Global liquidity: a view from Basel

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I appreciate the opportunity to address this important grouping of capital market professionals.

Today, I would like to take up the issue of global liquidity. The recent financial turbulence has highlighted the crucial role of liquidity in global markets. Global liquidity is being discussed in the G20, in part because policymakers in emerging markets are concerned that monetary developments in the main economies are stimulating capital flows. Yet the discussion lacks focus, in part because of the many meanings that are attached to the term "liquidity" in general and "global liquidity" in particular.

In my remarks this afternoon, I shall make five points, which will address different but related aspects of the debate about global liquidity:

- First, your role as credit originators makes you a key source of global liquidity.
- Second, as a case in point, I will highlight the contrast between shrinking dollar credit to private borrowers in the United States and expanding dollar credit to borrowers elsewhere, all with a single policy rate determined by the monetary authorities.
- Third, international credit tends to amplify domestic credit booms, posing first-order policy challenges.
- Fourth, during the run-up to the global financial crisis banks' maturity mismatches made financing within and between currencies very easy, but made banks vulnerable to rollover risk.
- Fifth, macroprudential policy and Basel III provide key mechanisms to stabilise *your* provision of liquidity.

Let me take each point sequentially.

International credit markets: today's gold mines

But first, what is meant by global liquidity? And what generates liquidity?

Liquidity is a broad term with many uses. It has specific definitions in terms of quantities and prices, markets and securities. An underlying common element, however, is the "ease of financing", ie the readiness with which an expected cash flow, claim or a liability can be turned into cash. For present purposes, by "liquidity" I will mean the extension of credit, and by "global liquidity", the extension of credit globally, with particular reference to the role of market participants.

Regarding what creates global liquidity, my answer is simple and adapted to the present global economy. But first let me cast doubt on a venerable, but in my view incomplete, answer.

The answer is not central bank liabilities per se. We learned in school how central banks create base money, sometimes known as "high-powered money".[1] In turn, this is supposed to lead to an expansion in credit and money (the "money multiplier"). In fact, even in normal times there is no such causal, mechanistic relationship. Central banks meet the demand for central bank liabilities passively at their chosen policy rate. And there is no stable link between this and credit expansion, across place or time. In fact, where reserves are not even required, the monetary base consists almost entirely of notes and coins with the public – hardly a solid foundation for credit expansion! The absence of a stable mechanistic relationship becomes most apparent in bad times, when balance sheets need repair. We should have learned from Japan 10 years ago that central bank reserves can, in fact, have very low power. Similarly, the expansion of bank reserves in the United States in the last few years has not been associated with a parallel expansion of broad money or bank lending in the United States (Graph 1).

Part of the correct answer is the policy interest rate set by central banks. This influences the price of leverage in a given currency. But this influence has its limits too that become most apparent when interest rates are close to zero and balance sheets need repair. The recent experience in the United States and that in Japan 10 years ago confirm this.

A bigger part of the right answer is private market participants' actions. It is you, private market participants, who play a key role. It is the waxing and waning of your perceptions and attitudes towards risk, valuations and cash flows that drives credit extension. This is true within a particular jurisdiction as well as internationally. International credit markets, including bank and securities credit, give rise to international credit, just as domestic banks and securities markets give rise to domestic credit. Together these make up global credit.

You, meaning investors, issuers and underwriters, and bankers, are the gold mines of today. The upside of this substitution of credit for gold was well captured by Daniel Webster:

> Credit – man's trust in man – has done a thousand times more to enrich mankind than all the goldmines in the world. It has exalted labour, stimulated manufacture and pushed commerce over every sea.

But there is a downside, too. Overabundance of credit tends to generate its subsequent scarcity. We have witnessed this recently. In the run-up to the crisis, underwriting standards deteriorated and leverage increased. When intermediaries' trust in intermediaries vanished, only the interposition of central banks' balance sheets kept credit from contracting in a vicious manner. In the end, only healthy intermediaries and properly functioning private credit markets can restore an appropriate flow of credit.

[1] See C Goodhart, "The continuing muddles of monetary theory: a steadfast refusal to face facts", *Economica*, vol 76, s1, 2009, pp 821–30, and C Borio and P Disyatat, "Unconventional monetary policies: an appraisal", *BIS Working Papers*, no 292, November 2009.

Dollar credit onshore and offshore: one currency, two credit aggregates

So, one can say that central banks propose, but market participants dispose. To see this, let us consider the growth of dollar credit to US borrowers and to non-US borrowers – my second point.

A substantial portion of global dollar credit has been extended to borrowers outside the United States. Dollar credit extended to businesses, households and governments in the United States reached $36 trillion at the end of 2010 (Graph 2). In the third quarter of 2010, US dollar credit to borrowers outside the United States reached $7.5 trillion. Thus, while the overwhelming majority of dollar credit is extended to US borrowers, a very substantial part of it has been extended to borrowers elsewhere.

Beyond this comparison of *stocks*, what is striking is the difference in their *flows* since the onset of the crisis. Despite short-term US dollar rates near zero and large-scale central bank bond holdings, dollar credit to households and businesses in the United States has fallen for some time and has only now stabilised. It fell $590 billion from the third quarter of 2008 through the end of 2010.

By contrast, dollar credit to non-banks outside the United States reached 30% growth before the crisis, stalled during the turbulence, but has since regained a rate of growth approximating 10% (Graph 3, middle panel). In some fast-growing countries like China, US dollar credit was growing very rapidly before the crisis, then decelerated very sharply but briefly during the crisis, only to resume very rapid growth since (Graph 3, right-hand panel).

Step back to appreciate the contrast: one currency, one overnight rate, one US dollar Libor, but very different rates of growth of credit. Capital and banking markets in London, Hong Kong SAR and Singapore are extending dollar credit to borrowers in Brazil, China, India and much of East Asia in a manner very different from the New York capital market and the US financial system more generally.

While firms in the United States and the euro area hardly even consider foreign currency borrowing, firms elsewhere always face the choice of financing in the dollar or euro, whatever the local currency. While central banks outside the United States and the euro area may set domestic interest rates with more or less independence, local firms can always shift their borrowing into the dollar or euro in response to interest differentials and exchange rate expectations.[2]

Thus, the US authorities set the terms for dollar credit for two different economies. Zero interest rates may serve well domestic borrowers in an economy with persistent unemployment and overindebted balance sheets. At the same time, zero interest rates may ill-serve borrowers elsewhere in booming economies with robust balance sheets. Global dollar credit results from very different market processes constrained by the same dollar yields.

[2] One study of eastern Europe found that monetary tightening systematically increased private sector borrowing in the euro and the Swiss franc. M Brzoza-Brzezina, T Chmielewski and J Niedźwiedzińska, "Substitution between domestic and foreign currency loans in Central Europe: do central banks matter?", *ECB Working Paper Series*, no 1187, May 2010.

International credit and national credit booms

Now to my third point. Over their post-war history, international capital markets have shown great inventiveness in putting financial innovations at the service of borrowers. Your fast footwork has induced many a domestic financial system to raise its game by providing better financial services. That said, this same responsiveness has meant that international credit tends to amplify credit booms in domestic economies.

For the selected economies in Graph 4, two international sources of finance are plotted against credit granted within the country. (Yet another form of international credit, local lending in foreign currency, is included in domestic credit.) International interbank funding allows domestic banking systems to extend credit beyond the constraints of domestic deposit growth. In plain words, credit can grow faster than money. In addition, direct cross-border ("offshore") lending to non-banks bypasses the domestic banking system completely, further adding to the excess of credit over money growth.

During booms, these two international sources of finance tend to grow faster than credit granted within the country. An extreme case is that of Ireland, where offshore credit to non-banks grew 10% faster than its domestic counterpart in the run-up to the global financial crisis. Moreover, even this domestic counterpart depended heavily on international funding through the interbank market and the international bond market.

Direct cross-border lending poses two policy challenges. First, it is hard to measure. Non-bank borrowers rarely report debts booked offshore accurately, and national reporting systems resist using partner data**.** Second, cross-border credit constrains policy responses. If the authorities tighten capital or liquidity requirements, or reduce maximum loan-to-value ratios on real estate lending, domestic banks are placed at a competitive disadvantage compared to the international competition. If the authorities nevertheless tighten such requirements, they are likely to see the substitution of offshore credit flows for domestic ones. I shall return to this issue with reference to the operation of the countercyclical capital buffer adopted under Basel III.

Cross-currency funding and maturity mismatches

Let me now come to my fourth point, namely how growing maturity mismatches, especially if associated with cross-currency funding, can be part and parcel of credit expansion and generate vulnerabilities.

European banks leveraged up in the early part of the past decade, not least to acquire US dollar assets. Probably their biggest single source of funding was, ironically, US households and firms that invested in US dollar money market funds. A smaller source of funds was central bank deposits, and yet a smaller one interbank deposits. On top of these sources, European currencies were swapped for dollars in the foreign exchange swap market and the longer-dated currency swap market.

It became evident during the crisis that European banks had leveraged up by adding large dollar books, and in the process had accumulated a huge maturity mismatch. Their dollar assets proved to be much less saleable on a rainy day than they had seemed on the sunny day of acquisition. Graph 5 roughly measures how big this mismatch was. The green line in the right-hand panel indicates these banks' net claims on non-banks – this includes their holdings of US dollar CDOs, as well as US Treasuries and any dollar-denominated commercial loans. These needed to be funded with the various remaining sources – interbank borrowing, cross-currency swaps and central bank deposits, also shown in the graph – all of which tend to be short-term.

This maturity transformation in US dollars by European banks rose in the run-up to the crisis. At a minimum, European banks needed to roll over nearly one trillion dollars by 2007. If we add reliance on money market funds (a non-bank but wholesale source of funding), they would have needed to roll over closer to two trillion dollars. During the crisis, loss of marketability of toxic dollar assets effectively lengthened the maturity of European banks' assets precisely as their funding tenor shortened on the liability side.

Today we do not have enough data, or the right kind of data, to monitor this sort of aggregate imbalance. When market participants and authorities are blind to their growth, they cannot properly anticipate the scale of the potential fallout. As a result, they cannot set their pricing and positions appropriately, and policymakers cannot take preventive steps. Fortunately, as we speak, central banks, under the auspices of the BIS, are making efforts to fill this gap in our statistics.

Macroprudential policy, Basel III and global liquidity

And now to my last point. As a result of the crisis, we have established new oversight institutions and engineered new regulatory tools to deal with national credit booms. A theme that runs through the new institutional arrangements and regulatory tools is that policy needs to recognise risks at the system level rather than just firm by firm. In particular, there is increased awareness of the risks of rapid credit growth accompanied by buoyant asset prices, and a corresponding search for policies to slow that growth or at least to lower the risks. There is also a recognition that the oversight institutions must look beyond the regulated institutions to spot the risks that accumulate in the shadow banking system.

Institutional change has taken various forms:

- The European Systemic Risk Board (ESRB) will identify systemic risks and ensure that the three new pan-EU supervisory authorities and national regulators mitigate them.
- In the United States, the US Treasury-chaired Financial Stability Oversight Council (FSOC) will draw together supervisors to diagnose risks and determine broad policies.
- In the United Kingdom, the Bank of England has regained responsibility for banking supervision and has a clear mandate for financial stability under the responsibility of its Financial Stability Committee, chaired by the Governor. In addition, since its financial stability objective is also shared with the Treasury and the FSA, a memorandum of understanding has been agreed among these three.
- At the international level, the Financial Stability Board has established a Standing Committee on the Assessment of Vulnerabilities, which draws in particular on the work of the IMF and the BIS, as well as of national authorities responsible for financial stability.

All these differences should not obscure the major point that we have emerged from the crisis with bodies charged with following banking and capital markets closely: monitoring credit growth, especially that resulting from higher leverage among borrowers or lenders, that built on maturity mismatches, and that extended in the shadows outside the bright lights of regulation. Drawing on their independence, central banks will play a key role in these new approaches without losing their main task of price stability.

Basel III for the first time provides a framework for supervisors to respond to rapid credit growth with higher capital requirements. Supervisors can require a countercyclical capital

buffer in the face of rapid growth of credit in the domestic economy, perhaps accompanied by buoyant prices and other evidence of underlying imbalances.

Admittedly, this capacity is not new. As noted above, a unilateral response to such accumulation of systemic risk has always been an option. It would, however, inevitably face the objection that foreign banks would be able to circumvent it and derive a competitive advantage.

What is new, and has not been fully appreciated, is that Basel III contains specific provisions to address this problem. In particular, international supervisors have agreed to require their own home banks to hold extra capital in the measure that they are exposed to borrowers in the host economy whose supervisors have activated the buffer. If host supervisors call for an up to 2.5% larger buffer against risk-weighted assets, the home supervisors of foreign banks with credit exposures in the host economy have agreed to require at least as much. For the first time, the new countercyclical capital buffer provides a convincing multilateral supervisory response to rapid credit growth and its associated risks.

Basel III also responds to the evidence of huge maturity mismatches, not least across currencies, on and off the balance sheets of internationally active banks. For the first time, there will be internationally agreed liquidity standards for banking organisations. Banks must be able to withstand a 30-day interruption in funding liquidity and to secure stable long-term funding appropriate to their business model. These regulations are new and their impact particularly hard to foresee. That is why the Basel Committee has agreed to a monitoring period and to a long phase-in period. But make no mistake: while policymakers need time to calibrate the standards appropriately, they will definitely come into effect.

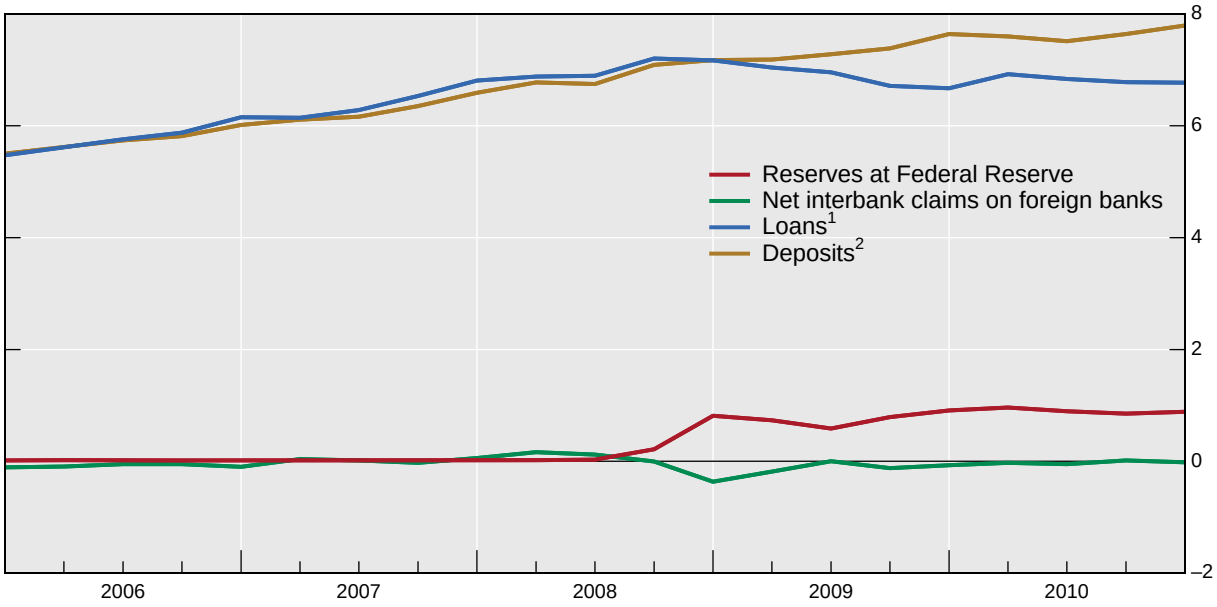
Conclusion

To conclude, policymakers have once again taken up a discussion of global liquidity. I hope to leave you with the thought that *you*, as gatekeepers of credit, play an important role in this regard, as indicated by the contrasting growth rates of US dollar credit within and outside the United States. International credit, including cross-currency credit involving maturity mismatches, tends to amplify domestic credit developments and poses challenges to policymakers. It is said that everyone talks about it the weather, but no one does anything about it. With new institutions and Basel III, we hope to have equipped ourselves with the tools to do something about global liquidity. But, on your part, better risk management, better analysis of liquidity risks and better funding strategies appropriate for the business model will be essential.

Graph 1

Bank reserves, deposits, loans and net interbank claims on the rest of the world of commercial banks in the United States

In trillions of US dollars; amounts outstanding at end of period



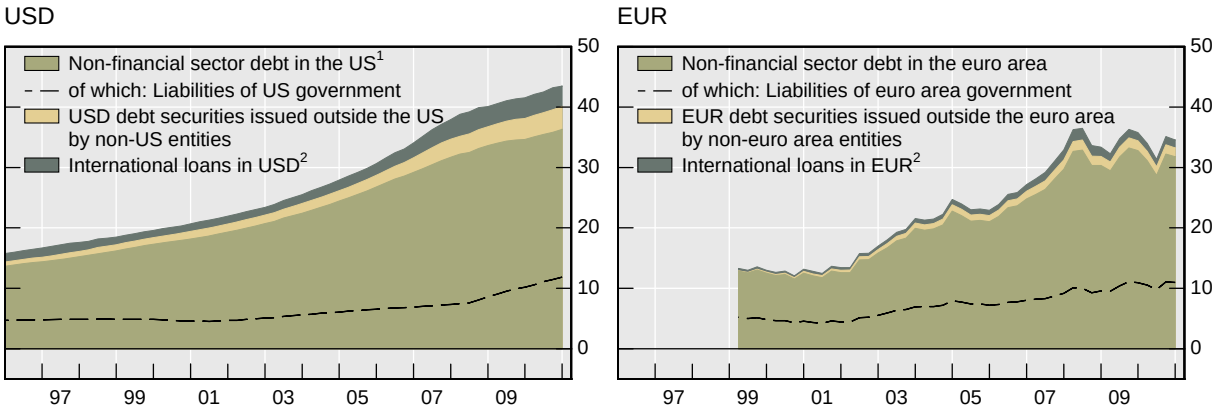
[1] Includes bank loans, mortgages, consumer credit and security credit. [2] Includes checkable deposits, small time and savings deposits and large time deposits.

Source: Federal Reserve, *Flow of Funds*, Table L109.

Graph 2

Credit extended to the non-financial sector, by currency

In trillions of US dollars



[1] Consists of debt securities, mortgages, bank loans, commercial paper, consumer credit, government loans, and other loans and advances; excludes trade debt, loans for the purpose of carrying securities and funds raised from equity sources. [2] Cross-border and local loans to non-banks outside the United States or euro area, respectively, plus cross-border and local loans to banks in non-BIS reporting countries plus local loans in foreign currency booked by banks in China (assuming 80% of FX loans are denominated in US dollars and 10% in euros).

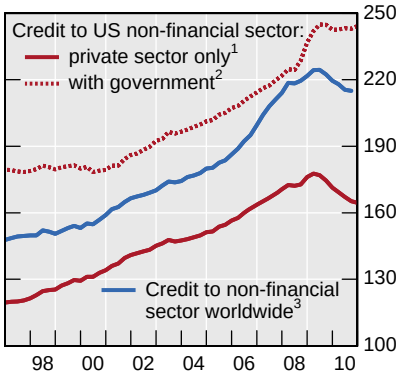
Sources: Board of Governors of the Federal Reserve System; ECB; People's Bank of China; BIS international debt statistics and locational banking statistics by residence.

Graph 3

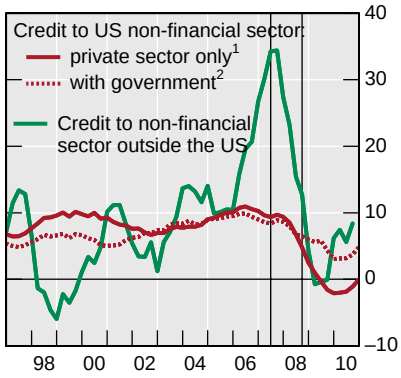
Global dollar credit growth

In per cent

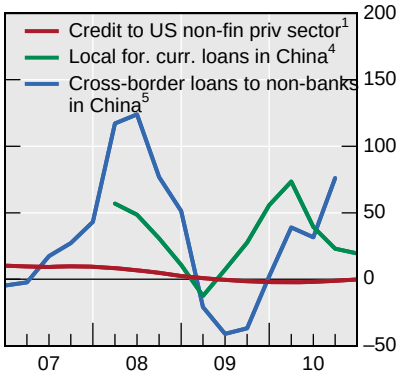
Dollar credit over US GDP



Year-on-year growth



Credit to US and Chinese residents



Vertical lines indicate end-Q2 2007 and end-Q3 2008.

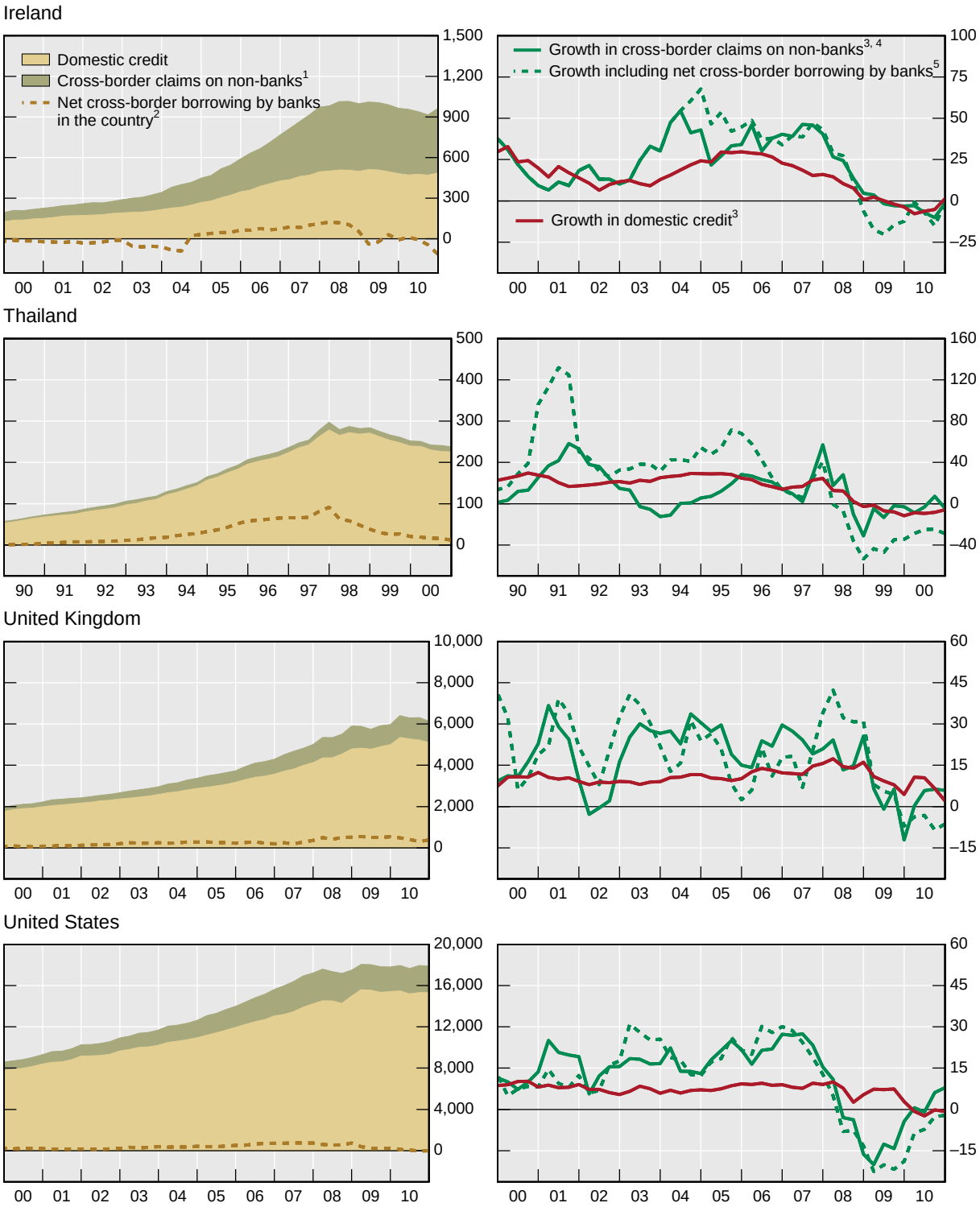
[1] Total credit to the non-financial sector in the United States minus credit to the US government. [2] Total credit to the non-financial sector in the United States. [3] Estimated as total dollar credit worldwide minus credit to the US government. [4] Growth in local foreign currency loans booked by banks in China. [5] BIS reporting banks' cross-border US dollar loans to non-banks in China.

Sources: Board of Governors of the Federal Reserve System; People's Bank of China; national data; BIS international debt statistics and locational banking statistics by residence.

Graph 4

Bank credit to non-bank residents: domestic and cross-border

In billions of US dollars (left column) and per cent (right column)



[1] BIS reporting banks' cross-border claims on non-banks. Claims include loans and securities, most of which is debt [2] Net cross-border borrowing (liabilities minus claims) from all sectors by banks located in the country. For Thailand, BIS reporting banks' net cross-border claims on banks in the country. [3] Year-on-year growth. [4] Growth in BIS reporting banks' cross-border claims on non-banks. [5] Growth including net cross-border borrowing (if positive) by banks in the country (dashed brown line), under the assumption that this cross-border credit is ultimately passed on to non-banks in the country.

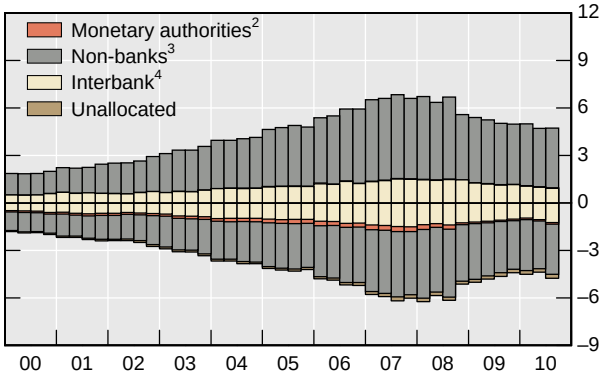
Sources: IMF, *International Financial Statistics*; BIS locational banking statistics by residence.

Graph 5

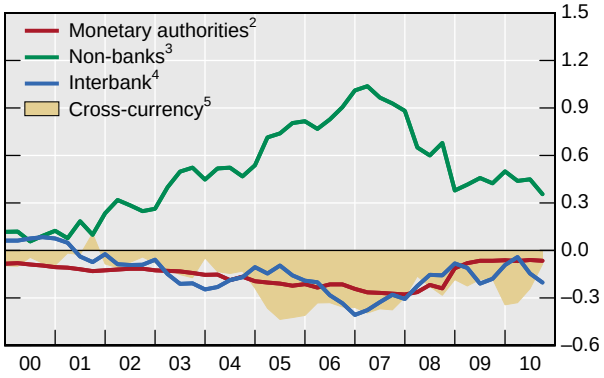
Long-USD European banks' on-balance sheet USD positions[1]

In trillions of US dollars

Gross, by counterparty sector



Net, by counterparty sector



[1] Estimates are constructed by aggregating the worldwide on-balance sheet cross-border and local positions reported by internationally active banks headquartered in Germany, the Netherlands, Switzerland and the United Kingdom. [2] Positions vis-à-vis official monetary authorities. Excludes liabilities to Japanese monetary authorities placed in banks located in Japan. [3] International positions vis-à-vis non-banks plus local positions vis-à-vis US residents (all sectors) booked by banks' offices in the United States. No sectoral breakdown is available for these positions. [4] Estimated net interbank lending to other (unaffiliated) banks. [5] Implied cross-currency funding (ie FX swaps), which equates US dollar assets and liabilities.

Sources: Bloomberg; JPMorgan; BIS consolidated statistics (immediate borrower basis); BIS locational statistics by nationality.