



## Assessing global liquidity from a financial stability perspective

### Speech by Jaime Caruana

General Manager, Bank for International Settlements

48th SEACEN Governors' Conference and High-Level Seminar

Ulaanbaatar, 22–24 November 2012

It is always a pleasure to participate in SEACEN events. On this occasion, I hope to provide you with a BIS perspective on regional and global liquidity conditions from a financial stability viewpoint.

Global liquidity has become a key focus of the international policy debate and a buzz word in the financial press. Yet, it is a vexed issue, as there is no commonly agreed conceptual framework. In the first part of my talk, I will therefore step back and review the definition of global liquidity that has been adopted by the Committee on the Global Financial System for its regular monitoring of financial vulnerabilities.<sup>1</sup>

Based on this, I will then briefly discuss current global liquidity conditions. First, let me make a few preliminary points. Some elements of credit growth, particularly cross-border flows, remain muted in comparison to past liquidity surges. At the same time, the macroeconomic environment in the major economies is still weak and uncertain. These trends would seem to allow a fairly benign interpretation of global liquidity conditions from the financial stability viewpoint. Yet monetary policy remains highly accommodative and investor risk appetite has picked up, albeit without much conviction – and these are two developments that, in the past, have accompanied build-ups of financial vulnerabilities.

Thus, there are good reasons to remain vigilant. And please forgive me if I seem intent on seeing the cloud behind every silver lining, but we have learned to be cautious.

For one, the extremely low volatility in financial markets contrasts with a widespread slowdown in global economic growth. There are also the well known financial stability risks from public finances and impaired banking systems in some advanced economies. Abrupt changes in global liquidity could result if unexpected shocks were to impinge on this mix of low volatility and heightened risk-taking.

A more significant source of concern is the outstanding stock of credit. In most advanced economies, public debt continues to grow while private sector debt has barely started to fall. But history tells us that excessive leverage in the private sector needs to be addressed for a recovery to be sustainable. Meanwhile, several emerging market economies have experienced prolonged booms. Recent developments in credit and property markets suggest that the credit cycle may be turning. If history were to repeat itself – which it never does exactly – these developments point to a non-negligible risk of financial stresses in the next few years. Building on current macroprudential efforts, the current spell of calm should therefore be used to implement policies that will contain these medium-term risks.

---

<sup>1</sup> For the conceptual framework see Committee on the Global Financial System, “Global liquidity – concept, measurement and policy implications”, *CGFS Papers*, no 45, 2011.



## Global liquidity: concept and measurement

### *What is global liquidity?*

In the wake of the global financial crisis, global liquidity has become a key focus of international policy debates, yet the term continues to be used in a variety of ways. For the purpose of this presentation, which is focused primarily on the financial stability implications of global liquidity conditions, it should be understood as the overall “ease of financing” in the international financial system. Experience shows that the very ample and very low-cost funding in global financial markets can contribute to the build-up of financial system vulnerabilities in the form of leverage, regional imbalances and large mismatches across currencies and maturities.

So, what creates global liquidity? Ultimately, it is trust, the root meaning of credit, expressed through private sector activity. However, central banks do play an important role.

The monetary policy stance, whether implemented by conventional or unconventional means, is best understood as the precursor of private liquidity creation. The central bank influences financing conditions by determining benchmark interest rates and the amount of funds available to settle payments through its accounts. Ultimately, though, the generation of private liquidity depends on the capacity and willingness of market participants to supply funding or to trade in securities markets. This activity hinges on their perceptions of risk, their risk appetite and broader macroeconomic conditions. Ex post, any build-up of vulnerabilities therefore arises from interactions of market participants within the private sector and with monetary authorities.

The key questions when assessing global liquidity assessments are therefore: how tight are ex-ante financing conditions, do they spur credit creation and how are they transmitted internationally? These considerations suggest that measures of global liquidity should capture actions by central banks and the private sector, particularly by bank and non-bank financial institutions and their cross-border and/or cross-currency operations. In addition, it is important to distinguish between indicators for the ease of funding conditions per se and for their materialisation in bank financing and other forms of credit. Indicators for ease of funding include broad measures of investor risk appetite and the availability of funding for financial institutions. Indicators for results include private sector credit growth, which, when rapid, can signal the emergence of financial vulnerabilities.

This suggests that no single indicator can capture all the various dimensions of global liquidity. Instead, the monitoring of global liquidity requires a mix of measures, such as global credit aggregates and price- and quantity-based indicators that capture the monetary policy stance, financial conditions and risk appetite.

## Current global liquidity conditions

In the following, I will draw on work done by the BIS and the Committee on the Global Financial System to give you a bird’s eye view of current global liquidity conditions. I will begin by discussing indicators for funding conditions in financial markets. Primarily these are measures of the monetary policy stance and of investor risk appetite. I will then turn to measures of actual credit creation and its international transmission.

### *Monetary policy, risk appetite and aggregate cross-border credit*

As we all know, both short- and longer-term real interest rates in major advanced economies are at historically low levels (left-hand panel of Graph 1). In fact, as of the second quarter of 2012, real 10-year yields in major advanced economies have turned negative, suggesting



highly accommodative funding conditions. Indeed, major bond markets have sometimes featured negative nominal yields stretching some way out the yield curve.

On top of that, central banks in several large advanced economies have relied on balance sheet policies to improve market functioning, ease financing conditions and stimulate economic activity. Central bank purchases can raise prices and reduce yields on a wide range of assets, with the aim of shoring up financial markets and the real economy. Such policies can also help to allay fears about “tail risks”.

The right-hand panel of Graph 1 shows how the balance sheets of these central banks have expanded; it also reveals that the pace of asset purchases has again accelerated in recent months. The balance sheet measure is overlaid with an equity price indicator, which has also risen over the same period – despite weak macroeconomic data and some revenue and earnings disappointments. This suggests that policy actions may have succeeded in boosting equity prices. If so, these policies may be blurring the information transmitted by asset prices. In fact, those prices may well be responding most strongly to market participants’ guesses about how the authorities will respond to future events.

Central bank balance sheet policies may have also influenced risk premia more broadly. Indeed, somewhat counterintuitively, given investors’ lack of conviction, there are signs that low policy interest rates and swollen central bank balance sheets have helped to suppress volatility, perhaps by dulling market participants’ perceptions of tail risks. The left-hand panel of Graph 2 shows indicators for the risk premia demanded by market participants. These indicators are constructed by aggregating information on implied volatility and credit spreads across a variety of markets. On these measures, the price of risk has dropped significantly during the second half of this year. In fact, we have not seen such buoyancy in risk sentiment – both in terms of valuations as conveyed by the red line, and across the range of assets and markets as conveyed by the blue line – since the boom years before the global financial crisis.

The right-hand panel of Graph 2 also shows that both hedge fund inflows and returns have been on the rise. This suggests that the low price of risk is inducing actual risk-taking.

So, how does all this translate into international credit expansion – the variable that normally signals the potential build-up of global liquidity-related vulnerabilities?

International credit growth, including cross-border credit and local credit in a foreign currency, has remained muted in *aggregate*, as confirmed by the left-hand panel of Graph 3, which shows the year-on-year growth rate. Taken at face value, this is a comforting observation. Such credit extension by international banks is far from the levels that have historically been associated with similar episodes of elevated risk appetite and accommodative policies,

That said, the weak state of aggregate credit growth should not provide us with much comfort. This is because it primarily reflects developments in the advanced economies. In particular, cross-border bank claims in Europe are declining. Yet this fall in cross-border bank lending is not indicative of any broader correction of excess leverage by European economies: no significant correction has been observed so far in the private sector, let alone in the public sector.

By contrast, cross-border bank credit to emerging markets outside Europe has recently surged. Emerging market economies accounted for most of the growth in US dollar-denominated lending to non-US residents, as shown in the right-hand panel of Graph 3.



Such credit growth peaked at 20% in 2011, although it has since slowed and is projected to grow more modestly from now onwards.<sup>2</sup>

Thus, new vulnerabilities could still be building up in specific places, while existing ones may take time to defuse in several advanced economies. I have recently discussed the direct influence of accommodative policies in the advanced economies through financial prices.<sup>3</sup> Here I focus on how higher risk appetite in a low-volatility environment leads to cross-border credit and capital flows into emerging market economies. These can affect emerging market economies' competitiveness through currency appreciation and may entail financial stability risks through the build-up of exposures that are prone to sharp reversals.

#### *International spillovers and regional vulnerabilities*

To provide a sense of these spillover risks, Graph 4 shows domestic and cross-border credit trends for Asia-Pacific, Latin America and emerging Europe. Private credit to GDP remains relatively low in these regions. However, on average, domestic credit in both Asia and Latin America has recently grown faster than it did during the run-up to the current crisis in the United States and Europe. This stands in contrast to anaemic credit growth in the advanced economies and to the sharp collapse in emerging Europe, which continues to suffer from the euro area crisis.

However, growth in international sources of credit, especially in Asia, has come down from the high rates seen in 2011 and has fallen to zero in Latin America. This development may to some extent reflect the retreat by some European banks as well as attempts to discourage domestic borrowers from accessing international credit.

Consistent with these regional credit aggregates, the balance sheet data at our disposal also suggest that emerging market banks were broadly increasing both lending and leverage throughout 2011, albeit from much lower levels. This growth, however, may have levelled off in 2012.

Speculative positioning in foreign exchange markets is another indicator of possible asymmetries in global liquidity conditions, and of their implications for financial stability. Recent data suggest that incentives to establish currency carry trade positions are broadly on the rise, which is also reflected in actual positioning data. However, market reports suggest a somewhat differentiated picture, with positioning apparently more concentrated in countries such as Mexico or Australia that have abstained from intervention in foreign exchange markets. This would point to selectivity in investment flows and may also suggest that policy measures taken by other recipient countries are deflecting these flows.

A final gauge of global liquidity-related financial positioning is equity and bond fund flows into emerging market economies. Graph 5 shows weekly flows into emerging market bond and equity mutual funds. The data point to increased capital flows to EMEs since early September.

---

<sup>2</sup> The projection of US dollar credit to non-residents is based on a simple least-squares model that incorporates quarterly data for policy rates, GDP growth and growth in international trade. The sample includes data for the United States, the euro area, emerging Asia, central and eastern Europe and Latin America. Regional aggregates are based on 2005 PPP-adjusted GDP-weighted averages. Projections through 2013 are derived from an out-of-sample forecast using Consensus Economics and JPMorgan Chase forecasts for the explanatory variables.

<sup>3</sup> See J Caruana, "International monetary policy interactions: challenges and prospects", speech to the CEMLA-SEACEN conference on "The role of central banks in macroeconomic and financial stability: the challenges in an uncertain and volatile world", Punta del Este, Uruguay, 16 November 2012.



Does this pickup in capital flows indicate an undue degree of risk? I would say “not necessarily”. The flows do not appear to have been as large or as concentrated as in previous episodes of low volatility and elevated risk appetite. For example, a risk-on period in 2009 and 2010 saw significantly larger private capital inflows into emerging markets, despite higher levels of the VIX volatility index than today. Indeed, simple causality measures suggest that the link between risk appetite indicators and observed cross-border investment flows may have weakened recently.<sup>4</sup> Again, this may reflect to some extent a lack of conviction by global investors, and also the effect of emerging market policy responses to accommodative monetary policies.

## **Global liquidity conditions and financial stability risks: green or amber?**

Thus, even though monetary policy remains accommodative and there are signs of search-for-yield behaviour, some measures of credit growth remain muted in comparison to past liquidity surges. This is particularly true of the growth in global cross-border flows. Cross-border and foreign currency lending to emerging markets has slowed. In addition, the global growth outlook in advanced economies and emerging market economies is expected to remain subdued in the near term. The resulting fall in credit demand will put further downward pressure on credit growth, including that of foreign currency and cross-border credit.

But does this mean that all lights are flashing green?

My answer is no. While, right now, weaker global growth and weak credit flows point to lower risks stemming from global liquidity, several risks are evident. In effect, the lights may be flashing amber.

First, if some risk factors materialise, potential shocks could lead to sudden changes in global liquidity. Recent policy actions in Europe have significantly reduced market perceptions of tail risks for the global financial system, yet vulnerabilities remain. Moreover, markets are weighing up other risks such as the US fiscal cliff or a growth slowdown in emerging markets. Either outcome could lead to sudden changes in risk appetite and the abrupt reversal of financial flows.

Second, and more importantly, credit stocks paint a picture that is rather different to the analysis of flows which I attempted above. And here it is useful to differentiate between advanced economies and emerging markets. In advanced countries, we would have expected deleveraging after the massive credit boom that preceded the global financial crisis. But this has not happened in most cases. Furthermore, credit has continued to accumulate rapidly in many emerging market economies, even in recent years. Each of these developments harbours a specific set of risks, as I will explain.

As one can see from Graph 6, leverage in advanced economies, as measured by the credit-to-GDP ratio, has barely dropped since the onset of the global financial crisis. Moreover, it remains well above long-run historic averages, regardless of whether countries experienced a crisis or not. Yet, the crisis clearly showed that we had experienced hazardous private over-leveraging rather than healthy financial deepening. As a corollary, leverage has to fall. But why has this not yet happened? Part of the answer brings me back to the monetary policy stance discussed at the outset of this presentation. One side effect of persistent very

---

<sup>4</sup> Another possibility is that the “tail risks” that keep investors from taking on more exposure to emerging markets are not adequately captured by traditional measures of risk, such as the VIX.



easy monetary policy is that it tends to delay structural adjustments by allowing the public and private sectors to postpone the necessary debt reduction.<sup>5</sup> Some smoothing of the process can be beneficial, but indefinite postponement is not. Viewed through this lens, the overall level of credit in advanced economies is still burdensome and needs to fall if the recovery is to be sustained.

Graph 6 also reveals that the average credit-to-GDP ratio for emerging Asia is trending towards the peak reached prior to the Asian financial crisis in the 1990s. However, there are signs of a slowdown for some countries, suggesting that these economies are moving into the later stages of the financial cycle.

Perhaps I should define what I mean by the financial cycle. Research by the BIS and others has identified three main characteristics of financial cycles. First, they are best characterised by co-movement in credit and property prices over the medium term. Second, they are longer than typical business cycles, typically lasting between 10 and 20 years. And last, peaks in the financial cycle are closely associated with systemic banking crises.<sup>6</sup>

And as one can see from Graph 7, some major economies in Asia may face such late-stage financial cycle risks. While the left-hand panels show current credit-to-GDP gaps and real property price growth rates, the right-hand panels illustrate how these variables typically behave around financial crises. Clearly, credit developments are very much in line with typical pre-crisis developments – indeed, too much so for comfort. From 2009 onwards, property prices have risen even faster than in historical pre-crisis episodes. Moreover, growth rates have recently fallen sharply since their peak at the start of 2010. Were history to repeat itself, serious episodes of stress could well occur a year or two ahead, given that – on average – property price growth has historically peaked three years ahead of a crisis.

It would therefore be wise if we used the current calm to implement measures to safeguard financial stability. And there is good news in this area. Policymakers, particularly in Asia, have started to employ macroprudential policies to contain these risks. For instance, Hong Kong SAR recently announced a new round of countercyclical prudential measures for property mortgage lending. And to stem systemic risks from volatile cross-border funding, Korea introduced a macroprudential levy on banks' non-deposit foreign currency liabilities in 2011.

Yet, as highlighted in my speech to the CEMLA-SEACEN conference in Uruguay last week, we need to understand the limitations of these policies – especially if policy stances continue to be so accommodative.<sup>7</sup> In particular, it is uncertain how far macroprudential policies can be used to lean against the cycle and hence how effective they can be in dampening credit booms.

---

<sup>5</sup> J Caruana, *ibid.*

<sup>6</sup> See for example M Drehmann, C Borio and K Tsatsaronis, "Characterising the financial cycle: don't lose sight of the medium term!", *BIS Working Papers*, no 380, June 2012, and or D Aikman, A Haldane and B Nelson, "Curbing the credit cycle", prepared for the Columbia University Center on Capital and Society Annual Conference, New York, November, 2010.

<sup>7</sup> J Caruana, *ibid.*



## Conclusion

Let me conclude. Growth in international credit seem to indicate more benign global liquidity conditions in comparison to past liquidity surges. Even for emerging Asia and Latin America, cross-border bank credit has slackened, although the reasons are unclear.

Nevertheless, there are areas of concern. In the short term, global liquidity could suddenly evaporate if risk factors should materialise in the form of renewed euro area strains, US fiscal discontinuity or a sharp slowdown in emerging market growth. In the medium term, the risks arise from current *levels* of credit, private and public, in many economies. In advanced economies, debt needs to be reduced if the recovery is to be self-sustaining. However, the pace of private deleveraging in advanced economies has been slow, delaying the necessary balance sheet repairs. Unless fundamental measures are taken, reliance only on central bank actions raises the risk of overburdening monetary policy. Meanwhile the public sector has leveraged up. For several emerging market economies, by contrast, recent years have been characterised by prolonged credit and property price booms. The latest developments in these economies, not least in Asia, point to the risk that the credit cycle may be turning – a signal that policymakers should focus their attention on making their financial systems more resilient.

Clearly, history never repeats itself exactly. Yet, even though much has already been done on the macroprudential policy front, we need to avoid complacency – more action is likely to be needed before the lights will flash green again. In this regard, today's seemingly benign global liquidity conditions can be seen as a window of opportunity – in which we should seize the chance to do whatever is necessary to assure the financial stability of tomorrow.

Thank you.

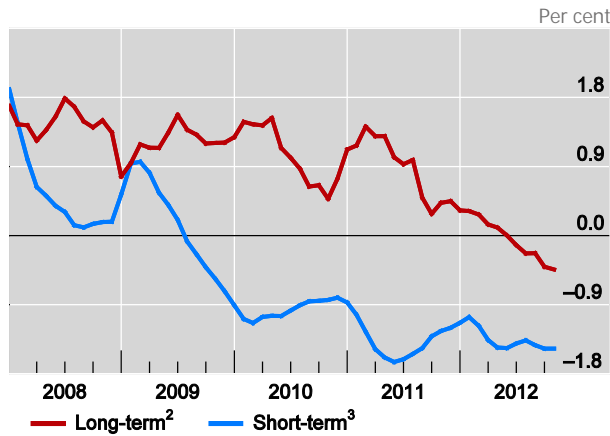


# Graphs

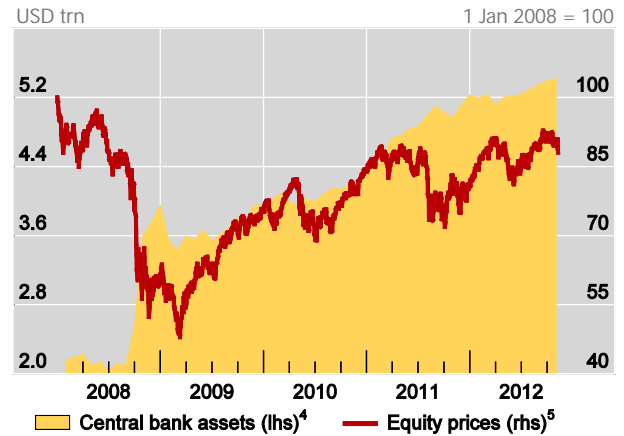
## Real interest rates and stock market indicators

Graph 1

Real interest rates<sup>1</sup>



Central bank assets and stock market indicators



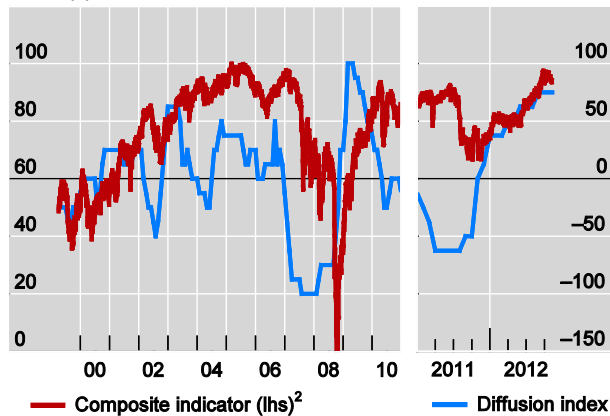
<sup>1</sup> 2005 PPP-weighted average of real interest rates for Canada, the euro area, Japan, Norway, Sweden, Switzerland, the United Kingdom and the United States. <sup>2</sup> Based on 10 years-ahead average inflation expectations. <sup>3</sup> Based on 12 months-ahead average inflation expectations. <sup>4</sup> Sum of total assets for the Federal Reserve, Bank of England and Bank of Japan. <sup>5</sup> Market value-weighted averages for stock markets in the United States, the United Kingdom and Japan.

Sources: Datastream; national data; BIS calculations.

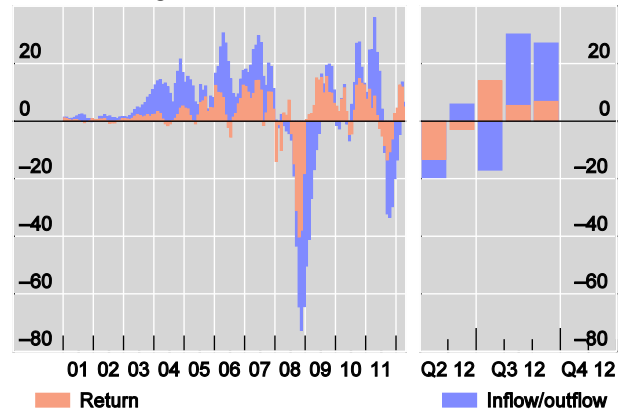
## Risk appetite and leverage

Graph 2

Risk appetite<sup>1</sup>



Assets of hedge funds<sup>4</sup>, in USD bn



<sup>1</sup> Composite based on a variety of implied volatility and credit spread measures covering both advanced economy and EME financial markets. <sup>2</sup> Principal component of risk appetite indicators. An upward movement indicates an increase in risk appetite. <sup>3</sup> Positive (negative) values indicate that more than half of the included risk appetite indicators are improving (deteriorating). <sup>4</sup> Changes in assets under management of 20,669 hedge funds are counted and decomposed into the inflows/outflows and re-investments from returns.

Sources: Bloomberg; Datastream; EurekaHedge; BIS calculations.



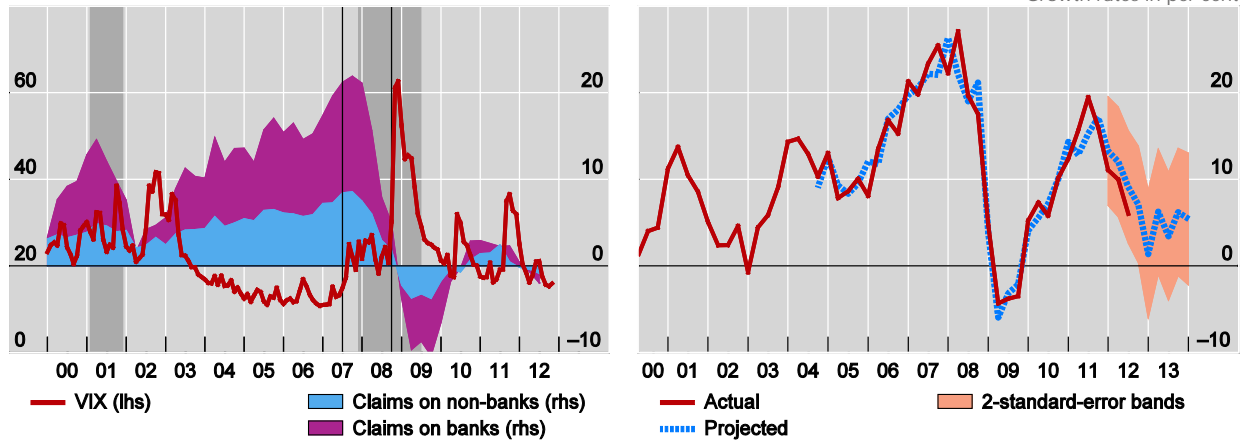


### Cycles in cross-border and foreign currency credit and US dollar credit to non-residents

Graph 3

Cycles in cross-border and foreign currency credit<sup>1</sup>

US dollar credit to non-residents and projected growth



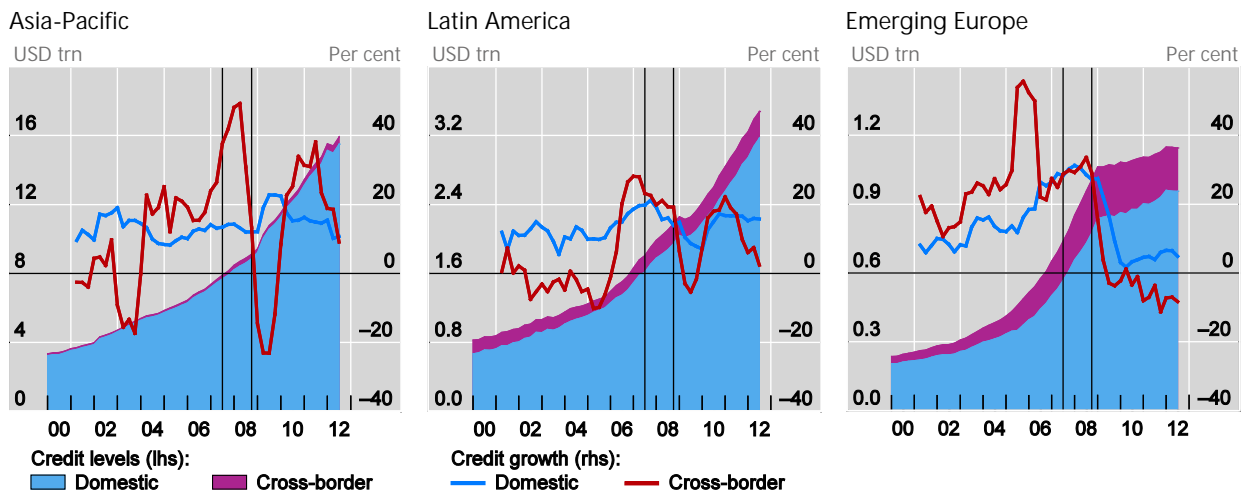
<sup>1</sup> The vertical lines indicate the 2007 beginning of the global financial crisis and the 2008 collapse of Lehman Brothers; the shaded areas refer to US recessions. The stacked areas indicate the contributions to the total year-on-year rate of growth in international claims, which include all BIS reporting banks' cross-border credit and local credit in foreign currency.

Sources: Bloomberg; © Consensus Economics; Datastream; JPMorgan Chase; BIS locational banking statistics by residence.

### Global bank credit aggregates, by borrower region<sup>1</sup>

At constant end-Q2 2012 exchange rates

Graph 4



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

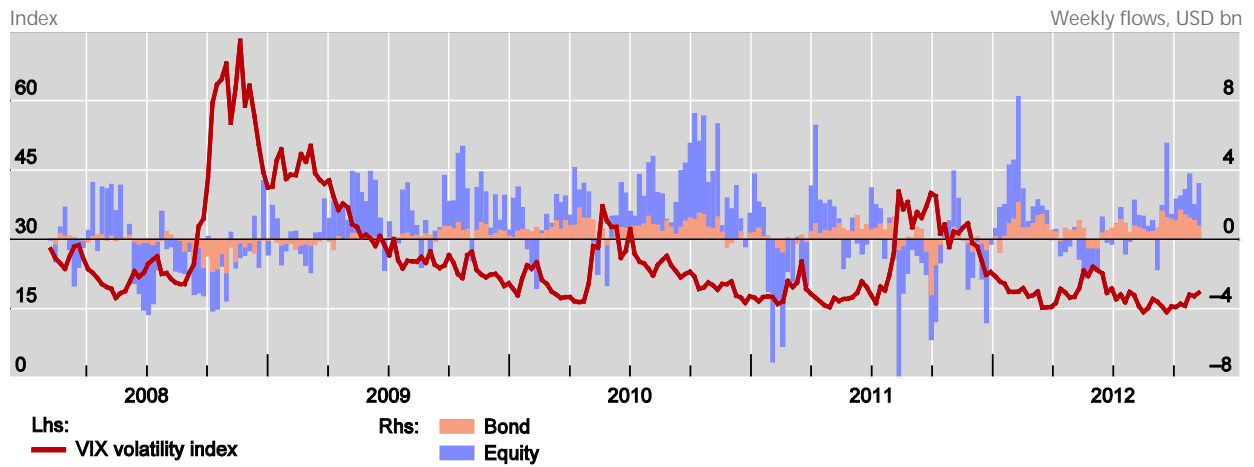
<sup>1</sup> The shaded areas indicate total bank credit to non-bank borrowers (including governments) and are adjusted using various components of the BIS banking statistics to produce a breakdown by currency for both cross-border credit and domestic credit.

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



VIX volatility and EME equity and bond fund flows

Graph 5



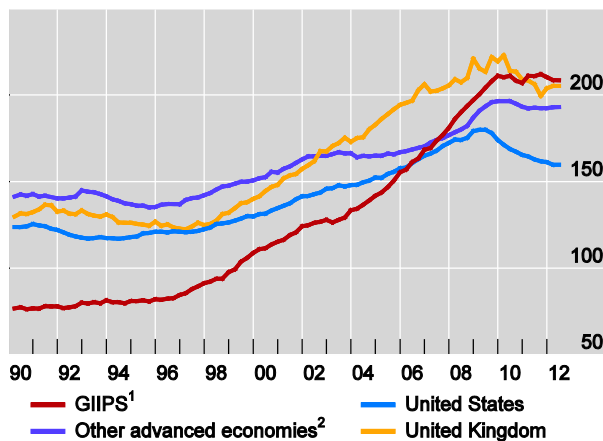
Sources: Bloomberg; EPFR.

Credit to the private sector

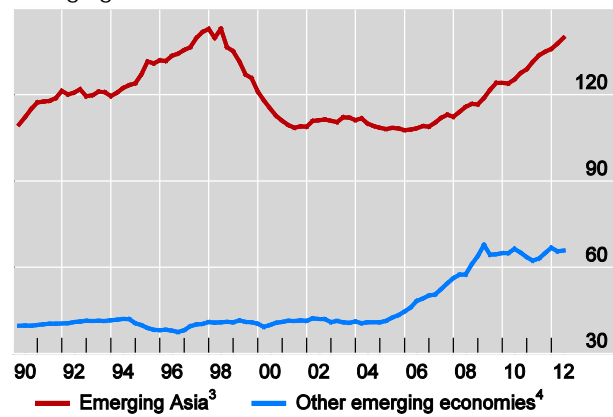
As a percentage of GDP; unweighted averages

Graph 6

Advanced economies



Emerging economies



<sup>1</sup> Greece, Ireland, Italy, Portugal, Spain. <sup>2</sup> Belgium, Canada, Denmark, France, Germany, Japan, Netherlands, Norway and Sweden. <sup>3</sup> China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Singapore and Thailand. <sup>4</sup> Argentina, Brazil, Mexico, Czech Republic, Hungary, Poland, Russian Federation, South Africa and Turkey.

Sources: National data; BIS calculations.

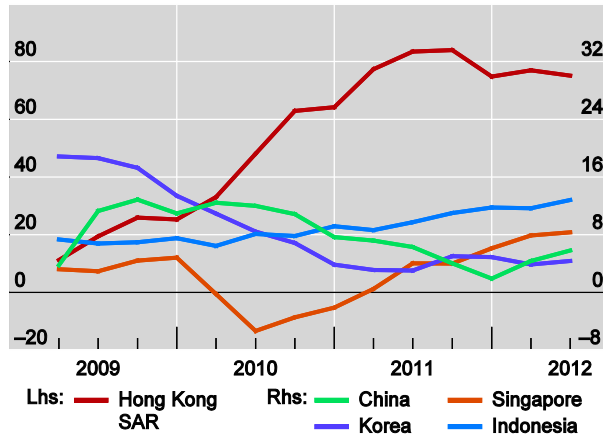


Late cycle risks

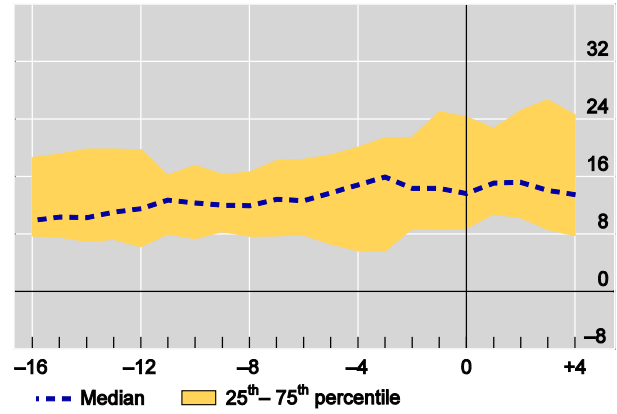
Graph 7

Credit-to-GDP gap<sup>1</sup>

Current developments

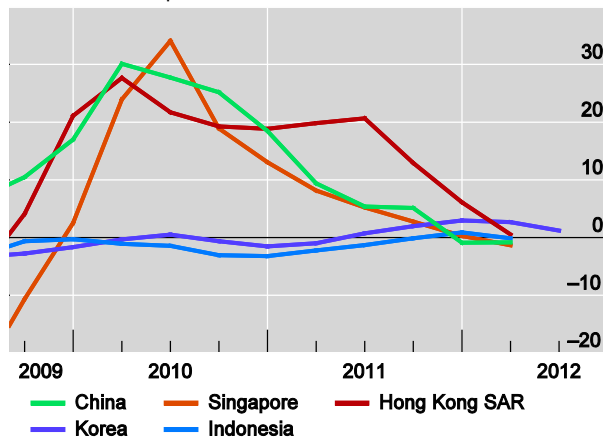


Typical pre-crisis developments<sup>2</sup>

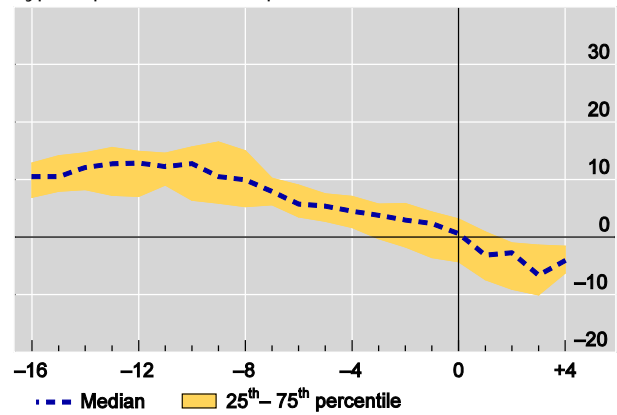


Real property price growth

Current developments



Typical pre-crisis developments<sup>2</sup>



<sup>1</sup> The credit-to-GDP gap is calculated according to the Basel III methodology for the countercyclical capital buffer. Total credit to the private non-financial sector is used, which can include borrowing that firms do in one country to finance assets in another, thereby not strictly reflecting domestic vulnerabilities. <sup>2</sup> The horizontal axis depicts 16 quarters before and four quarters after a crisis, which is indicated by the vertical line. The historical dispersion of the relevant variable is taken at the specific quarter before past financial crisis episodes, based on a sample covering 17 crisis episodes in 27 advanced economies and emerging markets from 1980 onwards.

Sources: IMF, *International Financial Statistics*; national data; BIS calculations.