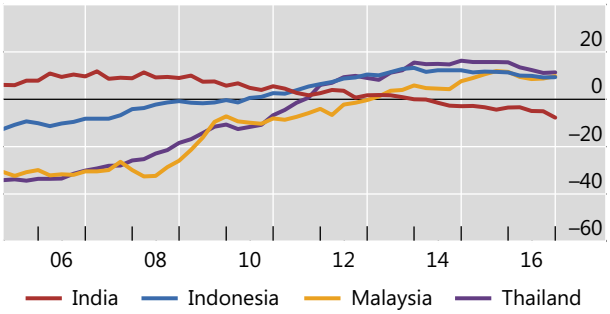
Major advanced economies



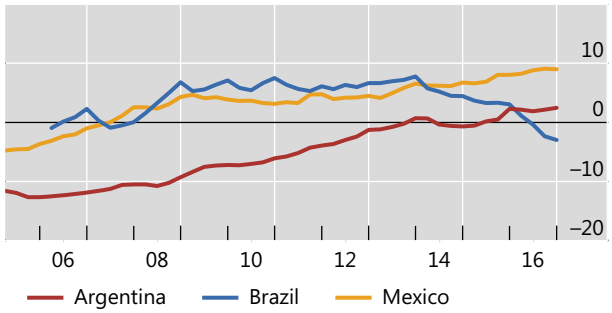
Emerging Asia



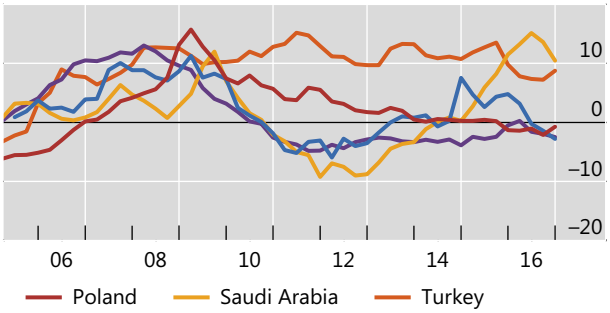
Other emerging Asia



Latin America



Other emerging market economies



[1] Estimates based on series on total credit to the private non-financial sector. The credit-to-GDP gap is defined as the difference between the credit-to-GDP ratio and its long-term trend; the long-term trend is calculated using a one-sided Hodrick-Prescott filter with a smoothing parameter of 400,000. Further information on the BIS credit-to-GDP gaps is available at www.bis.org/statistics/c_gaps.htm.

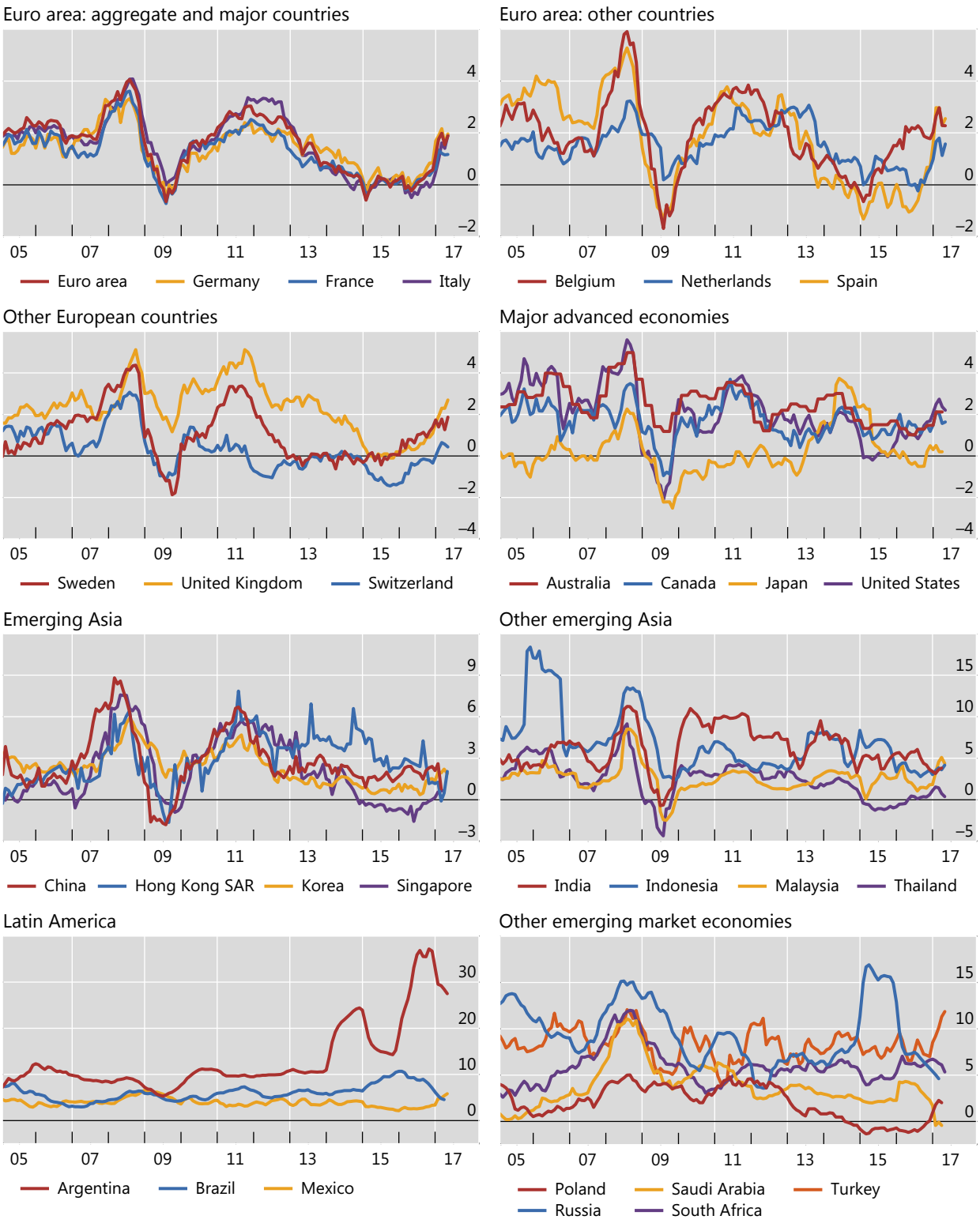
Source: BIS credit-to-GDP gaps statistics.

K Consumer prices

Consumer prices

Year-on-year percentage changes

Graph K.1



Further information on the BIS consumer prices is available at www.bis.org/statistics/cp.htm.

Source: BIS consumer price statistics.

Special features in the BIS Quarterly Review

March 2017	Consumption-led expansions	Enisse Kharroubi & Emanuel Kohlscheen
March 2017	The new era of expected credit loss provisioning	Benjamin Cohen & Gerald Edwards Jr
March 2017	The quest for speed in payments	Morten Bech, Yuuki Shimizu and Paul Wong
March 2017	The bond benchmark continues to tip to swaps	Lawrence Kreicher, Robert McCauley & Philip Wooldridge
December 2016	Downsized FX markets: causes and implications	Michael Moore, Andreas Schrimpf and Vladyslav Sushko
December 2016	The changing shape of interest rate derivatives markets	Torsten Ehlers & Egemen Eren
December 2016	Emerging derivatives markets?	Christian Upper & Marcos Valli
December 2016	Non-deliverable forwards: impact of currency internationalisation and derivatives reform	Robert McCauley & Chang Shu
December 2016	Does the financial channel of exchange rates offset the trade channel?	Jonathan Kerns & Nikhil Patel
September 2016	Covered interest parity lost: understanding the cross-currency basis	Claudio Borio, Robert McCauley, Patrick McGuire & Vladyslav Sushko
September 2016	Foreign exchange market intervention in EMEs: what has changed?	Dietrich Domanski, Emanuel Kohlscheen & Ramon Moreno
September 2016	Domestic financial markets and offshore bond financing	Jose Maria Serena & Ramon Moreno
September 2016	The ECB's QE and euro cross-border bank lending	Stefan Avdjiev, Agne Subelyte & Elod Takats

Recent BIS publications[1]

BIS Papers

The Financial systems and the real economy
BIS Papers No 91, March 2017

The great financial crisis of 2007-08 and the recession have generated active debate on the role of financial systems on the real economy. In particular, central banks have shown increased interest in how financial systems can evolve to maximise their contribution to the real economy. Many Asia-Pacific economies have also experienced a rapid growth in household debt since the crisis.

Against this background, Bank Negara Malaysia and the Bank for International Settlements (BIS) co-hosted a research conference on "Financial systems and the real economy" on 16-18 October 2016 in Kuala Lumpur. The event was the wrap-up conference of a research programme of the BIS Representative Office for Asia and the Pacific that had been approved by the Asian Consultative Council of central bank Governors in February 2015. The conference brought together senior officials and researchers from central banks, international organisations and academia.

Papers presented at the conference covered macroprudential policies and firm financing; household credit, growth and inequality; capital structure in emerging Asia; foreign banks and credit conditions in emerging market economies; household credit and the effectiveness of monetary and macroprudential policies in Asia-Pacific; and household indebtedness and debt repayment capacity. This volume is a collection of the speeches, papers and prepared discussant remarks and panel remarks from the conference.

Foreign exchange liquidity in the Americas
BIS Papers No 90, March 2017

This report discusses FX liquidity metrics and their drivers, reaching four conclusions. First, changes in FX markets have reduced the usefulness of some conventional FX liquidity metrics; several metrics need to be assessed together to give a better picture of market liquidity. Second, some metrics suggest that liquidity in FX markets has declined during some recent episodes of market stress. Third, technology appears to have changed liquidity dynamics - enhancing liquidity in normal conditions and offsetting the impact of market fragmentation, but also adding to FX volatility in stressed market conditions. Fourth, the impact of post-crisis regulatory change on FX market liquidity remains unclear and requires further study.

BIS Working Papers

Understanding the determinants of financial outcomes and choices: the role of noncognitive abilities
May 2017, No 640

We explore how financial distress and choices are affected by noncognitive abilities. Our measures stem from research in psychology and economics. In a representative panel of

[1] 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 (http://www.bis.org/).

households, we find that people in the bottom decile of noncognitive abilities are five times more likely to experience financial distress compared to those in the top decile. Relatedly, individuals with lower noncognitive abilities make financial choices that increase their likelihood of distress: They are less likely to plan for retirement and save, and more likely to buy impulsively and to have unsecured debt. Causality is shown using childhood trauma as an instrument.

Supply - and demand-side factors in global banking
Mary Amiti, Patrick McGuire and David E Weinstein
May 2017, No 639

What is the role for supply and demand forces in determining movements in international banking flows? Answering this question is crucial for understanding the international transmission of financial shocks and formulating policy. This paper addresses the question by using the method developed in Amiti and Weinstein (forthcoming) to exactly decompose the growth in international bank credit into common shocks, idiosyncratic supply shocks and idiosyncratic demand shocks for the period 2000-2016. A striking feature of the global banking flows data can be characterized by what we term the "Anna Karenina Principle": all healthy credit relationships are alike, each unhealthy credit relationship is unhealthy in its own way. During non-crisis years, bank flows are well-explained by a common global factor and a local demand factor. But during times of crisis flows are affected by idiosyncratic supply shocks to a borrower country's creditor banks. This has important implications for why standard models break down during crises.

Assessing fiscal policy through the lens of the financial and the commodity price cycles
Enrique Alberola-Ila and Ricardo Sousa
May 2017, No 638

We assess the link between fiscal policy and credit and commodity price booms and busts. We do so by investigating the impact of financial and commodity price cycles on the identification of episodes of fiscal consolidation and stimulus and the size of the fiscal impulse. We find that controlling for the credit cycle has an impact on the magnitude of the change in the cyclically-adjusted budget balance. The impact is lower in the case of the commodity price cycle. In addition, we show that credit booms and busts influence the cyclicality of fiscal policy, but not to the extent of significantly altering the systematic response of fiscal policy to the dynamics of real economic activity. Again, the impact of the commodity price cycle is smaller and limited to some specific cases.

Global value chains and effective exchange rates at the country-sector level
Nikhil Patel, Zhi Wang and Shang-Jin Wei
May 2017, No 637

The real effective exchange rate (REER) is one of the most cited statistical constructs in open-economy macroeconomics. We show that the models used to compute these numbers are not rich enough to allow for the rising importance of global value chains. Moreover, because different sectors within a country participate in international production sharing at different stages, sector level variations are also important for determining competitiveness. Incorporating these features, we develop a framework to compute REER at both the sector and country level and apply it on inter-country input-output tables to study the properties of the new measures of REER for 35 sectors in 40 countries.

The impact of macroprudential policies and their interaction with monetary policy: an empirical analysis using credit registry data
Leonardo Gambacorta and Andrés Murcia Pabón
May 2017, No 636

This paper summarises the results of a joint research project by eight central banks in the Americas region to evaluate the effectiveness of macroprudential tools and their interaction with monetary policy. In particular, using meta-analysis techniques, we summarise the results for five Latin American countries (Argentina, Brazil, Colombia, Mexico and Peru) that use confidential bank-loan data. The use of granular credit registry data helps us to disentangle loan demand from loan supply effects without making strong assumptions. Results from another three countries (Canada, Chile and the United States) corroborate the analysis using

data for credit origination and borrower characteristics. The main conclusions are that (i) macroprudential policies have been quite effective in stabilising credit cycles. The propagation of the effects to credit growth is more rapid (they materialise after one quarter) for policies aimed at curbing the cycle than for policies aimed at fostering resilience (which take effect within a year); and (ii) macroprudential tools have a greater effect on credit growth when reinforced by the use of monetary policy to push in the same direction.

Prudential policies and their impact on credit in the United States
Paul Calem, Ricardo Correa and Seung Jung Lee
May 2017, No 635

We analyze how two types of recently used prudential policies affected the supply of credit in the United States. First,we test whether the U.S. bank stress tests had any impact on the supply of mortgage credit. We find that the first Comprehensive Capital Analysis and Review (CCAR) stress test in 2011 had a negative effect on the share of jumbo mortgage originations and approval rates at stress-tested banks-banks with worse capital positions were impacted more negatively. Second, we analyze the impact of the 2013 Supervisory Guidance on Leveraged Lending and subsequent 2014 FAQ notice, which clarified expectations on the Guidance. We find that the share of speculative-grade term-loan originations decreased notably at regulated banks after the FAQ notice.

Evaluating the impact of macroprudential policies on credit growth in Colombia
Esteban Gómez, Angélica Lizarazo, Juan Carlos Mendoza and Andrés Murcia Pabón
May 2017, No 634

Macroprudential tools have been used around the world to counter potential risks and imbalances in the financial sector. Colombia is a good example of a country that has employed a variety of regulatory measures to manage systemic risks in the economy. The purpose of this paper is to evaluate the effectiveness of two such policies with a view to increasing systemic resilience and curbing excesses in the credit supply. The first measure, the countercyclical reserve requirement, was implemented in 2007 to control excessive credit growth. The second was the dynamic provisioning scheme for commercial loans, which was designed to establish a countercyclical buffer through loan loss provision requirements. To perform this analysis, a rich dataset based on loan-by-loan information for Colombian banks during the 2006-09 period is used. A fixed effects panel model is estimated using the characteristics of debtors, banks and the macroeconomy as control variables. In addition, a difference in differences estimation is performed to evaluate the policies' impact. The findings suggest that the dynamic provisions and the countercyclical reserve requirement had a negative effect on credit growth, and that this effect varies according to bank-specific characteristics. Results also suggest that the aggregate macroprudential policy stance in Colombia has worked effectively to stabilize credit cycles, with some preliminary evidence also pointing towards significant effects in reducing bank risk-taking. Moreover, evidence is found that macroprudential policies have worked as a complement to monetary policy, as both have a moderating effect on credit growth when tightened.

The impact of warnings published in a financial stability report on loan-to value ratios
Andrés Alegría, Rodrigo Alfaro and Felipe Córdova
May 2017, No 633

This paper shows how central bank communications can play a role in macroprudential supervision. We document how specific warnings about real estate markets, published in the Central Bank of Chile's Financial Stability Reports of 2012, affected bank lending policies. We provide empirical evidence of a rebalancing in the characteristics of mortgage loans granted, with a reduction in the number of mortgage loans with high loan-to-value ratios (LTV), along with an increase in loans with lower LTV ratios.

The impact of macroprudential housing finance tools in Canada
Jason Allen, Timothy Grieder, Tom Roberts and Brian Peterson
May 2017, No 632

This paper combines loan-level administrative data with household-level survey data to analyze the impact of recent macroprudential policy changes in Canada using a microsimulation model of mortgage demand of first-time homebuyers. Policies targeting the

loan-to-value ratio are found to have a larger impact on demand than policies targeting the debt-service ratio, such as amortization. In addition, we show that loan-to-value policies have a larger role to play in reducing default than income-based policies.

Arbitrage costs and the persistent non-zero CDS-bond basis: Evidence from intraday euro area sovereign debt markets
Jacob Gyntelberg, Peter Hördahl, Kristyna Ters and Jörg Urban
April 2017, No 631

We find evidence that in the market for euro area sovereign credit risk, arbitrageurs engage in basis trades between credit default swap (CDS) and bond markets only when the CDS-bond basis exceeds a certain threshold. This threshold effect is likely to reflect costs that arbitrageurs face when implementing trading strategies, including transaction costs and costs associated with committing balance sheet space for such trades. Using a threshold vector error correction model, we endogenously estimate these unknown trading costs for basis trades in the market for euro area sovereign debt. During the euro sovereign credit crisis, we find very high transaction costs of around 190 basis points, compared to around 80 basis points before the crisis. Our results show, that even when markets in times of stress are liquid, the basis can widen as high market volatility makes arbitrage trades riskier, leading arbitrageurs to demand a higher compensation for increased risk. Our findings help explain the persistent non-zero CDS-bond basis in euro area sovereign debt markets and its increase during the last sovereign crisis.

How post-crisis regulation has affected bank CEO compensation
Vittoria Cerasi, Sebastian M Deininger, Leonardo Gambacorta and Tommaso Oliviero
April 2017, No 630

This paper assesses whether compensation practices for bank Chief Executive Officers (CEOs) changed after the Financial Stability Board (FSB) issued post-crisis guidelines on sound compensation. Banks in jurisdictions which implemented the FSB's Principles and Standards of Sound Compensation in national legislation changed their compensation policies more than other banks. Compensation in those jurisdictions is less linked to short-term profits and more linked to risks, with CEOs at riskier banks receiving less, by way of variable compensation, than those at less-risky peers. This was particularly true of investment banks and of banks which previously had weaker risk management, for example those that previously lacked a Chief Risk Officer.

The beneficial aspect of FX volatility for market liquidity
Jakree Koosakul and Ilhyock Shim
April 2017, No 629

A substantial body of existing research suggests that asset price volatility is harmful to market liquidity. This paper explores a contrarian view that, by creating opportunities for profit making, exchange rate volatility can be beneficial to trading activity. Utilising granular data from the Thai foreign exchange (FX) market from January 2010 to March 2016, we find that the volatility of the US dollar-Thai baht exchange rate has significant positive effects on trading volume in the spot market, except at very high levels of volatility. We also observe significant heterogeneity in such effects across different types of market participant. In particular, FX volatility has positive effects on the FX trading activity of foreign and interbank players, but it negatively affects that of local players. These results are robust when we control for potential confounding variables, such as information arrivals, that can generate a positive but non-causal co-movement between volatility and volume.

Is monetary policy less effective when interest rates are persistently low?
Claudio Borio and Boris Hofmann
April 2017, No 628

Is monetary policy less effective in boosting aggregate demand and output during periods of persistently low interest rates? This paper reviews the reasons why this might be the case and the corresponding empirical evidence. Transmission could be weaker for two main reasons: (i) headwinds, which would typically arise in the wake of balance sheet recessions, when interest rates are low; and (ii) inherent non-linearities, which would kick in when interest rates are persistently low and would dampen their impact on spending. Our review of the evidence

suggests that headwinds during the recovery from balance-sheet recessions tend to reduce monetary policy effectiveness. At the same time, there is also evidence of inherent non-linearities. That said, disentangling the two types of effect is very hard, not least given the limited extant work on this issue. In addition, there appears to be an independent role for nominal rates in the transmission process, regardless of the level of real (inflation-adjusted) rates.

External debt composition and domestic credit cycles
Stefan Avdjiev, Stephan Binder and Ricardo Sousa
April 2017, No 627

We assess the role of external debt in shaping the dynamics of domestic credit cycles. Using quarterly data for 40 countries between 1980 and 2015, we examine four dimensions of external debt composition: instrument, sector, currency and maturity. We show that the first two dimensions provide valuable information about the likelihood of credit booms and busts. In particular, we find that a higher share of external bank lending in the form of bonds is associated with a greater likelihood of credit booms. Our results also reveal that credit busts tend to be associated with a lower share of interbank lending and a higher share of lending from banks to nonbanks.

Monetary policy's rising FX impact in the era of ultra-low rates
Massimo Ferrari, Jonathan Kearns and Andreas Schrimpf
April 2017, No 626

We show that the FX impact of monetary policy has been growing significantly. We use a high-frequency event study of the joint response of fixed income instruments and exchange rates to monetary policy news from seven major central banks spanning 2004-2015. News affecting short maturity bonds have the strongest impact, highlighting the relevance of communication regarding the path of future policy. The FX impact of monetary policy is state-dependent and is stronger the lower the level of interest rates. A greater adjustment burden falls onto the exchange rate, as rates are increasingly constrained by the effective lower bound.

Scarcity effects of QE: A transaction-level analysis in the Bund market
Kathi Schlepper, Heiko Hofer, Ryan Riordan and Andreas Schrimpf
April 2017, No 625

This paper investigates the scarcity effects of quantitative easing (QE) policies, drawing on intra-day transaction-level data for German government bonds, purchased under the public sector purchase program (PSPP) of the ECB/Eurosystem. This paper is the first to match high-frequency QE purchase data with high-frequency inter-dealer data. We find economically significant price impacts at high (minute-by-minute) and low (daily) frequencies, highlighting the relevance of scarcity effects in bond markets. Asset purchase policies are not without side effects, though, as the induced scarcity has an adverse impact on liquidity conditions as measured by bid-ask spreads and inter-dealer order book depth. We further show that the price impact varies greatly with market conditions: it is considerably higher during episodes of illiquidity and when yields are higher.

Does exchange rate depreciation have contractionary effects on firm-level investment?
José María Serena and Ricardo Sousa
April 2017, No 624

We assess the conditions under which exchange rate fluctuations are contractionary for firm-level investment. To address this question, we match firm-level balance sheet data with a large dataset of firm-level bonds for about 1,000 firms from 36 emerging market economies over the period 1998-2014. We augment a standard firm-level investment model to control for (country-specific) macroeconomic variables, and interact the effect of an exchange rate depreciation with several dimensions of bond composition, namely: 1) currency of issuance; 2) maturity structure of bonds; and 3) market of issuance. We find that, conditional on the amount of debt issued in foreign currency, an exchange rate depreciation can have a contractionary impact on a firm's investment spending. We also find that the market of issuance and maturity structure, in particular, when coupled with foreign currency-denominated debt can influence this impact.

International inflation spillovers through input linkages
Raphael Auer, Andrei A Levchenko and Philip Sauré
April 2017, No 623

We document that observed international input-output linkages contribute substantially to synchronizing producer price inflation (PPI) across countries. Using a multi-country, industry-level dataset that combines information on PPI and exchange rates with international and domestic input-output linkages, we recover the underlying cost shocks that are propagated internationally via the global input-output network, thus generating the observed dynamics of PPI. We then compare the extent to which common global factors account for the variation in actual PPI and in the underlying cost shocks. Our main finding is that across a range of econometric tests, input-output linkages account for half of the global component of PPI inflation. We report three additional findings: (i) the results are similar when allowing for imperfect cost pass-through and demand complementarities; (ii) PPI synchronization across countries is driven primarily by common sectoral shocks and input-output linkages amplify co-movement primarily by propagating sectoral shocks; and (iii) the observed pattern of international input use preserves fat-tailed idiosyncratic shocks and thus leads to a fat-tailed distribution of inflation rates, i.e., periods of disinflation and high inflation.

External financing and economic activity in the euro area - why are bank loans special?
Iñaki Aldasoro and Robert Unger
March 2017, No 622

Using a Bayesian vector autoregression (BVAR) identified with a mix of sign and zero restrictions, we show that a restrictive bank loan supply shock has a strong and persistent negative impact on real GDP and the GDP deflator. This result comes about even though flows of other sources of financing, such as equity and debt securities, expand strongly and act as a "spare tire" for the reduction in bank loans. We show that this result can be rationalized by a recently revived view of banking, which holds that banks increase the nominal purchasing power of the economy when they create additional deposits in the act of lending. Consequently, our findings indicate that a substitution of bank loans by other sources of financing might have negative macroeconomic repercussions.

The dynamics of investment projects: evidence from Peru
Rocío Gondo and Marco Vega
March 2017, No 621

We analyse the effect of commodity price cycles on firm investment decisions at the project level, by considering the decision to delay, cancel or complete a project as initially announced. In particular, we use logit and duration models of competing risks on a novel dataset of announced investment projects in Peru from different economic sectors. The empirical framework for the timing of investment is motivated by real option models for projects that take time to build, with commodity prices used as a proxy of expected future income and their volatility as a proxy for uncertainty.

Our results suggest that both a reduction in commodity prices and an increase in volatility increase the probability to delay investment in the mining sector, with an amplification effect when both simultaneously occur. In other sectors, delays in implementation occur more often in periods of high volatility. Probability regressions under a competing risk framework suggest that higher commodity prices lead to a higher probability of completion in all sectors of the economy.

Commodity price risk management and fiscal policy in a sovereign default model
Bernabe Lopez-Martin, Julio Leal and Andre Martinez Fritscher
March 2017, No 620

Commodity prices are an important driver of fiscal policy and the business cycle in many developing and emerging market economies. We analyze a dynamic stochastic small-open-economy model of sovereign default, featuring endogenous fiscal policy and stochastic commodity revenues. The model accounts for a positive correlation of commodity revenues with government expenditures and a negative correlation with tax rates. We quantitatively document the extent to which the utilization of different financial hedging instruments by the government contributes to lowering the volatility of different macroeconomic variables and

their correlation with commodity revenues. An event analysis illustrates how financial hedging instruments moderate fiscal adjustment in response to significant falls in the price of commodities. We evaluate the conditional and unconditional welfare gains for the representative household, generated by financial derivatives and commodity-indexed bonds.

Volatility risk premia and future commodities returns
José Renato Haas Ornelas and Roberto Baltieri Mauad
March 2017, No 619

This paper extends the empirical literature on Volatility Risk Premium (VRP) and future returns by analyzing the predictive ability of Commodities Currencies VRP and commodities VRP. The empirical evidence throughout this paper provides support for a positive relationship of Commodities Currencies VRP and future commodities returns, but only for the period after the 2008 Global Financial Crisis. This predictability survives to the inclusion of control variables like the Equity VRP and past currency returns. Furthermore, we find a negative relationship between Gold VRP and future commodities and currency returns. This result corroborates the view of Gold as a safe haven asset.

Business cycles in an oil economy
Drago Bergholt, Vegard H Larsen and Martin Seneca
March 2017, No 618

The recent oil price fall has created concern among policy makers regarding the consequences of terms of trade shocks for resource-rich countries. This concern is not a minor one - the world's commodity exporters combined are responsible for 15-20% of global value added. We develop and estimate a two-country New Keynesian model in order to quantify the importance of oil price shocks for Norway - a large, prototype petroleum exporter. Domestic supply chains link mainland (nonoil) Norway to the off-shore oil industry, while fiscal authorities accumulate income in a sovereign wealth fund. Oil prices and the international business cycle are jointly determined abroad. These features allow us to disentangle the structural sources of oil price fluctuations, and how they affect mainland Norway. The estimated model provides three key results. First, oil price movements represent an important source of macroeconomic volatility in mainland Norway. Second, while no two shocks cause the same dynamics, conventional trade channels make an economically less significant difference for the transmission of global shocks to the oil exporter than to oil importers. Third, the domestic oil industry's supply chain is an important transmission mechanism for oil price movements, while the prevailing fiscal regime provides substantial protection against external shocks.

Oil, equities, and the zero lower bound
Deepa Datta, Benjamin K Johannsen, Hannah Kwon and Robert J Vigfusson
March 2017, No 617

Since 2008, oil and equity returns have moved together much more than they did previously. In addition, we show that both oil and equity returns have become more responsive to macroeconomic news. Before 2008, there is little evidence that oil returns were responsive to macroeconomic news. We argue that these results are consistent with a new-Keynesian model that includes oil and incorporates the zero lower bound on nominal interest rates. Our empirical findings lend support the model's implication that different rules apply at the zero lower bound.

Macro policy responses to natural resource windfalls and the crash in commodity prices
Frederick van der Ploeg
March 2017, No 616

Policy prescriptions for managing natural resource windfalls are based on the permanent income hypothesis: none of the windfall is invested at home and saving in an intergenerational SWF is dictated by smoothing consumption across different generations. Furthermore, with Dutch disease effects the optimal response is to intertemporally smooth the real exchange rate, smooth public and private consumption, and limit sharp fluctuations in the intersectoral allocation of production factors. We show that these prescriptions need to be modified for the following reasons. First, to cope with volatile commodity prices precautionary buffers should be put in a stabilisation fund. Second, with imperfect access to

capital markets the windfall must be used to curb capital scarcity, invest domestically and bring consumption forward. Third, with real wage rigidity consumption must also be brought forward to mitigate transient unemployment. Fourth, the real exchange rate has to temporarily appreciate to signal the need to invest in the domestic economy to gradually improve the ability to absorb the extra spending from the windfall. Fifth, with finite lives the timing of handing back the windfall to the private sector matters and consumption and the real exchange rate will be volatile. Finally, with nominal wage rigidity we show that a Taylor rule is a better short-run response to a crash in commodity prices than a nominal exchange rate peg.

Currency wars or efficient spillovers?
Anton Korinek
March 2017, No 615

In an interconnected world, national economic policies regularly lead to large international spillover effects, which frequently trigger calls for international policy cooperation. However, the premise of successful cooperation is that there is a Pareto inefficiency, i.e. if there is scope to make some nations better off without hurting others. This paper presents a first welfare theorem for open economies that defines an efficient benchmark and spells out the conditions that need to be violated to generate inefficiency and scope for cooperation. These are: (i) policymakers act competitively in the international market, (ii) policymakers have sufficient external policy instruments and (iii) international markets are free of imperfections. Our theorem holds even if each economy suffers from a wide range of domestic market imperfections and targeting problems. We provide examples of current account intervention, monetary policy, fiscal policy, macroprudential policy/capital controls, and exchange rate management and show that the resulting spillovers are Pareto efficient, but only if the three conditions are satisfied. Furthermore, we develop general guidelines for how policy cooperation can improve welfare when the conditions are violated.

Changing business models in international bank funding
Leonardo Gambacorta, Adrian Van Rixtel and Stefano Schiaffi
March 2017, No 614

This paper investigates the foreign funding mix of globally active banks. Using BIS international banking statistics for a panel of 12 advanced economies, we detect a structural break in international bank funding at the onset of the global financial crisis. In their post-break business model, banks rely less on cross-border liabilities and, instead, tap funds from outside their jurisdictions by making more active use of their subsidiaries and branches, as well as inter-office accounts within the same banking group.

Risk sharing and real exchange rates: the role of non-tradable sector and trend shocks
Hüseyin Çağrı Akkoyun, Yavuz Arslan and Mustafa Kılınç
February 2017, No 613

Most of the international macro models, in contrast to the data, imply a very high level of risk sharing across countries and very low real exchange rate (RER) volatility relative to output. In this paper we show that a standard two-country two-good model augmented with conintegrated TFP processes comes closer to matching the data. We first show that the tradable and non-tradable total factor productivity (TFP) processes of the US and Europe have unit roots and can be modelled by a vector error correction model (VECM). Then, we develop a standard two-country and two-good (tradable and non-tradable) DSGE model and study the quantitative implications. Cointegrated TFP shocks, or trend shocks, generate significant income effects and amplify the mechanisms that produce high RER volatility. Moreover, trend shocks can break the tight link between relative consumption and RER for low and high values of trade elasticity parameters.

Monetary policy and bank lending in a low interest rate environment: diminishing effectiveness?
Claudio Borio and Leonardo Gambacorta
February 2017, No 612

This paper analyses the effectiveness of monetary policy on bank lending in a low interest rate environment. Based on a sample of 108 large international banks, our empirical analysis

suggests that reductions in short-term interest rates are less effective in stimulating bank lending growth when rates reach a very low level. This result holds after controlling for business and financial cycle conditions and different bank-specific characteristics such as liquidity, capitalisation, funding costs, bank risk and income diversification. We find that the impact of low rates on the profitability of banks' traditional intermediation activity helps explain the subdued evolution of lending in the period 2010-14.

Basel Committee on Banking Supervision

Twelfth progress report on adoption of the Basel regulatory framework
April 2017

This updated Progress report on adoption of the Basel regulatory framework provides a high-level view of Basel Committee members' progress in adopting Basel III standards as of end-March 2017.

The report focuses on the status of adoption of all the Basel III standards (which will become effective by 2019) to ensure that the Basel standards are transformed into national law or regulation according to the internationally agreed timeframes. The report is based on information provided by individual members as part of the Committee's Regulatory Consistency Assessment Programme (RCAP). The report includes the status of adoption of the Basel III risk-based capital standards, the leverage ratio, the liquidity coverage ratio (LCR), the net stable funding ratio (NSFR), the standards for global and domestic systemically important banks (SIBs), Pillar 3 disclosure requirements, the large exposure framework and interest rate risk in the banking book.

In addition to periodically reporting on the status of adoption, all Committee members undergo an assessment of the consistency of their domestic rules with the Basel standards.

Prudential treatment of problem assets - definitions of non-performing exposures and forbearance
April 2017

The Basel Committee on Banking Supervision has today released the final guidance on the Prudential treatment of problem assets - definitions of non-performing exposures and forbearance.

The definitions promote harmonisation in the measurement and application of two important measures of asset quality, non-performing exposures and forbearance, thereby fostering consistency in supervisory reporting.

These guidelines complement the existing accounting and regulatory framework for asset categorisation. They harmonise the scope, recognition criteria and level of application of both terms, promoting a better understanding of the terms, improving identification and monitoring, and promoting consistency in supervisory reporting and disclosures by banks.

The Basel Committee thanks all those who contributed time and effort to express their views during the consultation process.

Global systemically important banks - revised assessment framework - consultative document
March 2017

In July 2013, the Basel Committee published the Global systemically important banks assessment methodology and higher loss absorbency requirement. The identification methodology assesses the relative systemic importance of internationally active banks based on 12 indicators in five categories, resulting in a score that measures the systemic importance of each bank. The bank's overall score is mapped to buckets that are associated with a higher loss absorbency (HLA) capital requirement.

When the G-SIB assessment framework was first published, the Committee agreed to review the framework every three years. The review is intended to enhance the framework and ensure that it remains consistent with its objectives in light of any structural changes in the global banking system that could introduce new dimensions of systemic risk not previously anticipated.

The Committee has completed its review and is consulting on the following modifications to the framework:

- Removal of the cap on the substitutability category;
- Expansion of the scope of consolidation to include insurance subsidiaries;
- Amendments to the definition of cross-jurisdictional activity;
- Modification of the weights in the substitutability category and introduction of a trading volume indicator;
- Revisions to the disclosure requirements;
- Further guidance on bucket migration and the associated surcharge; and
- A proposed transition schedule.

The Committee is also seeking feedback on the introduction of a new indicator for short-term wholesale funding.

The Committee welcomes comments on all aspects of the consultative document. Comments should be uploaded by Friday 30 June 2017 using the link: www.bis.org/bcbs/commentupload.htm. All comments may be published on the website of the Bank for International Settlements (BIS) unless a respondent specifically requests confidential treatment.

Regulatory treatment of accounting provisions - interim approach and transitional arrangements
March 2017

The Basel Committee on Banking Supervision today released details of the interim regulatory treatment of accounting provisions and standards for transitional arrangements. These measures are in response to the forthcoming international accounting standards on expected credit loss provisioning.

Given the limited time until the effective date of IFRS 9 (which will take effect on 1 January 2018) the Committee will retain the current regulatory treatment of provisions under the Basel framework for an interim period. This will allow the Committee to consider more thoroughly the longer-term regulatory treatment of provisions. Jurisdictions may adopt transitional arrangements to smooth any potential significant negative impact on regulatory capital arising from the introduction of ECL accounting.

The Basel Committee thanks all those who contributed time and effort to express their views during the consultation process.

Pillar 3 disclosure requirements - consolidated and enhanced framework
March 2017

The Basel Committee on Banking Supervision has issued the Pillar 3 disclosure requirements - consolidated and enhanced framework. This standard represents the second phase of the Committee's review of the Pillar 3 disclosure framework and builds on the revisions to the Pillar 3 disclosure published by the Committee in January 2015.

The Pillar 3 disclosure framework seeks to promote market discipline through regulatory disclosure requirements. The enhancements in the standard contain three main elements:

- Consolidation of all existing Basel Committee disclosure requirements into the Pillar 3 framework, covering the composition of capital, the leverage ratio, the liquidity ratios, the indicators for determining globally systemically important banks, the countercyclical capital buffer, interest rate risk in the banking book and remuneration.

- Introduction of a "dashboard" of banks' key prudential metrics which will provide users of Pillar 3 data with an overview of a bank's prudential position and a new disclosure requirement for banks which record prudent valuation adjustments to provide users with a granular breakdown of its calculation.
- Updates to reflect ongoing reforms to the regulatory framework, such as the total loss-absorbing capacity (TLAC) regime for globally systemically important banks and the revised market risk framework published by the Committee in January 2016.

The standard incorporates feedback from Pillar 3 preparers and users collected during the public consultation conducted in March 2016. Clarifications have been made relating to the disclosure requirements, in particular those pertaining to TLAC.

The implementation date for each of the disclosure requirements is set out in the standard. In general, the implementation date for existing disclosure requirements consolidated under the standard will be end-2017. For disclosure requirements which are new and/or depend on the implementation of another policy framework, the implementation date has been aligned with the implementation date of that framework.

Progress in adopting the "Principles for effective risk data aggregation and risk reporting"
March 2017

The Basel Committee on Banking Supervision issued the fourth report on Progress in adopting the principles for effective risk data aggregation and risk reporting.

The Committee's Principles for effective risk data aggregation and risk reporting, published in January 2013, aim to strengthen risk data aggregation and risk reporting practices at banks to improve their risk management practices, decision-making processes and resolvability. They are applicable to firms designated as globally systemically important banks (G-SIBs). Firms identified as G-SIBs in 2011 and 2012 were required to fully adopt the Principles by January 2016.

The report reviews G-SIBs' progress in implementing the Principles in 2016 and is based on results of a self-assessment survey completed by authorities having supervisory responsibility for G-SIBs. Self-assessment surveys completed by G-SIBs had formed the basis of the previous progress reports. The report notes that, while some progress has been made, most G-SIBs have not fully implemented the Principles and the level of compliance with the Principles is unsatisfactory.

The report found that G-SIBs' level of compliance with the Principles is unsatisfactory, notwithstanding that G-SIBs have made some progress in implementing the Principles in 2016. Among the G-SIBs subject to an implementation deadline of January 2016, only one G-SIB fully complied with the Principles within the deadline.

In view of the results and to promote further adoption of the Principles, the Committee has made the following additional recommendations:

- Banks should develop clear roadmaps to achieve full compliance with the Principles and comply with them on an ongoing basis.
- Supervisors should: (i) communicate the assessment results to their banks and provide the necessary incentives to achieve full compliance with the Principles; and (ii) continue to refine their techniques to assess banks' compliance with the Principles.

The Committee will continue to monitor the G-SIBs' progress in adopting the Principles. The Committee also strongly suggests that national supervisors apply the Principles to institutions identified as domestic systemically important banks three years after their designation as such.

Identification and management of step-in risk - second consultative document
March 2017

The aim of the proposed framework included in the second consultative document Identification and management of step-in risk is to mitigate potential spillover effects from

the shadow banking system to banks. This work falls within the G20's initiative to strengthen the oversight and regulation of the shadow banking system and mitigate the associated potential systemic risks.

The proposed guidelines define the step-in risk that is potentially embedded in banks' relationships with unconsolidated entities. Step-in risk is the risk that a bank might support entities beyond its contractual obligations in order to protect itself from any adverse reputational risk stemming from its connection to the entities. If not appropriately anticipated, the materialisation of step-in risk could affect a bank's capital and liquidity positions.

The guidelines propose criteria for identification of step-in risk that cover the risk characteristics of the entities in addition to banks' relationships with them. In terms of prudential response, the Committee has recognised the necessity of a tailored rather than a standardised approach. To this end, this framework entails no automatic Pillar 1 capital or liquidity charge additional to the existing Basel standards. Rather, the framework leverages existing prudential tools by informing or supplementing them.

The Committee welcomes comments on the proposals by Monday 15 May 2017 using the following link: www.bis.org/bcbs/commentupload.htm. All comments will be published on the Bank for International Settlements website unless a respondent specifically requests confidential treatment.

Basel III Monitoring Report
February 2017

This report presents the results of the Basel Committee's latest Basel III monitoring exercise based on data as of 30 June 2016. The Committee established a rigorous reporting process to regularly review the implications of the Basel III standards for banks, and it has published the results of previous exercises since 2012.

Data have been provided for a total of 210 banks, comprising 100 large internationally active banks. These "Group 1 banks" are defined as internationally active banks that have Tier 1 capital of more than €3 billion, and include all 30 banks that have been designated as global systemically important banks (G-SIBs). The Basel Committee's sample also includes 110 "Group 2 banks" (ie banks that have Tier 1 capital of less than €3 billion or are not internationally active).

On a fully phased-in basis, data as of 30 June 2016 show that virtually all participating banks meet both the Basel III risk-based capital minimum Common Equity Tier 1 (CET1) requirement of 4.5% and the target level CET1 requirement of 7.0% (plus the surcharges on G-SIBs, as applicable). Between 31 December 2015 and 30 June 2016, Group 1 banks continued to reduce their capital shortfalls relative to the higher Tier 1 and total capital target levels; in particular, the Tier 2 capital shortfall has decreased from €5.5 billion to €3.4 billion. As a point of reference, the sum of after-tax profits prior to distributions across the same sample of Group 1 banks for the six-month period ending 30 June 2016 was €263 billion. In addition, applying the 2022 minimum requirements for Total Loss-Absorbing Capacity (TLAC), 18 of the G-SIBs in the sample have a combined incremental TLAC shortfall of €318 billion as at the end of June 2016, compared with €416 billion at the end of 2015.

The monitoring reports also collect bank data on Basel III's liquidity requirements. Basel III's Liquidity Coverage Ratio (LCR) was set at 60% in 2015, increased to 70% in 2016 and will continue to rise in equal annual steps to reach 100% in 2019. The weighted average LCR for the Group 1 bank sample was 126% on 30 June 2016, slightly up from 125% six months earlier. For Group 2 banks, the weighted average LCR was 155%, up from 148% six months earlier. Of the banks in the LCR sample, 88% of the Group 1 banks and 94% of the Group 2 banks reported an LCR that met or exceeded 100%, while all Group 1 and Group 2 banks reported an LCR at or above the 70% minimum requirement that was in place for 2016.

Basel III also includes a longer-term structural liquidity standard - the Net Stable Funding Ratio (NSFR). The weighted average NSFR for the Group 1 bank sample was 114%, while for Group 2 banks the average NSFR was 115%. As of June 2016, 84% of the Group 1 banks and 86% of the Group 2 banks in the NSFR sample reported a ratio that met or exceeded 100%,

while 98% of the Group 1 banks and 96% of the Group 2 banks reported an NSFR at or above 90%.

The results of the monitoring exercise assume that the positions as of 30 June 2016 were subject to the fully phased-in Basel III standards as agreed up to end-2015. That is, they do not take account of the transitional arrangements set out in the Basel III framework, such as the gradual phase-in of deductions from regulatory capital. Furthermore, the report does not reflect any standards agreed since the beginning of 2016, such as the revisions to the market risk framework (analysed separately in a special feature). No assumptions were made about bank profitability or behavioural responses, such as changes in bank capital or balance sheet composition. For that reason, the results of the study may not be comparable with industry estimates.

Basel III - The Net Stable Funding Ratio: frequently asked questions
February 2017

The Basel Committee on Banking Supervision today issued the second set of frequently asked questions (FAQs) and answers on Basel III's Net Stable Funding Ratio (NSFR).

To promote consistent global implementation of these requirements, the Committee periodically reviews frequently asked questions and publishes answers along with any necessary technical elaboration of the rules text and interpretative guidance. The Committee has received a number of interpretation questions related to the October 2014 publication of the NSFR standard. The FAQs published today correspond to the text set out in that standard.

Committee on the Global Financial System

FinTech credit: Market structure, business models and financial stability implications
May 2017 No 60

FinTech credit refers to credit activity facilitated by electronic platforms. This usually involves borrowers being matched directly with investors, although some platforms use their own balance sheet to lend. FinTech platforms facilitate various forms of credit, including consumer and business lending, lending against real estate, and business invoice financing. There is also variation in the creditor base of FinTech credit platforms: some source funding mostly from retail investors, while others use significant funding from institutional investors, banks and securitisation markets.

Academic surveys on lending volumes in 2015 show considerable dispersion in FinTech credit market size across jurisdictions. In absolute terms, the largest FinTech credit market is China, followed at a distance by the United States and the United Kingdom. In general, FinTech credit is a small fraction of overall credit across jurisdictions, but it appears to be growing rapidly, and it may have much larger shares in specific market segments.

The report considers the implications for financial stability should FinTech credit grow to account for a significant share of overall credit. Potential benefits include access to alternative funding sources for borrowers, a lower concentration of credit in the traditional banking system and pressure on incumbent banks to be more efficient in their credit provision. At the same time, systemic risk concerns may arise, such as weaker lending standards and more procyclical credit provision in the economy. FinTech credit also poses challenges to the regulatory perimeter and authorities' monitoring of credit activity.

Repo market functioning
April 2017 No 59

The Repo markets play a key role in facilitating the flow of cash and securities around the financial system. The CGFS Study Group on repo market functioning analysed changes in the availability and cost of repo financing, and how these affect the ability of repo markets to support the financial system, both in normal and stressed conditions. The Group focused on repo transactions backed by government bonds.

Repo markets are in a state of transition and differ across jurisdictions in terms of both their structure and their functioning. Underneath the relative stability in headline measures of activity and pricing, there are signs of banks being less willing to undertake repo market intermediation, compared to the period before the crisis. The volatility in prices and volumes around balance sheet reporting dates can be associated with banks in some jurisdictions contracting their repo exposure in order to "window dress" their regulatory ratios.

The report identifies several drivers behind these changes including exceptionally accommodative monetary policy, which provided ample central bank liquidity to the market and reduced the need for banks to trade reserves through the repo market, and changes in regulation, which have made intermediation more costly in terms of regulatory capital. Considered from the narrow perspective of repo markets, the balance between the costs and the benefits of these changes is unclear and differs across jurisdictions. The effect of market adaptations will require more time to mature. Measures that have been adopted by some central banks to reduce the scarcity of certain repo collateral, and others initiated in certain jurisdictions with the objective of facilitating monetary policy, have improved repo market functioning.

Designing frameworks for central bank liquidity assistance: addressing new challenges
April 2017 No 58

Opening remarks by Hiroshi Nakaso, Deputy Governor of the Bank of Japan, for the media briefing on 6 April 2017.

Liquidity assistance (LA) operations that took place during the 2007-09 Global Financial Crisis presented central banks with a number of challenges. Notwithstanding important changes in the institutional and regulatory landscape, some of these challenges remain in place, and lessons drawn from the crisis experience remain highly relevant. Above all that LA should be provided swiftly but only when there is a clearly identifiable liquidity problem and when other tools are not available. It should also be supplied in ways that keep moral hazard to a minimum.

This report considers three issues in particular: the provision of LA to internationally active financial intermediaries; transparency about LA; and the provision of LA to a market. The overarching message is the need to prepare in calm times to be able to provide LA effectively in times of stress. A set of principles articulate this general message in the context of specific challenges. The first six principles relate to the fact that central banks may be called to work closely with each other when providing LA to an internationally active financial intermediary. Central banks need to consider how the interaction of their frameworks for providing LA affects how they can most effectively coordinate their LA operations. Each central bank's responsibilities are likely to depend on a number of factors, ranging from those that can (and should) be assessed in advance to those largely dependent on circumstances prevailing at the time LA is considered. In terms of transparency, central banks should bear in mind the trade-offs between transparency, which strengthens accountability, and the need for flexibility in the timing of disclosures to promote financial stability. Finally, central banks should seek to better understand the implications of the evolution of market-based forms of financial intermediation, as these channels are likely to play a key role in future episodes of systemic stress.

Committee on Payments and Market Infrastructures

Implementation monitoring of PFMI: Level 2 assessment report for Hong Kong SAR
May 2017 No 159

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 (PFMI). The principles within the PFMI (the Principles) set expectations for the design and operation of key financial market infrastructures (FMIs) to enhance their safety and efficiency, and, more broadly, to

limit systemic risk and foster transparency and financial stability. The Principles apply to all systemically important payment systems (PSs), central securities depositories (CSDs), securities settlement systems (SSSs), central counterparties (CCPs) and trade repositories (TRs) (collectively FMIs). These FMIs collectively clear, settle and record transactions in financial markets. In line with the G20's expectations, CPMI and IOSCO members have committed themselves to implementing and applying the PFMI in their respective jurisdictions.

This report presents the conclusions drawn by the CPMI and IOSCO from a Level 2 assessment of whether, and to what degree, the legal, regulatory and oversight frameworks, including rules and regulations, any relevant policy statements, or other forms of implementation applied to systemically important PSs, CSDs/SSSs, CCPs and TRs in Hong Kong, are complete and consistent with the Principles.

The work on the Level 2 assessment was carried out as a peer review from August 2016 to March 2017. The assessment reflects the status of Hong Kong's legal, regulatory and oversight framework as of 15 July 2016. Accordingly, assessment ratings reflect the implementation measures in place as of 15 July; other measures that were introduced after this date, or other material developments, are noted where relevant but were not considered in assigning ratings of consistency.

The authorities responsible for regulation, supervision and oversight of FMIs in Hong Kong are the Hong Kong Monetary Authority (HKMA) and the Securities and Futures Commission (SFC). CSDs/SSSs for securities and future contracts and all CCPs are regulated exclusively by the SFC. The HKMA has exclusive regulatory and oversight authority over CSDs/SSSs for debt securities, PSs and TRs. There is no overlap in supervisory/regulatory authority across the HKMA and the SFC.

The assessment concluded that the legal, regulatory and oversight frameworks in Hong Kong are complete and consistent with the Principles.

Harmonisation of the Unique Transaction Identifier - Technical Guidance
February 2017 No 158

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 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 individual OTC derivatives transactions required by authorities to be reported to TRs. The report produces technical guidance to authorities on the definition, format and usage of the UTI that meets the needs of UTI users. The guidance is global in scale, based on relevant international technical standards where applicable, thus enabling the consistent global aggregation of OTC derivatives transaction data.

Distributed ledger in payment, clearing and settlement - an analytical framework
February 2017 No 157

The Committee on Payments and Market Infrastructures has published a report on Distributed ledger technology in payment clearing and settlement. The report provides an analytical framework for central banks and other authorities to review and analyse the use of distributed ledgers in payment, clearing and settlement activities. Market participants may also find the report useful.

The framework focuses on the potential implications for efficiency and safety and for the broader financial markets. The framework is directed primarily at arrangements that involve restricted ledgers (ie access to which is for approved users only), reflecting the main types of arrangement currently being developed in the financial sector, which are of particular interest to the relevant authorities.

Speeches

Monetary policy challenges posed by global liquidity

Speech by Mr Hyun Song Shin, Economic Adviser and Head of Research of the BIS, at the High-level roundtable on central banking in Asia, 50th ADB Annual Meeting, Yokohama, 6 May 2017.

The development of the local currency bond market in Asia stands as an enduring legacy of the Asian financial crisis and a testament to its lesson to avoid the combination of currency mismatch and maturity mismatch. However, mature local currency bond markets in Asia have not insulated monetary policy from the ebb and flow of global liquidity.

Exchange rates affect the economy not only through a trade channel but also through a financial channel. The financial channel goes in the opposite direction to the trade channel: a stronger currency goes hand in hand with looser financial conditions and buoyant investment activity on the back of strong capital inflows. The financial channel works through the bilateral exchange rate against the dollar, rather than the trade-weighted effective exchange rate. Hofmann, Shim and Shin (2017) show that an appreciating currency against the US dollar compresses the risk spreads of sovereign bonds and boosts industrial production; an appreciation in the effective exchange rate dampens it.

Behind the financial channel of exchange rates is a dense matrix of financial claims in dollars. The global economy is a matrix, not a collection of islands, and the matrix does not respect geography. A European bank lending dollars to an Asian borrower by drawing dollars from a US money market fund has its liabilities in New York and assets in Asia, but headquarters in London or Paris.

The financial channel of exchange rates compounds the monetary policy challenges. A stronger currency loosens financial conditions even as pass-through to domestic inflation is subdued, and a weaker currency tightens financial conditions even as inflation rises due to pass-through effects. For this reason, the monetary policy framework has to incorporate the exchange rate as a key element. By extension, monetary policy is an element of a larger policy framework involving macroprudential frameworks.

Financial soundness indicators - looking beyond the lessons learned from the crisis

Keynote address by Mr Fernando Restoy, Chairman, Financial Stability Institute, Bank for International Settlements, at the Users' Workshop on Financial Soundness Indicators, International Monetary Fund, Washington DC, 26 April 2017.

1. Introduction

Good morning, everyone, and thank you for inviting me to deliver the keynote address at this workshop on financial soundness indicators (FSIs).

When I received the invitation to speak here, I was wrapping up my stint as Deputy Governor of the Bank of Spain. So, as someone who was working at an institution that actively contributes to and uses FSIs, I had a clear interest in participating in this event. But that interest has obviously increased in my new capacity as Chairman of the Financial Stability Institute (FSI) of the Bank for International Settlements (BIS). And this is not only because the Institute and the indicators bear the same acronym!

The Institute is mandated by its Statute - which dates back to 1999 - to contribute to helping financial authorities around the world to strengthen their financial systems. That entails not only the dissemination of international regulatory standards but also the identification of

relevant policy challenges and the promotion of sound practices to address them. In that respect, the quantitative references provided by the FSIs on the state of different financial systems are of great help.

In my address today, I will begin by describing the recent evolution of FSIs, particularly in the context of the lessons learned from the Great Financial Crisis (GFC) and the regulatory reforms in response to it. At the outset, let me just say that the IMF and all the countries that contributed to the revision of the FSIs have done a highly commendable job in enhancing the effectiveness of the indicators in identifying financial system risks and vulnerabilities, as I will discuss subsequently.

I will then offer some thoughts on how the FSIs are likely to evolve in the perhaps not so distant future in order to keep track of financial sector developments. As we all know, the financial system is undergoing rapid technological change in the way financial products and services are delivered. This is likely to disrupt the structure of banking and financial markets. This will also have implications for the distribution of risks and vulnerabilities in the financial system, and thus for the effectiveness of FSIs in alerting to them.

Accounting for global liquidity: reloading the matrix

Speech by Mr Hyun Song Shin, Economic Adviser and Head of Research of the BIS, at the IMF-IBRN Joint Conference "Transmission of macroprudential and monetary policies across borders", Washington DC, 19 April 2017.

Exchange rates affect the economy through a financial channel, as well as the trade channel. The financial channel works in the opposite direction to the trade channel. In emerging market economies especially, a weakening of the domestic currency against the dollar saps both cross-border bank lending and investment. Such effects flow through the dense interconnections of dollar lending in the global financial system. In devising policy for financial stability, a tight focus on underlying causes (excess leverage and funding risk) rather than on the symptoms (capital flows) stands a better chance of being more effective in addressing the vulnerabilities as they emerge.

Jaime Caruana interview with the Börsen-Zeitung

Interview with Mr Jaime Caruana, General Manager of the BIS, in Börsen-Zeitung, conducted by Mr Mark Schrörs and published on 11 April 2017.

QE experiences and some lessons for monetary policy: defending the important role central banks have played

Article by Mr Luiz Awazu Pereira da Silva, Deputy General Manager of the BIS, and Mr Phurichai Rungcharoenkitkul, Senior Economist, for the Eurofi High Level Seminar 2017, Malta, 5-7 April 2017.

The last decade has seen a number of innovations in monetary policymaking, as major central banks grappled with the global financial crisis and persistently low inflation. These unconventional monetary policies have played a critical role in putting an end to the confidence crisis and averting the prospect of a more prolonged recession. At the same time, their medium-term macroeconomic benefits and associated risks have been more difficult to assess. Moreover, the burden on monetary policy has moreover become excessive, and a greater emphasis should be placed on structural reforms and other growth-enhancing policies. But in a world where well tested policies are increasingly receiving criticisms, often unjustified, it is important to defend sound policymaking, including central banks' responses during the global financial crisis.

The risk of complacency and self-delusion

Article by Mr Luiz Awazu Pereira da Silva, Deputy General Manager of the BIS, and Előd Takáts, Senior Economist, for the Eurofi High Level Seminar 2017, Malta, 5-7 April 2017.

Many years into the crisis, there are finally some consistent signs of a rebound in activity, some reflation and more optimism in markets, with a rise in equities and higher confidence. But the puzzling element is that policy uncertainty is very high while volatility is very low.

What's going on? Perhaps the most significant risk for financial markets now is the risk of complacency and self-delusion with positive but only short-term indicators. There seems to be an underestimation of the long-term consequences of political risks in a context of increasing scepticism about trade/financial integration and international cooperation.

Secular stagnation or financial cycle drag?

Keynote speech by Mr Claudio Borio, Head of the Monetary and Economic Department, at the National Association for Business Economics, 33rd Economic Policy Conference, Washington DC, 5-7 March 2017.

This speech compares and contrasts two different interpretations of the current plight of the global economy. It argues that the world has been suffering not so much from secular stagnation as from the aftermath of financial booms gone wrong - financial cycle drag. It then draws the implications of the analysis for the risks ahead and for policy.

How much should we read into shifts in long-dated yields?

Speech by Mr Hyun Song Shin, Economic Adviser and Head of Research of the BIS, at the US Monetary Policy Forum, New York City, 3 March 2017.

Very low yields on long-term government bonds may not necessarily signal prolonged future economic stagnation and deflation but instead reflect efforts by institutional investors to limit risk. This speech presents some findings from BIS research on the European government bond market which suggests that the very low long-dated yields in the middle of last year may have had as much to do with yield-chasing behaviour arising from short-term risk management practices of long-term investors than any far-sighted portfolio choices based on predictions about the distant future. The findings hold lessons for economic commentators and central banks, who closely monitor market indicators such as long-term bond yields for signals about the future direction of inflation and economic growth.

Have we passed "peak finance"?

Lecture by Mr Jaime Caruana, General Manager of the BIS, for the International Center for Monetary and Banking Studies, Geneva, 28 February 2017.

Analysis of BIS international banking and securities data suggests that global financial integration has not peaked. First, the appearance of peak finance in cross-border banking positions is, on closer inspection, more regional than global. The deleveraging of European banks is better understood as a post-crisis cyclical development than as a secular trend. Second, one has to look beyond banking to the boom in global capital markets. Global finance has favoured bond markets over banking since 2009 in both the dollar and the euro. Third, all this is not only a matter of academic debate. There is a clear and present risk of a political reaction against global finance. Guarding against this risk requires recognition that global financial integration is not already in secular retreat. Global financial integration can play a key role in the spread of best practice and innovation and contribute to economic growth. Continued interdependence in international finance requires global cooperation in managing its risks and setting global standards with global implementation.

Rethinking development finance: towards a new "possible trinity" for growth?

Remarks by Mr Luiz Awazu Pereira da Silva, Deputy General Manager of the BIS, at the Atlantic Dialogues 2016, organised by OCP Policy Center and The German Marshall Fund of the United States, Marrakesh, December 2016.

Development finance is an issue that typically concerns developing countries where numerous, grave socio-economic problems persist, including - and not among the least - the need for stable development finance in higher quantity and of higher quality. However, development finance could also be used today as a growth-enhancing concept applicable to advanced economies, to boost their growth and help their social inclusion. It could contribute to rebalancing macroeconomic policies and move them towards a new "possible trinity": growth based on higher productivity, growth that favours stronger social inclusion and growth that is friendlier to the environment.