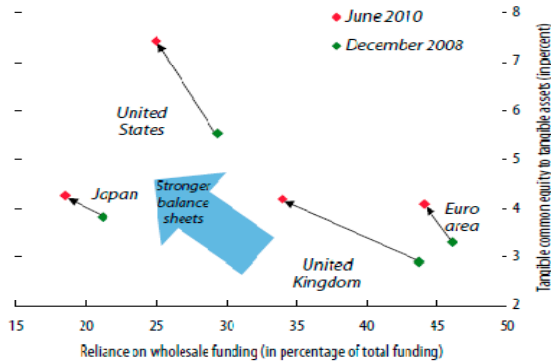




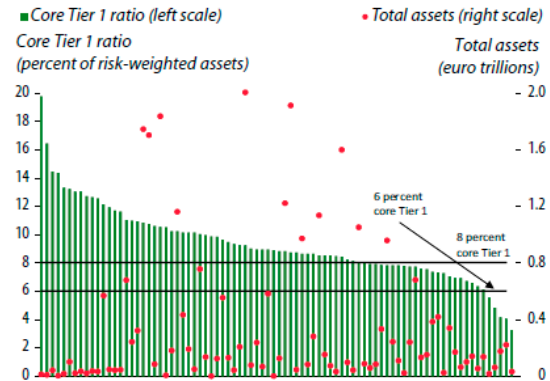
**Figure 2. Banking System Capital and Reliance on Wholesale Funding**



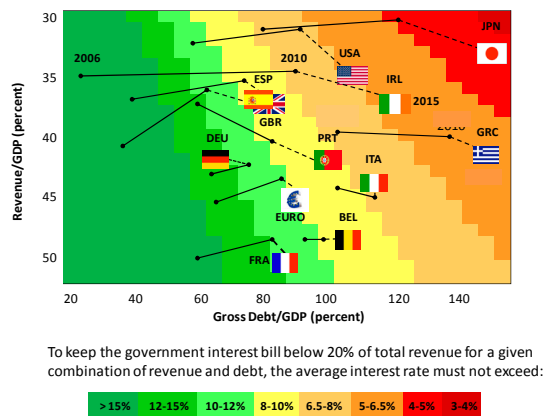
**Sovereign balance sheets remain under strain in several advanced economies.** Certain countries in the euro area are especially at risk, as market concerns about the sustainability of public debt—which has increased sharply as a legacy of the crisis—have prompted a sharp increase in funding costs that damages bank balance sheets and creates an adverse feedback loop to the real economy. Sovereign funding challenges could extend beyond the euro area, as both the United States and Japan are sensitive to higher funding burdens if interest rates increase substantially from current levels (Figure 4). Strategies to contain financial stability risks must combine medium-term deficit reduction with adequate multilateral backstops for crisis countries.

**Household leverage ratios in the United States are elevated and pose downside risks to housing markets.** The overhang of household debt risks further weakening banks' balance sheets, credit availability, and housing prices. The U.S. shadow housing inventory stands at approximately 6.3 million, or 16 months of additional housing supply (Figure 5). Household debt levels would need to decline by some \$2-5 trillion to return to more normal levels. More structural policies may be needed to deal with the shadow inventory and reduce the overall debt burden. Indeed, our stress tests suggest that banks are strong enough to absorb sizeable principal writedowns. Meanwhile,

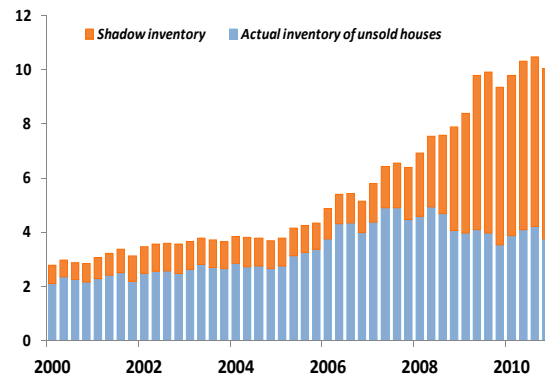
**Figure 3. Core Tier 1 Ratios of EU Banks, 2010**



**Figure 4. Funding Cost Thresholds, Debt, Revenue**



**Figure 5. U.S. Inventory of Houses Potentially for Sale (millions of loans)**

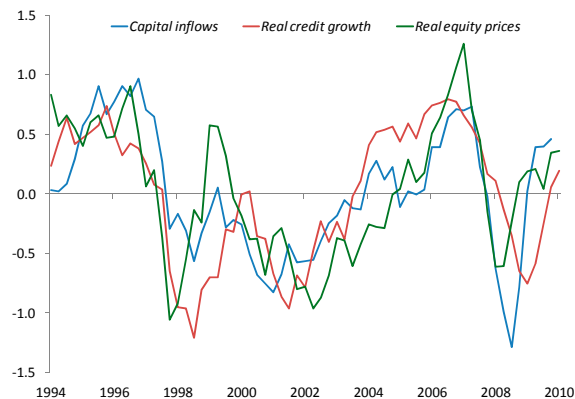


although corporate balance sheets have generally improved, the ingredients are in place for increased risk-taking among larger corporates.

***Emerging markets need to guard against overheating and a buildup of financial imbalances,***

as rebounding capital inflows combine with strong credit growth and rising inflation (Figure 6). Corporate leverage is also rising and weaker firms are increasingly accessing capital markets, making corporate balance sheets more vulnerable to external shocks. Indeed, in a stylized stress test involving a 300 bps increase in funding costs and a decline in corporate earnings by 25 percent, emerging market corporates would experience a similar level of stress as in some past crises of sudden stops in capital inflows. Macro-prudential and, in some cases, capital control measures can play a supportive role in managing capital flows and their effects, but in the context of strong domestic momentum, policies need to rely more on macroeconomic measures to avoid overheating, accumulating financial risks, and undermining policy credibility.

**Figure 6. Capital Inflows, Real Credit, and Real Equity Prices (Standard deviations from historical averages)**



***In sum, policymakers face four key challenges:***

- ***Addressing legacy problems*** highlighted by the crisis, including high debt burdens and weakened balance sheets in many advanced economies;
- ***Navigating to a more robust financial system*** that is less reliant on public support and subject to greater market discipline;
- ***Guarding against overheating*** and the further buildup of financial imbalances, especially in emerging markets; and
- ***Preventing a recurrence of financial crises***, through a financial system grounded in better supervision, regulation, and macro-prudential oversight.

## Press Points for Chapter Two:

### *How to Address the Systemic Part of Liquidity Risk*

Prepared by Jeanne Gobat, Theodore Barnhill Jr, Andreas Jobst, Turgut Kisinbay,  
Hiroko Oura, Tiago Severo, and Liliana Schumacher

Global Financial Stability Report (GFSR), April 2011

#### ***Key Points***

- Establish a macroprudential framework that mitigates systemic liquidity risk.
- Proposes three ways to measure systemic liquidity risk that are used to construct associated macroprudential tools to capture individual institutions contribution to systemic liquidity risk, thus helping to minimize the tendency for financial institutions to collectively underprice liquidity risk.
- However, policymakers will need to be conscious of the interactive effects of multiple approaches to mitigate systemic risks. Capital surcharges or other tools to control systemic *solvency* risk could help mitigate systemic *liquidity* risk.
- Strengthen disclosure practices on liquidity risk. This would help investors and policymakers assess the robustness of liquidity management practices and identify emerging liquidity strains early on.
- Targeted tools and enhanced information should allow official emergency liquidity support to be more effectively provided.
- Follow up on our October 2010 GFSR recommendations to strengthen market infrastructures and market practices in the secured funding markets and introduce more oversight over nonbank financial institutions that contribute to systemic liquidity risk.

**Systemic liquidity risk was at the heart of the recent crisis—funding markets for financial institutions dried up and central banks had to intervene in unprecedented amounts using untried methods.** The chapter stresses why more needs to be done to develop macroprudential techniques to measure and mitigate systemic liquidity risks and offers some initial thoughts about how to do it.

**The new Basel III global quantitative liquidity standards for liquidity risk management should enhance the stability of the banking sector and indirectly help mitigate systemic liquidity risk.** But at their core the Basel III rules are “microprudential”—that is they seek to

limit each bank's individual liquidity risk-taking. They are not intended or designed to mitigate *systemic* liquidity risks.

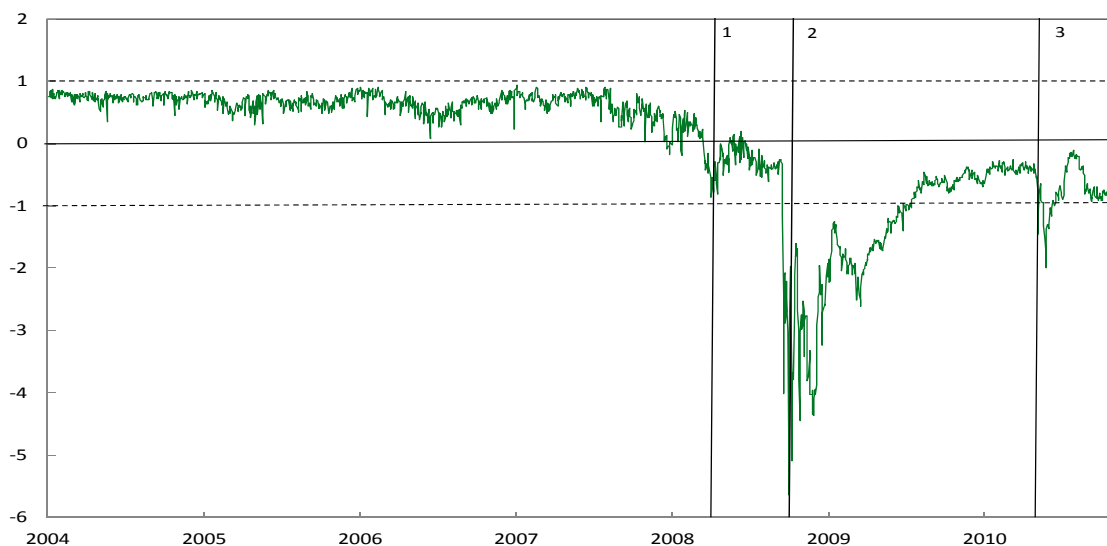
**For this reason, the chapter stresses the need to establish a macroprudential framework aimed at mitigating system-wide, or *systemic*, liquidity risk.** A priority should be to design some type of assessment capturing the negative affect that one institution's liquidity risk management decisions could inflict on the rest of the financial system. This would allow financial institutions to bear more of the burden they place on central banks and governments. This can be achieved through a macroprudential tool that could be in the form of a capital surcharge, a fee, a tax, or an insurance premium.

**But such a tool presupposes that policymakers have a robust methodology for measuring systemic liquidity risk and each institution's contribution to this risk on which to base it.** A problem so far has been the lack of analysis of how to measure systemic liquidity risk and the extent to which individual institutions contribute to this risk.

**The chapter proposes three different approaches to measure systemic liquidity risk and macroprudential tools to mitigate it. The three methods proposed are:**

- a market-based systemic liquidity risk index (SLRI). It captures the widening of normal spreads that can arise during periods of stress. For the particular set of investment strategies examined, investors can take offsetting positions so as to keep the spreads narrow (making them nearly risk-free trades) in normal times, but are unable to do so in stressed times as they may not have the funding to do so.. The figure below shows that global market and funding liquidity conditions tightened sharply (visible in a sharp decline) during the financial crisis, with extreme periods of systemic liquidity stress defined as more than 2 standard deviations from zero.
- a systemic risk-adjusted liquidity (SRL) model which combines financial balance sheet and market data to generate a forward-looking, risk-based liquidity risk measure for financial institutions. Using this measure, an options pricing model, and general statistics, the chances of a joint expected shortfall (or a systemic liquidity event) across a number of institutions can be calculated as well as an individual institutions' contribution to such a shortfall.
- a macro stress-testing (ST) model which gauges the effects of an adverse macroeconomic or financial environment on the liquidity risk of a set of institutions by determining how close they are to insolvency and thus an inability to fund themselves.

**All three methods capture the risks across time and across institutions.** The methodologies are sufficiently flexible to be used for nonbank institutions that contribute to systemic liquidity risk. A critical finding of one of the models is that the joint probability of system-wide liquidity shortfalls by banks was higher during the recent crisis than if one just added the liquidity risks associated with each individual bank. This illustrates the importance of incorporating the systemic nature of liquidity risk in macroprudential frameworks.

**Figure. Systemic Liquidity Risk Index**

Sources: Bloomberg L.P.; Datastream; and IMF staff estimates.

Note: The dotted band depicts +/- standard deviation around the zero line. Dates of vertical lines are as follows:

1—March 14, 2008, Bear Stearns rescue; 2—September 14, 2008, Lehman Brothers failure; and 3—April 27, 2010, Greek debt crisis.

**The proposed three methods along with the macroprudential tools should accomplish two goals:** (1) measure the extent to which an institution contributes to systemic liquidity risk; (2) use this to indirectly price the liquidity assistance that an institution would receive from a central bank. Proper pricing of this assistance would help lower the scale of support warranted by a central bank in times of stress and help assure that systemic liquidity shortfalls do not morph into large-scale solvency problems and undermine financial intermediation and the real economy.

**The chapter further emphasizes that the regulatory approach to addressing systemic liquidity risk should be multipronged and include:**

- Measures to make funding markets work better by strengthening the infrastructure underpinning them, for instance by having collateral behind repurchase agreements registered in central counterparties as we recommended in the October 2010 GFSR.
- Requiring greater oversight and regulation of nonbank financial institutions that contribute to systemic liquidity risk through the so-called “shadow banks” representing institutions that do some bank-like activities but are subject to lighter regulations than banks (e.g., hedge funds and money market mutual funds).
- Closer international coordination and greater disclosure of financial information on relevant funding markets and the maturity of assets and liabilities allowing for an adequate assessment of buildup of liquidity risks in the financial system.
- Better evaluation the overall cost effectiveness of various macroprudential tools. For instance, taxes or add-on capital surcharges to control systemic *solvency* risk among SIFIs may also help lower systemic *liquidity* risk. If the case, this would help lessen the need to rely on systemic liquidity risk mitigation techniques.

## Press Points for Chapter Three:

### *Housing Finance and Financial Stability—Back to Basics?*

Prepared by Ann-Margret Westin (team leader), Dawn Yi Lin Chew, Francesco Columba, Alessandro Gullo, Deniz Igan, Andreas Jobst, John Kiff, Andrea Maechler, Srobona Mitra, and Erlend Nier

Global Financial Stability Report (GFSR), April 2011

#### ***Key Points***

- To avoid future housing bubbles, policymakers should take into account best practices for creating and maintaining stable housing finance systems. Our empirical analysis points to three broad areas of best practice:
  - 1) Policymakers should focus on the health of the mortgage origination business by encouraging enhanced risk management, better underwriting standards, and effective supervision.
  - 2) Government participation in housing finance needs to be more carefully considered to avoid unintended consequences. Empirical analyses point to the significant financial stability impact of government participation in the run-up to the recent crisis.
  - 3) Incentives in the private-label securitization business, including mortgage servicing, need to be better aligned with those of investors.
- Countries seeking to create new housing finance systems should start by encouraging solid regulation, effective supervision, and transparency. This is particularly relevant for a number of emerging market countries, where policymakers have more leeway to determine the underpinnings of their housing finance systems.
- The U.S. housing finance system, which has several unique features, needs to be reformed. We welcome the recent reform proposal by the U.S. administration.

This chapter analyzes housing finance systems in a number of representative advanced and emerging economies in order to identify factors that enhance the stability of housing finance systems, and financial stability more generally. It is important to note that the financial stability impact of housing market meltdowns is greater in some countries than in others.

This is partly because of important differences in countries' housing finance systems, including the role of government.

In particular, this chapter examines aspects of housing finance systems in some advanced countries that contributed to financial instability during the recent crisis.

Empirical analyses in the chapter—across countries and over time—show a close correlation between rapid mortgage credit growth and sharp increases in house prices. It also examines the impact of a number of housing finance characteristics on mortgage credit and house prices. For example, government participation exacerbated house price swings and amplified mortgage credit growth in the run-up to the recent crisis, particularly in some advanced countries. On average, countries with more government involvement also experienced deeper house price declines.

Moreover, higher loan-to-value ratios are significantly correlated with higher house price and credit growth over time in advanced countries, in line with the findings of many other studies. This effect disappears when emerging economies are included in the sample covering the most recent period. This might be due to less formal loan limits in these countries, where unregulated sectors tend to play an important role in the lending process.

Three broad areas of best practices for stable housing finance systems emerge from the chapter: (1) enhanced risk management, better underwriting standards, and more effective supervision; (2) more careful calibration of government participation; and (3) better alignment of incentives in the private-label securitization business with those of investors.

The chapter discusses additional aspects of best practice that need to be considered by policymakers in emerging market countries, as they set up their housing finance systems. In particular, to focus first on developing solid regulation and oversight for all organizations originating loans so as to help ensure good underwriting standards. Credit bureaus that help educate consumers about the nature and risks of mortgage products are also important.

Finally, based on the best practices, the chapter makes specific recommendations for the housing finance system in the United States. This system remains unique in many ways, and an overhaul is needed. The U.S. administration's recently-released housing finance reform proposal is a welcome step in the right direction.

Reform of the U.S. housing finance system should address current gaps in the regulatory, supervisory, and consumer protection frameworks. It should aim for better-defined and more transparent government involvement in the housing market, showing relevant items on the government's budget. It should also reconsider the role of the housing-related government-sponsored enterprises, given the need to create a more level playing field in mortgage markets. Finally, the reform should encourage "safe" private-label securitization, including by improving the alignment of incentives. Such reforms would have a significant positive effect on the U.S. financial system and would help bolster global financial stability.