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PBC and IMF Joint Conference
**Strengthening the International
Monetary System and International
Experience in Resolving Debt
Problems**

EDITORS

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**增强国际货币体系，完善债务
处理国际经验**

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SUMMARIES AND PRESENTATIONS

总结与报告

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STRENGTHENING THE INTERNATIONAL MONETARY SYSTEM AND INTERNATIONAL EXPERIENCE IN RESOLVING DEBT PROBLEMS

AI Ming and Alfred Schipke¹

For the fourth year, the People's Bank of China (PBC) and the International Monetary Fund (IMF) held a joint conference to discuss issues that are in line with China's reform agenda. The objective of these conferences has been to identify practical policy solutions based on international experience. This year's joint conference focused on two timely issues: (1) how to strengthen the global international monetary system and (2) the international experience in resolving credit booms and debt problems.

INTERNATIONAL MONETARY SYSTEM

The ongoing transformation of the global economy has important implications for the functioning of the international monetary system. Significant recent developments include the increasing role of emerging market and developing countries and more pronounced financial interconnectedness, which has altered the nature of systemic risk. The legacy of slow post-crisis global growth, in particular in advanced markets, and the prospect of a succession of monetary policy normalization events over the next few years from the reserve-currency-issuing central banks—along with China's rebalancing and the end of the commodities super cycle—present further challenges to the system.

Against this backdrop, it was propitious to review reform avenues that could strengthen crisis prevention and global mechanisms for adjustment, cooperation, and liquidity provision. This is also the focus of

¹ Editors and conference organizers.

the Group of Twenty (G20) agenda, this year under the presidency of China. The session on the international monetary system examined four possible areas of reform: (1) mechanisms for crisis prevention and adjustment; (2) rules and institutions for enhanced global cooperation on issues and policies affecting global stability; (3) mechanisms for the adequate supply of global liquidity—building on the important milestone of the renminbi’s inclusion in the SDR basket; and (4) a more coherent global financial safety net, with a strengthened IMF at its core.

DEBT AND LEVERAGE

Globally, booming credit is often associated with greater leverage, and is followed by periods of subpar growth and—in many cases—financial distress. During credit booms, corporate investment and credit rise sharply, but as the efficiency of investment falls, enterprises eventually scale investment back and begin deleveraging. This usually lowers economic activity, wages, and household income.

Credit booms and busts are common in emerging markets, but the global financial crisis was a reminder that advanced economies are equally susceptible. In addition to drawing lessons on how to minimize the risk of credit bubble buildups, conference participants looked at past deleveraging experiences that might be relevant for China.

Since the global financial crisis, China’s policy stimulus has led to strong credit growth and a buildup of corporate debt. As China implements its ambitious reform program to move toward a sustainable and high quality consumption driven-growth model, the question has been what lessons can be learned from international experience of how best to reduce vulnerabilities and leverage. In this context, participants also looked at China’s corporate bond market. While it provides an important alternative form of financing, its development needs to go hand in hand with appropriate risk pricing and a strengthening of supervision and regulation.

China’s surge in public debt over the past years was mainly driven by local governments. To address this issue, the government has implemented a number of reforms, including a large local government bond-swap program. Conference participants discussed the government’s recent reform efforts, including the implications of the swap program, and—based on international experience—identified areas for further reforms.

CONFERENCE PARTICIPANTS

This joint PBC/IMF conference brought together international and Chinese experts and policymakers; PBC and IMF staff; as well as staff from the Ministry of Finance, China Banking Regulatory Commission, China Securities Regulatory Commission, the Development Research Center of the State Council, and other Chinese government agencies to discuss these issues.

ACKNOWLEDGMENTS

We would like to express our gratitude to LI Jing for putting together this e-book and providing invaluable support in making the conference a success. Also, we would like to thank SHAN Qiqi and YUAN Chunwang for managing the conference logistics and keeping all the balls in the air. Furthermore, we would like to thank the staff of the PBC IMF division and the IMF office in Beijing for providing all the invaluable “behind-the-scenes” support.

OPENING REMARKS

CHEN Yulu²

Distinguished guests,

Vice Minister ZHU Guangyao,

Ladies and gentlemen,

Good morning!

I welcome you all to this conference. This is the fourth conference jointly held by the IMF and the People's Bank of China. Today we will focus on strengthening the international monetary system (IMS) and on international experiences in resolving debt problems. These issues have been widely discussed recently, ever since China's G20 Presidency. I'd like to share with you some of my thoughts on the G20 framework.

On the IMS. China restored the International Financial Architecture Working Group after its G20 Presidency. We have made great progress in five areas: the IMF's quota and governance reform, capital flows, the global financial safety net, sovereign debt restructuring and debt sustainability, and an enhanced role for the Special Drawing Right (SDR). Such progress is very important for a stronger IMS. Going forward, more efforts will be made in the following areas:

First, in light of more volatile capital flows, we need to better monitor capital flows and associated risks. We hope the IMF can help its members better tackle challenges by sharing international experiences and best practices.

Second, orderly sovereign debt restructuring is important for stability of the IMS. We should further incorporate enhanced collective

² CHEN Yulu is Deputy Governor, People's Bank of China.

action and pari passu clauses into new and existing sovereign debt to achieve market-based restructuring.

Third, with implementation of the 2010 quota and governance reforms, the Fund's governance structure and resources have been improved. The IMF's lending tools are more effective. The global financial safety net centered on the IMF has been strengthened. Meanwhile, regional financial arrangements have been playing a more important role in this respect. Therefore, a key issue in the future is how to allow regional financial arrangements to better supplement and support the global safety net. As a cochair of ASEAN+3 this year, China is willing to actively contribute to the Chiang Mai Initiative Multilateralization's support for and cooperation with the IMF.

Fourth, we need further reform to the SDR to expand its use, including reporting of financial and economic data in the SDR in parallel with the U.S. dollar, and issuing SDR-denominated bonds. China recently released its foreign exchange reserve data in the SDR along with the U.S. dollar, and has researched the possibility of SDR-denominated bonds in China. We encourage the IMF and other institutions to consider the SDR as a unit of account, and to use it more in their publications and statistics.

China's debt issue is structural. The debt level is low in the household sector but high in the corporate sector; local governments are heavily indebted, whereas the central government is not.

There are three factors concerning high corporate leverage worth special attention:

First, the aggregate ratio is high. This means debt financing through bank loans and bond issuance is commonly practiced. Therefore, it is not surprising that China's corporate debt level is relatively higher than that in other countries. But if it gets too high, there will be problems.

Second, China's equity market started late and is still developing. Indirect financing and debt financing remain dominant, where savings are channeled through banks and the bond market and then into debt. This helps explain why China's debt-to-GDP ratio is high and continues to rise.

Third, reforms and opening up have created many investment opportunities in China. However, given China's low per capita income and lack of wealth accumulation, private investors tend to borrow money to develop. As corporate and personal wealth gradually grows, debt financing will be used less. But this process will take time and patience. We will also need to find the right ways to facilitate this process.

We believe that China's debt issue could be resolved by step-by-step reforms. Diversification of financing channels will turn more savings into equity investments, and less into loans and debt. The recent 13th Five-Year Plan puts forward the idea of decisively developing the capital market. This is an important solution. I believe that with more reforms and development, China's debt issue will be resolved. We will also learn from international experiences in this process. We look forward to an open discussion and valuable suggestions from all participants.

I wish the conference complete success.

Thank you!

SESSION I

STRENGTHENING THE INTERNATIONAL MONETARY SYSTEM

STRENGTHENING THE INTERNATIONAL MONETARY SYSTEM

ZHU Jun³

Strengthening the International Monetary System (IMS) is a very broad topic and has many important aspects, for example, crisis prevention and adjustment, rules and institutions for global cooperation, supply of global liquidity in which the special drawing right (SDR) has a role to play, an enhanced global financial safety net (GFSN), and so on. I'd like to focus on two points, the GFSN and broader use of the SDR.

GFSN

The GFSN is a key topic on the G20 agenda this year. In the context of heightened market volatility and rekindled concerns over global financial risks, discussion of strengthening the GFSN is increasingly relevant. The IMF's recent papers on stocktaking of the IMS and adequacy of the GFSN have provided us with a useful starting point and important references for our discussions.

The GFSN consists of multiple layers, with the IMF at its core. In the wake of the recent global financial crisis, the IMF has undertaken a range of important reforms to improve its legitimacy, credibility and effectiveness, including implementing the 2010 quota and governance reform, overhauling its surveillance and policy tools, and strengthening its lending capacity and toolkit.

Facing the current challenges, there is still more to do. For example, the Fund's quota and governance structure needs to be further improved by shifting quota shares to dynamic emerging market and

³ ZHU Jun is Director General, International Department, People's Bank of China.

developing countries to better reflect their weights in the world economy. Building on its central role in the GFSN, the IMF can improve cooperation with other elements of the GFSN such that more resources can be mobilized at the global level in an integrated manner.

As important components of the safety net, regional financial arrangements (RFAs) support and supplement the IMF. To enhance coordination among different layers of the GFSN, cooperation between the IMF and RFAs should be encouraged. I'd like to introduce the People's Bank of China's (PBC's) efforts to strengthen cooperation between Chiang Mai Initiative Multilateralization (CMIM) and the IMF.

As one co-chair of the ASEAN+3 financial cooperation this year, the PBC is actively promoting cooperation between the CMIM and the IMF. Deputies of the ASEAN+3 Finance Ministers and Central Bank Governors have agreed to conduct a joint test run with the IMF in the meeting early this month. The upcoming test run features a scenario in which a CMIM member will apply for the CMIM facility linked to the IMF program, so as to test the coordination mechanism between the CMIM and the Fund for crisis resolution. The PBC and IMF are now discussing relevant issues. The joint test run will kick off in the second half of 2016.

At present, 70 percent of the CMIM arrangement resource is linked to the IMF program, referred to as the "IMF linked-portion." A member is eligible for the linked portion only if an IMF program is in place or is expected to be established in the near future. So far, the CMIM has not conducted a test run on activating facilities linked to an IMF program, thus the coordinating mechanism is not sufficiently clear. **The purpose of this test run is to enhance the operational readiness of CMIM, improve the coordination mechanism with the IMF, and further strengthen the GFSN.**

The upcoming test run is an important first step toward strengthening cooperation between the CMIM and the IMF, and efforts will be made in the future to further enhance this cooperation.

BROADER USE OF THE SDR

Let me turn to the broader use of the SDR. The SDR has stabilizing effects and can play a supplementary role to the IMS. We need to take concrete steps to broaden the use of the SDR, such as reporting financial and economic data including foreign exchange reserves in SDR in parallel with the US dollar, and issuing SDR-denominated bonds.

First, because the SDR could be more stable than individual currencies in the basket, having the SDR as a reporting currency and an accounting unit would make financial statements and statistics more objective and easier to understand.

Taking advantage of these benefits, China released SDR-denominated foreign exchange reserve data in parallel with US dollar data earlier this month. We will soon report more economic and financial data in the SDR and US dollar.

We encourage other countries and institutions to consider the benefits of using the SDR as unit of account. For example, the IMF may consider using the SDR as a reporting unit in its publications and databases, or provide an SDR-denominated version in parallel with existing practice. This could help make analysis more accurate and objective.

Using the SDR as a reporting currency implies that risks will also be measured in SDRs, because the SDR will be used for accounting and auditing purposes. Therefore, reporting in SDR can automatically lead to hedging needs for the SDR.

Second, there may be scope for developing an SDR-denominated bond market. SDR-denominated bonds automatically embed a diversified currency portfolio and exposures to major reserve currencies. There will also be more demand for SDR-denominated assets if balance sheets were reported in SDR or financial products were quoted in SDR.

We can provide initial impetus for market development and encourage and facilitate the private sector to join. The PBC is looking into steps for issuing SDR-denominated bonds in China, which will allow investors to diversify their portfolios into a range of reserve currency assets. Some institutions have shown interest, and we are working with

them on the term sheet, such as proposed tenor, interest rate, how to calculate the coupon, size of placement, potential investors, whether there will be an active secondary market, and so on.

Of course, we all know that there are some inconveniences, such as lower liquidity, wider spread, higher settlement costs, and possibly lack of an active secondary market. However, we can develop technical solutions to alleviate those inconveniences. For example, we can have large market makers between SDR and the US dollar, and between SDR and the RMB, so they can provide more liquidity. We need to be creative and adopt a long-term view.

Third, we can also think of ways to make better use of existing SDRs and increase their liquidity. Currently, most SDRs are held by countries as reserve assets but cannot be used for interventions or payments. The IMF can explore options to make the SDR more liquid within the official sector.

A broader role for the SDR could also help alleviate some unnecessary burden on reserve-currency-issuing countries. The benefits of being a reserve currency are perhaps overstated, while costs might be underestimated. Broadly speaking, any reserve-currency-issuing central bank will have to meet its domestic objectives in an environment in which the use of its currency is global. And this is not always easy. The PBC has already felt these inconsistencies, even though international use of the RMB is still quite limited. In this respect, a broader role for the SDR could be helpful.

To sum up, the SDR was created to make the IMS more stable and resilient, and the SDR is still relevant today. We should support ongoing work to broaden its use, including reporting financial and economic data in SDR in parallel with the US dollar and exploring ways to issue SDR-denominated bonds. We can take concrete steps now that will lead to tangible progress in the future.

STRENGTHENING THE INTERNATIONAL MONETARY SYSTEM

Alfred Kammer⁴

The world is going through major economic and financial changes (**please see the corresponding presentations, including figures and tables**). It is becoming more multipolar as emerging markets and developing countries (EMDCs) integrate into the global economy. Financial markets are becoming more complex with more interconnections, and nonbank players are growing in importance. These shifts present major opportunities for global growth, but also significant risks to global economic and financial stability. This calls for a renewed dialogue on the effectiveness of the international monetary system (IMS).⁵ In my presentation today, I will present some of the key stylized facts on how the global economy has evolved, I will set out some of the key gaps in the IMS, and finally I will close with some possible reform areas.

To date, the current IMS has performed better than its predecessor, but the crisis and postcrisis developments highlighted that it must adapt in line with economic and financial developments.

How has the global economy been evolving?

We are seeing a more multipolar global economy emerging with the sustained growth and the rapid trade integration of EMDCs. Since 2000, EMDCs' share of world GDP has increased by more than two-thirds, reaching 40 percent in 2014. While trade integration was fast, financial integration and deepening in EMDCs has proceeded at a much slower pace than in advanced economies. While China is less financially integrated than other EMDCs, it is a notable exception when it comes to

⁴ Alfred Kammer is Deputy Director, Strategy, Policy and Review Department, IMF.

⁵ For a detailed analysis see:

<http://www.imf.org/external/np/pp/eng/2016/022216b.pdf>

its high financial market depth. Why do we need to care? If financial integration of EMDCs gets ahead of deepening and regulatory improvements, it could be a source of financial instability and capital flow volatility.

Financial globalization led to a dramatic increase in global capital flows. These have increased by more than 25-fold between 1980 and 2007, compared to an eight-fold expansion in global trade.

Cross-border liabilities of EMDCs have tripled over the past decade. Moreover, nonbanks are now playing an increasingly important role in intermediation.

Financial cycles appear to have become synchronized, and while the cycles of some countries such as the United Kingdom and Australia have been highly correlated with the United States for decades, this pattern has extended to most other advanced economies since the crisis. The length and the amplitude of the U.S. financial cycle have increased markedly, and cyclical surges and troughs of capital flows seem to have moved in tandem with the financial cycle, mirroring its amplitude over the past decade.

In addition, the prospect of monetary policy normalization coming in succession over the next few years from the reserve currency-issuing central banks, China's rebalancing, and the end of the commodity supercycle will present further challenges to the system.

So what are the gaps?

Let's look first at global adjustment mechanisms. First, global current account imbalances have narrowed since the crisis. But this narrowing reflected compressed demand in many deficit countries rather than adjustments in both deficit and surplus countries. This adjustment contributed to an inferior global growth outcome. Second, the nature of the adjustment appears to have contributed to the buildup of financial imbalances. Low growth in deficit countries contributed to expansionary monetary policies in advanced economy central banks, with global spillovers of liquidity. As a result, stock imbalances widened, with increasing balance sheet mismatches.

Constrained domestic policy choices. In a highly interconnected global financial system, with one or two major reserve currencies, policy and financial developments in the issuing countries have significant spillover effects on others. These spillovers constrain the domestic policy choices in countries with open economies and less developed financial markets, especially in those economies with fixed exchange rates. Importantly, monetary policy is more constrained in how it can be used to respond to domestic concerns than it would be without imported financial conditions, posing greater challenges for macroprudential management.

Regulatory gaps. One gap is the absence of global oversight of capital flows. Financial globalization has led to the reconfiguration of the size and structure of global balance sheets, raising the risk of destabilizing capital outflows. Moreover, the crisis demonstrated the potential for financial imbalances to generate systemic risks as shocks spread via contagion, given synchronized financial cycles. Another gap is nonbanks. While substantial progress has been made on the financial regulatory reform agenda, there has been slower progress in expanding the global prudential regulatory parameter to encompass the rapid rise of nonbanks.

Global liquidity challenges/Limited global liquidity mechanisms. While the global financial safety net (GFSN) has grown significantly since the global financial crisis, this growth has led to a more decentralized safety net that remains untested. The layers include international reserves, which have grown fastest, regional financial agreements (RFAs), bilateral swap lines, and the IMF.

To assess the adequacy of the GFSN we evaluated how well different sets of countries are covered along five dimensions; predictability, speed, reliability, cost, and policies.⁶

We found that reserve currency-issuing advanced economies are well served by the current GFSN. This is due to the ability to fully rely on printing reserve currencies and access to bilateral swap lines from other

⁶ See <http://www.imf.org/external/np/pp/eng/2016/031016.pdf>

reserve currency issuers. However, emerging markets face a more decentralized and uncertain safety net, which leaves sizable financing gaps and thus provides incentives to over accumulate reserves. Most elements are very costly. They can be financially costly, such as reserves and market-based instruments, or politically costly due to stigma with the IMF and, to some extent, RFAs. Many GFSN resources are inadequately predictable, particularly swap lines and RFAs. In addition, there is a lack of reliable cover for the full duration of shocks given that most elements provide time-bound support.

In short, the tensions in the functioning of the IMS, compounded by the ongoing transformation of the global economy, need to be addressed to shore up the effectiveness of the system. Possible reforms fall in four areas: crisis prevention and adjustment, global cooperation, mechanisms for ensuring an adequate supply of global liquidity, and building a stronger GFSN. Let me discuss each:

What can be done in the first reform area: crisis prevention and adjustment?

EMDCs' financial integration in the global economy needs to be supported by helping them deepen their financial markets to provide a safe environment for financial integration. Deeper financial markets could help raise domestic demand, facilitate greater reliance on exchange rates to achieve external adjustment, and strengthen EMDCs' ability to cope with capital flow volatility.

A more equitable burden of adjustment needs to be promoted across countries. Raising global aggregate demand is a shared responsibility. During our recent Spring Meetings, countries agreed to use a three-pronged approach - structural, fiscal, and monetary policies, both individually and collectively, to lift actual and potential growth.

Excessive leveraging needs to be discouraged. While Basel III is helping to strengthen bank capital and reduce leverage, macroprudential policy needs strengthening in countries and at the global level. A deeper understanding of their impact and interaction with other policies is also needed. We are working together with the Financial Stability Board on

these issues. Encouraging longer-term equity-based financing can also help limit excessive leverage.

Surges in capital flows that fueled credit booms in many countries point to the need to consider together the analysis of capital flow management and macroprudential policies. We are currently reviewing the experience under our institutional view of capital flows, which is a cornerstone the macro framework for broad capital flow risk management.

And sovereign balance sheets need to be made safer. Financial instruments, for instance, GDP-linked bonds, that allow for risk sharing with the private sector can provide recession insurance and reduce the likelihood of defaults.

What about the second reform area, rules and institutions for global cooperation? As countries become increasingly integrated, with greater potential for spillovers, effective cooperation becomes increasingly critical for the system. The IMF will have to play a central role in promoting cooperation between its members, particularly through strengthening its spillover analysis, and on capital flow management.

In the third reform area, mechanisms for adequate supply of global liquidity, let me focus on the possible role of the special drawing right (SDR).

The official SDR: One could argue that demand for reserve assets is continually increasing and “safe” reserve assets need to be produced through fiscal deficits, and investment inflows to purchase them tend to be associated with current account deficits in the issuing country. This creates tension in an IMS that is based on few currencies that serve as reserve assets. The official SDR was seen as a way to supplement the sources of reserve assets to meet demand without the costs of accumulating reserves. In short, the SDR might help lower the propensity of countries to self-insure, which could alter the pattern of capital flows by raising effective liquidity buffers. However, for this to work, the supply and demand for the SDR would need to increase, and its liquidity be strengthened.

The private SDR: A private SDR would serve a somewhat different purpose. A private SDR is any claim denominated in SDR, whether issued by the official sector or private sector. SDR assets could create an alternative to existing reserve assets.

In the fourth reform area, the global financial safety net could be strengthened through reforms at the IMF: We are looking at our lending toolkit. Prequalification could help ensure that funds are readily available and could reduce the stigma associated with IMF resources. For instance, an instrument that could provide quick, predictable, and reliable liquidity could help ring fence innocent bystanders hit by liquidity shocks and thus limit the potential for contagion.

The IMF could also strengthen its cooperation with the different elements of the GFSN, which would help make the system more predictable and reliable, improve speed, reduce costs, and help promote good policies. And we could offer a policy-signaling-instrument that could be used by the other layers of the system.

To conclude, the ongoing transformation of the global economy needs a stronger IMS, and strengthening the IMS is a shared responsibility requiring concerted efforts.

THE ROLE OF THE RMB IN REFORMING THE GLOBAL MONETARY SYSTEM

LI Daokui (David)⁷

It has been nearly 10 years since the outbreak of the global financial crisis in 2007 [sic] **(please see the corresponding presentations, including figures and tables)**. In the post crisis era, the major economies have differed in terms of monetary policy stance. With the gradual recovery of the US domestic economy, the dollar is now poised for an interest rate hike after experiencing a long period of quantitative easing; the euro area and Japan are in a deep mire of deflation and will likely continue with their loose monetary policy. Major emerging market countries, in the wake of the global financial crisis, stood out as a stabilizing force in the world economic recovery. However, in recent years, with lower prices for oil and other commodities, the financial situation and economic growth in certain energy-and resource-dependent countries fell into malaise. In the current global financial system, the tightening of monetary policy and rising interest rate in the United States will lead to a partial reversal of capital flows to the emerging market countries, triggering localized financial shocks. We believe that the major issue in the current international monetary system is the shortage of dollars in the presence of dollar dominance in the monetary system, and that an important way to solve the current dilemma is the internationalization of the RMB.

CURRENT CHALLENGES FACING THE INTERNATIONAL MONETARY SYSTEM

Despite the quantitative easing by one major developed economy after another subsequent to the financial crisis, global liquidity is still insufficient. The proportion accounted for by M2 in financial assets

⁷ LI Daokui (David) is Professor, Tsinghua University.

(including stocks and bonds) denominated in the dollar, the yen and the euro has shown a falling trend since 2007. The stock of the dollar, although rebounding slightly due to several rounds of quantitative easing between 2008 and 2012, has been in the doldrums since then. For a more complete measure of total money supply in major developed countries, we take the sum of M2 denominated in the dollar, the yen and the euro and calculate the percentage accounted for by issued currencies in world GDP. The indicator is shown to have been falling consistently since after the financial crisis in 2008, from 47.96% in 2009 to 39.39% in 2014. Thus, the problem in the international monetary system since the financial crisis has not been excessive issuance of currencies but a shortage thereof.

Meanwhile, the global monetary system is over-dependent on the major international currencies, particularly the US dollar. According to a study of cross-border holdings of monetary assets (Daokui Li et al., 2016), holdings by global non-US investors of dollar-denominated assets has risen rather than fallen since after the crisis, indicating the degree of internationalization of the dollar. For example, cross-border dollar holdings as a percentage of aggregate cross-border foreign currency holdings reached approximately 35% in 2013. In addition, transactions denominated in the dollar in the SWIFT system as a percentage of the total is as high as 44%. In contrast, the share of the United States in Global GDP has continued to decline and was a mere 22% in 2013. The mismatch between the internationalization of the dollar and the size of the US economy also reflects the fact that the global monetary system is overly dependent on the dollar.

Based on a study by Daokui Li, et al. (2009), tightening by the United States of its monetary policy indeed increases financial risk and triggers financial crisis in emerging market economies. In fact, since 2014, major emerging market economies such as Russia, Brazil and South Africa have faced varying degrees of currency devaluation and domestic inflation, while commodity prices have fallen drastically.

POSSIBLE WAYS TO MITIGATE THE PLIGHT OF THE INTERNATIONAL MONETARY SYSTEM

Dollar dominance in the international monetary system and liquidity shortage will inevitably trigger systemic risks and lead to losses to the global economy. How, then, are we to mitigate risks and resolve the current dilemma in the monetary system? We put forward a three-part proposal.

A. LOOSENING MONETARY POLICY BY THE UNITED STATES

Without changing the existing monetary framework, an increase in the supply of the US currency is the most direct means to ease the various regional financial crises. However, the implementation of such policies have an important premise, namely, that the Federal Reserve becomes the world's central bank, instead of just the issuer of the US currency. In fact, since the financial crisis, US monetary policy has been based on macroeconomic data in the United States itself. Even if the financial resilience and risk tolerance of other countries has been taken into account when devising such policy, the indirect focus has still been on how the implementation of the policy will impact the economic conditions of the United States itself, albeit by way of the fiscal and financial conditions in other countries. Recently, Federal Reserve Chairman Janet Yellen stated publicly that "under the current macroeconomic trends, the outlook for the US economy is relatively optimistic, posing no significant potential risks..... only a slowdown in the domestic economy will affect the monetary policy of the United States."

Therefore, to relieve the shortage of international liquidity, we cannot rely solely on the United States to increase its money supply, especially given the lack of balance in global economic growth and given the various external shocks faced by developed and developing countries alike. In order to overcome the current difficulty, we must start from reforming the dollar dominance in the international monetary system.

B. A MORE ACTIVE IMF AND ISSUANCE OF SUFFICIENT SDRS

As a supranational currency, SDRs are undoubtedly the best option for resolving the dilemma arising from the sovereign status of the dollar. In times of international liquidity shortage in the emerging market economies, the IMF, by providing emergency loans to crisis countries, can mitigate risks and prevent contagion. However, we have to consider two related issues.

First, the fact that a country is applying for loans from the IMF will, to a degree, seem to suggest the emergence of a crisis in its financial markets. In addition, because they find it difficult to accept a lot of the terms attached to the loans, most sovereign states are relatively cautious when applying for them. Some are even reluctant to borrow from the IMF during a crisis.

Secondly, although global SDRs have undergone several rounds of expansion, the overall amount outstanding has reached only \$204.1 billion, which is only a drop in the bucket compared with a total of \$11 trillion in global foreign exchange reserves. Thus, the role of SDR deposits as supplementary foreign exchange reserves is not fully realized. Although the SDR can be a good means to solve the plight of the monetary system, it is far from having become an international reserve currency because of its lack of circulation and small size.

C. A MORE STABLE AND INTERNATIONALIZED RMB

With the rise of China's international status, the internationalization of its currency is inevitable. The RMB is playing an increasingly important role, not only in the region but on a global scale. Specifically, it is having a positive impact on the global monetary system through three avenues.

First, an increasing number of currencies are gradually becoming detached from the dollar anchor, choosing instead to peg the RMB. Immediately after the currency reform measures pronounced by China on August 11, the RMB depreciated sharply against the US dollar, while the Thai baht, Malaysian ringgit and other Southeast Asian currencies all followed the RMB into the devaluation window during the same period. Because of the close trade relationship between China and these

emerging market countries, a stable exchange rate between emerging market currencies and the RMB plays an increasingly important role in maintaining a healthy balance of trade and a stable current account balance. We believe that the stability of the RMB exchange rate, including against the dollar and against a basket of currencies, is particularly important for the stability of regional financial markets and for boosting confidence in emerging market countries.

Secondly, while using more RMB broad, China imports an increasing amount of commodities, thereby stabilizing the economy of the emerging market in an indirect way. During the first quarter of 2016, the pace of investment and industrial production in China rebounded, resulting in some signs of recovery, which was soon reflected in international commodity prices. Steel prices increased by 35% from the end of 2015 to early April 2016, while copper futures also rose by nearly 10 percent. Because of the size of its international commodity imports and exports, China is no longer a commodity price-taker and has gradually assumed the part of the price setter. Therefore, China is crucial for stabilizing the prices of major traded goods internationally and for preventing financial risks to emerging market countries.

Thirdly, China is expanding the global circulation of the RMB through increased foreign direct investment and thus is playing a role in adding to global liquidity. During the last 15 years, while the growth of inbound foreign direct investment to China showed a slowing trend, the share accounted for by China in the global outbound foreign direct investment rose significantly, indicating the country's influence in the field of capital became larger. Outflow of direct investment capital will help improve the ability of China's foreign exchange capital to generate income. At the same time, it increases the stock of international currencies in the target countries of its investments, such as those in Africa and Latin America, thereby supplementing the foreign exchange reserves of emerging market countries.

According to estimates by Daokui Li et al. (2016), RMB assets held by foreigners currently stand at \$3.2 trillion. While this is the result of a significant growth in recent years, it accounts for only about 3.2% of global cross-border capital holdings, which is well below the 35%

accounted for by such assets denominated in the dollar. We believe that the status of the RMB in the global monetary system will continue to elevate over the next 10 to 20 years and the currency will become an important supplement to global liquidity, thus playing an important role in resolving the current difficulties in the international monetary system.

STRENGTHENING THE INTERNATIONAL MONETARY SYSTEM

Chia Der Jiun⁸

CAPITAL FLOWS AND VULNERABILITIES

- 2008 marked the end of a long financial super-cycle and large expansion of international capital flows, especially between advanced economies.
 - Deleveraging of banking systems
 - Receding of securitization
 - Retrenchment of cross-border banking flows
 - Consolidation of sovereign debt
 - Deep and long recession in advanced economies (AEs); emerging market economies (EMEs) did relatively well

CAPITAL FLOWS AND VULNERABILITIES

- Are we at the end of another expansion of capital flows that had its genesis in the expansion of AEs' central bank balance sheets? This time, flows into EMEs were a big part of the story.
- Reasons for vigilance:
 - Previous turns in US monetary policy have had international spillovers
 - Internal and external imbalances and financial vulnerabilities are present in major EMEs

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- Unprecedented expansion of credit in EMEs, especially emerging Asia, coupled now with a downshift in growth
- Reasons to not be excessively worried:
 - Monetary policy is turning at a much more gradual pace and to a lower amplitude than previous cycles
 - Policy frameworks, macro positions, banking systems, and reserve positions are generally stronger
 - Exchange rate flexibility has been an important feature of adjustment
 - Composition of capital inflows into emerging Asia over past six years has been portfolio flows rather than cross-border banking flows
 - Portfolio inflows into local currency debt has been strong. Initial signs are that these have been stable. Episodic outflows have been small relative to cumulative inflows.
- Net impact? Variability between countries but a full-blown emerging market crisis is unlikely.

PROSPECTS FOR A MORE STABLE INTERNATIONAL MONETARY SYSTEM

- Over past decades, capital flows into EMEs have been dependent on AE financial cycle and US monetary policy cycle.
- Diversification from this concentrated exposure could be potentially stabilizing for the international monetary system.
- Progressive liberalization of capital account in China, internationalization of RMB and resultant capital flows could in the longer term provide this diversifying effect.
- China's low correlated with the financial cycle is key.

- China's diversifying influence is likely largest in Asia, similar to how euro area policies have a larger influence on Central and Eastern European countries.
- Potential for both shocks and stability to be transmitted.
- A successful and stable China, and an orderly process of capital account liberalization is a global public good.

CHINA'S GROWING INFLUENCE ON FINANCIAL MARKETS

- Economic and trade integration of China with the global economy is far ahead of its financial integration.
- Yet, at a relatively low level of financial integration, China's influence on emerging Asian markets has already been significant.
- Influence of Chinese equity markets on emerging Asian equity markets is well documented by the Bank for International Settlements and the IMF.
- Impact of RMB on Southeast Asian currencies has risen over the past several years as the RMB progressively gained greater flexibility.
 - More recently, analysis by the Monetary Authority of Singapore shows that the influence of the RMB has further increased since August 2015. The RMB is a more significant influence than either the euro or the yen, while the US dollar is still dominant.
- As the financial integration of China grows, China's influence on international capital flows, currencies, and asset markets will also grow.
- Potential for very large gross flows from domestic and international portfolio reallocation toward privately held assets and portfolio flows on the liabilities side.
 - Majority of China's gross international investment assets is official foreign reserves.

- Majority of gross international investment liabilities is foreign direct investment.

SPECIAL DRAWING RIGHT (SDR) SECURITIES

SDR instruments bring potential benefits—ease of diversification, lower costs, lower volatility, greater portfolio stability, and others; particularly for less active, longer-term investors.

- The fundamental challenge for greater acceptance of SDR instruments is that investors can directly gain access to assets in the underlying currencies, and can take their own view of the currency composition of their portfolios.
- Additional challenges include liquidity constraints and less developed market infrastructure than instruments in the underlying currencies.
- Greater acceptance and usage of SDR instruments could require SDRs to have attributes superior that are superior to the underlying assets, for example, robust market making, tighter bid-offer spreads, continuous and transparent pricing, availability of hedging instruments, and lender of last resort.

SESSION II

INTERNATIONAL EXPERIENCE IN RESOLVING DEBT PROBLEMS AND DELEVERAGING

Part I: International Experience with Credit Booms and Deleveraging

THE CAUSES AND CONSEQUENCES OF FINANCIAL INSTABILITY

Moritz Schularick⁹

Financial crises are rare events (**please see the corresponding presentations, including figures and tables**). If we are to understand the empirical regularities underlying them, we have to go back in time to obtain a large number of observations. Over the past years, this new emphasis on long-run quantitative research on the causes and consequences of financial instability has yielded important new insights with regard to the link between private credit growth and banking crises (Schularick and Taylor 2012); the output effects of financial crises and the effects of debt overhangs on recovery trajectories (Jordà, Schularick, and Taylor 2013); as well as the important amplification role of asset prices (Jordà, Schularick, and Taylor 2015).

In this short article, I aim to summarize the main insights from this recent line of research. I will focus on three main insights from long-run cross-country studies: First, financial crises are best described as credit booms gone bust, that is, an acceleration of credit growth relative to country-specific trends is the best early-warning sign of financial crises. Second, financial crises have considerable real effects as debt overhangs and balance sheet repair slow down the recovery for an extended period. Last, in the upswing and downswing, asset price bubbles and their collapses amplify these phenomena.

CREDIT BOOMS GONE BUST

The idea that financial crises are credit booms gone wrong underlies the oft-cited works of Hyman Minsky and Charles Kindleberger. Yet until

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recently, firm statistical evidence was still scant. Some evidence existed that systemic financial crises in emerging markets were preceded by rapid expansion of credit, but recent studies have shown that the same problem afflicts advanced economies.

A paper by Schularick and Taylor (2012) contributed to this literature in two ways. First, it assembled long-run data for 14 developed economies from 1870 to 2012, in contrast to the focus of much of the recent literature on the experience of developing countries with shorter time series. The key interest of the paper is in determining whether there is systematic evidence for credit-growth-induced financial instability. To answer this question, Schularick and Taylor proposed using a basic forecasting framework: does a country's recent history of credit growth help predict a financial crisis, and is this robust to different specifications, samples, and control variables? Formally, they specified a probabilistic model of a financial crisis event in a given country in a given year as a function of lagged information.

Their core result, since then replicated and extended in various ways, is that credit growth (measured as real credit growth or changes in the credit-to-GDP ratio) is the best early warning indicator for financial crises. A one standard deviation change in real loan growth increases the probability of a crisis by about 2.5 percent. Given that the sample frequency of crises is under 4 percent, these results demonstrate a high sensitivity of crises to empirically observed loan growth accelerations. The authors also show that the model has predictive power, as measured by a standard tool used to evaluate binary classification abilities-- the Receiver Operating Characteristic (ROC) curve.

CREDIT BITES BACK

Another question that has attracted considerable attention relates to the output effects of financial crises: are recessions following financial crises different? Using advanced econometric techniques Jordà, Schularick, and Taylor (2013) show that after five years, the financial-crisis recession path of real GDP per capita is about 5 percent lower than the normal recession

path, with the difference being highly significant at standard confidence levels.

Moreover, Jordà, Schularick, and Taylor (2013) go one step further and show how a large build-up of credit makes recessions worse, in normal as well as in financial recessions. They construct a measure of “excess credit” buildup during the boom and correlate this measure with output declines in the recession and recovery phases. They show that over a century of modern economic history in advanced economies, a close relationship has existed between the buildup of credit during an expansion and the severity of the subsequent recession.

Yet are the observed effects of credit on outcomes a proxy for omitted information about the economy? Using the local projection method, Jordà, Schularick, and Taylor (2013) track the effects of excess credit on the paths of seven key macroeconomic variables for up to five years after the beginning of the recession. This richer dynamic specification shows that excess credit shapes the recovery path responses of other macroeconomic variables. The study finds large and systematic variations in outcomes such as investment, lending, interest rates, and the current account depending on the credit intensity of the preceding cycle. While these effects appear stronger in recessions that coincide with financial crises, they remain clearly visible in garden-variety recessions.

ASSET PRICE AMPLIFICATION

More recently, the role of asset price bubbles has come under increased scrutiny. After the global financial crisis, many policymakers embraced the idea that there are two categories of bubbles. First are pure, unleveraged “irrational exuberance” bubbles that may pose a limited threat to financial stability and the macroeconomic outlook. But then there are also “credit boom bubbles” that are characterized by a potentially dangerous combination of surging asset prices fueled by credit growth. The interaction of the two is thought to sow the seeds of severe economic distress. In such bubbles, positive feedback between

credit growth, asset prices, and increasing leverage can be observed. When such credit boom bubbles burst, the deleveraging pressures may weigh on the economy for a long time.

Jordà, Schularick, and Taylor (2015) study these issues empirically and find evidence that the combination of asset price bubbles and credit booms is particularly harmful. When asset price booms and credit booms coincide, the risk of a financial crisis rises substantially, and the ensuing recessions are considerably more painful. The fallout from credit-fueled bubbles presents a great danger to the macroeconomic outlook. Leveraged housing bubbles turn out to be the most harmful combination of all. These results put more nuance on earlier work on the causes of financial instability. It is not credit growth alone, but the interaction of credit and asset prices that matters for financial stability risks and the economic costs of financial crises.

References

Jordà, Òscar, Moritz Schularick, and Alan M. Taylor. 2013. "When Credit Bites Back." *Journal of Money, Credit and Banking* 45 (s2): 3–28.

———. 2015. "Leveraged Bubbles." *Journal of Monetary Economics* 76: S1–S20.

Schularick, Moritz, and Alan M. Taylor. 2012. "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1870–2008." *American Economic Review* 102 (2): 1029–61.

HOW TO DEAL WITH CREDIT BOOMS

Giovanni Dell’Ariccia¹⁰

Credit booms buttress investment and consumption and can contribute to long-term financial deepening (Levine 2005) **(please see the corresponding presentations, including figures and tables)**. But they often end up in costly balance sheet dislocations, and more often than acceptable, in devastating financial crises, whose costs can exceed the benefits associated with the boom. Indeed, credit booms have been historically associated with financial crises (Reinhart and Rogoff 2009). And while only about one-third of booms have ended in crashes, some of these crashes have been spectacular, contributing to the notion that credit booms are at best dangerous and at worst a recipe for disaster (Gourinchas, Valdes, and Landerretche 2001; Borio and Lowe 2002; Enoch and Ötoker-Robe 2007).

These dangers notwithstanding, until the 2008–09 global financial crisis the policy debate paid limited attention to credit booms, especially in advanced economies.¹¹ This lack of attention might have reflected two issues. First, with the diffusion of inflation targeting, monetary policy had increasingly focused on interest rates and had come largely to disregard monetary aggregates.¹² And regulatory policy, with its focus on individual

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¹¹ In a few emerging markets, however, credit booms were an important part of the policy discussions, and warnings on possible risks were put out before the crisis. See, for instance, Backé, Égert, and Zumer (2005); Boissay, Calvo-Gonzales, and Kozluk (2006); Cottarelli, Dell’Ariccia, and Vladkova-Hollar (2003); Duenwald, Gueorguiev, and Schaechter (2005); Hilbers and others (2005); and Terrones (2004).

¹² Of course, there were exceptions, such as the “two-pillar” policy of the European Central Bank and the more credit-responsive approach of the central banks in India and Poland.

institutions, was ill-equipped to deal with aggregate credit dynamics.¹³ Second, with regard to asset price bubbles, there was the long-standing view that it was better to deal with the bust than to try to prevent the boom because unhealthy booms were difficult to separate from healthy ones, and in any event, policy was well equipped to contain the effects of a bust.

The crisis, preceded by booms in many of the hardest-hit countries, has challenged that view. In its aftermath, calls for more effective tools to monitor and control credit dynamics have come from several quarters (see, for instance, FSA 2009). And the regulatory framework has already started to respond. For instance, Basel III introduced a capital buffer range that is adjusted “when there are signs that credit has grown to excessive levels” (Basel Committee on Banking Supervision 2010).

Yet, while a consensus has emerged that credit booms are too dangerous to be left alone, there is little agreement on what the appropriate policy response should be. First is the issue of whether and when to intervene. After all, not all booms end up in crises, and the macro costs of curtailing credit can be substantial. Second, should intervention be deemed necessary, there are questions about what form such intervention should take. Is this a natural job for monetary policy, or are there concerns that favor other options? This presentation (based on a recently published paper [Dell’Ariccia and others 2016]) explores past credit booms with the objective of assessing the effectiveness of macroeconomic and macroprudential policies in reducing the risk of a crisis, or at least limiting its consequences.

It should be recognized at the outset that a more interventionist policy will inevitably imply some trade-offs. No policy tool is a panacea for the ills stemming from credit booms, and any form of intervention will entail costs and distortions, the relevance of which will depend on the

¹³ Again, there were exceptions, like the Bank of Spain’s dynamic provisioning, the loan eligibility requirements of the Hong Kong Monetary Authority, and the multipronged approach of the Croatian National Bank.

characteristics and institutions of individual countries. With these caveats in mind, the analysis in the paper brings the following insights:

First, credit booms are often triggered by financial reform, capital inflow surges associated with capital account liberalization, and periods of strong economic growth. They tend to be more frequent in fixed exchange rate regimes, when banking supervision is weak, and when macroeconomic policies are loose.

Second, not all booms are bad. About a third of boom cases end up in financial crises. Others do not lead to busts but are followed by extended periods of below-trend economic growth. Yet many result in permanent financial deepening and benefit long-term economic growth.

Third, it is difficult to tell “bad” from “good” booms in real time. But there are useful telltale signs. Bad booms tend to be larger and last longer (roughly half of the booms lasting longer than six years end up in a crisis).

Fourth, monetary policy is, in principle, the natural lever with which to contain a credit boom. In practice, however, capital flows (and related concerns about exchange rate volatility) and currency substitution limit its effectiveness in small open economies. In addition, because booms can occur in low-inflation environments, a conflict may emerge with its primary objective.

Fifth, given its time lags, fiscal policy is ill-equipped to stop a boom on a timely basis. But consolidation during the boom years can help create fiscal room to support the financial sector or stimulate the economy if and when a bust arrives.

Finally, macroprudential tools have at times proven effective in containing booms, and more often in limiting the consequences of busts, thanks to the buffers they help to build. Their more targeted nature limits their costs, although their associated distortions, should these tools be abused, can be severe. Moreover, circumvention has often been a major issue, underscoring the importance of careful design, coordination with other policies (including across borders), and close supervision to ensure the efficacy of these tools.

All of the above raise important questions about the optimal policy response to credit booms. Our view is that when credit booms coincide with periods of general overheating in the economy, monetary policy should act first and foremost. If the boom lasts and is likely to end up badly or if it occurs in the absence of overheating, then macroprudential policy should come into play. Preferably, the use of macroprudential policy should be in combination and coordination with macroeconomic policy, especially when macroeconomic policy is already being used to address overheating of the economy.

Questions also remain about the optimal mix and modality of macroprudential policies, also in light of political economy considerations and the type of supervisory arrangements in the country. Political economy considerations call for a more rules-based approach to setting macroprudential policy to avoid pressure from interest groups to relax regulation during a crisis. But such considerations have to be weighed against the practical problems and unintended effects of a rules-based approach, such as the calibration of rules with rather demanding data requirements and the risk of circumvention in the presence of active earnings management. The design of a macroprudential framework should also consider the capacity and ability of supervisors to enforce such rules so that unintended and potentially dangerous side effects can be avoided.

Finally, policy coordination across different authorities and across borders may increase the effectiveness of monetary tightening and macroprudential policies. Cooperation and a continuous flow of information among national supervisors, especially regarding the activities of institutions that are active across borders, are crucial. Equally important is the coordination of regulations and actions among supervisors of different types of financial institutions. Whether and how national policymakers take into account the effects of their actions on the financial and macroeconomic stability of other countries is a vital issue, calling for further regional and global cooperation in the setting up of macroprudential policy frameworks and the conduct of macroeconomic policies.

References and Related Literature

Abiad, Abdul, Giovanni Dell’Ariccia, and Bin (Grace) Li. 2011. “Creditless Recoveries.” IMF Working Paper No. 11/58, International Monetary Fund, Washington.

Abiad, Abdul, Enrica Detragiache, and Thierry Tresselt. 2008. “A New Database of Financial Reforms.” IMF Working Paper No. 08/266, International Monetary Fund, Washington.

Adrian, Tobias, and Hyun Song Shin. 2009. “Money, Liquidity, and Monetary Policy.” *American Economic Review* 99 (2): 600–5.

Backé, Peter, Balázs Égert, and Tina Zumer. 2005. “Credit Growth in Central and Eastern Europe: Emerging from Financial Repression to New (Over)Shooting Stars?” Unpublished, Austrian National Bank.

Barajas, Adolfo, Giovanni Dell’Ariccia, and Andrei Levchenko. 2008. “Credit Booms: The Good, the Bad, and the Ugly.” Unpublished, International Monetary Fund, Washington.

Basel Committee on Banking Supervision. 2010. “Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems.” Bank for International Settlements, Basel.
<http://www.bis.org/publ/bcbs189.htm>.

Berger, Helge, Jakob de Haan, and Jan-Egbert Sturm. 2006. “Does Money Matter in the ECB Strategy? New Evidence Based on ECB Communication,” CESIFO Working Paper No. 1652 Center for Economic Studies, Munich.

Berger, Allen N., and Gregory F. Udell. 2004. “The Institutional Memory Hypothesis and the Procyclicality of Bank Lending Behavior.” *Journal of Financial Intermediation* 13: 458–95.

Bernanke, Ben, and Mark Gertler. 1989. “Agency Costs, Net Worth, and Business Fluctuations.” *American Economic Review* 79 (1): 14–31.

———. 1995. “Inside the Black Box: The Credit Channel of Monetary Policy Transmission.” *Journal of Economic Perspectives* 9 (4): 27–48.

Bank for International Settlements (BIS). 2011. "Macroprudential Policy Tools and Frameworks." Update to G20 Finance Ministers and Central Bank Governors. www.bis.org/publ/othp13.pdf.

Boissay, Frédéric, Oscar Calvo-Gonzales, and Tomasz Kozluk. 2006. "Is Lending in Central and Eastern Europe Developing Too Fast?" In *Financial Development, Integration and Stability*, edited by Klaus Liebscher, Josef Christl, Peter Mooslechner, and Doris Ritzberger-Grünwald. Cheltenham, U.K.: Edward Elgar Publishing.

Borio, Claudio. 2003. "Towards a Macroprudential Framework for Financial Supervision and Regulation?" *CESifo Economic Studies* 49 (2): 181–216.

———. 2009. "The Macroprudential Approach to Regulation and Supervision." *VoxEU.org*, April 14.
<http://www.voxeu.org/index.php?q=node/3445>.

———, and Philippe Lowe. 2002. "Asset Prices, Financial and Monetary Stability: Exploring the Nexus." BIS Working Paper No. 114, Bank for International Settlements, Basel.

Borio, Claudio, Robert McCauley, and Patrick McGuire. 2011. "Global Credit and Domestic Credit Booms." *BIS Quarterly Review* September: 43–57.

Borio, Claudio, and Ilhyock Shim. 2007. "What Can (Macro-) Prudential Policy Do to Support Monetary Policy?" BIS Working Paper No. 242, Bank for International Settlements, Basel.

Borio, Claudio, and Haibin Zhu. 2008. "Capital Regulation, Risk-Taking and Monetary Policy: A Missing Link in the Transmission Mechanism?" BIS Working Paper No. 268, Bank for International Settlements, Basel.

Brzoza-Brzezina, Michał, Tomasz Chmielewski, and Joanna Niedźwiedzińska. 2010. "Substitution between Domestic and Foreign Currency Loans in Central Europe: Do Central Banks Matter?" *European Central Bank Working Paper* No. 1187, European Central Bank, Frankfurt.

Caprio, Gerard, Daniela Klingebiel, Luc Laeven, and Guillermo Noguera. 2005. "Appendix: Banking Crisis Database." In *Systemic Financial Crises*:

Containment and Resolution, edited by Patrick Honohan and Luc Laeven. Cambridge, U.K.: Cambridge University Press.

Claessens, Stijn, Giovanni Dell’Ariccia, Deniz Igan, and Luc Laeven. 2010. “Cross-Country Experiences and Policy Implications from the Global Financial Crisis.” *Economic Policy* 25 (62): 267–93.

Claessens, Stijn, Michael Keen, and Ceyla Pazarbasioglu. 2010. “Financial Sector Taxation.” IMF report with background material presented to the G-20, International Monetary Fund, Washington.

Claessens, Stijn, Ayhan Kose, and Marco E. Terrones. 2012. “How Do Business and Financial Cycles Interact?” *Journal of International Economics* 87 (May): 178–90.

Cottarelli, Carlo, Giovanni Dell’Ariccia, and Ivanna Vladkova-Hollar. 2003. “Early Birds, Late Risers, and Sleeping Beauties: Bank Credit Growth to the Private Sector in Central and Eastern Europe and the Balkans.” IMF Working Paper No. 03/213, International Monetary Fund, Washington.

Crowe, Christopher W., Deniz Igan, Giovanni Dell’Ariccia, and Pau Rabanal. 2011. “How to Deal with Real Estate Booms: Lessons from Country Experiences.” IMF Working Paper No. 11/91, International Monetary Fund, Washington.

Decressin, Jörg, and Marco Terrones. 2011. “Credit Boom-Bust Cycles: Their Triggers and Policy Implications.” Box 1.2 in *World Economic Outlook*, September. Washington: International Monetary Fund.

Dell’Ariccia, Giovanni, Deniz Igan, and Luc Laeven. 2012. “Credit Booms and Lending Standards: Evidence from the Subprime Mortgage Market.” *Journal of Money, Credit, and Banking* 44 (2–3): 367–84.

Dell’Ariccia, G., D. Igan, L. Laeven, and H. Tong. 2016. “Credit Booms and Macroeconomic Stability.” *Economic Policy* 31 (86): 299–355.

Dell’Ariccia, Giovanni, and Robert Marquez. 2006. “Lending Booms and Lending Standards.” *Journal of Finance* 61 (5): 2511–546.

De Nicolò, Gianni, Giovanni Dell’Ariccia, Luc Laeven, and Fabian Valencia. 2010. “Monetary Policy and Bank Risk-Taking.” Staff Position Note, 2010/09 International Monetary Fund, Washington.

De Nicolò, Gianni, Giovanni Favara, and Lev Ratnovski. Forthcoming. “Externalities and Macroprudential Policy.” Staff Position Note, International Monetary Fund, Washington..

Drehmann, Mathias, Claudio Borio, and Kostas Tsatsaronis. 2011. “Anchoring Countercyclical Capital Buffers: The Role of Credit Aggregates.” BIS Working Paper No. 355, Bank for International Settlements, Basel.

Duenwald, Christoph, Nikolay Gueorguiev, and Andrea Schaechter. 2005. “Too Much of a Good Thing? Credit Booms in Transition Economies.” IMF Working Paper No. 5/128, International Monetary Fund, Washington..

European Central Bank (ECB). 1999. “The Stability-Oriented Monetary Policy Strategy of the Eurosystem.” ECB Monthly Bulletin January: 39–50.

Eichengreen, Barry, and Kris Mitchener. 2003. “The Great Depression as a Credit Boom Gone Wrong.” BIS Working Paper No. 137, Bank for International Settlements, Basel.

Enoch, Charles, and Inci Ötker-Robe. 2007. *Rapid Credit Growth in Central and Eastern Europe: Endless Boom or Early Warning?* New York, NY: Palgrave Macmillan.

Favara, Giovanni. 2003. “An Empirical Reassessment of the Relationship Between Finance and Growth.” IMF Working Paper No. 03/123, International Monetary Fund, Washington.

Financial Services Authority (FSA). 2009. “The Turner Review: A Regulatory Response to the Global Banking Crisis.” March, Financial Services Authority, London.

www.fsa.gov.uk/pubs/other/turner_review.pdf.

Gilchrist, Simon, and Egon Zakrajsek. 2008. “Linkages between the Financial and Real Sectors: An Overview.” Paper prepared for the Academic Consultants Meeting, Federal Reserve Board, October 3.

Gourinchas, Pierre-Olivier, Rodrigo Valdes, and Oscar Landerretche. 2001. "Lending Booms: Latin America and the World." *Economia* 1 (2): 47–99.

Hilbers, Paul, Inci Ötoker-Robe, Ceyla Pazarbasioglu, and Gudrun Johnsen. 2005. "Assessing and Managing Rapid Credit Growth and the Role of Supervisory and Prudential Policies." IMF Working Paper No. 05/151, International Monetary Fund, Washington.

Igan, Deniz, Alain Kabundi, Francisco Nadal De Simone, Marcelo Pinheiro, and Natalia Tamirisa. 2011. "Housing, Credit, and Real Activity Cycles: Characteristics and Comovement." *Journal of Housing Economics* 20 (3): 210–31.

Igan, Deniz, and Heedon Kang. 2011. "Do Loan-to-Value and Debt-to-Income Limits Work? Evidence from Korea." IMF Working Paper No. 11/297, International Monetary Fund, Washington.

Igan, Deniz, and Marcelo Pinheiro. 2011. "Credit Growth and Bank Soundness: Fast and Furious?" IMF Working Paper No. 11/278, International Monetary Fund, Washington.

International Monetary Fund (IMF). 2010. "Building Confidence." In *Europe Regional Economic Outlook*, October. Washington: International Monetary Fund.

www.imf.org/external/pubs/ft/reo/2010/eur/eng/ereo1010.pdf.

———. 2011a. "Macroprudential Policy: An Organizing Framework." International Monetary Fund, Washington.

www.imf.org/external/np/pp/eng/2011/031411.pdf.

———. 2011b. "Macroprudential Policy: An Organizing Framework - Background Paper." International Monetary Fund, Washington. www.imf.org/external/np/pp/eng/2011/031411a.pdf.

Jeanne, Olivier. 2008. "Dealing with Credit Booms and Busts: The Case for Prudential Taxation." Remarks at "Building an International Monetary and Financial System for the 21st Century: Agenda for Reform," conference organized by the Reinventing Bretton Woods Committee, New York, November 24–25.

— — —, and Anton Korinek. 2010. “Managing Credit Booms and Busts: A Pigouvian Taxation Approach.” NBER Working Paper No. 16377, National Bureau of Economic Research, Cambridge, Massachusetts.

Jiménez, Gabriel, Steven Ongena, José-Luis Peydró, and Jesús Saurina. 2011. “Macroprudential Policy, Countercyclical Bank Capital Buffers and Credit Supply: Evidence from the Spanish Dynamic Provisioning Experiments.” Working Paper, Bank of Spain [Banco de España], Madrid.

Jordà, Òscar, Moritz Schularick, and Alan M. Taylor. 2011. “Financial Crises, Credit Booms, and External Imbalances: 140 Years of Lessons.” *IMF Economic Review* 59 (June): 340–78.

Kane, Edward J. 1977. “Good Intentions and Unintended Evil: The Case against Selective Credit Allocation.” *Journal of Money, Credit, and Banking* 9 (1): 55–69.

Keen, Michael, and Ruud de Mooij. 2012. “Debt, Taxes, and Banks.” IMF Working Paper No. 12/48, International Monetary Fund, Washington.

King, Robert G., and Ross Levine. 1993. “Finance and Growth: Schumpeter Might Be Right.” *Quarterly Journal of Economics* 108 (3): 717–37.

Kiyotaki, Nobuhiro, and John Moore. 1997. “Credit Cycles.” *Journal of Political Economy* 105 (2): 211–48.

Kongsamut, Piyabha, and Jérôme Vandenbussche. Forthcoming. “The Eastern European Experience with Macroprudential Policies: Evidence from Bulgaria, Croatia, Romania and Serbia during the Latest Credit Boom-Bust Cycle.” IMF Working Paper, International Monetary Fund, Washington.

Kraft, Evan, and Tomislav Galac. 2011. “Macroprudential Regulation of Credit Booms and Busts: the Case of Croatia.” Policy Research Working Paper No. 5772, World Bank, Washington.

Kruszka, Michal, and Michal Kowalczyk. 2011. “Macro-Prudential Regulation of Credit Booms and Busts: The Case of Poland.” Policy Research Working Paper No. 5832, World Bank, Washington.

Laeven, Luc, and Fabian Valencia. 2010. "Resolution of Banking Crises: The Good, the Bad, and the Ugly." IMF Working Paper No. 10/46, International Monetary Fund, Washington.

Leigh, Daniel, Deniz Igan, John Simon, and Petia Topalova. 2012. "Dealing with Household Debt." Chapter 3 in *World Economic Outlook*, April. Washington: International Monetary Fund.

Levine, Ross. 2005. "Law, Endowments and Property Rights." *Journal of Economic Perspectives* 19 (3): 61–88.

———, Norman Loayza, and Thorsten Beck. 1999. "Financial Intermediation and Growth: Causality and Causes." Policy Research Working Paper No. 2059, World Bank, Washington.

Levine, Ross, and David Renelt. 1992. "A Sensitivity Analysis of Cross-Country Growth Regressions." *American Economic Review* 82 (4): 942–63.

Lim, Cheng Hoon, Francesco Columba, Alejo Costa, P. Kongsamut, A. Otani, M. Saiyid, T. Wezel, and X. Wu. 2011. "Macroprudential Policy: What Instruments and How to Use Them? Lessons from Country Experiences." IMF Working Paper No. 11/238, International Monetary Fund, Washington.

Maddaloni, Angela, and José-Luis Peydró. 2011. "Bank Risk-Taking, Securitization, and Low-Interest Rates: Evidence from the Euro-area and U.S. Lending Standards." *Review of Financial Studies* 24 (6): 2121–65.

Magud, Nicolas E., Carmen M. Reinhart, and Esteban R. Vesperoni. 2012. "Capital Inflows, Exchange Rate Flexibility, and Credit Booms." IMF Working Paper No. 12/41, International Monetary Fund, Washington.

Mendoza, Enrique, and Marco Terrones. 2008. "An Anatomy of Credit Booms: Evidence from Macro Aggregates and Micro Data." NBER Working Paper No. 14049, National Bureau of Economic Research, Cambridge, Massachusetts.

Merrouche, Ourda, and Erlend Nier. 2010. "What Caused the Global Financial Crisis? Evidence on the Drivers of Financial Imbalances 1999–

2007.” IMF Working Paper No. 10/265, International Monetary Fund, Washington.

Mitra, Srobona, Jaromír Beneš, Silvia Iorgova, Kasper Lund-Jensen, Christian Schmieder, and Tiago Severo. 2011. “Toward Operationalizing Macroprudential Policies: When to Act?” Chapter 3 in Global Financial Stability Report, September. Washington: International Monetary Fund.

Ostry, Jonathan D., Atish Ghosh, Karl Habermeier, Luc Laeven, Marcos Chamon, Mahvash S. Qureshi, and Annamaria Kokenyne. 2011. “Managing Capital Inflows: What Tools to Use?” IMF Staff Discussion Note No. 11/06, International Monetary Fund, Washington.

Rajan, Raghuram G. 1994. “Why Bank Credit Policies Fluctuate: A Theory and Some Evidence.” *Quarterly Journal of Economics* 109 (2): 399–441.

Rajan, Raghuram G., and Luigi Zingales. 1998. “Financial Dependence and Growth.” *American Economic Review* 88 (3): 559–86.

Rancière, Romain, Aaron Tornell, and Frank Westermann. 2008. “Systemic Crises and Growth.” *Quarterly Journal of Economics* 123 (1): 359–406.

Reinhart, Carmen M., and Kenneth S. Rogoff. 2004. “The Modern History of Exchange Rate Arrangements: A Reinterpretation.” *Quarterly Journal of Economics* 119 (1): 1–48.

Reinhart, Carmen M., and Kenneth S. Rogoff. 2009. “The Aftermath of Financial Crises.” NBER Working Paper No. 14656, National Bureau of Economic Research, Cambridge, Massachusetts.

Ruckes, Martin. 2004. “Bank Competition and Credit Standards.” *Review of Financial Studies* 17 (4): 1073–102.

Schularick, Moritz, and Alan M. Taylor. 2009. “Credit Booms Gone Bust: Monetary Policy, Leverage Cycles and Financial Crises, 1870-2008.” CEPR Discussion Paper No. 7570, Centre for Economic Policy Research, London.

Svensson, Lars E. O. 2003. “In the Right Direction, But Not Enough: The Modification of the Monetary-Policy Strategy of the ECB.” Briefing paper

for the Committee on Economic and Monetary Affairs (ECON) of the European Parliament.

Terrier, Gilbert, Rodrigo Valdés, Camilo E. Tovar, Jorge Chan-Lau, Carlos Fernández-Valdovinos, Mercedes García-Escribano, Carlos Medeiros, Man-Keung Tang, Mercedes Vera Martin, and Chris Walker. 2011. “Policy Instruments to Lean against the Wind in Latin America.” IMF Working Paper No. 11/159, International Monetary Fund, Washington.

Terrones, Marco. 2004. “Are Credit Booms in Emerging Markets a Concern?” Chapter 4 in World Economic Outlook, April. Washington: International Monetary Fund.

Vandenbussche, Jérôme, Ursula Vogel, and Enrica Detragiache. 2012. “Macroprudential Policies and Housing Prices: A New Database and Empirical Evidence for Central, Eastern, and South-Eastern Europe.” IMF Working Paper 12/303, International Monetary Fund, Washington.

Woodford, Michael. 2008. “How Important Is Money in the Conduct of Monetary Policy?” *Journal of Money, Credit and Banking* 40 (8): 1561–98.

Wong, Eric, Tom Fong, Ka-fai Li, and Henry Choi. 2011. “Loan-to-Value Ratio as a Macroprudential Tool: Hong Kong’s Experience and Cross-Country Evidence.” Working Paper No. 01/2011, Hong Kong Monetary Authority, Hong Kong SAR.

KOREA'S CREDIT CYCLE EXPERIENCE

Yongbeom Kim¹⁴

The Korean economy today remains resilient despite the global downturn (*please see the corresponding presentations, including figures and tables*). Korea's record high credit rating in 2016 reflects its sound macroeconomic fundamentals and stable financial system. The road to where we stand today, however, was a bumpy one. We went through three distinctive credit cycles in Korea over the past 20 years, which gave regulators hard-earned lessons with which to weather future economic turbulence.

In 1997, Korea had a credit cycle triggered by a rapid rise in corporate debt. The sector's debt-to-equity ratio nearly doubled from 1996 to 1997 as companies borrowed heavily to expand their capacity both at home and abroad. Such leveraged investments, normally a "good" thing, became highly risky when they did not generate returns. In the late 1990s, the corporate sector's return on equity fell sharply as its leverage went up. Moreover, the structure of the debt was vulnerable. Short-term dollar borrowing caused currency and maturity mismatch risks. Another vulnerability was that the corporate leverage binge was driven by the rapid growth of shadow banking. Merchant banks and investment trusts were the main vehicles for the leverage problem. They were regulated by less stringent standards than those of banks. The nonperforming loan ratio of merchant banks, which stood at just 4.5 percent by domestic standards in 1997, rose sharply to 12.4 percent as reassessed by global standards.

Korea was not immune to the full-blown crisis that swept Asian countries in 1997; however, the policy responses we took became a textbook example for many other countries. The key to Korea's quick recovery was our accurate diagnosis of the illness, which led to the best

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cure for the problem. We recognized the problem as a balance sheet cycle; therefore, our policy was focused on restoring the banking system, whereas many other countries at that time came up with growth-focused measures. The Korean banking system was recapitalized and reshaped through closures and mergers and acquisitions. A resolution trust corporation like KAMCO was created to deal with toxic assets from companies and banks. Insolvent companies were forced to go bankrupt to address excess capacity. Financial supervisory and regulatory functions, divided among different agencies and organizations, were integrated into a single control tower agency for the entire financial system. Thanks to these policy efforts, the Korean economy rebounded strongly with solid growth and stability.

In 2003, another credit cycle turned in Korea, driven by a consumer credit binge this time. Tighter regulations on corporate lending caused a “balloon effect” that drove a surge in consumer lending. As Korean consumers went on a credit-fueled spending binge in the early 2000s, the country’s credit card businesses grew more than 10-fold in just two years. Back then, we did not yet have a proper risk management system in place. As a consequence, credit card defaults sharply increased because many were struggling to pay their debt.

Our policy response was focused on creating a new credit rating system to assess consumers’ creditworthiness. We fostered private credit bureaus and let them use a broader range of credit information in addition to the data on public credit registries, which resulted in more accurate assessments of consumer credit risks. The household delinquency rate, which had risen sharply in the early 2000s, stayed at steadily low levels during the global financial crisis in 2008.

In the early 2000s, another risk rose in the Korean economy amid the global liquidity surge caused by the Fed’s monetary easing. It was a house price bubble in the property market. Our policy measures were intended to target speculative activities to ensure that such measures did not have chilling effects on the wider economy. The government introduced macroprudential measures, which targeted “problem” areas by limiting loan-to-value ratios in 2002 and debt-to-income ratios in 2005. Although there were some micro-adjustments to take various

evolving economic conditions into account, the measures successfully curbed a rapid rise in property prices and removed most of speculative elements from the market.

What policy implications can we draw from our past experiences?

First, credit cycles are inevitable. The key is properly managing them. In the 1990s, when the Korean economy was growing fast, a credit crisis was only a remote concern. Back then, we thought the corporate sector debt-to-equity ratio of 400 percent was fine. However, it turned into a nightmare. Still, figuring out how much debt is fine or at which levels it starts to get risky remains an ongoing challenge for regulators. One thing we learned from our past experience is that debt could become risky at any level when profits fall and growth slows. Another important challenge for us is finding the right regulatory balance to avoid the “policy pendulum” effect. There is a tendency for regulators to set regulations too tight after a credit cycle that they believed to have been triggered by regulations that were too loose. However, such a drastic policy swing could cause an unexpected shock in the macro economy.

Second, managing credit cycles is a matter of determining how to restore the economy’s impaired balance sheet. Historically, many countries have mistakenly confused balance sheet problems with income statement ones, resulting in incorrect policy responses. Expansionary stimulus alone cannot prevent a credit bust. Growth takes place only when the balance sheet is sound. Credit-driven excess capacity is near-term GDP positive but longer-term economic and financial system negative. In managing credit cycles, it is important for regulators to move swiftly in dealing with pockets of problems before the problems worsen into “too-big-to-fail” situations.

Third, emerging countries need to manage their credit cycles more prudently than G7 countries. The G7 countries have hard currencies, meaning they have more room for using economic stimulus in dealing with leverage problems. However, emerging economies cannot fix credit cycles with more credit. It is among the perils of being a medium-sized open economy, like Korea. Policy makers also need to be

aware that eliminating business cycles for political gain will only lead to more risks piling up in the economy.

CHINA AND EMERGING MARKET CRISIS TAXONOMY

Jonathan Anderson¹⁵

KEY POINT: Government carve-outs and recapitalization are generally tools for post crisis clean-up rather than crisis prevention, and this will likely be the case in China as well **(please see the corresponding presentations, including figures and tables)**.

In this note we would like to examine the myth that China cannot have a financial crisis because it can easily recapitalize banks and fiscalize bad debt.

The idea here is simple. China is not only a closed economy; it is also a heavily state-driven economy, and the lion's share of the credit stimulus boom of the past six years is little more than state-owned banks lending to government-affiliated borrowers.

As a result, we should not be too worried about the level of corporate debt in the system, or implied nonperforming loan (NPL) ratios. When push comes to shove, the government can easily take bad debts onto its own books and recapitalize banks if needed, just as it did in the aftermath of the 1990s bubble.

This would increase the public debt ratio, but the government still has fiscal room (and in any case effectively sets interest rates as well). And banks' asset quality would be made whole again, their capital would be replenished

... ergo, no crisis.

Right?

Not really.

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In fact, it is not the size of outstanding debt in the economy or the quality of assets on bank balance sheets (or, for that matter, the level of capital solvency) that leads to a financial crisis.

Instead, it is the underlying funding risk—something that neither government carve-outs nor recapitalization truly address. These are measures that clean up messes, but do not inherently prevent them in the first place.

A simple example:

To see why, consider the following massively stylized example with three simple charts.

We start with a bank that has only two items on its balance sheet: loan assets of 100 on one side, matched by “plain vanilla” deposit liabilities of 100 on the other (Chart on page 4 of corresponding presentation-see appendix).

Now let’s create a crisis scenario. Assume that the bank goes on a huge credit binge over the ensuing five years, tripling the amount of loans on its balance sheet and rapidly lowering the quality of those loans as well. And assume further that only half of this binge was funded with standard “safe” household and corporate deposits, with the rest coming either from shady short-term arrangements with local nonbank financial institutions or equally short-maturity external borrowing.

Now the balance sheet looks like this (Chart on Page 5).

Where is the crisis risk? It is in the circled portion of the chart (Page 6).

As you can see, implicit funding instability has skyrocketed, as a full one-third of the bank’s liabilities can be called at short notice, whether because of concerns about the bank’s own ability to repay, sudden stress in nonbank lenders, or a macro reversal of foreign capital inflows. This is precisely what lay at the heart of every bank credit-related emerging market (and developing market) crisis.

And now let’s imagine that the government, alarmed at the run-up of debt in the economy and the associated rise in NPLs in the banking

system, decides to take the most extreme action possible: it takes every last loan off the banks' books and replaces them with AAA government bonds, that is, a 100 percent carve-out.

What does the balance sheet look like now?

As shown in the Chart on Page 7, the entire asset side has been switched from (crappy) loans to government debt.

But does this reduce the risk of a banking crisis?

It certainly can at the margin, in the sense that NPLs and asset quality can no longer serve as a catalyst for funding pullout. However, it does nothing to address the fundamental problem, that is, sharply heightened liability-side liquidity exposure. Specifically, the circled green bar in Chart 3 is exactly the same size it was in Chart 2, and thus still leaves the bank open to other liquidity-related shocks that can cause a Minsky lockup.

How does this relate to China?

We have only two things to stress here.

The first is that we do not mean to imply that the Chinese financial system today is facing the same magnitude of unstable liability exposures we showed in the sample charts above. This is still far from the case.

But second, nonetheless, the longer the credit and debt boom goes on, the closer China gets to those crisis funding risks.

SESSION II

INTERNATIONAL EXPERIENCE IN RESOLVING DEBT PROBLEMS AND DELEVERAGING

Part II: Corporate Debt and Leverage

RESOLVING CHINA'S DEBT PROBLEM

Markus Rodlauer and Wojciech Maliszewski¹⁶

China's high credit growth points to macroeconomic risks (*Please see the corresponding presentations, including figures and tables*). In response to the global financial crisis and collapse in external trade, China deployed policies to boost domestic demand supported by high credit growth, which averaged about 20 percent per year between 2009 and 2015—much higher than nominal GDP growth and the previous trend. The credit-to-GDP ratio rose from about 150 percent to more than 200 percent over the same period as a result, and stood at 15–25 percent above the level consistent with the historical trend at end-2015—a potentially dangerously high “credit gap.” The gap is comparable to that of countries that experienced painful deleveraging.

Credit growth in China is concentrated in the corporate sector. The rapid increase in credit could reflect financial deepening in a fast-growing economy. But the credit-to-GDP ratio for the corporate sector is significantly higher in China than in countries at a similar level of development and indeed exceeded the level typical for developed economies. This indicates that credit growth has been faster than that consistent with a normal path of financial deepening.

High corporate investment after the global financial crisis has been the main factor behind sizable credit growth. Credit has financed a broad-based scaling up of infrastructure spending and real estate investment, which has then supported rapid development in upstream industries such as steel, cement, and coal. In addition, corporate sector borrowing has increased in response to growing payments arrears.

The use of capital has become less efficient, hitting financial

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results. The “efficiency of credit” (incremental GDP growth relative to an incremental increase in credit) has been declining. Growth payoffs from additional capital spending have been falling despite the additional borrowing to finance balance sheet expansion. As a result, the corporate leverage ratio has been rising while returns on assets have been steadily falling, suggesting deteriorating debt-servicing capacity. This is most pronounced in real estate, construction, and related upstream activities.

State-owned enterprises (SOEs) have been more leveraged and less profitable than the private sector. They have acted partly as a conduit for policy-driven investment. Soft budget constraints (access to cheap financing by state-owned banks underpinned by implicit guarantees by the government) have also contributed to the large buildup of leverage in SOEs. IMF staff estimates suggest that implicit guarantees translate to a 4–5 notch upgrade in credit ratings, and appear to lower borrowing costs by about 1–2 percentage points. Because borrowing costs are not commensurate with returns and risks, they distort the allocation of resources and promote inefficiency.

Banks’ credit quality has been deteriorating accordingly. Reported nonperforming loans and special mention loans have been on the rise, although still remain low (at about 5½ percent of total loans) and manageable given banks’ buffers. However, IMF staff estimates based on corporate data suggest that potential “debt at risk” amounts to 15½ percent of the total corporate loan portfolio, which could yield an estimated potential loss of about 7 percent of GDP when applying a 60 percent loss ratio on these loans (see the April 2016 *Global Financial Stability Report* for details).

The authorities recognize the problem and are developing plans to tackle it. They have announced reductions of 10–15 percent of existing capacity in coal and steel over the next three to five years, together with a RMB 100 billion restructuring fund to absorb the welfare costs for an expected 1.8 million laid-off workers, signaling firm intent to reduce excess capacity and restructure the economy. But the focus on operational restructuring in overcapacity sectors is too narrow, and little progress has been made in recognizing and sharing the burden of losses in the financial system. In addition, overall progress in SOE reforms has

been slow, and the current approach does not address the issue of tightening budget constraints given that implicit guarantees are still in place, and promoting mergers and acquisitions among stronger and weaker SOEs does not help in imposing financial discipline. Cases of mini-defaults among Chinese firms have been rising, but corporate debt workouts are currently handled on a case-by-case basis and do not seem to promote corporate restructuring.

China needs a comprehensive, proactive strategy to address the debt problem. Key elements should include the following:

- *Identify companies in financial difficulty (triage).* This could be done through a market-based approach (driven by creditors) or by a setting up a separate entity vested with sufficient legal and political powers (driven by the government).
- *Loss recognition.* Proactively recognize losses in the financial system through an enhanced supervisory and regulatory framework.
- *Burden sharing.* Once the losses have been recognized, they have to be allocated among the indebted firm, its creditors, and local and central governments. This should consider moral hazard (imposing costs on those whose decisions led to the losses), capacity to repay, and social consequences. Mechanisms should be developed to facilitate debt workouts (for example, debt for equity conversions).
- *Corporate restructuring.* Corporate restructuring and governance reform—particularly in SOEs—must also be a part of the process. Otherwise losses will resume.
- *Hardening budget constraints.* Additional measures (for example, regulatory reforms, particularly in the bond market) are needed to harden budget constraints of firms, and in particular to remove implicit guarantees.

Supporting policies are also needed for successful corporate restructuring, including the following.

- *Enhancing the legal framework.* A long-term goal is to improve legal institutions to handle insolvencies. But large-scale and expedited

restructuring requires out-of-court mechanisms to complement the existing framework.

- *Minimizing the hit to near-term growth and employment* (and helping those that are affected). Corporate restructuring will have short-term economic costs. These costs will ultimately be offset by activity and employment created in new sectors, but supportive mechanisms to facilitate this transition—such as strengthening the social safety net, retraining, and easing restrictions on migration—are needed.
- *Improving local government fiscal discipline*. Boundaries between public and private debt are blurred. Local governments have been borrowing off-budget through local government financing vehicles, which are nominally part of the corporate sector, but in reality they are part of the public sector. Local governments still face incentives to engage in such off-budget activity.

The enhanced debt-restructuring strategy could be deployed on a pilot basis involving a small number of SOEs in a sector with clear overcapacity and experiencing diverse degrees of distress. The pilot could be based on a predominantly out-of-court approach, conducted under the oversight of a SOE restructuring task force consisting of the relevant institutions for corporate debt restructuring and using independent expert valuations. Once the target enterprises are selected, the pilot could proceed according to the following steps:

- *Determining fair value of claims* held by major creditors of the target enterprises by the China Banking Regulatory Commission, reflecting the losses in the banks' books.
- *Debt workouts*. Two alternative approaches could be considered: (1) sale of the loans, at fair value, to a newly established asset management company; or (2) establishment of a creditor committee by the relevant banks.
- *Restructuring or resolution of the target enterprises*. Restructuring or resolution should be based on the assessment of the asset management company or creditor committee on the viability of each target enterprise.

- *Transfer of claims and ownership.* Equity acquired by banks in debt workouts could be sold to private investors or to SOEs with the appropriate governance mechanisms.
- *Assistance to laid-off workers,* using the restructuring fund.

The proactive strategy would have short-term costs, but these costs would be more than offset by longer-term gains. The IMF staff's illustrative scenarios suggest that the short-term growth slowdown is mainly driven by output and employment cuts in overleveraged and overcapacity industries. This, however, gradually gives way to higher production and employment as labor is reallocated elsewhere, partly to services. The reallocation produces higher and more sustainable growth in the future, with less investment and credit, but higher total factor productivity growth. The simulation shows that growth in the proactive scenario will temporarily dip to 6 percent by 2017 (which would be 5½ percent excluding some assumed high-quality fiscal stimulus), but will then pick up and maintain a rate of 6.5 percent in the medium term. The credit-to-GDP ratio would stabilize in the short term, while gradually declining to more sustainable levels in the medium term.

A FEW THOUGHTS ON “DELEVERAGING”

Ma Jun¹⁷

Key points: (1) The very high and rising leverage ratio in China could increase the probability of financial stress. (2) The main reason for these developments is that a large share of credit has been taken up by the real estate sector and by state-owned enterprises. (3) To address the real estate issues, it is imperative that the real estate tax system be reformed. (4) Also, to avoid systemic risks in the banking sector, it will be critical to harden the budget constraint of state-owned enterprises and local government financing platforms (please see the corresponding presentations, including figures and tables).

The very high and rising leverage ratio among Chinese enterprises will increase risks in the economy as well as the probability of stress in the financial system. There is a growing consensus among Chinese and international academics that this is indeed a major challenge China is facing. There are two main reasons behind the rapid rise in China’s leverage ratio over the past decade or so: the first is the rapid expansion of the share of the real estate sector in the economy and very fast rise in housing prices; the second is that state-owned enterprises, including local government financing platforms, are taking up too large a share of credit, reflecting soft budget constraints.

THE ORIGIN OF HIGH LEVERAGE AS SEEN IN THE DATA ON THE SECTOR-BASED LEVERAGE RATIO AND THE USE OF CREDIT

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A variety of data and analyses have shown that the excessive development of the real estate sector and the inefficient use of significant financial resources are the main contributors to the high and rising leverage ratio of Chinese enterprises.

According to our estimate, in 2014, the asset-liability ratio of real estate developers was approximately 70 percent. The asset-liability ratio of state-owned enterprises was approximately 65 percent. Both were significantly higher than the asset-liability ratio of other enterprises, that is, non-real-estate, privately owned enterprises, which stood at approximately 40 percent. In addition, the balance of RMB loans held by financial institutions, including real estate development loans, individual housing loans, and low-income housing development loans, accounted for only 2 percent of the total loan balances held by financial institutions in 1988. But the ratio gradually increased to 25 percent by 2015. According to another estimate, the outstanding amount of loans and bonds for state-owned enterprises and state-owned holding companies stood at 37 trillion RMB at the end of 2015, accounting for 27 percent of the outstanding amount of loans and bonds in total social financing (TSF). Data from the Ministry of Finance show that between 2013 and 2015, the total liability of state-owned enterprises rose by 33 percent, much faster than the 21 percent growth of outstanding liabilities in aggregate TSF.

According to our preliminary estimates, credit to the housing sector and state-owned enterprises together account for about 50 percent of total credit, while the two sectors only contribute about 30 percent of GDP.

How Housing Prices Have Raised the Leverage Ratio According to the Quantity Theory of Money

From the perspective of the quantity theory of money, which explains the relationship between money and prices, most people generally use the function $MV = PY$ to do the calculation, where M is $M2$, V is the velocity of money, P is the GDP deflator, and Y is real GDP (value added in goods and services). Because the growth differential between the calculated $M2$

and PY is excessively large (about 6 percent annually over the past 10 or more years), it can only be explained by the unexplainable “declining V.”

However, the choice of indicators in the above function is probably a misunderstanding of the quantity theory of money. The original purpose of the quantity theory of money was to find an indicator for economic activity that can explain the demand for money. The indicator should be “transactions that require the support of the monetary medium,” rather than value added in production activities or GDP.

As a matter of fact, over the past decade or more, transactions that require the support of the monetary medium have not been limited to transactions in goods and services. They have increasingly included asset transactions such as real estate transactions. These include secondary market property transactions, which create very little GDP but nonetheless require significant amounts of money. In addition, if money supports transactions rather than GDP, then the price (P) used in the quantity theory of money should be the prices of transactions, including goods, services, and assets. This price (P) should be different from the GDP deflator currently used.

To fully reconstruct the calculation method of the quantity theory of money, we must create a new time series T (quantity of transactions) and a new deflator, which includes price indices for goods, services and properties. Sufficient data to construct T are lacking, but constructing a new deflator that includes real estate prices is relatively easier. We construct a new deflator with 10% weight for a comparable housing price indicator (provided by the Tsinghua University Henglong Real Estate Research Center) and 90 percent weight for the original GDP deflator. Calculating the growth differential between M2 and new nominal GDP (using the new nominal GDP growth rate calculated by the new deflator), we find that the M2-nominal GDP growth differential decreases by 35 percent from the previous calculation. In this sense, housing prices alone can explain about one-third of the rise in the leverage ratio in China. From an intuitive perspective, against the background of a significant rise in housing prices, money supply has to rise sharply to meet the need arising from real estate transactions.

HOW TO DELEVERAGE IN THE REAL ESTATE SECTOR

An important reason that the leverage ratio in China remains high and continues to rise is that too much credit is going to the real estate sector. In addition, the housing-price-to-income ratio in urban China is nine times, which is the highest among major countries and far higher than that in the United States, where the ratio is four. China's real estate enterprises leverage ratio is also significantly higher than that of similar enterprises in many other countries. What is even more worrisome are the demographic prospects in China. Given China's demographics, in the next three decades, housing purchases due to household formation will continue to decline. The gradual contraction of demand will make leverage in the real estate sector even more risky.

In Germany, two sets of policy tools played an important role in preventing excessive real estate sector development and excessive use of leverage. The first was taxation. Germany imposed a 15 percent capital gains tax, a 3.5 percent transaction tax, and a 1.5 percent property holding tax for real estate transactions. The high tax burden effectively suppresses investment and speculative real estate investment and, by suppressing demand, prevents housing prices from rising too fast. Therefore, over the past two decades, housing prices largely rose in line with Germany's consumer price index (CPI). In China, however, over the past 10 years, the annual rate of comparable housing price increases in large and medium-sized cities exceeded that of the CPI by 11.5 percentage points, on average. The second tool used by Germany has been to strictly impose a mortgage down payment ratio (LTV ratio). Partly because of the implementation of these real estate policies that are aimed at controlling bubbles, the ratio of M2 to GDP in Germany is less than 90 percent, substantially lower than China's 206 percent.

Implementing a set of German-style policies requires great determination. Although these policies may help avoid real estate bubbles and reduce financial risks in the medium and long terms, in the short and medium terms, they may create downward pressure on

economic growth. Some local governments, developers and property owners will likely oppose such policies.

How to Lower Leverage in State-Owned Enterprises

There are two issues in deleveraging in the state-owned enterprise sectors: reducing excess debt stock and controlling debt growth. With regard to existing debt stock, the problem is how to dispose of debt already incurred by many local government financing vehicles (LGFV) and state-owned enterprises. In the short term, one solution is to transfer the leverage to the government, that is, to convert part LGFV's debt and debt of state-owned enterprises into formal government debt. This will not lower the country's overall leverage ratio, but transferring part of the enterprises' debt to the government will lower systemic risks because government debt levels are still moderate.

Specifically, reducing the existing stock of debt should include the following:

- *Allowing some zombie companies to go bankrupt and banks to write off the corresponding debt;*
- *Market-based debt-to-equity conversions;*
- *Setting up asset management companies within the banking system;*
- *The establishment of additional asset management companies by the government; and*
- *Lowering corporate taxes.*

A more important and more difficult problem is how to prevent LGFVs under new disguises and state-owned enterprises without hard budget constraints from taking on new debts, hence renewing the rise in leverage and financial risks, after the existing stock of debt is disposed of. To root out the problem, the issue of soft budget constraints must be addressed. To enforce hard budget constraints, it will be important to address the following issues head on:

- *Promote state-owned enterprise equity structure reform;*
- *Increase the transparency of local government finances;*
- *Allow some state-owned enterprises and local government financing platforms to default under the condition of no systemic risks; and*
- *Ensure that the rating companies' bond ratings reflect credit risks.*

DEALING WITH CHINA'S DEBT CHALLENGE

WANG Tao¹⁸

Almost everyone is concerned about China's debt problem (*Please see the corresponding presentations, including figures and tables*). We estimate that China's total non-financial sector debt stood at 260 percent of GDP as of 2015, but it is the rapid increase of leverage that is most worrying for investors—China's debt-to-GDP ratio rose by almost 100 percentage points since the global financial crisis. Despite the government's call to reduce leverage, China's debt continues to grow rapidly and is expected to rise by another 20 percentage points of GDP in 2016. Before long, the debt-to-GDP ratio could exceed 300 percent. While leverage in the household sector is modest and overall government debt is moderate, China's corporate sector is among the most levered in the world, with debt totaling more than 150 percent of GDP. As debt has risen rapidly to such a high level, the overall interest burden in the economy has increased substantially in recent years even as nominal GDP growth slowed, implying declining debt-service ability.

Why has China's debt grown so rapidly in recent years? One of the strongest bull arguments on China's debt sustainability has been that debt has been used to finance investment and build assets, unlike in many other countries where debt was used to finance consumption or welfare. However, this argument is only valid if debt is used to finance productive investment and productive assets are effectively deployed.

In the case of China, investment indeed rose as a share of GDP since the global financial crisis, as the government sought to boost domestic demand to offset external shocks with credit-fueled investment. Over this period, China's investment became more credit intensive for a couple of important reasons: (1) the share of public investment rose as corporate investment slowed, and public investment

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is almost 100 percent financed by debt; and (2) as corporate sector earnings dropped, corporations had to rely more on external financing from the financial sector rather than on their own retained earnings to fund both investment and working capital for daily operations.

However, debt and investment have increasingly gone into nonproductive sectors. In recent years, nonproductive assets such as real estate and construction rose much faster than manufacturing or industrial assets, and they were funded by even faster debt growth. In the industrial sector, while assets also rose rapidly, returns on assets have been declining, resulting in growth that is more dependent on debt. One reason is perhaps the inefficient allocation of financial resources—debt in the less-profitable state-owned enterprises rose much faster than in non-state-owned enterprises, and excess capacity sectors continued to occupy resources. In addition, while public investment in infrastructure may generate returns in the long term, it does not generate cash flow in the short term, which means that the government needs to raise more debt to continue to finance public investment year after year.

The increasing need to finance interest payments on existing debt has been another contributing factor to the recent rapid increase in debt. As corporate profitability and cash flows weaken, many companies do not have enough cash flow to pay interest and have to borrow for such purposes. UBS bank analysts have shown that nonfinancial A-share companies whose earnings before interest, taxes, depreciation, and amortization cannot cover their financing costs accounted for 11.7 percent of total nonfinancial A-share liabilities as of the first half of 2015. A similar study by the IMF more recently put this ratio at 15.5 percent. We estimate that about 10 percent of new debt in 2015 was used to service interest payments.

As alarming as the above trends may sound, China's high domestic savings, extensive government ownership of the financial sector, and controls on capital outflows mean that China's debt is mainly financed by domestic savings and that banking sector liquidity is not yet an issue. The official loan-to-deposit ratio is below 70 percent and the adjusted loan-to-deposit ratio (adjusted for banks' off-balance sheet credit and wealth management products) is still significantly below 100 percent. This means

banks, which dominate China's financial sector, are less vulnerable to credit market volatility and can continue to fund the credit cycle despite the high level of debt.

However, there are worrying developments that may increase the risk for the financial system: (1) rapid growth in shadow credit often designed to hide loans and/or nonperforming loans; (2) overly broad implicit guarantees are encouraging excessive risk taking and excessive credit risk; (3) large capital outflows are reducing domestic liquidity buffers, and the pressure will remain as the government seeks to liberalize the capital account and push for RMB internationalization; (4) reluctance to restructure corporate and bad debt, leading excess capacity sectors to continue to occupy financial resources; and (5) increased moral suasion on banks to continue to lend, weakening their commercial independence and risk management.

How can China contain the rising leverage? Stabilizing nominal GDP growth (the denominator) is obviously important. Measures include increasing fiscal spending, cutting taxes for labor and small businesses, improving the social safety net, and allowing for accommodative monetary policy. Stabilizing and reducing the debt (the numerator) is also important. Measures should include reducing financing costs by lowering interest rates, developing the bond market, and using the policy banks more. Debt restructuring such as local government debt swaps and corporate debt restructuring is also important. It is important to balance the need to deleverage and the need to stabilize growth, ensuring adequate liquidity but also preventing credit growing too rapidly. In addition, to keep liquidity at home and reduce systematic financial risk, the Chinese government will need to manage capital flows more closely and act to prevent the spillover of credit events through the interbank system.

Among the above measures, the most difficult but arguably most important one is corporate debt restructuring—closing "zombie" companies and reducing excess capacity while writing off their bad debt is critical. Debt restructuring should not be just about lowering corporate debt and making banks' balance sheets look better. It is also about exercising market discipline, reducing moral hazard, and allowing for

market clearance so that good companies can be more profitable and would want to invest again.

It may be important to reexamine the calls from various authorities and academics to "increase the support of financial sector to the real economy," including through financial liberalization and innovation. Since the main role of the financial sector is to provide financing for the real economy, increasing "support" means providing more credit (debt) to the real economy, that is, to increase leverage. Considering that China's non-financial sector debt (provided by the financial sector) has increased by almost 100 percentage points in the past seven years and already reached 260 percent of GDP, one could argue that China's financial sector has provided more than enough support to the real economy. It is perhaps time for China to stabilize the debt situation and contain the rapid increase of leverage, and to focus on structural reforms and clean up bad debt and "zombie" companies instead of focusing on ways to raise more debt. Financial liberalization and innovation can help prolong credit cycles by providing new channels for supplying debt, but it cannot solve the underlying issues of resource misallocation, excess capacity, and stagnation in productivity gains. At the end, hardening budget constraints and structural reforms are more critical than finding yet new ways to finance the same structure.

In recent months, investors have been concerned about China's corporate bond market selloff. Bond market yields dropped and credit spreads tightened last year when interest rates fell and the stock market corrected. More recently, as expectations for monetary policy changed and credit defaults increased, bond yields rose and the credit spread widened. Given the widely known implicit guarantees in the corporate bond market, corporate bonds have rarely defaulted in China. The recent increase of defaults is perhaps a small step toward more normal market conditions, which should help the bond market to better price risks in the future.

CORPORATE DEBT RESTRUCTURING: BEST PRACTICES AND INTERNATIONAL EXPERIENCES

Sean Hagan and Jose Garrido¹⁹

***Summary:** This presentation focuses on best practices in corporate debt restructuring and how these best practices may be incorporated in China (Please see the corresponding presentations, including figures and tables). The presentation is divided into three parts: the first part sets the foundations of the debt restructuring framework as applied to ordinary cases of companies in crisis. The second part explores the changes to this ordinary framework in crisis situations or situations of generalized corporate debt overhang. The last part looks at the Chinese environment and provides some suggestions for addressing corporate debt restructuring.*

A. The ordinary framework for debt restructuring is based on insolvency as a collective enforcement mechanism for creditor rights. The insolvency system seeks to maximize the value of the insolvency estate, benefiting the creditors and the economy in general. The ordinary insolvency system is based on rehabilitation of viable enterprises and the liquidation of unviable ones. The decision to rehabilitate or to liquidate should be made by the creditors on the basis of an assessment of the viability of the business. The key principle is that creditors should receive more under a rehabilitation plan than what they would receive in the liquidation of the enterprise. Participants in the rehabilitation process are protected by important safeguards: respect of the creditors' hierarchy, the existence of accurate information, the professional valuation of assets and projections, and the general oversight by the court.

¹⁹ Sean Hagan is Director, and Jose Garrido is Senior Counsel, Legal Department, IMF.

A rehabilitation plan may contain not just financial restructuring elements (debt reduction, debt rescheduling, debt conversion), but also operational restructuring elements, which may refer to any aspect of the business enterprise (including the sale of business units, changes in management, or the adjustment of workforce levels). A plan may also include a debt to equity conversion: it is crucial that the debt to equity conversion proposal be based on a valuation conducted by a professional, under the control of the court. If the value of the liabilities exceeds the value of the assets, essentially the shareholders have no value in the company, and the creditors may decide to convert their claims into shares, provided the business is viable and will generate a better return than liquidation of the company.

Liquidation performs a useful economic function: liquidation may consist in the sale of separate assets, but also in the sale of business units or the whole enterprise. In this way assets are redeployed to more productive uses, and creditors receive the proceeds of liquidation according to their position in the ranking (that is, the priority of secured creditors is respected).

The ordinary debt-restructuring system is based on an efficient institutional framework comprising the courts and the insolvency administrators. The system needs clearly defined roles and accountability for its actors.

B. In the case of a systemic corporate debt overhang, the debt-restructuring system needs to be enhanced. A situation of systemic debt overhang results in diminished economic growth and reduces the credit supplied by banks. This generates a vicious circle, with nonperforming loans and an absence of credit reinforcing each other, and the end result may be a financial crisis and a corporate crisis. The ordinary framework is not sufficient to address this problem: the high number of cases overloads the courts, and the depressed price of assets results in market failure, freezing the conduct of economic operators who wait for the situation to improve.

Experience recommends that an enhanced debt restructuring framework be established, with the active participation of the state, to address the problem of systemic corporate debt overhang. The enhanced debt-restructuring framework should be part of an overall strategy, and should include the following key features: coordination between relevant agencies, sometimes through the establishment of a centralized agency or task force; support by the state of the debt-restructuring mechanism; introduction of positive and negative incentives (carrots and sticks) designed to ensure that companies and banks engage in restructuring (these include supervisory measures to force debt write-downs, tax incentives, and the threat of insolvency for the debtor); and provision of professional mediation services. In any case, the design of the enhanced debt-restructuring system depends on the circumstances of each particular country, as illustrated by the experience of the Asian crisis in the late 1990s, or the more recent European crises. The most important point is that the state does not determine the *outcome* of the debt-restructuring negotiations: it only creates the incentives (carrots and sticks) and the framework for negotiation. Outcomes should be driven by the commercial principles that underline the ordinary debt-restructuring framework (that is, value maximization and assessment of the viability of the company on a company-by-company basis). In addition, the enhanced debt-restructuring system may rely on the general system to bind minority creditors to a rehabilitation plan.

The enhanced debt-restructuring system may include some additional features, such as a role for the state as lead creditor. The state may adopt such a role as a result of the acquisition of claims, especially through an asset-management company, or indirectly, as a result of the state recapitalization of banks.

There are multiple benefits that derive from establishing an enhanced debt-restructuring framework: sustainable restructurings, both financial and operational, are instrumental in the recovery of companies; restructured loans become performing loans; and, if the framework is sufficiently predictable, it helps to develop a distressed debt market, allowing banks to transfer their nonperforming loans to specialized entities, reducing the nonperforming loans in the banking sector.

Nonviable companies are liquidated and their assets are redeployed to more productive sectors in the economy. However, a minimum degree of economic stabilization and prospects for growth are needed for creditors to make an informed assessment of the prospects of businesses.

C. Best practices in corporate debt restructuring can provide useful suggestions for China. Best practices, including experiences in enhanced frameworks for systemic debt overhang, have been incorporated in different countries with a variety of approaches, depending on the circumstances of each economy. There are some fundamental principles, however, that can be taken into account for the implementation of debt-restructuring mechanisms in China.

First, the assessments of viability need to be made on the basis of commercial principles, especially when both the creditors and the debtor are state owned. While the state can play an important strategic role in identifying excess capacity levels in certain sectors, the downsizing of capacity should be done according to assessments of viability that are conducted *enterprise by enterprise*. The process needs to be founded on *credible valuations* and technical restructuring expertise, as provided by independent specialists. Finally, assessments of viability should be based on *hard budget constraints*; there should be no assumption of unlimited state support (guarantees or subsidies).

Restructuring operations must be based on plans designed by professionals and be based on credible viability assessments. Where state-owned banks consider debt write-downs in the context of restructurings, international experience provides guidance as to how the relevant officials can be protected from civil or criminal liability in circumstances where their decisions are based on viability assessments that, in turn, are based on professional valuations. While the Chinese insolvency framework is broadly in line with international best practices, the judicial capacity to deal with a large-scale corporate debt overhang is limited. If restructuring processes are conducted out of court, the same requirements for viability assessments and preparation of plans by expert professionals should apply. Regarding the overall effects of the

restructuring process, the restructuring and liquidation of enterprises will result in worker layoffs, and this problem needs to be addressed by developing a dedicated strategy for reemployment.

Regarding the final ownership of enterprises, there is a broad range of possible outcomes: debt to equity conversion is one of the possibilities, but shares of nonfinancial companies cannot remain indefinitely on the balance sheets of banks. The restructuring may also result in a merger or a sale of the enterprise to private investors. Alternatively, the state may remain the owner of certain enterprises after restructuring the debt. However, in those circumstances, it would be necessary to engage expert professionals to restructure the enterprise operations and manage them to ensure long-term viability. A credible governance framework would need to be established to ensure that the restructuring objectives are achieved. Finally, if asset-management companies become owners of the restructured enterprises, they should also implement operational restructuring plans, but they should dispose of the enterprises within a specified time horizon.

SESSION II

INTERNATIONAL EXPERIENCE IN RESOLVING DEBT PROBLEMS AND DELEVERAGING

Part III: Local Government Debt

POLICY RECOMMENDATIONS ON RESOLVING RISKS IN LOCAL GOVERNMENT DEBT

WEI Jianing²⁰

This article examines and compares different approaches used in other countries to address risks associated with local government debt (*Please see the corresponding presentations, including figures and tables*). It recommends a comprehensive “package” program for dealing with such risks in China, including short-term tactics for responding to crises, medium-term arrangements for resolving them and long-term reform strategies for preventing such risks.

SHORT TERM TACTICS

A. PUBLISHING AUDIT RESULTS AND CHANNELING PUBLIC PRESSURE DOWNWARD

International experience demonstrates that most debt crises occur due to information being concealed and that the process to resolve them usually starts from the disclosure of information.

Currently, audit findings are made public in a somewhat limited fashion, with only aggregate national and provincial/municipal data being released, whereas detailed data from sub-municipal levels are not, which impedes the necessary public pressure from reaching local governments.

For this reason, we recommend that further steps be taken to publish specific data on municipal debt, thereby channeling to the local government the pressure of public opinion now borne by the central government, in order to enhance the discipline imposed by the public

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and the market on local government debt, especially in heavily indebted regions.

B. ESTABLISHING A DEBT MANAGEMENT COMMISSION ²¹TO BEGIN TO DEAL WITH UNEXPECTED RISKS

It is recommended that a “Local Government Debt Risk Management Commission” be established under the State Council, composed of representatives from the Ministry of Finance, the People's Bank, the State-owned Assets Supervision and Administration Commission (SASAC), the National Development and Reform Commission (NDRC) and the financial regulatory authorities as well as experts and scholars in the related fields. The Commission should be charged with addressing localized emergencies that may take place in the near future, mitigating risks in the medium-term, and developing long-term strategies to eliminate the root causes of the problem.

More specifically, the functions of the Commission should include assessing the risks in local government debt and determining whether or not emergency rescue will be provided to a local government in distress, and, if yes, how. In addition, the Commission will also be responsible for controlling the aggregate amount of debt issued by local governments when issuance is authorized, and for handling the approval process and supervision, including with regard to the truth in information disclosure.

C. SETTING UP RISK DISPOSAL FUNDS AND RAISING BAILOUT FUNDS FROM MULTIPLE SOURCES

It is recommended that a “Facility for the Disposal of Risks in Local Government Debt” be established under the Local Government Debt Risk Management Commission, with multiple sources of funding, including the use of available fiscal surpluses, transfer payments, liquidation of state-owned assets, central bank loans and issuance of bonds guaranteed by

²¹ The “Local Government Debt Risk Management Commission” is a temporary cross-sectoral decision mechanism, not a permanent administration.

the central government. The Facility will be used primarily for providing temporary relief loans, fiscal aid and incentive for debt reduction to local governments in distress or with a high level of risk.

D. DEVISING CONTINGENCY PLANS AND DEVELOPING GUIDELINES ON CRISIS RELIEF

It is recommended that emergency response plans be drawn up expeditiously with regard to risks in local government debt, laying out the related basic principles, approval procedures and specific methods. In this regard, relief funds should be used as leverage to demand that local governments in distress rectify their behavior, reach quantitative goals, engage in reforms and undergo debt restructuring. It is also important to develop relevant road maps and timetables and follow up and monitor how plans are implemented.

E. DETERMINING THE NATURE AND DEGREE OF RISKS AND ADOPTING DIFFERENT APPROACHES ACCORDINGLY

International experience shows three models which can be employed to address risks in local government debt.

- The “deposit insurance model” (or the model adopted for the city of Yubari, Japan) may be emulated for situations where debt indicators have exceeded the established threshold but where a debt crisis has not yet occurred. This entails early intervention on the part of the Commission, which will, with an emphasis on self-responsibility, require that “fiscal restructuring” be carried out in heavily indebted localities. The local government concerned will be called upon to formulate a restructuring plan, which will be submitted to the Commission for approval. After approval is granted, the plan will be implemented by the local government concerned which will be monitored by the Commission. The Commission may provide appropriate rewards to those localities that are able to accomplish the fiscal restructuring on schedule.
- The “IMF model” may be followed for localities where a debt crisis has erupted but where no systemic risk exists. This means that the

Commission promises to provide the necessary bailout but at the same time puts forward a series of measures aimed at rectification, requiring that the local government concerned achieve phased targets set by the central government within prescribed time limits. Failing to do so will prevent the former from receiving or continuing to receive bailout funds.

- The model used during New York City’s fiscal crisis during the 1970’s can be copied when dealing with situations where a serious debt crisis has been going on and may lead to systemic risk. This requires declaring a “state of fiscal emergency” and taking over by the Commission if important functions including financial operations, hiring and firing of personnel and administration. It also involves the formation of a “debt restructuring team” to serve as the “receiver” that is solely responsible for related matters such as emergency response and debt restructuring, until after the crisis has subsided, when the relevant powers are gradually returned to the local government concerned.

MEDIUM-TERM ARRANGEMENTS

The current risks arising from local government debt have a myriad of complex causes. Looking upon the risks from a purely fiscal point of view and dismissing them all as “contingent liabilities” will likely lead to financial crisis. On the other hand, treating them merely from a financial point of view and classifying everything as “government debt” may very well lead to a fiscal crisis. Therefore, it is important that the cross-sectoral Commission develop a unified “package” solution covering both the fiscal and financial aspects and come up with “medium-term plans” for gradually resolving all existing risks within a five-year period.

On one hand, a number of measures can be taken with regard to local government funding sources:

- Efforts need to be made to accelerate the reform of tax system. Fees should be replaced with taxes as soon as possible. All-in budget

management should be practiced. Major revenue sources for the local government should be cultivated. These will enhance the financial autonomy of local governments.

- Transfer payments must be regularized by reducing special transfer payments while increasing general transfer payments, by establishing horizontal transfer payments, and by making such payments more regularized, formula-based and transparent, in order to enhance the capacity of local government to make fiscal decisions.
- Regular channels for raising debt by local governments should be developed so that they are able to obtain financing from capital markets in ways that are open, transparent and independent. These will be official and established, rather than by avoiding existing rules (that is through the backdoor). gray-market, avenues. Make existing debt more liquid through asset securitization and bring hidden debt out into the open, in order to enhance liquidity, avoid insolvency and reduce banking risks.
- Various financing platforms of local governments should be screened and regularized. The ones that are more oriented towards providing public good but with lower profitability should rely mainly on issuing municipal bonds and receiving loans from policy banks, while all others should be transformed into joint-stock companies as soon as possible and should rely primarily on issuing corporate bonds and obtaining loans from commercial banks.
- It is worth emphasizing that one of the best options for resolving the risks associated with local financing platforms may be attracting private capital into such fields as municipal construction through the use of public-private partnerships (the so-called “PPP model”). At the same time, attention must be paid to avoid its “double-edged sword” effect, as the PPP will not completely free the government from debt repayment obligations if the government still controls who the customers are, what services are provided and how much are charged for them. The PPP only stretch the time period of repayment obligations and make the debt more implicit. Its long-term risks must not be overlooked.

- Due to China's low level of external debt, one possible way to help alleviate the local government debt risk in our country is allowing the purchase of publicly offered municipal bonds by foreign investors through the Qualified Foreign Institutional Investor (QFII) scheme. This new way to attract foreign investment can win valuable time for defusing the local government debt problem.

On the other hand, risk mitigation can be approached on the side of financial institutions:

- The process of "de-nationalizing" state-owned banks should be continued by reducing as soon as possible the stakes held by all levels of government in commercial banks, until a full exit is completed. This will serve to prevent related transactions within the government (i.e. various government entities, due to the shares they hold of commercial banks and the control they have over the hiring and firing of commercial bank executives, can and do order these banks to make loans to government projects), thus eliminating the main cause of local government debt risk.
- The State Development Bank should be allowed to return to its policy role, becoming again a policy-oriented financial institution specializing in making loans to the financing platforms of local governments. As their source of funding is different than regular commercial banks, policy banks generally do not face issues such as mismatched maturities and costs between deposits and loans and those between borrowings and investments. Therefore, they can avoid potential risks faced by commercial banks that have to lend to platforms of local governments.
- Under certain conditions, non-performing loans at banks arising from local governments should be stripped and passed to asset management companies, who will try to recover them or dispose of them by using the market. Commercial banks with too many non-performing loans and are too hopeless to rescue should be allowed to go bankrupt, provided a deposit insurance system has been established.

- Finally, pilot projects should be conducted on securitization of local government debt. Assets can be made more liquid from both the fiscal and the financial perspectives (local government debt and bank loans both get securitized), so that the liquidity risk faced by commercial banks is dispersed and reduced.

LONG TERM STRATEGIES

In modern market economies, there are usually three mechanisms for controlling local government debt. One is top-down debt management. Another is market discipline from investors, intermediaries and rating agencies. The third is bottom-up democratic supervision

- A framework must be put in place for the central government to manage local government debt, including risk monitoring indicators and an effective regulatory regime, preferably (as in countries like Japan) separating fiscal affairs of the central government from those of the local government, with a specialized agency independent from the central government responsible for the supervision of local government debt.
- Local governments should be permitted to issue municipal bonds in the capital markets in an open, independent manner so as to form a market discipline mechanism involving credit rating agencies, financial intermediaries and investors.
- Finally, the fundamental strategy for treating local government debt risk lies in creating local fiscal autonomy, establishing mechanisms of self-discipline and building a “firewall” among various levels of government. Specific measures include: strengthening local legislature’s supervision and control of local debt financing; enhancing checks and balances offered by the local treasurer versus the local chief executive; introducing a democratic voting mechanism on issuance of local government bonds; and setting up arrangements for the resolution of municipal bankruptcies.

In short, the risks in local government debt did not just appear overnight and their causes are complicated. It is therefore ill-advised to adopt a laissez-faire approach or act in a rash and impatient manner. The solution must cover both the short term and the long term and target both tactical and strategic issues.

THE CHINESE VERSION OF QE IS IMPERATIVE, BUT THREE CRITICAL THINGS MUST BE DONE RIGHT.

In 2015, the Ministry of Finance granted debt replacement limits totaling 3.2 trillion yuan to local governments in order to ease their refinancing pressure. In our opinion, it is necessary to implement the “Chinese version of QE” – the central bank forcing local government into reforms by purchasing municipal bonds from financial institutions - but three critical things must be done right.

- The first is for the fiscal authorities to properly manage the debt replacement process. When allocating debt replacement limits, it is very important to not yield to the “squeaky wheel gets the grease” effect! Instead, the sole criterion must be that the allocation is good for achieving reform! State-owned enterprises that are more successful in carrying out reforms, in restructuring state-owned assets, in improving fiscal transparency, and in preparing and disclosing their balance sheets should be allocated larger limits. Smaller or no limits should be given to those that are less successful in the above-mentioned aspects, so that they are forced to do a better job carrying out reforms.
- The second thing is for financial institutions to play their role, i.e. the role of the market, in the right way. Financial institutions and investors, when purchasing local government bonds, must also act in the interest of advancing reform, with their purchasing decisions based solely on whether and how vigorously the government concerned is pushing for reform.

- Finally, the central bank must make sure money supply is administered properly. Its decisions on buying local government bonds from financial institutions must also be reform-oriented. Priority should be given to local governments that are doing a good job in reforming their state-owned enterprises, in disclosing information and in preparing balance sheets. With the backing of the central bank and a clear policy direction, the financial institutions up front will act decisively and seek out “reform bonds” issued by such local governments.

The key is to properly handle the relationship among three elements, here likened to “giving blood transfusion,” “administering anesthetic” and “performing surgery.” With regard to the current economic downturn, researchers have put forward three propositions: one is to continue increasing the delivery of money, credit and fiscal resources, i.e. “giving blood transfusion;” another is to adjusting to the so-called “new normal” state of the economy without worrying too much, sort of like “administering anesthetic” or “taking pain killers;” yet another proposes accelerating reforms, such as those targeted at state-owned enterprises and local governments, so as to “stop the bleeding” as quickly as possible, hence “performing surgery.”

If surgery is prescribed, then blood transfusion will be necessary while administering a little anesthetic will also be understandable and necessary. However, blood transfusion and anesthetic without surgery will likely lead to serious problems for the Chinese economy.

In short, the implementation of the Chinese version of QE is equivalent to “spending money to buy a mechanism,” or giving blood transfusion before surgery. Therefore, QE must be for the purpose of promoting reform. The related decisions must be guided by the desire to make broad-based and fundamental reforms a success.

LOCAL GOVERNMENT DEBT IN CHINA: CHALLENGES AND POLICY RECOMMENDATIONS

LIU Shangxi²²

OVERALL STATUS OF VARIOUS CATEGORIES OF LOCAL GOVERNMENT DEBT AND MAJOR RELATED ISSUES

A. OVERALL STATUS OF VARIOUS CATEGORIES OF LOCAL GOVERNMENT DEBT

According to an audit by the National Audit Office at the end of June 2013, local government debt in China can be divided into three categories: borrowings for which local governments bear the responsibility to repay; those for which they bear responsibility as the guarantor; and those for which they bear a certain degree of responsibility to provide rescue (***Please see the corresponding presentations, including figures and tables***). The first category occurs mainly at the municipal and district levels, with the former accounting for 44.5 percent and the latter 39.2 percent; the remaining 16.3 percent resides at the provincial level. In terms of the borrower, aside from local governments acting as the guarantor, debt raised by financing platforms that governments are obligated to repay and those for which they will provide rescue when needed constitute the largest parts of the total. Local government departments and agencies are the biggest guarantors of debt. Overall, debt due in 2015 is the highest between the years 2015 and 2017 for all three categories of debt.

B. THE MAIN CHALLENGE

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The main challenge arising from local government debt is the lack of transparency of the associated risks, which leads to significant uncertainty. This is mainly manifested by the following:

- Data and statistics on local government debt are not published regularly.
- Recognition and measurement of local government debt is not based on clear government accounting standards.
- The system for managing risks needs improvement.
- Rules on debt management need improvement.
- Management of local debt is disconnected from the budget process.

RELATIONSHIP BETWEEN FISCAL AND REVENUE REFORMS AND IMPROVEMENT TO THE LOCAL DEBT FINANCING FRAMEWORK

The fiscal and revenue system is a comprehensive concept that includes the fiscal relationship between the central and local governments (which used to be called the "fiscal system"), the budget system, and the tax revenue system. Of these, the fiscal system is directly related to local debt financing. In theory, a country's fiscal system consists of three elements: administrative powers, fiscal powers, and fiscal resources. Corresponding to these three elements are the issues they each address: (1) how administrative powers are divided between central and local authorities, which forms the basis for their respective spending responsibilities; (2) how fiscal powers, including the right to tax revenues, fees, and property, are divided between the central and local authorities; and (3) intergovernmental transfers.

The framework governing local government debt financing is based on the country's fiscal regime and is centered on the division of administrative powers between the central and local authorities. Specifically, the framework provides for a series of institutional arrangements with regard to how different levels of local government

should borrow, use, and repay their debt. In terms of governmental hierarchy, China has a two-layer structure of governance, namely, the national (central) and the local. Correspondingly, the fiscal structure also has two layers: the national fiscal arrangement, which defines the fiscal relationship between the central and local governments, and the local fiscal arrangement, which defines the fiscal relationships among various levels of local government. Obviously, the local financing framework is part of the local fiscal arrangement and dictates the division of administrative powers among a province and its cities, counties, and townships as well as the delineation of fiscal responsibilities.

To improve the framework for local debt financing, actions need to be taken at two levels. First, what the central government should and should not do must be determined, thereby defining what the local governments should and should not do. Second, what a province and its cities, counties, and townships should and should not do must be determined. Local government is not a general concept. Opposite from the way in which the central government operates, the local government's debt is distributed at various levels and the responsibilities to repay that debt also reside at various levels.

ASSESSMENT OF RISKS IN LOCAL GOVERNMENT DEBT

Chinese local government debt is the result of years of accumulation, which has accelerated rapidly since 2008. On the whole, risks in such debt are currently under control.

- Growth in the size of the debt is effectively controlled.
- Leverage is not high judging from the balance sheet because of the existence of large amounts of public resources and assets.
- The liquidity risk due to impending repayment has been brought under control through the issuance of replacement debt. In 2016 local governments will continue to defuse such risk by issuing replacement debt.

- With the economy bottoming out, local government will have the opportunity and resources to lessen the associated risks.

While appearing to be manageable on the whole, risks in local government debt are still significant. In particular, long-term risks should not be taken lightly.

- With the economy now in a “new normal” state, growth of local tax revenues (including land revenue) has slowed considerably, while responsibility for local public spending has become more rigid, creating a gap between revenues and expenditures and exerting increased fiscal pressure on the local government.
- Rapid urbanization requires heavy investment and financing, leading to innovative financing schemes by local government, with risks that must not be ignored, especially increased risks associated with contingent liabilities.
- Peer-to-peer banking, public-private partnerships, financial leasing, policy lending, affiliation of financial institutions with local governments, and rapid expansion of investment funds under local governments are bringing heightened risks, particularly in the absence of adequate fiscal and financial supervision.

POLICY RECOMMENDATIONS

A. GENERAL RECOMMENDATIONS

- Governance must be enhanced on the basis of the rule of law.
- The framework for local government debt financing should be improved.
- The risk control infrastructure also needs improvement.
- In the medium to long term, the existing vertical structure of public administration, which separates central and local governance, should be adjusted so that it considers all debt-related risk, fiscal risk, and

public risk at the local and the national levels in an integrated fashion while managing them separately at the respective level.

- It is important to allow laws, rules, and market discipline to play active roles and to develop legislation that defines how administrative powers, property rights, rights to tax revenues, rights to levy charges, scope of revenue and spending, and spending responsibilities should be distributed between the central and local governments, gradually giving the local government a relatively complete but controlled right to govern, while building a debt-financing management system that is supervised by the central and local authorities as well as the public and the market.

B. SPECIFIC RECOMMENDATIONS

Given current circumstances, two issues need to be addressed to keep risks in local government debt under control. On the one hand, resolving risks in such debt should in no way impede overall steady growth. On the other hand, government investments must be made more efficient, while growth in government debt and fiscal risks need to be managed properly.

- Investment and financing need to be addressed in an integrated manner, with the focus being on the effectiveness of investment.
- The market mechanism should be used to attract investors to public projects.
- The budget process should be further reformed to free up fiscal resources.
- Reform of government accounting needs to be intensified to provide the statistical basis for the screening and replacement of existing debt.
- Efforts should be put into the development of early warning mechanisms and preparations for crisis response.

CONCLUDING ROUNDTABLE

CONTINUED IMPROVEMENT TO THE INTERNATIONAL MONETARY SYSTEM AND PROPER RESOLUTION OF EXCESSIVE LEVERAGE IN CHINA

Yi Gang²³

With regard to the international monetary system, Yi Gang, Deputy Governor of the People's Bank of China, says that it is essential to improve the international monetary system to enhance global economic growth and financial stability amid the current global environment of weak economic recovery and increased market volatility and risks. China, while serving as the Presidency of the G20, restored the International Financial Architecture Working Group and encouraged related work in five areas, namely, the IMF's quota and governance reform, sovereign debt restructuring and debt sustainability, monitoring and managing capital flows, the global financial safety net, and expanded role for the Special Drawing Right (SDR). Ideas have been put forward on how to further improve the international monetary system, and significant progress has already been made in these areas.

On the topic of debt and deleveraging, the Deputy Governor stresses the following areas when tackling the issue of excessive leverage in China:

1. The relevant legal framework and guidelines need to be improved, including the laws on contracts, securities, and bankruptcy so that market clearing may be accomplished following the principle of the rule of law. It is important to stabilize expectations and raise efficiency by creating a favorable legal environment.

2. Strict fiscal discipline must be exercised. Each business entity should be responsible for its own finances, and budgetary constraints should be hardened. The essence of a market economy is that each market player must be responsible for its own behaviors. This is the most important principle without which moral hazard will arise.

²³ Yi Gang is Deputy Governor, People's Bank of China.

3. A market-oriented approach should be increasingly employed and administrative intervention gradually reduced. We need to increase the share of direct financing by encouraging business entities to attract capital from the public through equity financing. This approach will lead not only to a reduction of leverage, but also to an improved corporate governance structure.

In the future, China will continue to adopt a prudent macroeconomic policy and keep the overall leverage ratio largely stable before gradually reducing it, and try to find an optimal solution, while taking into account the overall leverage conditions including government, the corporate and the household sectors.

THREE QUESTIONS ABOUT CHINA'S LEVERAGE PROBLEM

HUANG Yiping²⁴

High leverage is widely recognized as a key risk for the Chinese economy. Several rating agencies downgraded the ratings outlook for China's sovereign bonds. The Chinese government also identified deleveraging as one of its five top policy priorities in 2016.

It looks like that there is broad consensus on this subject, especially about risks of rapid credit expansion and generally high leverage ratios. However, many of the assumptions and conclusions have not been carefully scrutinized. Today, I would like to raise three questions for discussion.

First, how high is too high?

Reinhart and Rogoff once warned that a public-debt-to-GDP ratio exceeding 90 percent would bring GDP growth down from 2.8 percent to -0.1 percent. That calculation turned out to be inaccurate, although growth would still fall from 2.8 percent to 2.2 percent. This simple example suggests that, while we all are aware of the potential risks of high leverage, we might not know exactly how much damage "high leverage" can cause.

The most commonly used indicators in discussions of China's leverage problem are the M2-to-GDP ratio and the nonfinancial corporate-borrowing-to-GDP ratio, which currently stand at 200 percent and 240 percent, respectively.

While these measures are relevant, M2 and nonfinancial corporate borrowing are stock variables while GDP is a flow variable. How meaningful are these indicators? This question is important, particularly if

²⁴ HUANG Yiping is Professor, National School of Development, Peking University.

countries under discussion have very different saving ratios, GDP growth rates, and fiscal balances.

For example, China's corporate-debt-to-GDP ratio, now at 160 percent, increased dramatically following the global financial crisis, a key cause of worry in the international capital markets. But the manufacturing industry's average debt-to-equity ratio has been declining steadily since 1998. This case clearly reveals that using GDP or equity as denominators at times could paint very different pictures about leverage. At the end of the day, the reason we worry about high leverage is because of default risk. An economic entity's ability to repay debt is determined first by its cash flow and then by its capital.

By definition, economies with bank-dominated financial systems have high leverage ratios. That is why China's M2-to-GDP ratio is higher than that of the United States but lower than Japan's. In this sense, if we do not like a high M2-to-GDP ratio, it is equivalent to saying that a bank-dominated financial system is inferior to a market-dominated financial system. But is that a valid assessment?

Therefore, simple cross-country comparisons are useful, but to make an informed judgment about the potential risks of high leverage, we need to take into account many country- or even firm-specific factors, such as the dynamism of the economy, the structure of the financial system, and the institutional arrangement.

Second, is leverage always bad?

Finance is about leverage. Through leverage, finance facilitates growth, increases income, and improves welfare. But high leverage ratios could lead to risks of an asset bubble, inefficiency, and financial crisis.

Continuous rapid expansion of credit or debt is definitely a cause for concern. Not only could a heavy debt burden adversely affect profitability and cash flows, but rapid credit growth often is also accompanied by misallocation and asset bubbles. However, it is also important to distinguish between good leverage and bad leverage.

China's nonfinancial corporate-borrowing-to-GDP ratio is higher than that of most developing countries but is in a range similar to that of

many advanced economies. Most of the borrowing is concentrated in the corporate sector. Leverage ratios are still low for both the government and households. The government's healthy balance sheet may buy some time for deleveraging policy.

Geographically, leverage ratios are high in both the western and coastal regions. But the leverage is more productive, that is, it is generating more economic growth, in the latter than in the former.

Within the corporate sector, the leverage ratio has been rising in the state sector but falling in the private sector. Meanwhile, the debt-servicing capability of private firms, measured by the ratio of pretax, pre-interest-payment profit to interest payments, is much stronger than that of state-owned enterprises.

Corporate leverage ratios are highest in the capital-intensive heavy industries, which also have the highest proportions of zombie firms. Leverage ratios escalated very rapidly in recent years in mining and heavy industries and property developers.

Therefore, there is probably a high leverage problem at the aggregate level, but the problem is much more severe in certain parts of the economy.

And, third, how can deleveraging occur?

Historically, most successful cases of deleveraging took place after financial crises, that is, they were mostly forced deleveraging. The implication we may take away from historical experience is that enforcing market discipline might be more crucial for deleveraging than regulations on aggregate borrowing.

Like it or not, the M2-to-GDP and total nonfinancial corporate-borrowing-to-GDP ratios will continue to rise in the foreseeable future. It is unimaginable that M2 or total borrowing will grow more slowly than nominal GDP any time soon. In fact, tighter control of M2 could lead to slower growth of nominal GDP, due to lower inflation, and could thus result in a higher M2-to-GDP ratio. This, at least in part, explained the recent rapid escalation of leverage ratios in China.

Of course, deleveraging at the aggregate level is possible through development of multilayered capital markets, especially equity investment. The debt-for-equity swap scheme recently introduced by the government may also serve the same purpose. But it will take a long time for these policies to have any material impact.

There is, however, plenty of room for policy actions at the micro or sectoral levels. From the discussion above, it should become clear that policy actions encouraging deleveraging should focus in particular on the corporate sector; the inland provinces; the mining, heavy, and property development industries; and state-owned companies.

The government is concerned that finance does not effectively support the real economy. One reason is because large amounts of funding continue to flow to the highly leveraged zombie firms. If the government could really begin to restructure the zombie firms, it should be able to lower the corporate leverage ratio and to strengthen finance's support to the real economy.

Without enforcing market discipline, simply tightening money supply or total borrowing could again lower the quality of leverage, that is, further increase bad leverage. This is because bad leverage, which is often implicitly supported or guaranteed by the government, could become even more favored by financial institutions.

The government and households still have some room to take on more leverage. But it would be unwise to simply move debt from the corporate sector to the government and households. This is probably the last opportunity for the government to re-leverage, which should be based on two conditions: one, enforcing market discipline, and two, generating new sources of growth.

If we cannot be certain that market discipline will be effectively enforced among financial institutions, companies, and local governments, as a risk management strategy, we should be prepared to experience a worst case scenario, whether a Korean-style financial crisis or Japanese-style stagnation.

ROUNDTABLE REMARKS

Changyong Rhee²⁵

Today's joint conference focused on three critical questions that are relevant for China: (1) how to strengthen the International Monetary System, (2) how to address high and rising corporate leverage, and (3) how to deal with local government debt.

I would like to focus my remarks on the issue of corporate debt and leverage. This is indeed an important topic for China that needs attention and warrants extensive analysis.

Today's discussion showed that conference participants broadly agree that China's corporate sector fundamentals have been deteriorating, that credit is growing too fast, and that increasing corporate leverage needs to be addressed. A number of presenters emphasized that, according to international experience, rapid credit booms are associated with significant risks. As a matter of fact, a large share of countries with high credit growth ended up with financial crises, while almost all countries experienced a sharp economic growth slowdown following the credit boom.

Given these insights the questions that arise are what to do about fast credit growth and high leverage, and can China engineer a "beautiful" deleveraging process? Our discussions suggest that there is no simple answer and that a comprehensive debt restructuring strategy is needed. This strategy first requires recognition of the debt problem and the use of market principles, while at the same time ensuring financial stability. In the case of China it also calls for strengthening the insolvency framework. Let me elaborate briefly on these issues:

- While China may not need large-scale corporate restructuring similar to the one in the early 2000s, it will be very important to select a few

²⁵ Changyong Rhee is Director, Asia and Pacific Department, IMF.

cases to demonstrate that China's policies will address these impending issues. In those cases, the focus should not only be on financial restructuring (including through tools such as debt-equity swaps), but it is even more important to focus on operational restructuring to ensure the profitability of restructured enterprises, especially state-owned enterprises, going forward.

- Together with the progress China has made in the past with court-based restructuring schemes, a well-functioning out-of-court resolution mechanism needs to be established, and the IMF can help by providing technical assistance in this area. It is also essential to introduce resolution frameworks for financial institutions.
- Resolution of nonperforming loans should rely on a market-based price-setting mechanism.
- To support corporate restructuring it will be important to put in place adequate social safety nets.
- While the elements listed above will help in addressing the stock of debt, it will also be critical to tackle flow issues, such as by reining in high credit growth. In this regard, China's economic growth target should be set conservatively to avoid any need for an excess liquidity injection.
- Delaying corporate restructuring, in turn, can have far-reaching consequences for the economy, even in the short term, including through intensified depreciation pressures and capital outflows.

It is, of course, important to take into account China's unique features. China's sovereign balance sheet is still strong, the country has a high national savings rate, most debt is domestic, and capital markets are still underdeveloped. While this does not mean that China does not have any problems, it implies that buffers are still strong, albeit deteriorating.

Finding the right solutions requires not only a strong conceptual framework, but also the use of real world experiences. And it is also important that from the beginning, political economy issues are taken into consideration given implementation challenges and the complexity of the issues. This includes—among others—regional and industrial

aspects, and as mentioned before, the social dimension of redundant workers, and risks to the financial system.

Because debt resolution is complex and can affect many different government agencies, it is important to strengthen cross-agency collaboration. In this context, it might be useful to consider institutionalizing a framework for collaboration (possibly for the next five years or so).

As China continues to move forward with its reform agenda, the IMF stands ready to assist through policy advice and technical assistance.

CLOSING REMARKS

CLOSING REMARKS

MARKUS RODLAUER²⁶

Deputy Governor Yi, Vice Minister Zhu, Honorary Kolodko, distinguished guests, ladies and gentlemen:

In closing this conference, first I would like to thank all speakers and attendees for their participation. We have had a busy and productive day and were able to share experiences and insights between Chinese and international experts, as well as across government agencies. This was truly an example of how an open and frank dialogue among colleagues and friends can help in finding practical solutions to complex issues.

I would just like to say a few words about how I think the main topics of today's proceedings relate to the path ahead for China.

Speakers have highlighted that the current **international monetary system (IMS)** has performed well; but there was also agreement that in light of an ever-changing global economy a constant review of existing rules, conventions, and institutions is necessary. Over the past decades, the world has experienced increased global trade and financial integration, which in turn has lifted millions out of poverty; China is, of course, one of the biggest success stories. But a more integrated global economy also comes with increased risks and spillovers. And as Alfred Kammer indicated "gaps exist in the international monetary system, partly from global imbalances, regulatory gaps, and global liquidity challenges" that need to be addressed. Ms. Zhu in her remarks today highlighted that China very much welcomes a discussion on how to strengthen the global financial system, including by strengthening

²⁶ Markus Rodlauer is Deputy Director, Asia and Pacific Department, IMF.

regional safety nets, an increased use of the Special Drawing Right (SDR), and more policy coordination, and that China will work with both the G-20 and the Fund to propose concrete measures.

Today's event also focused on the important issue of **credit booms and deleveraging**. Here the international evidence is clear—countries experiencing rapid credit booms are vulnerable to a banking crisis or a growth slowdown.

What are some of the key takeaways for China from these cross-country experiences?

Participants agreed that the buildup of vulnerabilities from leverage has risen. Some of you reminded us of the painful experiences in your own countries as your economies underwent their deleveraging processes—China can, of course, learn from these experiences. My sense is that there was broad agreement on the need to be proactive and to tackle the issue head on.

Of course, it is important to keep in mind **China's distinctive features**. China has a high national savings rate and sound household balance sheets. At the same time, most debt is domestic, and policy buffers, while declining, still remain strong. There is also room to further deepen the role of direct financing via capital markets. The past record of reforms provides us with some degree of confidence that China can manage the transition.

Participants also agreed that policymakers will need to pursue a **comprehensive strategy** to resolve rising corporate leverage. This will require a consistent framework for a system-wide solution. Key elements will include (1) identifying viable and nonviable companies, with the latter exiting markets; (2) removing debt overhang by loss recognition and recapitalization of banks, if needed; and (3) hardening budget constraints through better financial discipline and by resolving implicit guarantees. *Deputy Governor Yi Gang* rightly reminded us that the strategy will need market-based principles.

Supportive measures are needed in the process—as *Sean Hagan* noted, enhancing legal frameworks to facilitate corporate restructuring

will be important. From a macro perspective, policymakers will need complementary policies to minimize near-term adverse impacts on growth and employment. It was also good to hear from *Vice Minister of Finance Zhu* that the RMB 100 billion restructuring fund will play an important role in facilitating the restructuring process by strengthening social safety nets.

At the same time, as echoed by many participants, **local government debt** has also risen rapidly, although the overall stock appears manageable at present. But it will be important to continue to strengthen the budgetary framework to manage government finances and local government debt.

The task is understandably complex and challenging. It is therefore critical to ensure close **cross-agency coordination and information sharing**. In that regard, this conference showcased that bringing together colleagues from various agencies allows for the sharing of good practices and experiences and fosters consensus building. The IMF and other international organizations can assist through both technical assistance and training. Our colleagues from our capital and monetary as well as our legal departments stand ready to assist.

I am sure that there were many other important points that merit further analysis and discussion. I am confident that each of you will be prepared to share further insights following the conference. To preserve some of today's very rich discussions, let me propose that we put together your presentations and speaking notes in a **compendium (an e-book)** that will be posted on our conference website, similar to the publications following our joint conferences on monetary frameworks and capital account liberalization over the past years.

In closing, please allow me to **thank the People's Bank of China** again for jointly organizing this conference. This marks the **fourth joint conference** and I am already looking forward to next year's event. As China continues to integrate into the global economy and implements its reform agenda in the coming years, rest assured that the IMF stands ready to provide any assistance and advice that you may find helpful.

BIOGRAPHIES



Yi Gang, Deputy Governor, People's Bank of China

Dr. Yi Gang received his Ph.D. in economics at the University of Illinois in 1986. From 1986 to 1994, he taught at the Department of Economics, Indiana University. In 1994 he co-founded with others the China Center for Economic Research (CCER) at Peking University, and has since served as a professor at the Center.

Dr. Yi joined the People's Bank of China (PBC) in 1997 and served as Secretary-General of its Monetary Policy Committee and Director of Monetary Policy. In December 2007, he was appointed Deputy Governor of PBC and in July 2009 began to concurrently hold the office of Director of the State Administration of Foreign Exchange. In December 2015 he was renamed PBC's Deputy Governor.

His research interests include monetary issues, banking and the Chinese economy.



CHEN Yulu, born in Hebei Province in November 1966, is currently Deputy Governor and Member of the CPC Committee of the People's Bank of China (PBC). Dr. CHEN is also a representative of the Twelfth National People's Congress, a member of the Seventh Academic Degree Committee of the State Council, and Vice President of China Society for Finance and Banking. He has been awarded as one of the first group of National Best Young Teachers by the Ministry of Education, the National Outstanding Doctoral Dissertation Advisor, and the National Candidate of "New Century Talents Project" by the Ministry of Human Resources.

His main research area is macro-financial theory and policy under the opening economy condition, the representative works include: A General Theory of Macrofinance, Universal Banking in China under the Modern Financial System: Path, Risks and Regulatory System, and etc.



ZHU Guangyao is the Vice Minister of the Ministry of Finance (MOF), P. R. China. He graduated with a bachelor's degree from Beijing Technology and Business University in 1982, and received his Master in Economics from Research Institute of Fiscal Science at MOF in 1985.

Mr. Zhu was Secretary of the Secretariat (at Deputy Director level) at Research Institute of Fiscal Science at MOF from 1988 to 1992, he joined the Department of the World Bank of MOF in 1992, first he was Deputy Director of Division of Energy, Industry and Communication from 1992 to 1993, and was the Director of Division of Agriculture between 1993 and 1994. Then, he served as China's Alternative Executive Director at the World Bank from 1994 to 1996. He returned to MOF and took the position of the Deputy Director General of Treasury Bond and Finance Department in 1997, he became Director General of International Affairs Department of MOF in 1998. He also served as China's Executive Director at the World Bank from 2001 to 2004. Then he returned to MOF as Director General of International Affairs Department in 2005. He was appointed Assistant Minister of MOF in 2007, and as Vice Minister of MOF in May 2010.



2011-2015.

ZHANG Tao has been Director General of the Legal Affairs Department of the People's Bank of China since 2015. He held various senior positions in the People's Bank of China (PBOC), including research, statistics, international, and legal affairs. Before joining PBOC, he worked at the World Bank and the Asian Development Bank. He was the Executive Director for China at the International Monetary Fund, during

Dr. ZHANG has an M.A. and Ph.D. in International Economics from the University of California, Santa Cruz, USA, and a B.S. Electrical Engineering and M.S. Finance from Tsinghua University, Beijing, China.



XUAN Changneng is the Director-General of Financial Stability Bureau, the People's Bank of China. He received his bachelor's degree from University of Science and Technology of China, Ph.D. in Finance from University of Texas (Austin) and LL.M. from the University of Pennsylvania. He worked for JP Morgan as a senior analyst in derivatives. Before joining the PBC, Mr. Xuan's major career experiences in China include serving as the Deputy Director-General of Department of Intermediary Supervision, China's Securities Regulatory Commission (2000-2004); the Secretary to Board for China Construction Bank from 2004-2006, broadly involved in the restructuring, reorganizing and IPO tasks of the bank. Mr. Xuan has an extensive background in the areas of investment banking, financial derivatives, regulation in capital market, banking sector reform, corporate governance as well as private equity. He had published a number of books and papers in these areas.



ZHU Jun, Director-General, International Department, the People's Bank of China

Ms. Zhu Jun joined the People's Bank of China in 1993 and has held a variety of positions since then. After working in the Governor's Office, Ms. Zhu joined the International Department in 1997, first in the BIS Division and then in the Research Division. In 2006, she took the position of the Director of the Research Division, and the Deputy Director-General of the International Department in 2009. She was appointed as the Director-General of the International Department in 2015. She worked in the BIS as a secondee from March to October 1999. In September 2003, she returned to the BIS and worked as an Economist until December 2005. Ms. Zhu graduated from Peking University with a Bachelor's degree in Economics in 1989, and received her Master's degree in Economics in Peking University in 1993.



MA Jun is Chief Economist at the People's Bank of China (PBC)'s Research Bureau. Before joining the PBC in early 2014, he worked for 13 years at Deutsche Bank, where he was Managing Director, Chief Economist for Greater China, and Head of China and Hong Kong Strategy. Prior to joining Deutsche Bank in 2000, he worked as public policy specialist, economist and senior economist at the International Monetary Fund and World Bank from 1992-2000. From 1988-1990, he was a research fellow at the Development Research Center of China's State Council.

Dr. Ma has published eleven books and several hundred articles on the Chinese economy, global economy, and financial markets. His main research interests include macroeconomics, monetary and financial policies, and environmental economics.

Dr. Ma received his Ph.D. in Economics from Georgetown University in 1994, and his master's degree in Management Science from Fudan University in 1988.



AI Ming, Director, IMF Division, International Department, the People's Bank of China

Ms. Ai Ming joined the People's Bank of China in 1996 and has held a variety of positions since then. After working in the Hebei Branch, Ms. Ai joined the International Department in 2001, working in the Central Bank Cooperation Division, the General Affairs Division and the IMF Division. From November 2012 until July 2015, she worked in the IMF as a Senior Advisor to China's Executive Director. In July 2015, she returned to the International Department of the PBOC where she heads the IMF Division. Ms. Ai graduated from Renmin University with a Bachelor's degree in Economic Information Management in 1996, and obtained her MPA degree in Economic Policy Management from the Columbia University in New York in 2007.



WANG Weixing, Male, currently Director General of Policy Research Department of the Ministry of Finance, P.R.C, Ph.D. in economics. He was promoted to Deputy Director General of the Budget Department in 1997, DG-level Inspector in 2003, Director General of the Rural Comprehensive Reform Office of the State Council in 2009. In more than 30 years of budget and fiscal management working, DG Wang has established a solid theoretical foundation and rich working experience, presiding translations such as the “Public Expenditure Management Handbook”, "Contemporary Public Expenditure Management", "Public Expenditure Management", and publications such as "Research on Government Budget Management Procedures and Methods", etc..



WANG Keping, Deputy Director-General of Budget Department, Ministry of Finance, P. R. China, Ph. D in Management. He has long term work experience in the field of fiscal legislation and budget management. He has worked as the director of budget division and Deputy Director-General of Tianjin Financial Bureau, as well as the Deputy Director-General of Department of Laws and Regulations, Ministry of Finance, P. R. China.



XIAO Yuanqi is currently the Director General of the Prudential Regulation Bureau of China Banking Regulatory Commission. Previously, he successively took the positions as the Director General of the Banking Supervision Department I (in charge of the supervision of large commercial banks in China), the Director General of the Banking Supervision Department II (in charge of the supervision of small and medium commercial banks in China), the Director General of the CBRC Chongqing Bureau, the deputy Director General of the CBRC Guangdong Bureau. Before these, during his more than 25 years working experience in banking regulation and supervision, Mr Xiao has taken various positions in CBRC and People’s Bank of China, with relate to the direct supervision of both domestic and foreign banks. Mr Xiao also directly took part in the series

of negotiations during the process of China joining World Trade Organization (WTO).

Mr Xiao has been greatly involved in the making and implementation of many key decisions with respect to the reform and opening up of Chinese banking industry, taking charge of the drafting and finalizing various important banking regulations and policies. He has conducted numerous innovative researches in the area of domestic and international economics and finance, publishing dozens of specialized papers and books. Among them are the following: “Financial structure and financial development”, “Security market and financial institutions”, “Strategy and strategy management”, “The development of foreign banks in China” and “International comparison of banking regulation”.



LIU Chunhang is Director General of Policy Research Bureau at China Banking Regulatory Commission (CBRC). He joined the CBRC in 2006 as Deputy Director General of Statistics Department. Since 2011, Mr. Liu has served as the CBRC representative on the Standing Committee on Supervisory and Regulatory Cooperation under the Financial Stability Board. Between 2012 and 2015, he was Chair of the Leverage Ratio Group under the Basel Committee on Banking Supervision, responsible for leading the work on the Basel III leverage ratio standard. He is currently Chair of the Supervision and Implementation Group under the Basel Committee.

Prior to joining the CBRC, Mr. Liu worked at Morgan Stanley and McKinsey on the restructuring and business strategies of multinational firms and financial institutions. Mr. Liu received his MPhil and PhD from Cambridge University and MBA from Harvard Business School (Baker Scholar).

Publications include *Decoding Basel: A Brief Analysis of the International Banking Regulatory Framework* (2015), *Multinationals, Globalization and Indigenous Firms in China* (2009). Mr. Liu is also editor-in-chief of *Financial Regulation Review*.



LI Wenhong is the Acting Director-General of the Banking Innovations Supervision Department, China Banking Regulatory Commission (CBRC). She holds a PhD degree in Economics and a Master's degree in Finance from the Graduate School of the People's Bank of China, and a Master's degree in Economics from the Australian National University. Ms. Li is currently the Co-Chair of the Working Group on Liquidity (WGL) and a member of the Macroprudential Supervision Group (MPG) of the Basel Committee, and used to be a member of the Basel Macro-variables Task Force (MVTF) during 2009-2010 and Basel Core Principles Review Group (CPG) during 2011-2012. She was also a member of the FSB country peer review team for Australia in 2011. Within the CBRC, Ms Li has been involved in a number of legislative projects for banking supervision in China and led the formulation of a number of supervisory rules and guidelines. She has been team leaders of the Group for FSAP-related tasks and FSB peer review of China at CBRC, as well as Basel III Policy Group and Basel II Policy Group, responsible for formulating SIFI policies, countercyclical policy framework, leverage ratio rules, liquidity risk management and supervision rules, and securitization capital framework. Ms Li has also led many research projects in the CBRC, and published a significant number of research papers in leading academic journals. Ms. Li was seconded to the Financial Stability Institute of the Bank for International Settlement (BIS) and the Basel Committee on Banking Supervision (BCBS) in 2005, and seconded to the Bank of China as the Deputy General Manager of the Risk Management Depart during 2006-2007.



WEI Jianing is director-general and researcher in the Development Research Center (DRC) of the State Council. He has had extensive experience in the DRC, specializing in the macroeconomics. He first joined the Macro Economy Department in 1991 and became the director-general (inspector) in 2013. Mr. Wei has collaborated and written joint works with many distinguished and prominent economists, including Mr. Wu Jinglian and Mr. Sun Xiangqing. He has been prolific and published on macroeconomic policies, financial risks and supervision, and fiscal issues on local government finances, which serve as inputs to the policy design. In 2014, he published a book on Resolving risks of local government debt and new

municipal financing. He received his doctoral degree on economics from China Academy of Social Science.



LIU Shangxi, PhD in economics, is currently a researcher, doctoral advisor, Secretary of the Party Committee, and Dean at Chinese Academy of Fiscal Science. He is an expert who receives the State Council Special Government Allowance and a national expert of the “National Hundred, Thousand, and Ten Thousand Talent Project”. In 2015, Mr. LIU was a participant in the Economic Analysis Expert Colloquium hosted by Mr. LI Keqiang, China’s Premier, and in the Study Colloquium of the Leading Party Group of the National People’s Congress (NPC) on Fiscal and Tax Reforms hosted by Mr. ZHANG Dejiang, Chairman of the NPC Standing Committee. In January 2016, Mr. LIU participated in and addressed the Economic Analysis Conference of the National Committee of the Chinese People’s Political Consultative Conference (CPPCC) hosted by Mr. YU Zhengsheng, Chairman of the CPPCC. Mr. LIU is also affiliated with a number of organizations and holds the following titles: member of the State Council Advisory Committee on Education, member of the State Council Advisory Committee on Medical Reform, member of the Expert Review Team of the National Social Science Foundation, vice president and secretary general of the Chinese Finance Society, member of the Expert Committee of the National Committee for Disaster Reduction, special commentator on tax issues for the State Administration of Taxation, special researcher of institutions including the China Reform Study Society, budgetary surveillance advisor to the Standing Committee of the People’s Congress of the Municipality of Beijing, and advisor to the Governments of Guangdong and Hubei Provinces, among others. Mr. LIU is a former expert of the National Science and Technology Major Project, member of the medical technology steering group for New Rural Cooperative Medical Care, and member of the expert group for the overall design of Key National Technology Infrastructure Constructions, among others.

Mr. LIU has made innovative achievements in the areas of income distribution, public risk, fiscal risk, public finance, the macroeconomy, public governance, etc. His major books include: *Circulation of Income Distribution*, *Study of Fiscal Risks and Their Prevention*, *Contingent Debt: Hidden Fiscal Risks*, *Macrofinancial Risks and Government Responsibilities*, *Public Finance*

from the Viewpoint of Public Risk, Tax and Consumption, Tax and People's Livelihood and Integration of Technology and Economy. He is also the author of a number of papers, including Fiscal Risks, an Analytical Framework, On Public Risks, On Categorization of Transfer Payments, "Employment Status" of Farmers: the Decisive Force for Success in China's Reform and Development, Rationale for the Provision of Public Goods and Socialization, A People-Oriented Fiscal Philosophy: Finance for People's Livelihood, the Root of Current Economic Problems: the Lagging Change in the Development Model, Consumption Rate, Economic Vulnerabilities and Risks for Sustainable Development, Equal Opportunities for Basic Public Services: Objectives and Policy Path, Equal Opportunities for Basic Public Services and the Government's Fiscal Responsibilities, China: Challenge of Urbanization to Intra-governmental Relations, Public Governance Reform Based on New Types of Urbanization, and others.



HUANG Yiping is Jin Guang Chair Professor of Economics/Deputy Dean at National School of Development and Director of Institute of Internet Finance, Peking University. His research focuses mainly on macroeconomic policy and financial reform. Currently he serves as a member of the People's Bank of China's Monetary Policy Committee. He is also the Rio Tinto Adjunct Professor in the Chinese Economy at the Australian National University, a member of the China Finance 40 Forum and a member of the Chinese Economists 50 Forum. He is Editor of China Economic Journal and an Associate Editor of Asian Economic Policy Review. Previously, he was a policy analyst at the Research Center for Rural Development of the State Council, research fellow and senior lecturer of economics at the Australian National University, General Mills International Visiting Professor of Economics and Finance at the Columbia Business School, Managing Director and Chief Asia Economist for Citigroup, Chief Economist for Caixin Media Group, Managing Director and Chief Economist for Emerging Asia for Barclays, and an Independent Director of China Life Insurance Ltd, Minmetal Trust Ltd and Alibaba's online bank Mybank. He received his Bachelor of Agricultural Sciences (Agricultural Economics) from Zhejiang Agricultural University, Master of Economics from Renmin University of China and PhD in Economics from Australian National University.



LI Daokui (David) is the Mansfield Freeman Chair Professor of Economics, Director of Center for China in the World Economy (CCWE), and the founding Dean of the Schwarzman Scholars at Tsinghua University, which is a fellowship program with a master's degree curriculum. The program's objective is to bring future global leaders to Tsinghua as a way to bridge the gap between China and the rest of the world.

As a leading Chinese economist, Professor Li is active in policy advising and discussions. He served on China's Monetary Policy Committee and was an external advisor to the International Monetary Fund. He is a member of the Chinese People's Political Consultative Committee (CPPCC) and a member of Sino-German Advisory Committee. He's also a member of the Global Agenda Council of the World Economic Forum based in Switzerland.

Professor Li holds a B.S. and Ph.D. in economics from Tsinghua University and Harvard University, respectively.



Jonathan Anderson is President of Emerging Advisors Group, an China-based emerging market macro consultancy that services the global fund management and financial industries. Prior to founding EM Advisors Jonathan was the Global Emerging Market Economist at UBS Investment Bank; he has also worked at Goldman Sachs and the International Monetary Fund, where he served as Resident Representative in both China and Russia. Jonathan received his MA and PhD candidacy in economics at Harvard University, and speaks fluent Russian and Mandarin Chinese.



Chia Der Jiun is an Assistant Managing Director and Head of the Markets and Investment Group at the Monetary Authority of Singapore. In this role, he has responsibilities for the implementation of monetary policy through the foreign exchange market, ensuring stable and well-functioning money markets, the issuance of Singapore Government Securities and the management of the Official Foreign Reserves. Prior

to this appointment in September 2013, Mr Chia has variously headed the Banking, Macroeconomic Surveillance and Prudential Policy departments in MAS. From May 2011 to April 2013, he served as Southeast Asia's Executive Director at the International Monetary Fund. From 1995 to 2003, he was an Administrative Service Officer in the Singapore Government.



Giovanni Dell'Ariccia is Deputy Director of the IMF Research Department where he supervises the activities of the Macro-Financial Division. Previously he worked in the Asia and Pacific Department. His research interests include: Banking; the Macroeconomics of Credit; Monetary Policy; International Finance; and Conditionality in International Lending and Aid Programs. His research has been published on major economics and finance journals. Mr. Dell'Ariccia holds a Ph.D. from MIT and a Laurea (Summa cum Laudem) from the University of Rome. He is a CEPR Research Fellow.



Sean Hagan is General Counsel and Director of the Legal Department at the International Monetary Fund. In this capacity, Mr. Hagan advises the Fund's management, Executive Board and membership on all legal aspects of the Fund's operations, including its regulatory, advisory and lending functions. Mr. Hagan has published extensively on both the law of the Fund and a broad range of legal issues relating to the prevention and resolution of financial crisis, with a particular emphasis on insolvency and the restructuring of debt, including sovereign debt.

Prior to beginning work at the IMF, Mr. Hagan was in private practice, first in New York and subsequently in Tokyo. Mr. Hagan received his Juris Doctor from the Georgetown University Law Center and also received a Master of Science in International Political Economy from the London School of Economics and Political Science.



Bert Hofman, a Dutch National, is the World Bank's Country Director for China, Mongolia and Korea in the East Asia and Pacific Region, based in Beijing since 2014, his 3rd tour of working on China since the early 1990s. He is leading a team that is managing the World Bank's largest loan portfolio and directs an extensive analytical and advisory program with China and Mongolia, and a growing knowledge partnership with Korea.

Prior to his present assignment, Mr. Hofman was the World Bank's Chief Economist for the East Asia and Pacific Region and Director, Singapore Office from 2011-14. As regional chief economist he led a team to analyze key trends and policy issues across East Asia and the Pacific and as Director Singapore he helped build a partnership that focuses on expanding investment in infrastructure in emerging economies.

Before moving to Singapore, Mr. Hofman was the Country Director for the Philippines, responsible for a growing portfolio of projects and advisory services to the Philippines government.

Mr. Hofman has accumulated more than 23 years of experience in the World Bank, 18 of which in the East Asia region. Among others, Mr. Hofman was Lead Economist for China and for Indonesia and country economist for Mongolia and Namibia. He had also worked on Brazil, South Africa, Russia, Zambia, and Namibia in his earlier years with the Bank.

Prior to joining the World Bank, Mr. Hofman worked at the Kiel Institute of World Economics in Germany, the Organization for Economic Cooperation and Development (OECD) in Paris, and NMB Bank in the Netherlands (now ING).

Mr. Hofman holds a degree in economics of Erasmus University Rotterdam and studied at the Christian Albrechts University, Kiel.



Alfred Kammer is Deputy Director of the Strategy, Policy and Review Department of the International Monetary Fund and oversees the work on strategy and surveillance. Previously, he was Deputy Director of the Middle East and Central Asia Department, overseeing regional economic developments and financial sector issues; Director of the Office of Technical Assistance Management, advising management on technical

assistance operations and overseeing fundraising and global partnerships for capacity building; and Advisor to the Deputy Managing Director, advising on a wide range of country, policy, and strategic issues. In the late 1990s, Mr. Kammer served as resident representative of the IMF in Russia and was advisor to the first deputy chairman of the Central Bank of Russia. Since joining the IMF in 1992, Mr. Kammer also worked with countries in Europe, Central Asia, and Africa, and on a wide range of policy and strategic issues. He obtained his graduate degree in economics from the State University of New York at Albany and post-graduate degrees from the Kiel Institute of World Economics in Germany and the University of Southern California in Los Angeles.



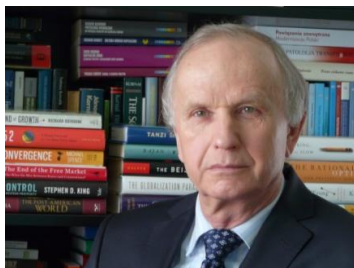
Dr. Yongbeom Kim, Secretary General of Financial Services Commission

Yongbeom Kim was appointed as the Secretary General of the Financial Services Commission on November 9, 2015, responsible for coordinating and directing the functional responsibilities of Korea's top financial authorities. Prior to his appointment, he served as the Standing Commissioner of the Securities and Futures Commission with a mandate to ensure fairness and order in Korea's capital markets.

In his career as a government official since 1986, Dr. Kim has been through key posts including Director of Banking System Division in the Ministry of Finance and Economy, Deputy Secretary for Economic Policies in the Office of the President of Korea, Director General and Head of Post Insurance Unit of the Korea Post, Director General of Financial Policy Bureau and Capital Markets Bureau of the Financial Services Commission. In 2000, he left the government for four and a half years to work as senior economist at the World Bank, where he specialized in the Chinese economy. In 2010, Dr. Kim served as Director General of Global Financial Architecture Bureau in the Presidential Committee for the G20 Seoul Summit.

As an economic expert, Dr. Kim is known for his strong knowledge of international affairs and deep insights into financial markets.

Dr. Kim graduated from Seoul National University, magna cum laude, with a bachelor's degree in economics and received his doctorate in economics from George Washington University on a Fulbright Scholarship.



Prof. Grzegorz W. Kolodko – intellectual and politician, a key architect of Polish reforms. Deputy Prime Minister and Minister of Finance, 1994-97 and 2002-03. Member of the European Academy of Arts, Sciences and Humanities. Founder and Director of Transformation, Integration and Globalization

Economic Research, TIGER (www.tiger.edu.pl) at Kozminski University. Author of research papers and numerous books published in 26 languages. The world's most quoted Polish economist. Marathon runner and globetrotter who's explored over 160 countries.



Wojciech S. Maliszewski is a Senior Economist working on China in the Asia and Pacific Department. Prior to taking this position he worked on Greece and Iceland in the European Department Prior and on several other assignments at the IMF, including four years in the Fiscal Affairs Department. Mr. Maliszewski's research interests and publications have mainly focused on monetary policy and structural reforms. He holds a Ph.D. and M.Sc from London School of Economics, a M.A. from the University of Sussex and a M.A. from the University of Warsaw. He was born and brought up in Poland.



Changyong Rhee assumed his current position as Director of the Asia and Pacific Department of the International Monetary Fund (IMF) in February 2014. Prior to coming to the Fund Dr. Rhee was chief economist at the Asian Development Bank (ADB). He was the chief spokesperson for ADB on economic and development trends, and oversaw the Economics and Research Department.

Dr. Rhee was the secretary-general of the G20 summit's Presidential Committee in the Republic of Korea. Prior to his appointment at the FSC, Dr. Rhee was a Professor of Economics at Seoul National University and Assistant Professor at University of Rochester. He was also a frequent and

active policy advisor to the Government of Korea, including in the Office of the President, the Ministry of Finance and Economy, the Bank of Korea, the Korea Securities Depository, and the Korea Development Institute.

His key research interests include macroeconomics, financial economics, and the Korean economy. He has published many papers in these fields. Dr. Rhee obtained his Ph.D. in Economics from Harvard University, and his Bachelor degree in Economics from Seoul National University.



Markus Rodlauer is Deputy Director of the IMF's Asia and Pacific Department (APD). Among other leadership responsibilities, he heads the Fund's China team, which conducted the annual Article IV Consultations with the People's Republic of China in recent years. His previous jobs at the Fund included Deputy Director of Human Resources, Deputy Director in the Western Hemisphere Department, Mission Chief for a number of countries in Asia, Europe, South America, and IMF Representative to Poland and the Philippines. Mr. Rodlauer worked with the Ministry of Foreign Affairs of Austria before joining the IMF. His academic training includes degrees in law, economics, and international relations.



Ratna Sahay is Deputy Director of the Monetary and Capital Markets Department (MCM) at the International Monetary Fund (IMF). She is responsible for setting strategic priorities for the department, leading key policy papers and projects, and budget and human resource management of the department. Her recent projects include analytical work on unconventional monetary policy and global spillovers, financial deepening, and financial inclusion. She has served as Advisor to Stanley Fischer (First Deputy Managing Director) and Advisor to Michael Mussa and Kenneth Rogoff (both Economic Counselors of the IMF). She has published widely in leading journals on the financial sector including financial market spillovers and financial crises, inflation, economic growth, fiscal policy and debt sustainability, and transition economies. She has

taught at Delhi University, Columbia University, and New York University and holds a Ph.D. in Economics from New York University, New York.



Alfred Schipke is the IMF Senior Resident Representative for China. Previously, he was a division chief in the Asia and Pacific Department, where he coordinated the work on fast growing low income countries in South-East Asia (Frontier Economies) and led missions to Vietnam. He was a division chief in the

IMF's Western Hemisphere Department in charge of the Latin Caribbean and Eastern Caribbean Currency Union (ECCU) divisions. Among others, he negotiated a high access Stand-by Arrangement, which included a debt restructuring and a debt-equity swap for one of the countries in the ECCU, as well as an \$800 million precautionary Stand-By Arrangement for El Salvador. Also, he was the Regional Resident Representative for Central America, Panama, and the Dominican Republic and worked in the IMF European Department. He teaches international trade and finance at Harvard University, John F. Kennedy School of Government and has authored and edited a number of books and articles, including a recently published handbook on the ECCU. His research has focused on economic integration and the linkages between macroeconomics and finance.



Moritz Schularick is Professor of Economics at the University of Bonn and a Research Fellow of the Centre for Economic Policy Research and the CESifo. In 2015/16, he is the Alfred-Grosser-Professor at SciencesPo in Paris. Previously, he taught at the Free University of Berlin and was a

visiting professor at New York University and the University of Cambridge. Working at the intersection of macroeconomics, international economics and economic history, his research has been published in the American Economic Review, the Journal of Monetary Economics, the Journal of International Economics, the Review of Economics and Statistics, the Journal of Money, Credit and Banking, and several other journals. His research is

currently supported by grants from the German Federal Ministry of Education and Research, the Volkswagen Foundation and the Institute for New Economic Thinking.



Dr. Tao Wang is a Managing Director and Co-Head of Asian Economic Research at UBS. She leads a team that covers China's macroeconomic development and policy issues and her team has been ranked highly in investor surveys. Prior to joining the company, Dr. Wang was Head of Greater China Economics and Strategy at Bank of America and Head of Asian Economics at BP plc. Before joining the private sector, Dr. Wang was a Senior Economist at the International Monetary Fund (IMF), working on the China desk. At the IMF, Dr. Wang was involved in programme negotiations and annual consultations with many member countries, and published a number of research papers.

Dr. Wang received her PhD in economics from New York University and her Bachelor's degree from Renmin University, Beijing.

PRESENTATIONS

SESSION I: Strengthening the International Monetary System

Strengthening the International Monetary System

Alfred Kammer

The Role of RMB in Strengthening the International Monetary System

LI Daokui (David)

SESSION II: International Experience in Resolving Debt Problems and Deleveraging

Part I: International Experience with Credit Booms and Deleveraging

Debt and the Macroeconomy

Moritz Schularick

How to Deal with Credit Booms

Giovanni Dell’Ariccia

Korea’s Credit Cycle Experience

Yongbeom Kim

China and EM Crisis Taxonomy

Jonathan Anderson

Part II: Corporate Debt and Leverage

How Big a Problem is Debt and What To Do About It?

Markus Rodlauer and Wojciech Maliszewski

How to reduce corporate leverage in China

MA Jun

Dealing with China's Debt Challenge

WANG Tao

Corporate Debt Restructuring: Best Practices and International Experiences
Sean Hagan and Jose Garrido

Part III: Local Government Debt

Developing a Regulated and Healthy Local Government Debt Financing System
WANG Keping and WANG Weixing

How to Resolve Risks in China's Local Government Debt?
WEI Jianing

Local Government Debt in China: Issues and Recommendations
LIU Shangxi

Strengthening the International Monetary System



Fourth Joint Conference, People's Bank of
China and International Monetary Fund
April 28 2016

1

What is the IMS?

- Rules

Governing arrangements between countries

- Mechanisms

For balance of payment adjustment

- Institutions

To enforce rules and mechanisms



What are the objectives?

Global financial and economic stability

- Facilitate efficient allocation of resources
- Ensure smooth functioning of international financial markets

The IMS has performed well, but must adapt to change

2

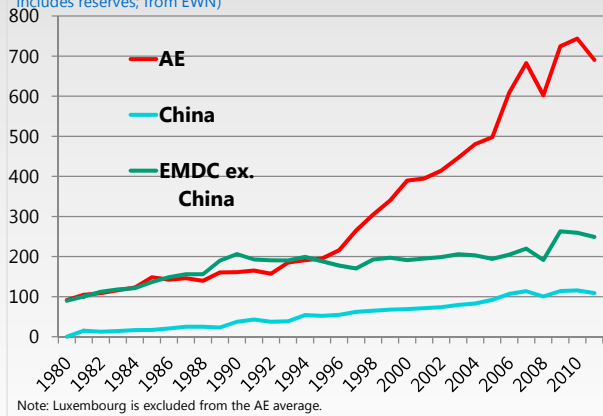
Need to Adapt – Changing Contours of the Global Economy

- Rapid trade integration of EMDCs, but slower financial integration and financial deepening.



Financial Openness

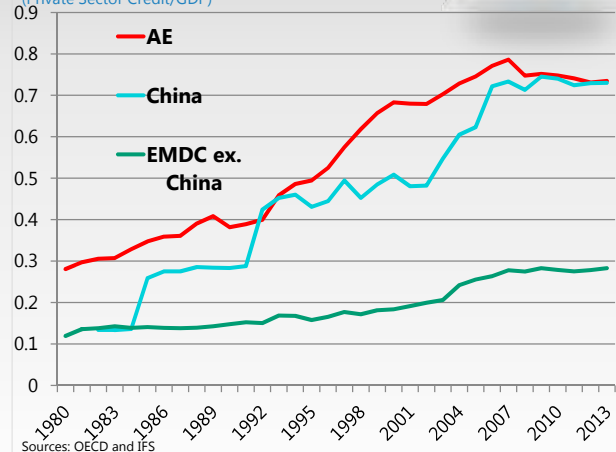
(Total Gross External Assets and Liabilities in percent of individual country GDP; includes reserves; from EWN)



Note: Luxembourg is excluded from the AE average.
Sources: OECD and IFS

Financial Development

(Private Sector Credit/GDP)



Sources: OECD and IFS

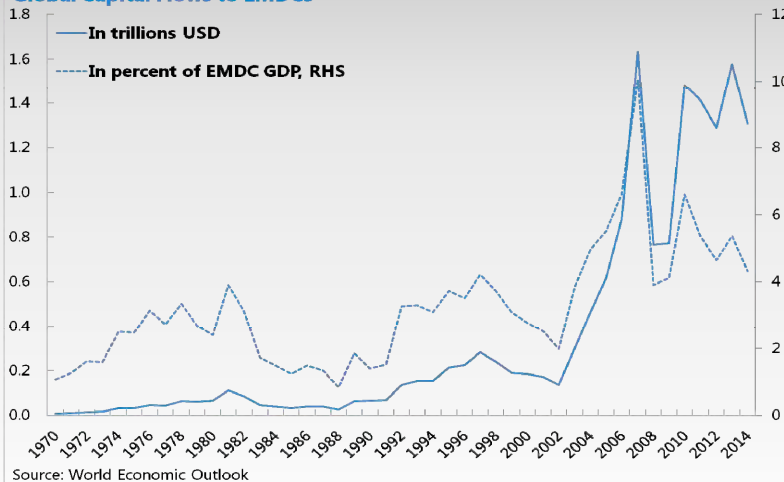
3

Need to Adapt – Changing Contours of the Global Economy

- Financial integration led to increase in capital flows and external liabilities.



Global Capital Flows to EMDCs

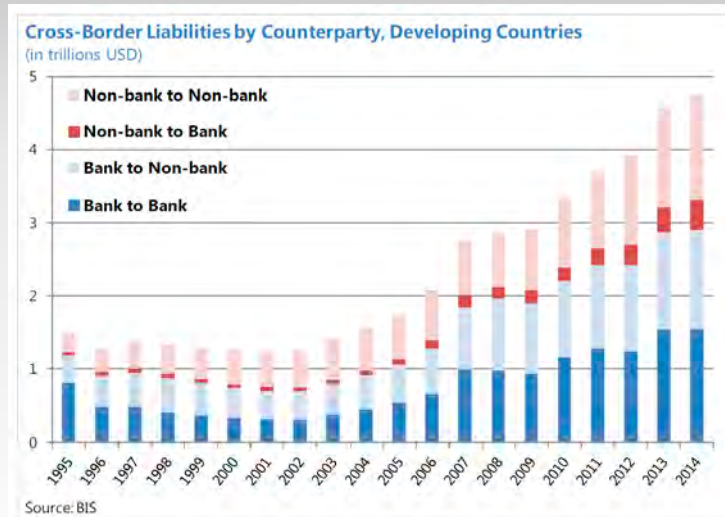


Source: World Economic Outlook

4

Need to Adapt – Changing Contours of the Global Economy

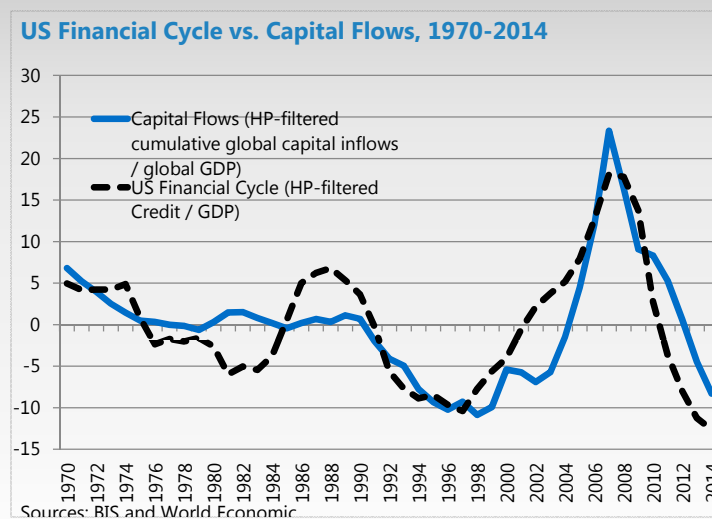
- Financial integration led to increase in capital flows and external liabilities.



5

Need to Adapt – Changing Contours of the Global Economy

- Financial cycles appear to have synchronized with surges and troughs of capital flows moving in tandem with cycles.



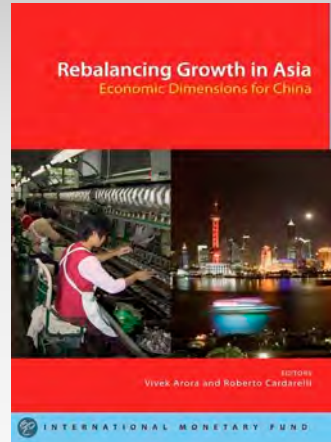
6

Need to Adapt – Changing Contours of the Global Economy

- Major transitions: Monetary policy normalization; China rebalancing; end of the commodity super-cycle.



Historic gamble for Yellen as Fed makes quarter-point rise



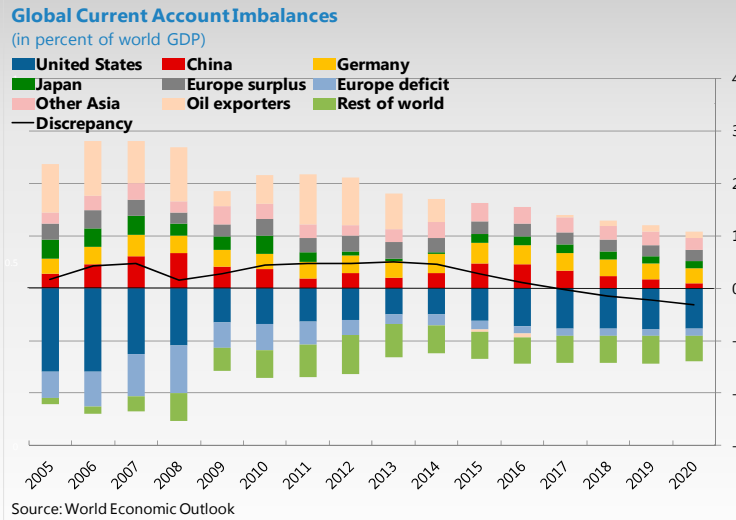
What are the Gaps in the IMS?



What are the Gaps in the IMS?

1) Weak Global Adjustment Mechanisms:

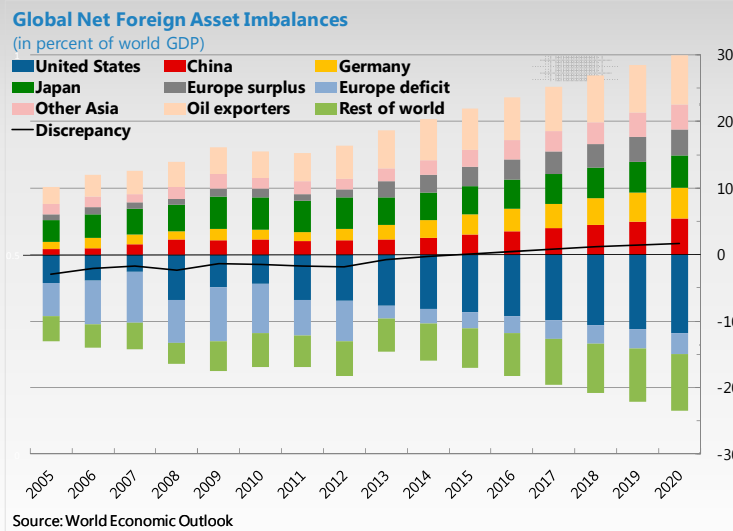
- Global imbalances



What are the Gaps in the IMS?

1) Weak Global Adjustment Mechanisms:

- Global imbalances



What are the Gaps in the IMS?

1) Weak Global Adjustment Mechanisms:

- Global imbalances
- Constrained domestic policy choices



11

What are the Gaps in the IMS?

1) Weak Global Adjustment Mechanisms:

- Global imbalances
- Constrained domestic policy choices

2) Regulatory gaps:

- Systemic risks from capital flows
- Partial global financial regulation



12

What are the Gaps in the IMS?

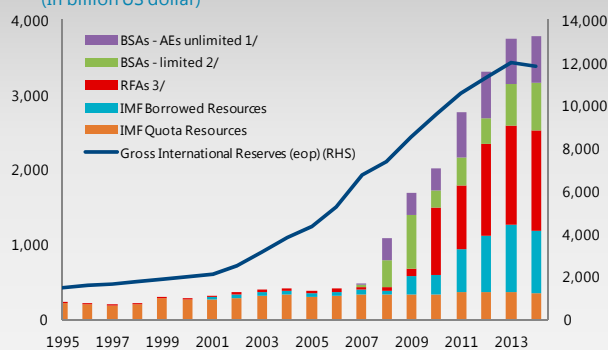
- 1) **Weak Global Adjustment Mechanisms:**
 - Global imbalances
 - Constrained domestic policy choices
- 2) **Regulatory gaps:**
 - Systemic risks from capital flows
 - Partial global financial regulation
- 3) **Global liquidity challenges/GFSN:**



What are the Gaps in the IMS?

3) Global liquidity challenges/GFSN:

Evolution of the Global Financial Safety Net, 1995—2014
(In billion US dollar)



1/ Unlimited swap arrangements are estimated based on known past usage or, if undrawn, on average past maximum drawings of the remaining central bank members in the network. Two-way arrangements are only counted once.

2/ Limited-value swap lines include all arrangements with an explicit value limit and exclude all CMIM and NAFA arrangements, which are included under RFAs. Two-way arrangements are only counted once.

3/ Based on explicit lending capacity/limit where available, committed resources, or estimated lending capacity based on country access limits and paid-in capital (see Figure 5).

Sources: Bank of England; Central Bank websites; and IMF staff estimates.



What are the Gaps in the IMS?

3) Global liquidity challenges/GFSN:



Characteristics of the System by Country Group

Characteristics	Reserve currency AEs	Other AEs	Systemic and gate keeper EMs	Other EMs	DCs
Predictability	2	1	1	1	2
Speed	2	2	2	1	1
Reliability	2	1	1	0	1
Cost	2	1	0	0	0
Policies	0	1	1	1	1

Red (0) = Limited/insufficient, Yellow (1) = Some, Green (2) = Extensive/adequate

Reform Areas and Ideas

1) Crisis Prevention and Adjustment

- Support EMDCs' financial integration and deepening
- Support equitable burden of adjustment across countries
- Discourage excessive leverage
- The IMF's Institutional View on capital flows
- Make sovereign balance sheets safer



2) Rules and Institutions for Global Cooperation

3) Role of the SDR

4) GFSN

- IMF Lending Toolkit
- RFA Coordination



The Role of RMB in Strengthening the International Monetary System

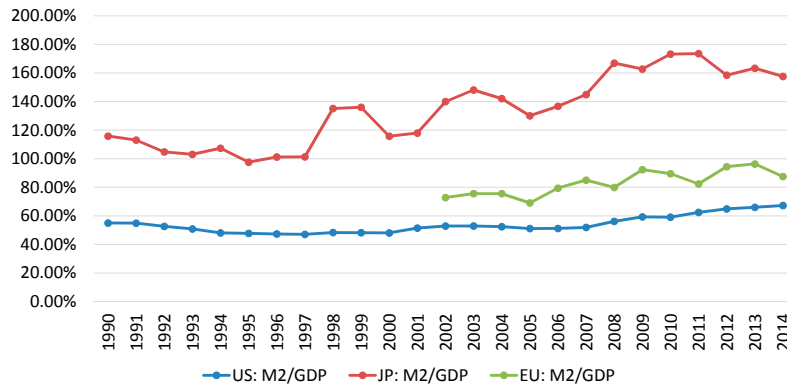
David Daokui Li
Center for China in the World Economy
And
Schwarzman Scholars
Tsinghua University

1

1. Dollar Shortage: The key problem of
the current international monetary
system

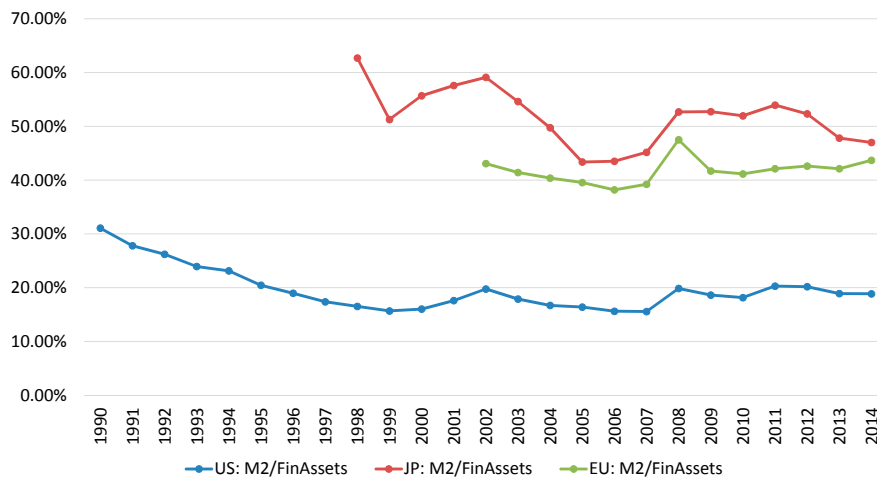
2

M2/GDP is moderately high



3

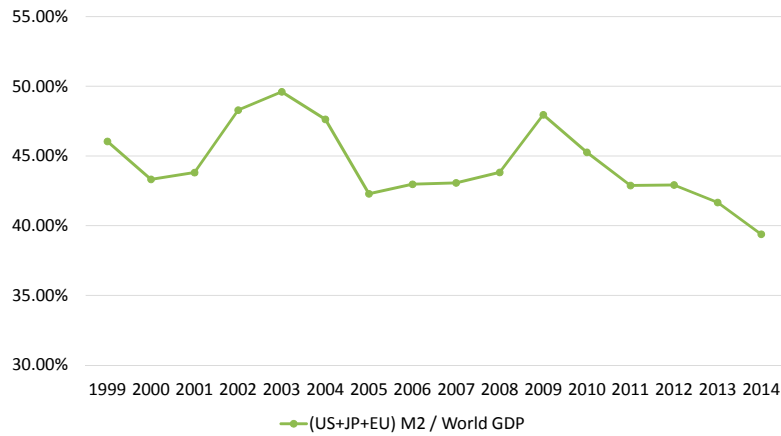
But, M2/FinAsset is low



4

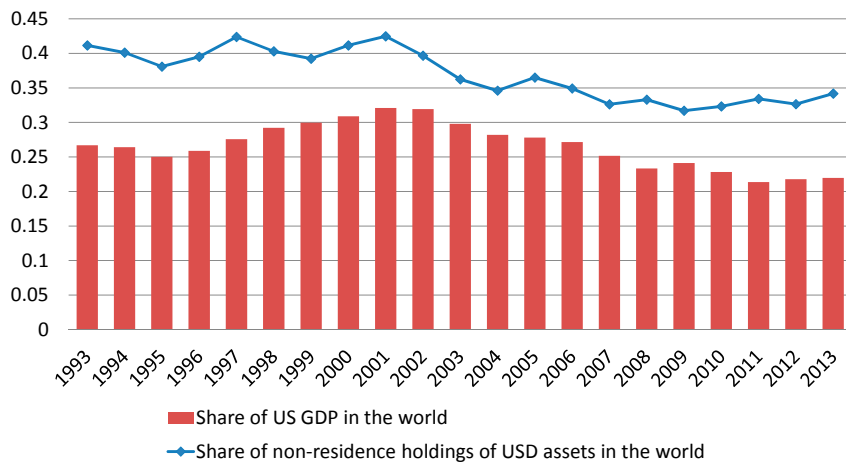
And (USD+Yen+Euro)/WorldGDP is low

- PBOC's YAO Yudong (2015): The World M2 growth is slowing down.
2000-2007, 5.3% 2003-2014, 0.36%.



5

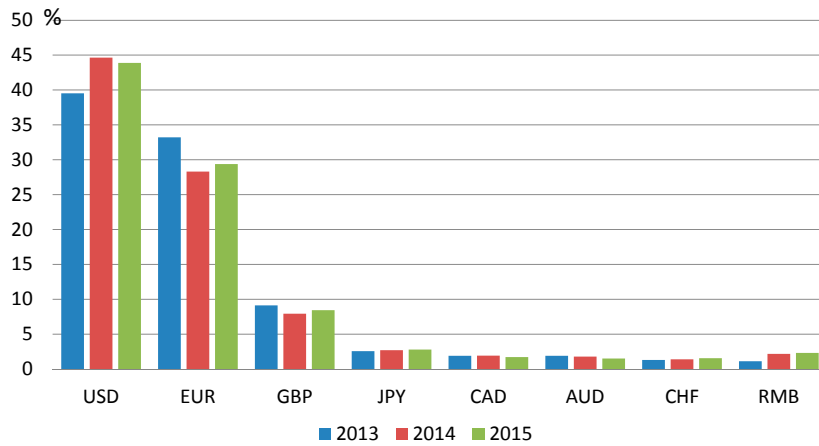
Over-reliance on the USD



Source: Li & Wu (2016); WDI

6

Increasing share of USD in the international settlements

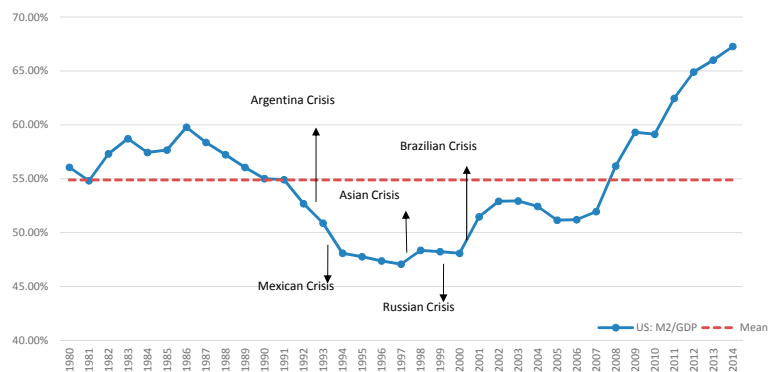


Source: Wind, SWIFT

7

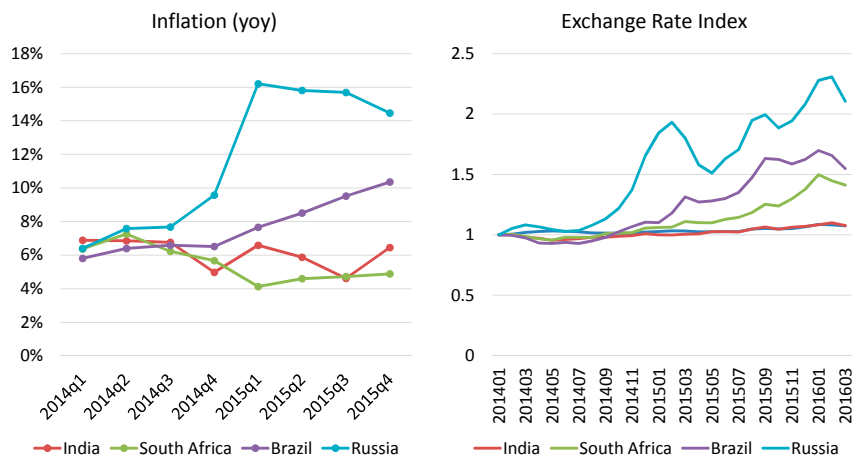
Low USD M2/GDP causes EM financial risks

- Li & Mei (2009): M2 and regional crisis
- Tightened monetary policy in the US adds to regional financial pressure



8

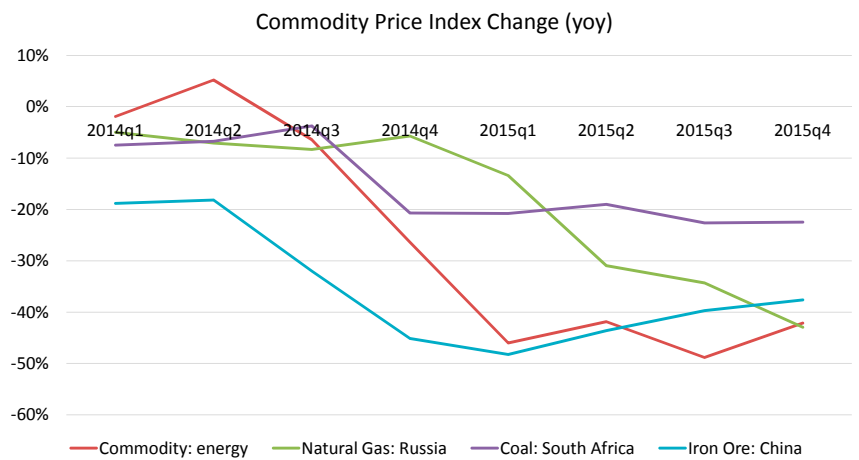
The mechanism: Devaluation causing inflation



Source: World Development Indicators

9

The recent phenomenon: Commodity price slumps



Source: CEIC Database

10

2. How to solve/mitigate the problem?

Three possibilities:

1. More accommodative US monetary policy for the world economy
2. A more proactive IMF and the SDR
3. The RMB: A stable exchange rate plus moderately expansionary monetary policy

11

The US Fed is unlikely to be appropriately accommodative

“Our sense is that at this stage these developments do not pose a substantial risk to the US economic outlook...only a domestic slowdown will influence US monetary policy”



12

The IMF and SDR

1. Flexible credits from the IMF may be counterproductive
2. SDR: size matters
 - 1970-1972: +\$9.3bn
 - 1979-1981: +\$12.1bn
 - 2009: +\$182.7bn
 - now: \$204.1bn2% of total foreign exchange reserve (\$11 trillion)
3. SDR is far from being an actively traded currency

13

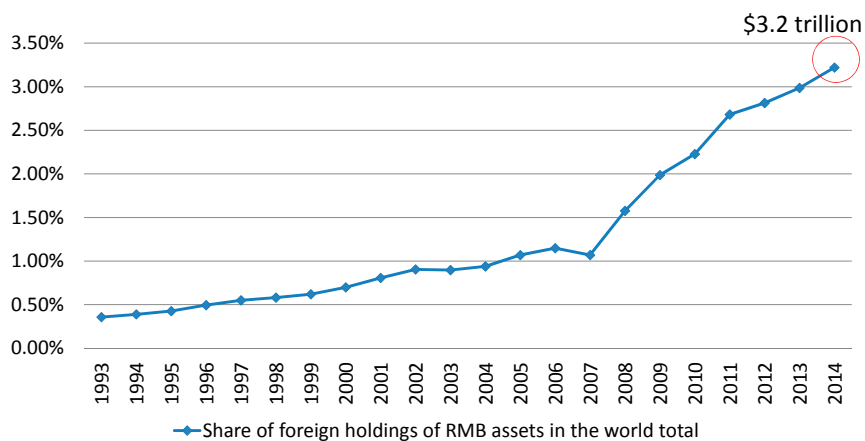
2. Why a stable exchange rate plus moderately proactive monetary of RMB helps?

Three channel:

1. Many currencies have been linked to the RMB in exchange rate
2. More import causing higher commodity prices
3. More outgoing FDI from China

14

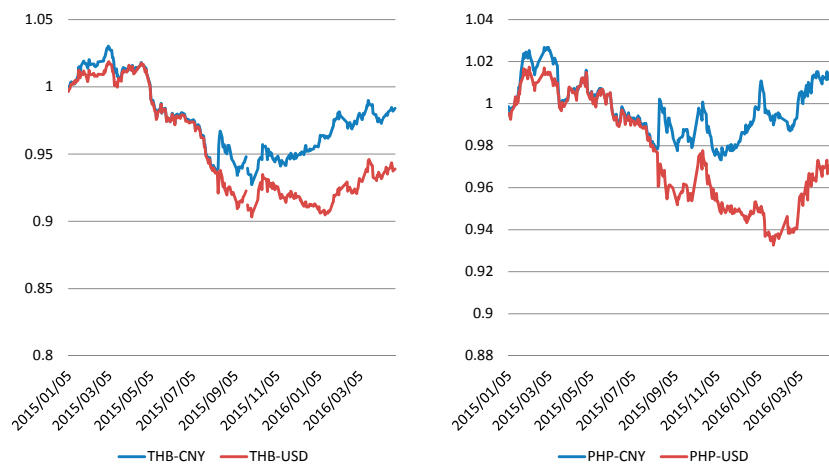
Non-residence holdings of RMB assets



Source: Li & Wu (2016)

15

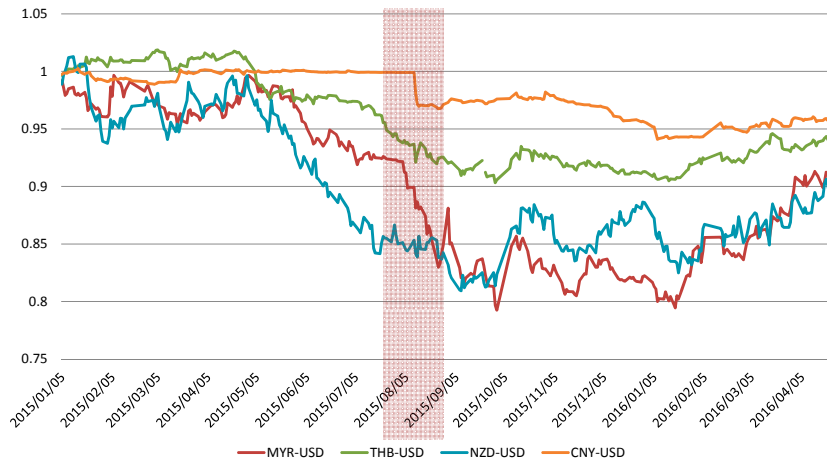
Many emerging market currencies are more pegged to RMB than the USD



Source: Wind; CCWE estimates

16

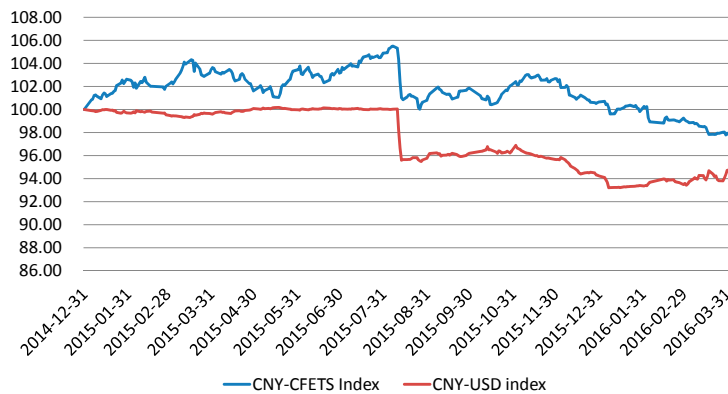
RMB depreciation triggered depreciation of China's trading partners



Source: Wind; CCWE estimates

17

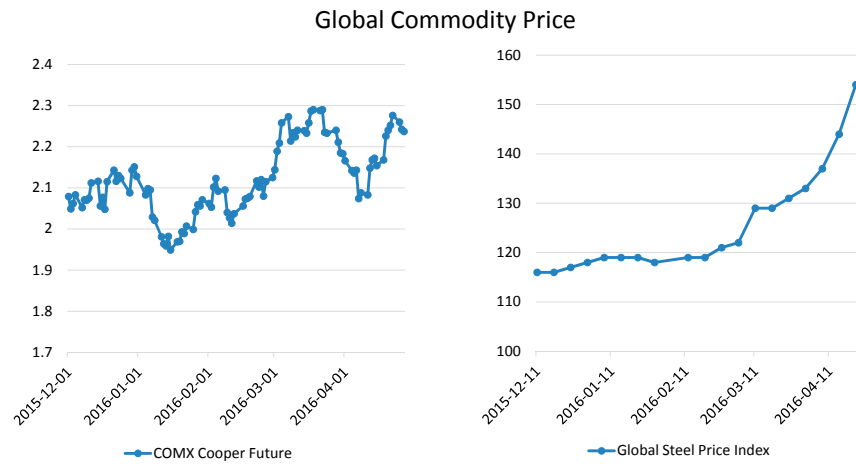
Recently, the RMB has been relatively stable to a basket of currencies



Source: Wind; CCWE estimates

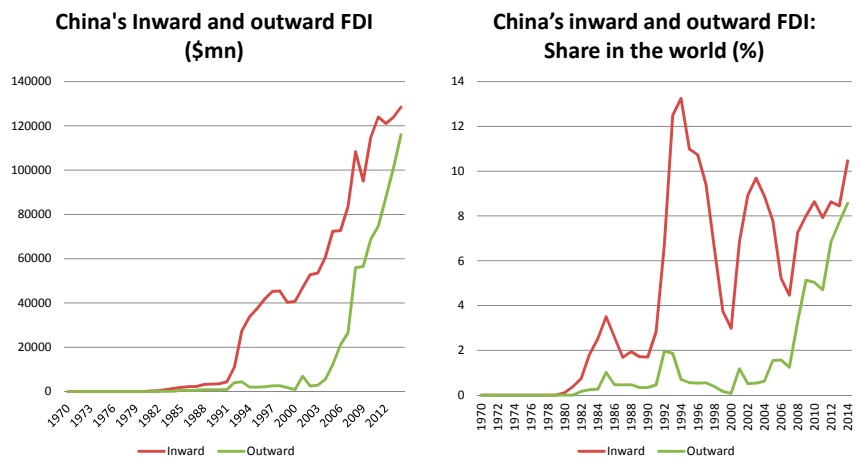
18

The recent recovery of commodity price

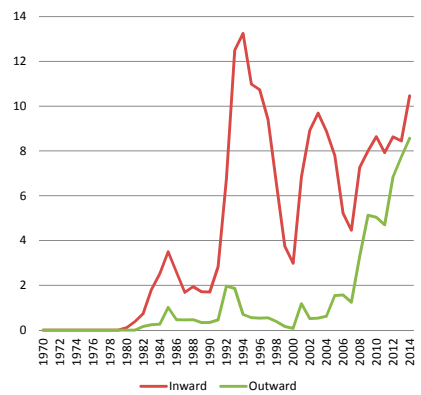


19

Chinese Outward FDI



China's inward and outward FDI: Share in the world (%)



Source: UNCTAD

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Summing Up

1. The issue of dollar shortage is coming back to the world economy
2. Chinese RMB is key to mitigating the problem

Debt and the Macroeconomy

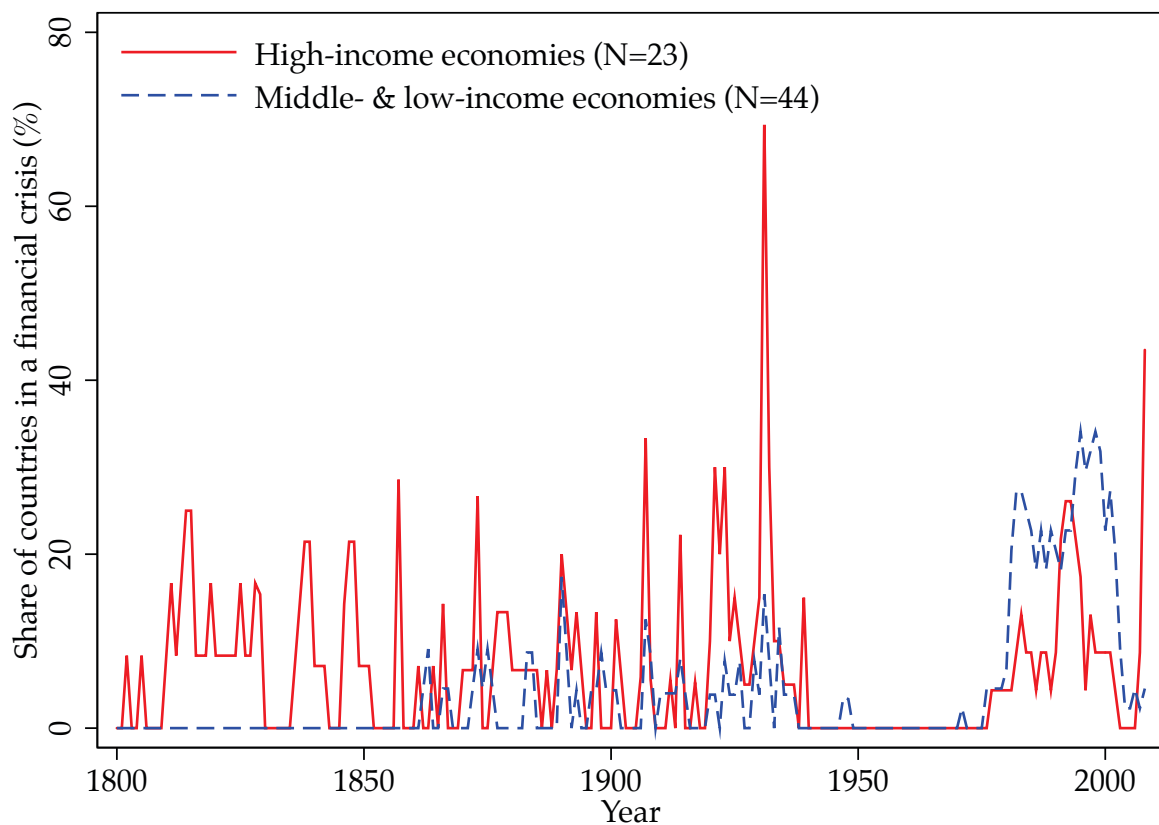
Moritz Schularick
U Bonn, CEPR and CESifo

Beijing
April 2016

1/35

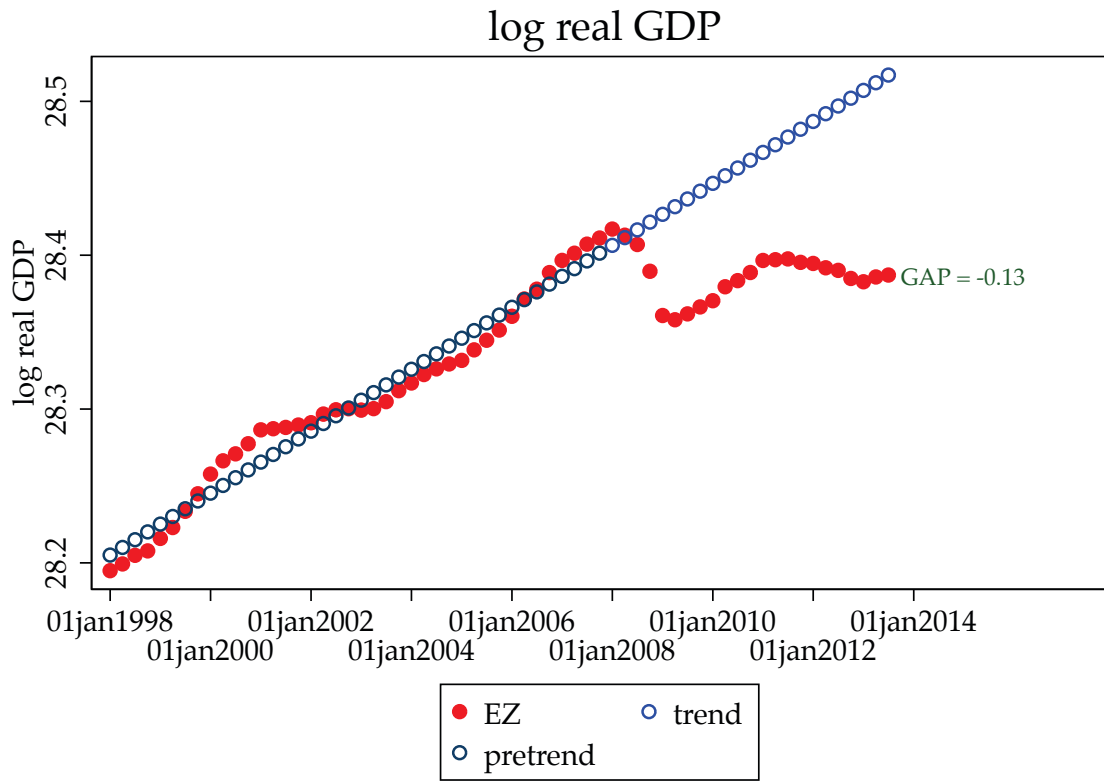
Explicandum 1 – financial crises happen: why?

Crisis frequency since 1800, all economies

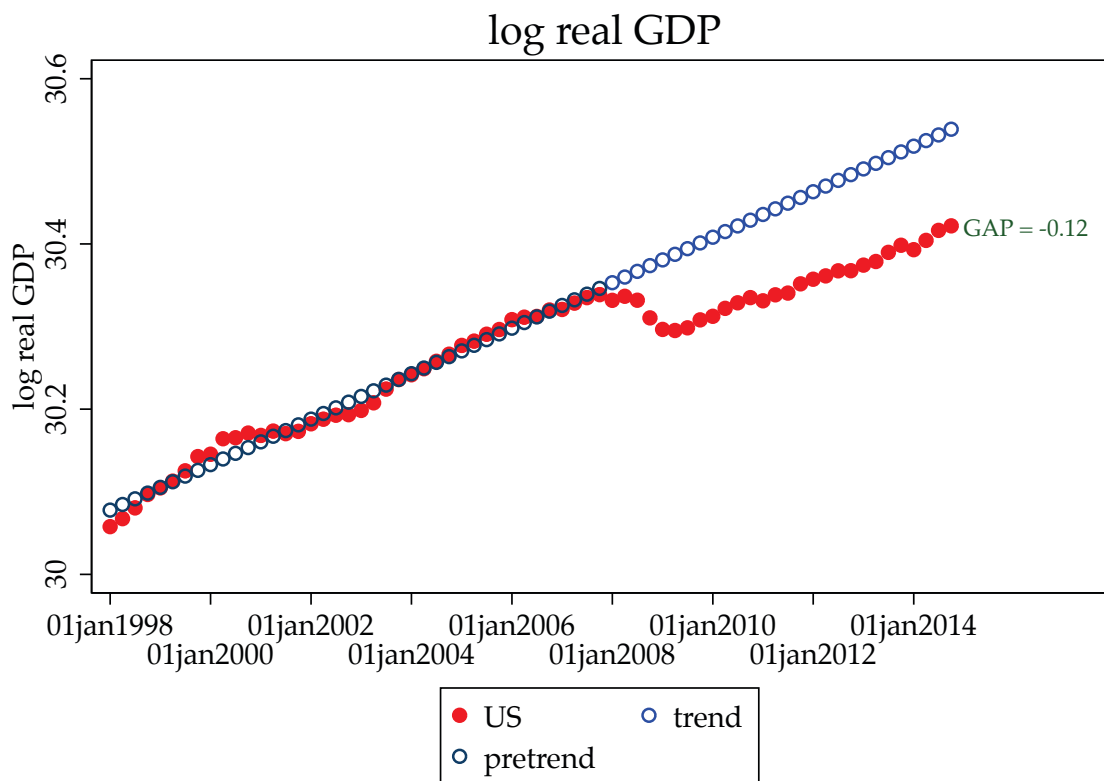


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Explicandum 2 – financial crises are painful: why?



Explicandum 2 – financial crises are painful: why?



Motivation

Debt in macroeconomics

- What are the origins of crises?
- How costly are they?
- What can be learned from the experience of advanced economies?

5/35

Motivation

Debt in macroeconomics

- What are the origins of crises?
- How costly are they?
- What can be learned from the experience of advanced economies?

Approach here

- Long-run empirical macro
- Large time-horizon, quantitative analysis
- “Rare events” problem
- Need a *lot* of data to say anything meaningful about these questions!

5/35

A Presentation in Three Parts

- Causes of financial crises: Credit booms gone bust
- Consequences of financial crises: Credit bites back
- Bubble trouble: Asset prices and amplification

References:

Schularick and Taylor, “Credit booms gone bust” (AER 2012)

Jordà, Schularick, and Taylor, “Crises and external imbalances” (IMF ER 2012)

Jordà, Schularick, and Taylor, “When credit bites back” (JMCB 2013)

Jordà, Schularick, and Taylor, “Sovereigns versus banks” (JEEA 2015)

Jordà, Schularick, and Taylor, “Betting the house” (JIE 2015)

Jordà, Schularick, and Taylor, “Leveraged bubbles” (JME 2015)

Knoll, Schularick, and Steger, “No price like home” (AER, RR)

Part I. Causes of financial crises: Credit booms gone bust

Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1870–2008

By MORITZ SCHULARICK AND ALAN M. TAYLOR*

The crisis of the advanced economies in 2008–09 has focused new attention on money and credit fluctuations, financial crises, and policy responses. We study the behavior of money, credit, and macroeconomic indicators over the long run based on a new historical dataset for 14 countries over the years 1870–2008, using the data to study rare events associated with financial crisis episodes. We present new evidence that leverage in the financial sector has increased strongly in the second half of the twentieth century as shown by a decoupling of money and credit aggregates. We show for the first time how monetary policy responses to financial crises have been more aggressive post-1945, but how despite these policies the output costs of crises have remained large. Importantly, we demonstrate that credit growth is a powerful predictor of financial crises, suggesting that such crises are credit booms gone wrong and that policymakers ignore credit at their peril. It is only with the long-run comparative data assembled for this paper that these patterns can be seen clearly. (JEL: E44, E51, E58, G01, G20, N10, N20.)

What's new?

Contribution of original ST AER 2012 paper...

- A new 140 x 14 annual panel database
- Key financial history variables for developed countries
- Many questions we could not answer without these data
- Major research area (e.g. Barro, Reinhart-Rogoff)

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What's new?

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- Many questions we could not answer without these data
- Major research area (e.g. Barro, Reinhart-Rogoff)

Building on that paper we have done much more...

- Develop, refine, and extend the dataset
- Apply to other important macro-finance questions

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Descriptive

- Data: Standard macro variables plus our new data
 - **Bank loans** = Domestic currency lending by domestic banks to domestic households and non-financial corporations (excluding lending within the financial system).

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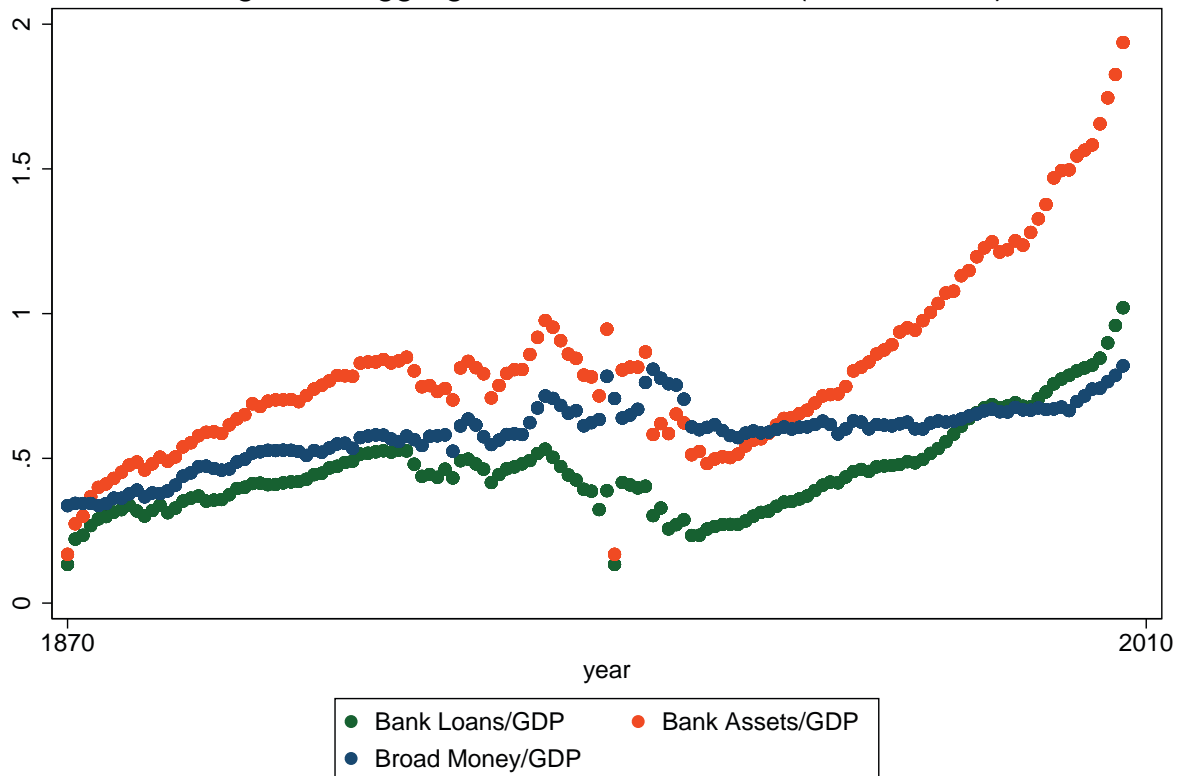
Descriptive

- Data: Standard macro variables plus our new data
 - **Bank loans** = Domestic currency lending by domestic banks to domestic households and non-financial corporations (excluding lending within the financial system).
- To summarize these data we construct “global trends”
 - For any X_{it} estimate country-fixed effects regression
$$X_{it} = a_i + b_t + e_{it}$$
then plot the estimated year effects b_t to show the average global level of X in year t .

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The Great Leveraging

Figure 1. Aggregates Relative to GDP (Year Effects)



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Trends—Summary

- Age of Money (1870–1970s)
 - Money and credit were tightly linked and maintained a fairly stable relationship relative to GDP
 - Both aggregates collapsed in the Great Depression
 - Recovery from the collapse from 1940s to 1970s in a period of low leverage/financial repression/regulation (with no financial crises)

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Trends—Summary

- Age of Money (1870–1970s)
 - Money and credit were tightly linked and maintained a fairly stable relationship relative to GDP
 - Both aggregates collapsed in the Great Depression
 - Recovery from the collapse from 1940s to 1970s in a period of low leverage/financial repression/regulation (with no financial crises)
- Age of Credit (1970s–2008)
 - Continued and unprecedented rise of leverage and growth of non-monetary liabilities of banks
 - Decoupling of credit from money
 - Decline of safe/liquid assets on bank balance sheets

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The origins of crises

- Economic conditions at $t - 1, t - 2, \dots \rightarrow$ crisis at time t

$$\text{logit}(p_{it}) = b_{0i} + b_1(L)\Delta\log\text{CREDIT}_{it} + b_2(L)X_{it} + e_{it}$$

where

$\text{logit}(p) = \ln\left(\frac{p}{1-p}\right)$ is the log odds ratio

$b_i(L)$ is a polynomial in the lag operator L

- We have also tried a linear probability specification (and a variety of fixed effects), but the results are robust

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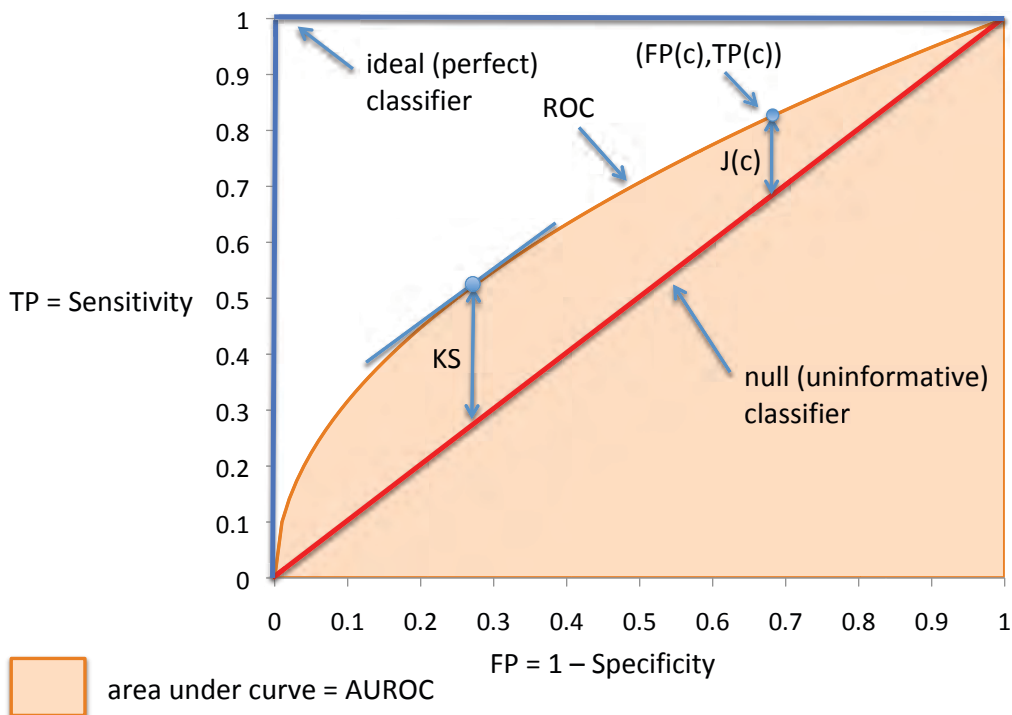
Baseline Model

TABLE 4 BASELINE MODEL AND ALTERNATIVE MEASURES OF MONEY AND CREDIT

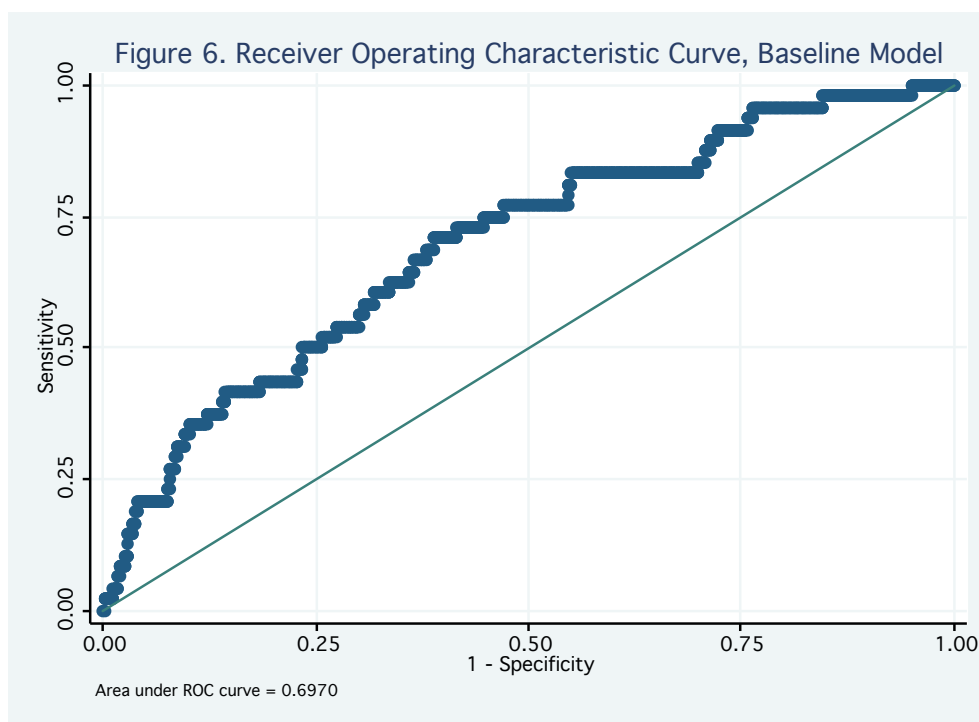
Specification (Logit country effects)	(6) Baseline	(7) Replace loans with broad money	(8) Replace loans with narrow money
L.Dlog(loans/P)	-0.108 (2.05)	1.942 (2.94)	-0.890 (1.37)
L2.Dlog(loans/P)	7.215*** (1.99)	5.329** (2.52)	2.697 (1.68)
L3.Dlog(loans/P)	1.785 (1.83)	2.423 (2.63)	2.463 (1.77)
L4.Dlog(loans/P)	0.0517 (1.49)	-1.742 (2.51)	-2.244 (1.65)
L5.Dlog(loans/P)	1.073 (1.78)	4.275* (2.30)	1.210 (1.82)
Observations	1285	1361	1394
Groups	14	14	14
Avg. obs. per group	91.79	97.21	99.57
Sum of lag coefficients	10.02***	12.23***	3.235
se	3.235	3.544	3.129
Test for all lags = 0, χ^2	17.22***	18.35***	5.705
p value	0.0041	0.0025	0.3360
Test for country effects = 0, χ^2	7.789	9.333	8.627
p value	0.857	0.747	0.800
Pseudo R^2	0.0596	0.0481	0.0343

Notes: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

Predictive Ability Testing: ROC Curve and Diagnostics



Baseline Model - The ROC Curve



- What is a “high” AUROC? [Medical examples]

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The menace of housing booms

The Great Mortgaging: Housing Finance, Crises, and Business Cycles*

Òscar Jordà[†]

Moritz Schularick[‡]

Alan M. Taylor[§]

March 2015

Abstract

This paper unveils a new resource for macroeconomic research: a long-run dataset covering disaggregated bank credit for 17 advanced economies since 1870. The new data show that the share of mortgages on banks' balance sheets doubled in the course of the 20th century, driven by a sharp rise of mortgage lending to households. Household debt to asset ratios have risen substantially in many countries. Financial stability risks have been increasingly linked to real estate lending booms which are typically followed by deeper recessions and slower recoveries. Housing finance has come to play a central role in the modern macroeconomy.

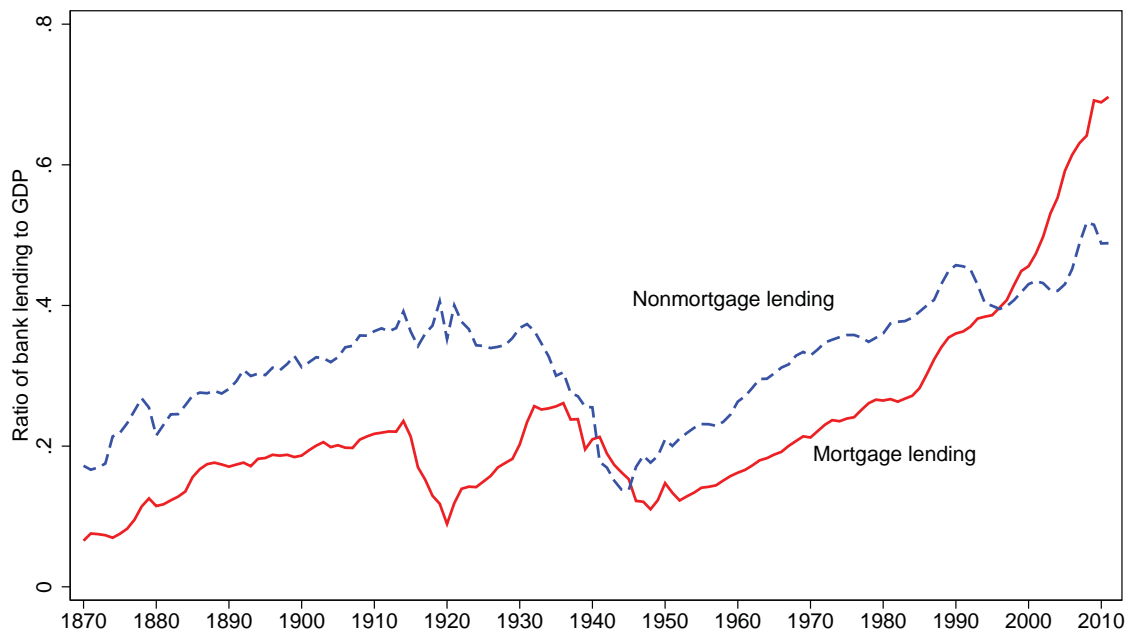
Keywords: leverage, recessions, mortgage lending, financial crises, business cycles, local projections.

JEL Codes: C14, C38, C52, E32, E37, E44, E51, G01, G21, N10, N20.

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The Great Mortgaging

Mortgage vs. non-mortgage lending (17 country average)



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Shifting sources of crisis risk

		Pre-WWII			
Total loans		54.30*** (13.74)			
Mortgage loans			18.76 (12.65)		23.38 (20.66)
Non-mortgage loans				66.91*** (21.57)	66.27*** (20.96)
AUC	0.63	0.76	0.69	0.77	0.78
s.e.	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Observations	1003	790	721	691	691
		Post-WWII			
Total loans		34.32*** (8.77)			
Mortgage loans			45.94*** (13.67)		33.11** (13.93)
Non-mortgage loans				50.06*** (14.39)	35.70** (15.57)
AUC	0.62	0.75	0.72	0.72	0.75
s.e.	(0.05)	(0.05)	(0.05)	(0.06)	(0.05)
Observations	976	967	964	964	964

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Major findings

- Credit = Money?
 - In the distant past, yes. Not any more.
- Banks no longer do what you think they do.
 - Mortgage credit is about 60% of the loan book of banks today.
- Shifting origins of crises.
 - Credit data contain predictive information about future financial crises.

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Part II. Consequences of financial crises: Credit bites back

ÒSCAR JORDÀ
MORITZ SCHULARICK
ALAN M. TAYLOR

When Credit Bites Back

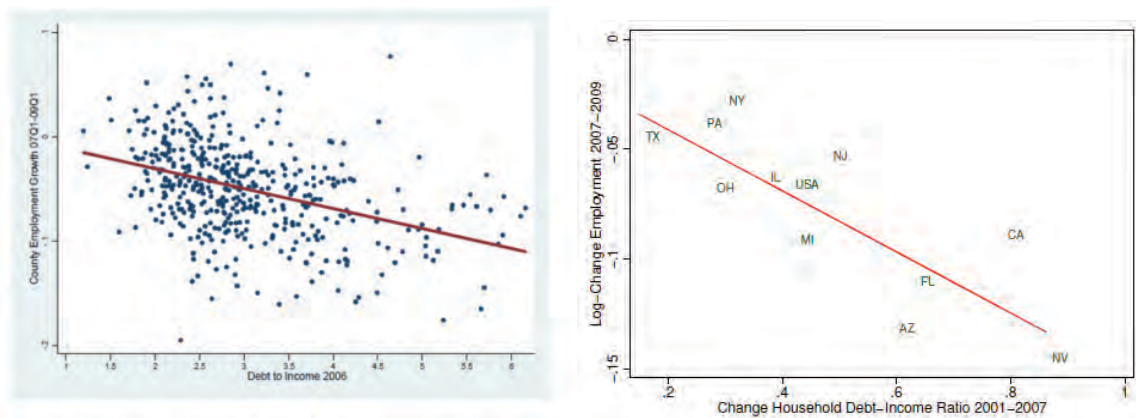
Using data on 14 advanced countries between 1870 and 2008 we document two key facts of the modern business cycle: relative to typical recessions, financial crisis recessions are costlier, and more credit-intensive expansions tend to be followed by deeper recessions (in financial crises or otherwise) and slower recoveries. We use local projection methods to condition on a broad set of macro-economic controls to study how past credit accumulation impacts key macro-economic variables such as output, investment, lending, interest rates, and inflation. The facts that we uncover lend support to the idea that financial factors play an important role in the modern business cycle.

JEL codes: C14, C52, E51, F32, F42, N10, N20

Keywords: leverage, booms, recessions, financial crises, business cycles, local projections.

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Recent Evidence: U.S. Leverage and the Great Recession



Source: Left = Mian & Sufi, Right = Midrigan & Philippon

- Is this an empirical regularity?
- Look at the near-universe of macroeconomic data that exists
- US 2008 cross-section → long-run historical global panel

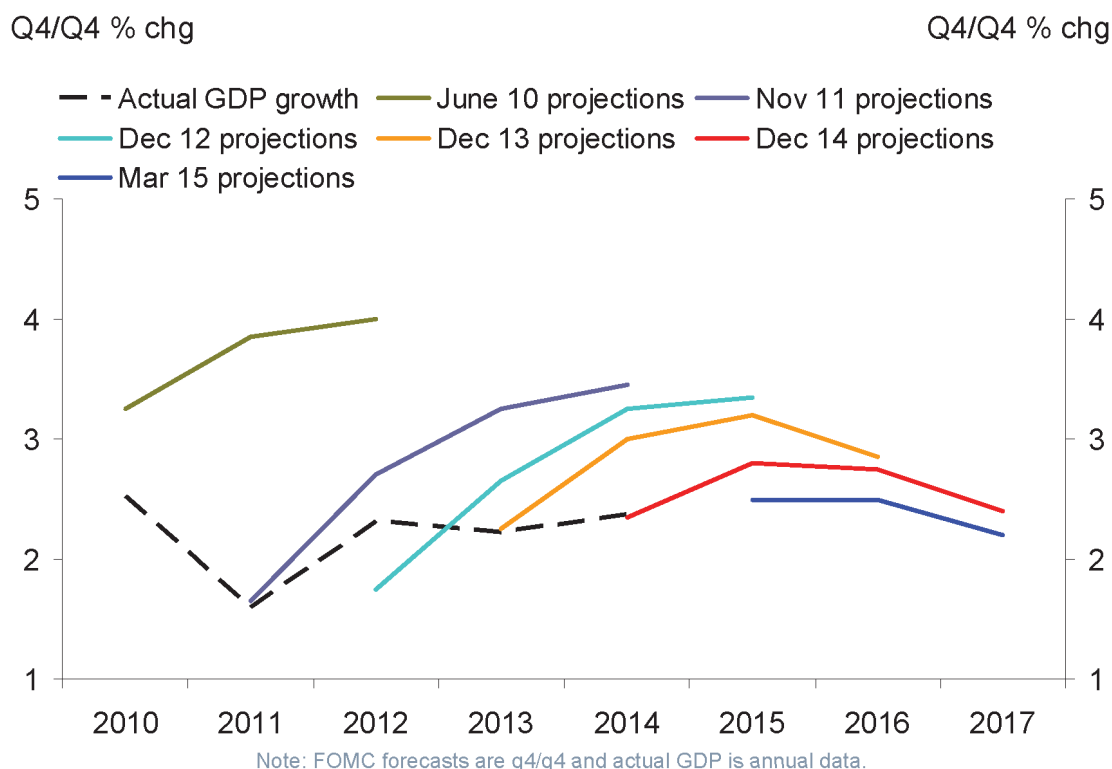
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Empirical challenge

- Can we disentangle these issues? We think so:
- Consider a country i coming out of a business cycle expansion p and entering a recession at time $t(p)$
- ... when private credit grew above country-specific historical average in the expansion: $(x_{i,t(p)} - \bar{x}_i)_{\text{credit}}$
- ... does this change the expected path of the economy through recession and recovery $(y_{t(p)}, \dots, y_{t(p)+h})$?

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An illustration: could we have known?



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Business cycle chronology

N = normal recession; F = financial crisis recession

AUS	N	1875	1878	1881	1883	1885	1887	1889	1896	1898	1900	1904	1910
		1913	1926	1938	1943	1951	1956	1961	1973	1976	1981		
	F	1891	1894	1989									
CAN	N	1871	1877	1882	1884	1888	1891	1894	1903	1913	1917	1928	1944
		1947	1953	1956	1981	1989	2007						
	F	1874	1907										
CHE	N	1875	1880	1886	1890	1893	1899	1902	1906	1912	1916	1920	1933
		1939	1947	1951	1957	1974	1981	1990	1994	2001			
	F	1871	1929	2008									
DEU	N	1879	1898	1905	1913	1922	1943	1966	1974	1980	1992	2001	
		1875	1890	1908	1928	2008							
	F	1875	1890	1908	1928	2008							
DNK	N	1870	1880	1887	1911	1914	1916	1923	1939	1944	1950	1962	1973
		1979	1987	1992									
	F	1872	1876	1883	1920	1931	2007						
ESP	N	1873	1877	1892	1894	1901	1909	1911	1916	1927	1932	1935	1940
		1944	1947	1952	1958	1974	1980	1992					
	F	1883	1889	1913	1925	1929	1978	2007					
FRA	N	1872	1874	1892	1894	1896	1900	1905	1909	1912	1916	1920	1926
		1933	1937	1939	1942	1974	1992						
	F	1882	1907	1929	2007								

- Peaks and troughs from Bry-Boschan algorithm
- $F = 1 \iff$ financial crisis with ± 2 years; else $N = 1$

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“Treatment” Variables

Table : Summary Statistics for the Treatment Variables

	(1) All recessions		(2) Financial recessions		(3) Normal recessions	
	mean	($F = 1$) (s.d.)	mean	($N = 1$) (s.d.)	mean	(s.d.)
Financial recession indicator (F) Observations	0.29 223		1 50		0 173	
Normal recession indicator (N) Observations	0.71 223		0 50		1 173	
Excess credit measure (ξ), ppy Observations	0.47 154	(2.17)	1.26 35	(2.51)	0.24 119	(2.01)

- Treatment-response framework
- Regress change in log real GDP per capita from peak to year h on treatments: normal/financial recession (N, F) and excess credit
- Excess credit is percentage pts per year in prior expansion

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Local projections: average effect of the overhang

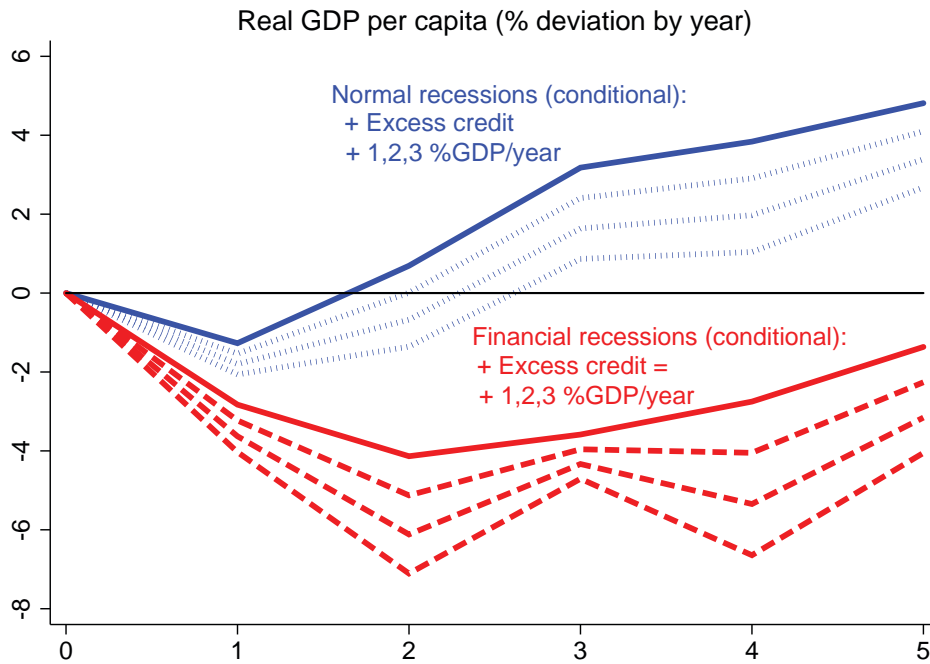
Paths in **normal** versus **financial** recessions and **experiments**

$$\begin{aligned}
 \underbrace{\Delta_h y_{it(p)+h}^k}_{\text{outcome}} &= \underbrace{\theta_N^k d_{it(p)}^N + \theta_F^k d_{it(p)}^F}_{\text{average conditional paths}} \\
 &+ \underbrace{\beta_{h,N}^k d_{it(p)}^N (x_{it(p)} - \bar{x}_i) + \beta_{h,F}^k d_{it(p)}^F (x_{it(p)} - \bar{x}_i)}_{\text{effect of the overhang}} \\
 &+ \underbrace{\sum_{l=0}^L \Gamma_{h,l}^k Y_{it(p)-l}}_{\text{controls (demeaned)}} + \underbrace{\alpha_i^k}_{\text{fixed effects (demeaned)}} + \underbrace{u_{h,it(p)}^k}_{\text{error term}}
 \end{aligned}$$

where $\underbrace{k = 1, \dots, K}_{\text{variables}}$; $\underbrace{h = 1, \dots, H}_{\text{horizons}}$; $\underbrace{l = 1, \dots, L}_{\text{lags}}$; $\underbrace{p = 1, \dots, P}_{\text{recessions}}$

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Credit bites back



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Conclusions of Part II

Major findings

- The credit intensity of the boom matters for output path...
- ... and this is true in any kind of recession (normal/financial).
- = new stylized fact.

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Major findings

- The credit intensity of the boom matters for output path...
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Implications

- Another macropru reason to worry about credit and crises
- Credit increases crisis risk (Part I)
- Credit slows down recovery path (Part II)

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Part III. Bubble trouble: asset prices and amplification



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Leveraged bubbles ☆

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Beliefs about bubbles

[O]ver-investment and over-speculation are often important; but they would have far less serious results were they not conducted with borrowed money.

— Irving Fisher, 1933

All of us knew there was a bubble. But a bubble in and of itself doesn't give you a crisis.... It's turning out to be bubbles with leverage.

— Former Federal Reserve Chair Alan Greenspan, CNBC Squawk Box, 2013

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What we ask

Bubbles and crises

What risks do bubbles pose to financial stability?

- Are all bubbles alike?
- Idea that credit boom + bubble can be dangerous.
- What's the evidence?

Combining two datasets

- Credit, equity prices, macro controls from Jordà, Schularick and Taylor (2014)
- House prices from Knoll, Schularick and Steger (2015)

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What is an asset price bubble?

Deviation from fundamentals? Many definitions available...

Lack of consensus + lack of data \Rightarrow a pragmatic solution.

Let z be a log asset price, z^{HP} denotes its HP cycle.

Price Elevation Signal $_{it}$ =

$$I(z_{it}^{HP} > \text{standard deviation of } z^{HP} \text{ in country } i)$$

Price Correction Signal $_{it}$ =

$$I(z_{i,t+3} - z_{it} < -0.15 \text{ for some year } t \text{ within the episode})$$

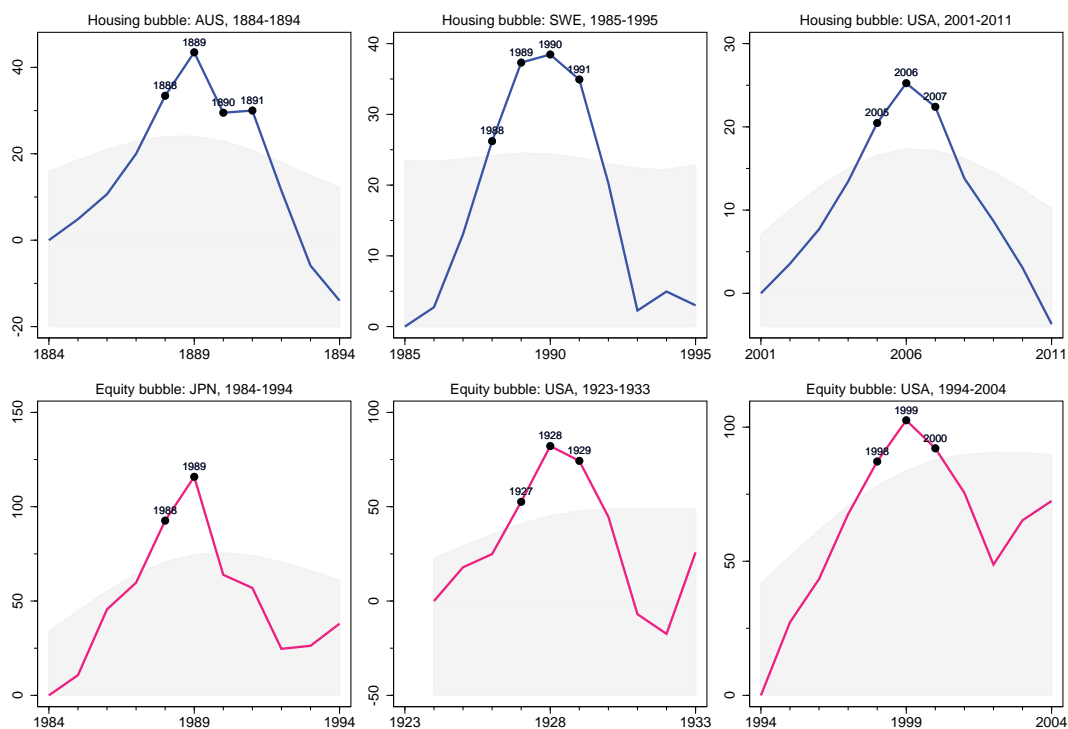
Bubble Signal $_{it} = d_{it} =$

$$(\text{Price Elevation Signal}_{it} \times \text{Price Correction Signal}_{it})$$

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Examples of famous bubble episodes

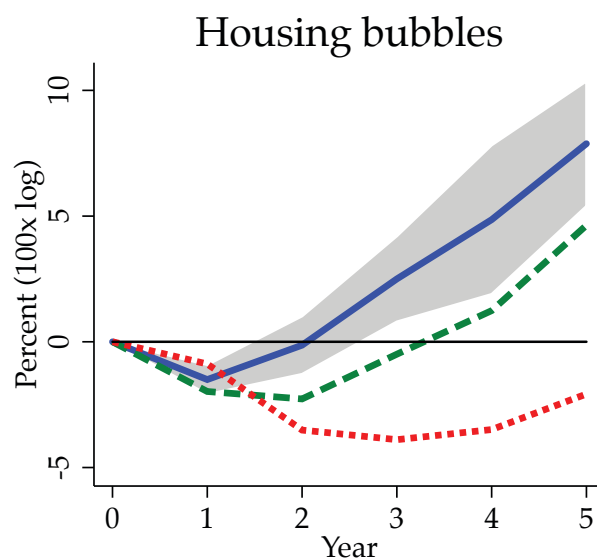
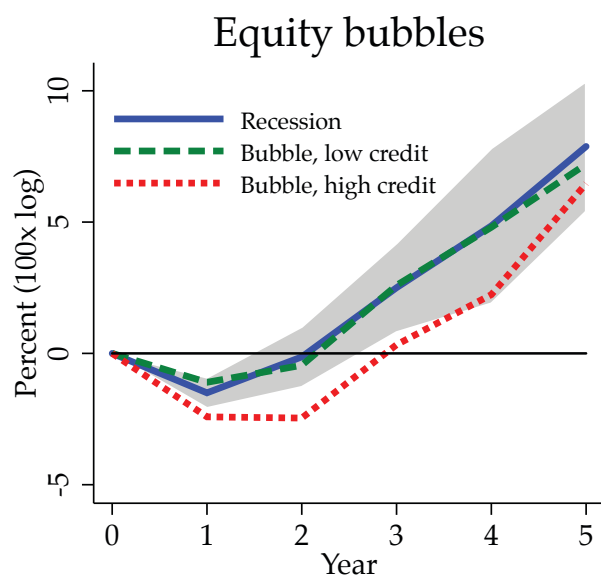
Using our bubble signal definition



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Benchmark + controls LP path

Post-WW2 sample: 1950–2012



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Conclusions of Part III

Leveraged bubbles spell trouble: ignore at your peril

- The combination of asset price bubbles and credit booms substantially increases crisis risks: this refines earlier results on the role of credit alone
- House price bubbles are less frequent than equity bubbles and more often end up in financial crises
- Credit fueled housing bubbles are particularly costly: they lead to deeper recessions and slower recoveries

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How to Deal with Credit Booms

GIOVANNI DELL'ARICCIA
IMF – RESEARCH DEPARTMENT

Joint *POBC-IMF* Conference, Beijing, April 2016

The views expressed here are those of the authors and do not necessarily represent those of the IMF or the IMF Board

Credit booms: A policy dilemma

The good

- increased access to finance
- greater support for investment and economic growth

e.g., Levine, 2005

The bad

- looser lending standards
- excessive leverage, asset price bubbles
- financial crises

e.g., Reinhart and Rogoff, 2009

Policy consensus

Before the crisis: Inflation targeting, microprudential focus, benign neglect

After the crisis: credit booms too dangerous to be left alone

An interventionist strategy requires better understanding of “macrofinancial” stability and assessment of all available policy options



Questions

What triggers credit booms?

When do credit booms end up in busts, and when do they not? Can we tell in advance those that will end up badly?

What is the role of different policies in curbing credit growth and/or mitigating the associated risks?



(Some) answers

Conditions conducive to credit booms:

- financial reform and economic growth
- fixed exchange rate regimes, weak banking supervision, loose macroeconomic policies

The larger and the longer is a boom, the more likely that it ends up badly

Monetary and fiscal policies do not appear to be very effective in limiting booms

Macroprudential tools at times proven effective in containing booms and in limiting the consequences of busts



Roadmap

Definition and stylized facts

Empirical analysis on:

- Triggers
- Determinants of (bad) booms
- Policies and likelihood of (bad) booms

Conclusions



What is a credit boom?

Aim: find a definition that is practical and can be used for policy decisions in real time

- Credit-to-GDP ratio
- Country-specific cubic trend from $t-10$ to t
- A combination of deviation from trend (1.5 std) and absolute thresholds (20%)

Data coverage: 170 countries from 1960s onward

- Identify 176 episodes between 1970 and 2010

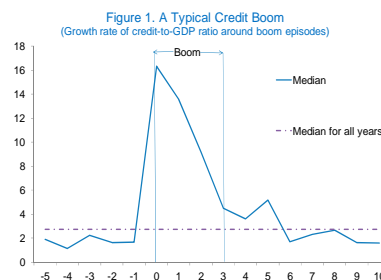
Caveats:

- Only bank credit
- Sample excludes countries with undeveloped financial systems (credit-to-GDP < 10%)

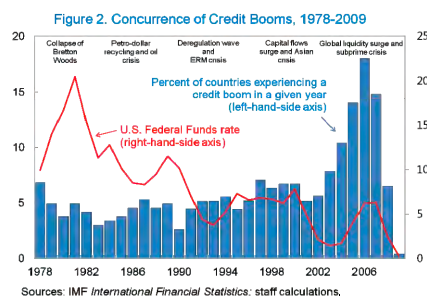


Stylized fact - I

- Typical boom lasts 3 years, with credit-to-GDP growing ~13 percent per year (5 times faster than in non-boom years)
- Upward trend in “synchronized booms” since the 1980s

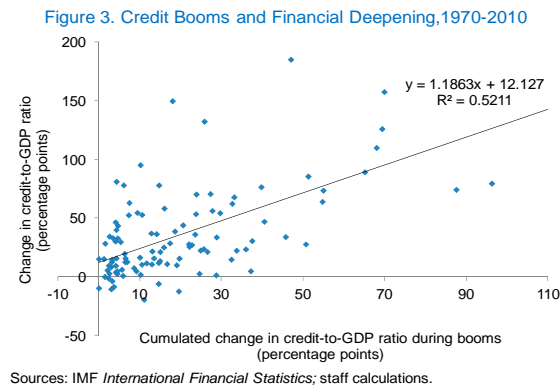


Sources: IMF International Financial Statistics; staff calculations.



Stylized fact - II

- Catching up important but booms happen in high-income countries too
- More booms in relatively undeveloped systems: median credit-to-GDP 19%, compared to sample median of 30%



Stylized fact - III

- Activity higher during booms
- Long-term growth benefits as well?

Average annual change (%)	Non-boom years	Booms
Credit-to-GDP	1.4	16.6
GDP	4.0	5.4
Consumption	4.4	5.4
Investment	5.4	10.5
Equity prices	4.3	11.1
House prices	1.2	9.5

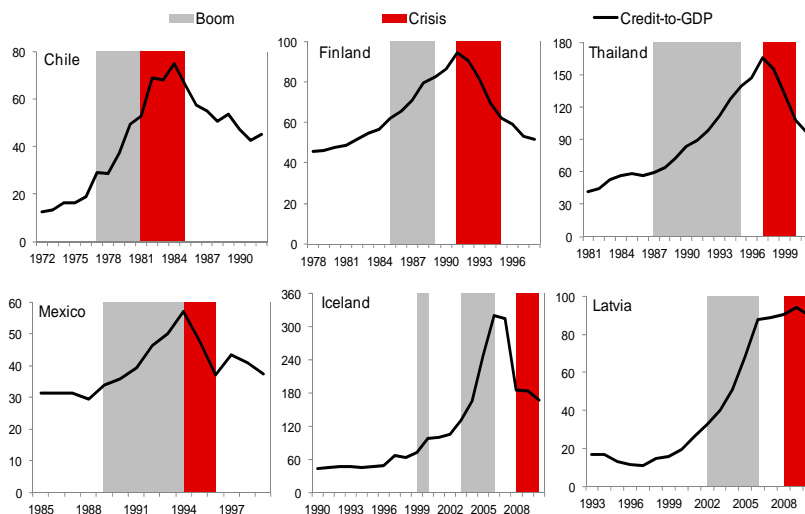
Years spent in a boom	Change in RGDPpc (%)
Zero	38
0 < x ≤ 5	60
> 5	59

Stylized fact - IV

- Link to crises
 - Early literature
 - High-profile cases
 - Recent experience
- Link to recessions, growth slowdown, and “credit-less recoveries”

Booms and Macrofinancial Stability						
Followed by financial crisis?	Followed by economic underperformance?				Total	
	No		Yes			
	#	%	#	%	#	%
No	52	30	67	38	119	68
Yes	14	8	43	24	57	32
Total	66	38	110	63	176	

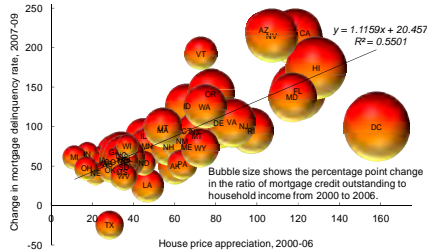
Figure 5. Credit Booms and Financial Crises: Examples of Bad Booms



Sources: Laeven and Valencia (2010), IMF *International Financial Statistics*; staff calculations.

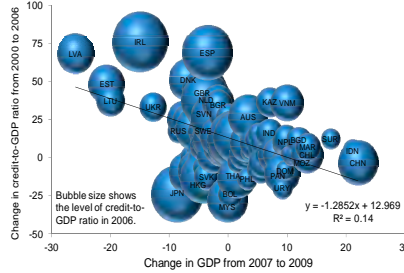
Bubbles and Bursts

Figure 4. Leverage: Linking Booms to Defaults



Sources: Federal Housing Finance Agency, Mortgage Bankers Association, Bureau of Economic Analysis, U.S. Census Bureau.
 Note: Each data point corresponds to a U.S. state, indicated by the two-letter abbreviations.

Figure 6. Credit Growth and Depth of Recession



Sources: IMF *International Financial Statistics*; staff calculations.
 Note: Each data point corresponds to a country, indicated by the three-letter abbreviations.

Triggers

Usual suspects (based on the literature):

- 1 out of 3 booms follow or coincide with **financial liberalization**, only 2% for reversals
- **Capital inflow surges** as net inflows increase from 2.3 to 3.1 percent of GDP in the three-year period before a boom
- **Buoyant economic growth** precede booms, with annual growth reaching 5.4 compared to 3.4% in tranquil times

Other regularities:

- Fixed exchange rate regimes
- Expansionary macroeconomic policies
- Low quality of banking supervision

FX regime		Monetary policy		Fiscal policy		Supervision	
Fixed	Floating	Loose	Tight	Loose	Tight	Low	High
76%	24%	85%	15%	74%	26%	79%	21%



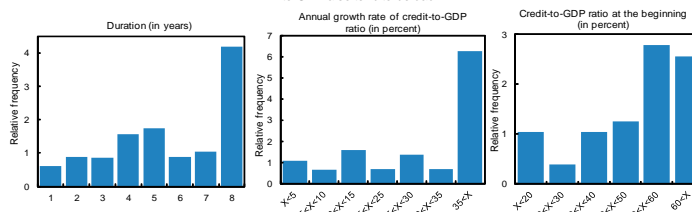
	Credit boom		Credit and housing boom	HH credit boom	Firm credit boom
GDP per capita	-0.04	-0.13	-0.05	-0.03	0.04
GDP growth	0.04*	0.12**	0.05***		
Financial reform	0.81**	2.46***	1.18***	1.10***	0.83**
Capital inflow surge	-0.03	-0.11	-0.04*	-0.07***	-0.05**
Inflation	0.01	0.02	-0.02***	-0.004	-0.003
Current account	0.01	0.03	0.01	0.04***	0.03***
Trade openness	-0.002	-0.005	-0.003***	-0.002	-0.002**
FX regime	-0.03*	-0.08*	-0.02	-0.01	-0.02
Bank orientation	-0.16	-0.49	-0.22**	-0.19*	-0.22**
C growth				0.01	
I growth					0.04***
Obs	125	123	104	117	114
R-sq	0.21	0.17	0.62	0.48	0.52



Booms gone wrong

Figure 7. Bad versus Good Booms

Booms that last longer and that develop faster are more likely to end up badly. Booms that start at a high level of credit-to-GDP also tend to be bad.



Sources: IMF *International Financial Statistics*; staff calculations.

Notes: Relative frequency is the frequency of a given attribute in bad booms divided by the frequency in good booms. Credit booms are identified as episodes during which the growth rate of credit-to-GDP ratio exceeds the growth rate implied by this ratio's backward-looking, country-specific trend by a certain threshold. Bad booms are those that are followed by a banking crisis within three years of their end.

Longer, faster, higher → greater likelihood that a systemic crisis will follow

Regression analyses suggest some association with larger current account deficits, higher inflation, lower-quality bank supervision, and faster growing asset prices, but coefficients unstable

No evidence that booms in emerging markets are more dangerous



Takeaway so far

Certain triggers and macroeconomic conditions have some bearing in assessing the susceptibility of a country to a credit boom even though they are far from giving definitive signals

Statistical evidence to pin down if a boom is good or bad is underwhelming but wise to pay extra attention (and take action) when a boom:

- Lasts longer than 6 years,
- Exceeds 25% average annual growth,
- Starts at an initial credit-to-GDP ratio higher than 60%

What to do?

- Monetary policy
- Fiscal tools
- Macroprudential measures



Monetary policy

Natural place to start

- Increases the cost of borrowing and reduces collateral values
- May limit leverage and risk taking

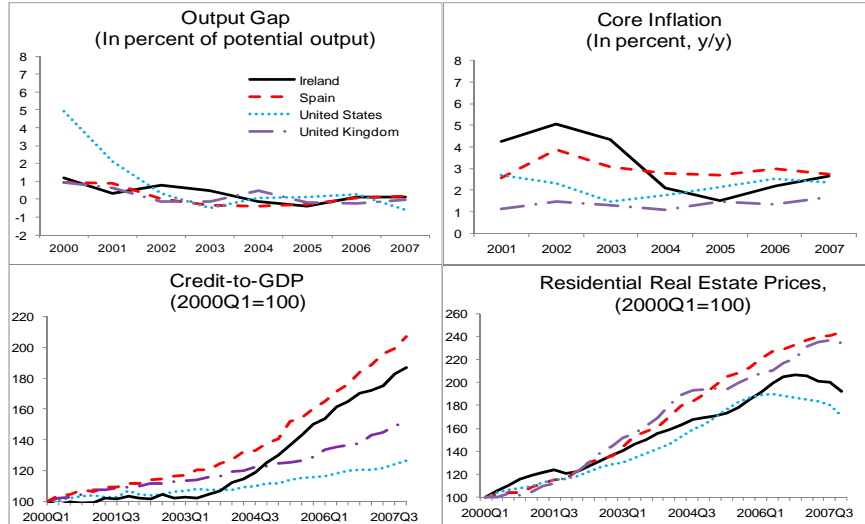
But:

- Costly for the *entire* economy and conflict of objectives possible (inflation targets, balance sheet stability, etc)
- Issues for small open economies (e.g., sudden stops and currency substitution)
- Effect on speculative component may be limited



Pre-crisis: Macro ok, but risks were growing

Figure 1. Output Gap, Core Inflation, and Financial Indicators Before the Crisis



Source: World Economic Outlook (September 2007 vintage for the output gap) and Haver Analytics.

Fiscal tools

Prudent countercyclical stance and removal of debt bias of course would help

- A buffer of 5% of GDP over the life of the boom would cover the fiscal costs associated with a typical crisis

But:

- Cyclical implementation and timely response difficult
- Practical issues with “financial activities taxes”
 - ✦ Setting progressive rates tailored to banks’ business models and taking bank reaction into account
 - ✦ Incentives to game the system may increase when systemic risk is elevated

Macroprudential measures

Targeted approach to:

- Prevent unsustainable booms
- Increase resilience to busts

But:

- Circumvention
- Political resistance
- Unintended consequences (e.g., insuring against aggregate fluctuations may increase risk taking in the cross-sectional dimension)



Preventing a boom				
GDP per capita	-0.04	-0.06	-0.16***	-0.16***
GDP growth	0.04*	0.02	0.06***	0.05**
Financial reform	0.72**	0.77**	0.97***	0.76**
Capital inflow surge	-0.03	-0.03	-0.02	-0.02
Inflation	0.01	0.002	0.01	-0.00
Current account	0.01	0.003	0.02*	0.01
Trade openness	-0.001	-0.002	-0.002**	-0.002
FX regime	-0.02*	-0.03	-0.02	-0.01
Bank orientation	-0.16	-0.23**	-0.26**	-0.33***
Monetary policy stance	-0.001			-0.001
Fiscal policy stance		0.09*		0.11**
Macroprudential tools			-0.14***	-0.14***
Obs	125	117	125	117
R-sq	0.22	0.26	0.34	0.38



Preventing a boom from going wrong

	All bad booms			Financial crises			Growth slowdowns		
Duration	0.05*	0.04	0.09*	0.02	0.02	0.01	0.05	0.02	0.09*
Monetary policy stance	0.00			0.00			-0.00		
Fiscal policy stance		-0.00			0.01			-0.01	
Macroprudential tools			-0.02			-0.04*			-0.02
Obs	137	111	78	137	111	78	137	111	78
R-sq	0.12	0.09	0.18	0.09	0.15	0.16	0.11	0.06	0.17



Limits of the analysis

Lack of evidence on effectiveness of monetary policy

- Switch to FX lending in reaction to MP tightening (HUN, POL)
- Endogeneity problem: tighter policy when credit is growing

Promising results on macroprudential tools

- Limited data
- Heterogeneity makes econometrics difficult



Conclusions

Only a (significant) minority of booms end up in crises and it is difficult to identify bad booms as they emerge

- Evidence presented identifies the conditions conducive to credit booms and the dangers of larger and longer booms
- The cost of intervening too early and the risk of stopping a good boom to be weighed against the aim of preventing a crisis

Monetary and fiscal policies do not appear to be effective in dealing with booms while macroprudential tools seem to be promising

Part of the answer is also much stronger micro-prudential policy. 20-percent CARs would have prevented a majority of banking crises



Important open questions

Optimal mix and modality of macroprudential policies

- Relationship among policies
 - ✦ To what extent are these independent tools?
 - ✦ Where should macroprudential authority reside?
- Rules versus discretion
 - ✦ Far away from inflation targeting standards
 - ✦ Risks associated with excessively interventionist policy
 - ✦ Challenges from political economy perspective
 - ✦ Preventing circumvention and risk shifting

Effectiveness of policies for different types of booms

Policy coordination across authorities and across borders



PBC-IMF Joint Conference, 28th April, 2016



Korea's Credit Cycle Experience

FSC Secretary General, Yongbeom Kim
Republic of Korea



Financial Services
Commission



Part I . Korea Today

Part II . Corporate Credit Crisis(1997)

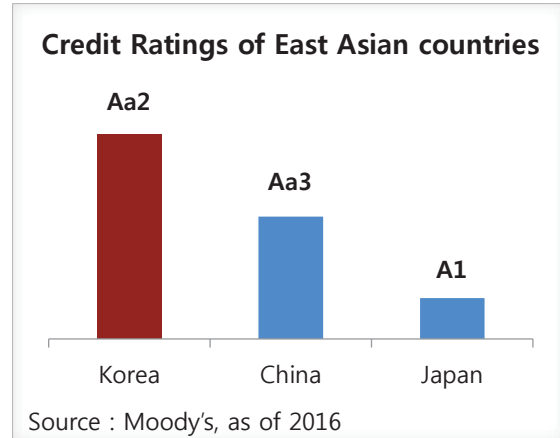
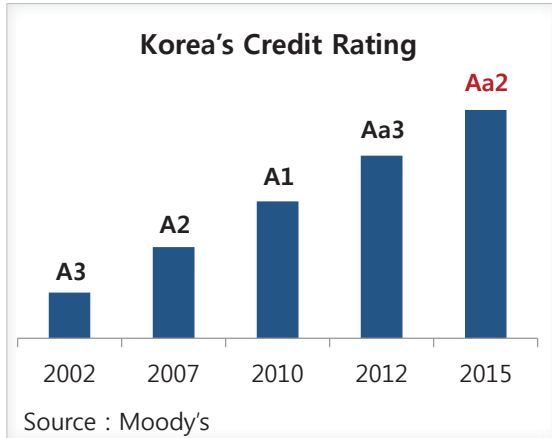
Part III . Consumer Credit Bust(2003)

Part IV . Property Bubble(2002-2005)

Part V . What we learned

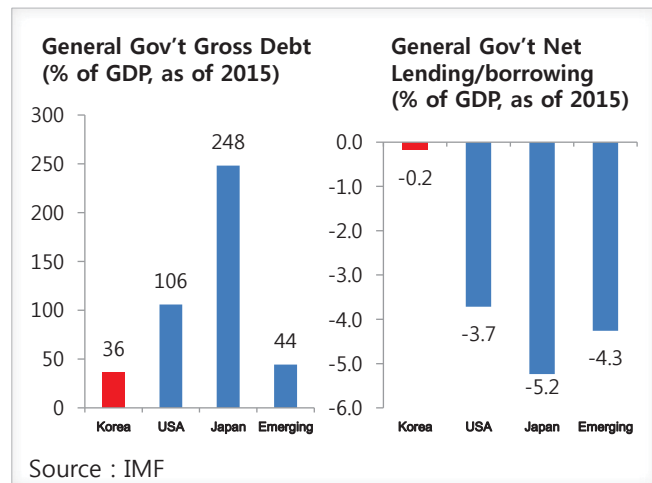
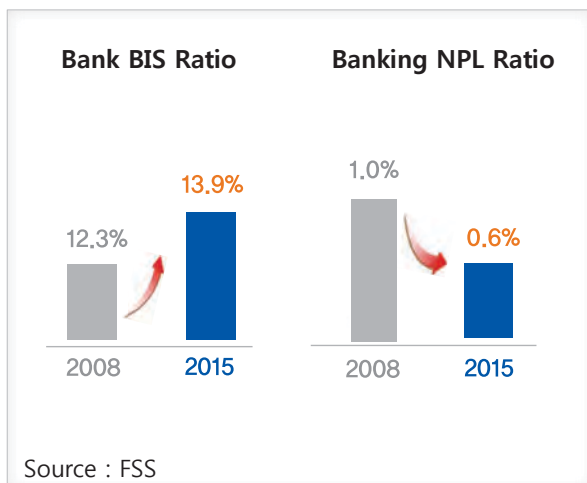
1. Korea Today

- One of the highest credit rating in Asia (Aa2, Moody's)
- Very Sound and stable banking System
- Healthy government balance sheet and budget



1. Korea Today

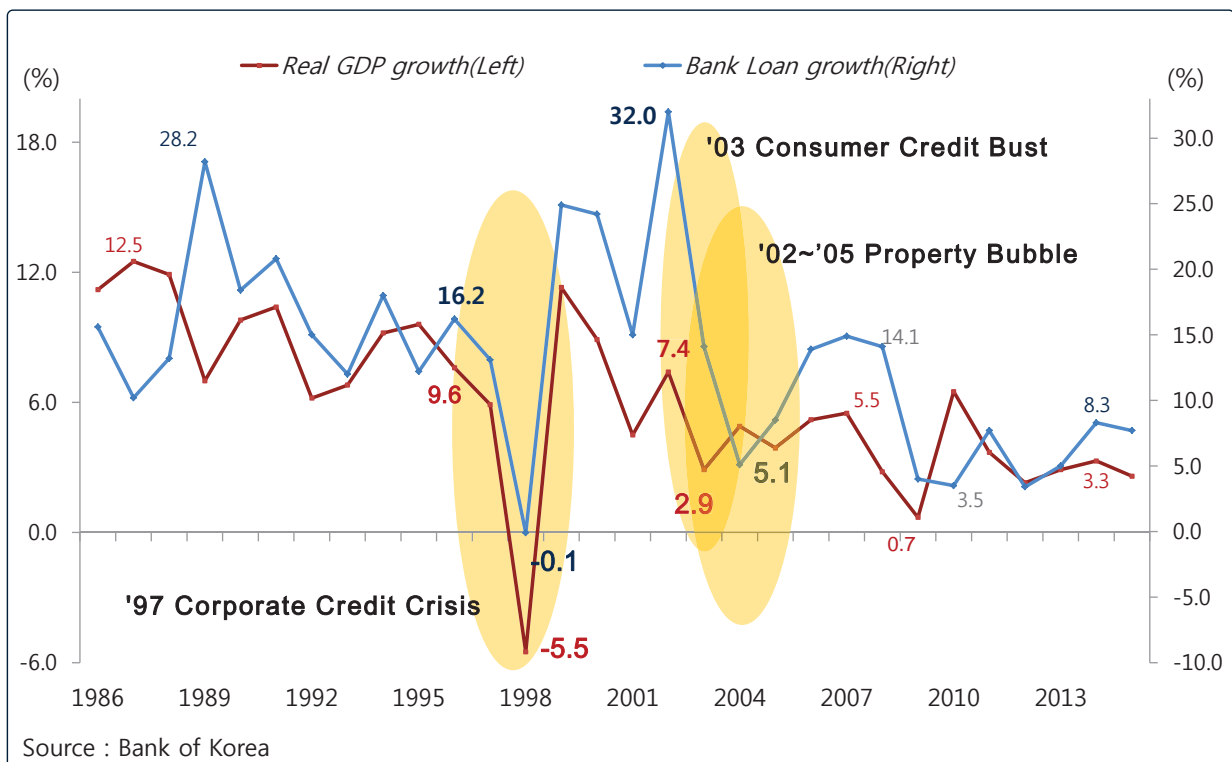
- Financial system stability
- Fiscal Soundness





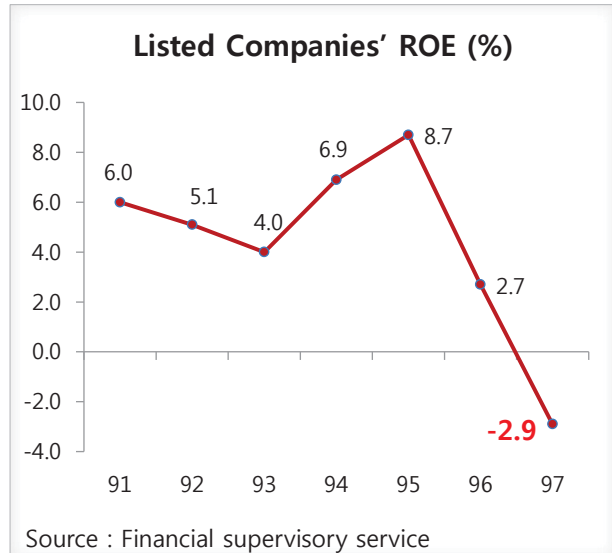
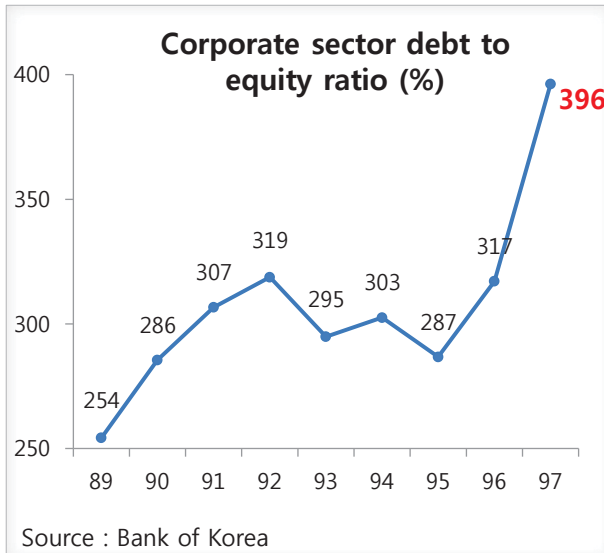
However, The Road to Today
was not Smooth

Overview : Korea's Credit Cycle



2. Corporate Credit Crisis (1997)

- Rapidly rising corporate debt and diminishing profit resulted in a full blown credit cycle



7

2. Corporate Credit Crisis (1997)

- **Short-term dollar borrowing** fueled sharp increase in corporate debt and a surge in economy-wide leverage
- This phenomenon was driven by a sudden rise in **shadow banking and a lax bank regulation** that was set below global standard
 - ✓ Number of merchant banks : (1985) 6 → (1997) 30
 - ✓ Number of investment trusts : (1995) 8 → (1997) 24
 - ✓ Merchant banks' NPL ratio(1997) : 4.5%
 - ➔ **Revaluated in global standards(1999) : 12.4%**

8

2. Corporate Credit Crisis (1997)

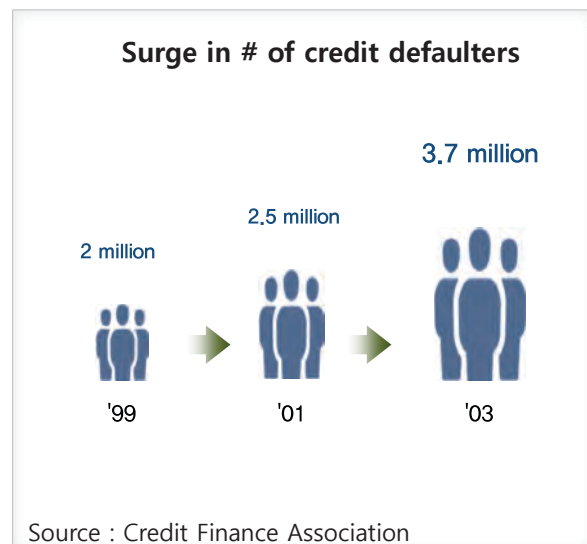
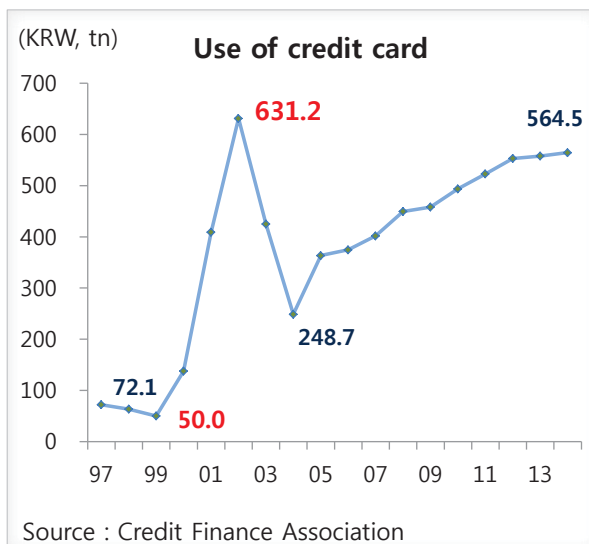
• Government Response

- ✓ The key to Korea's quick recovery
we recognized this as **a balance sheet cycle** and created plans accordingly
Many other countries at that time came up with **an income statement solution** (i.e. growth initiatives)
- ✓ Recapitalized & reorganized the banking system through **closures and M&A**
- ✓ **Fixed the over-capacity** by letting the insolvent companies go bankrupt
- ✓ Upgraded the financial regulatory capability and created an **independent control tower agency** to oversee the entire financial system

9

3. Consumer Credit Crisis (2003)

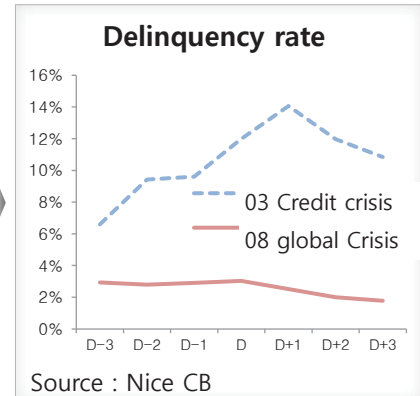
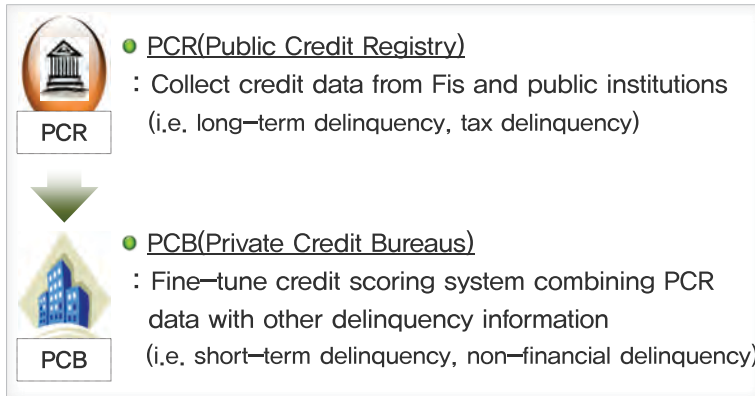
- Surge in credit card business **without adequate credit rating system** resulted in a rapid **increase in default**



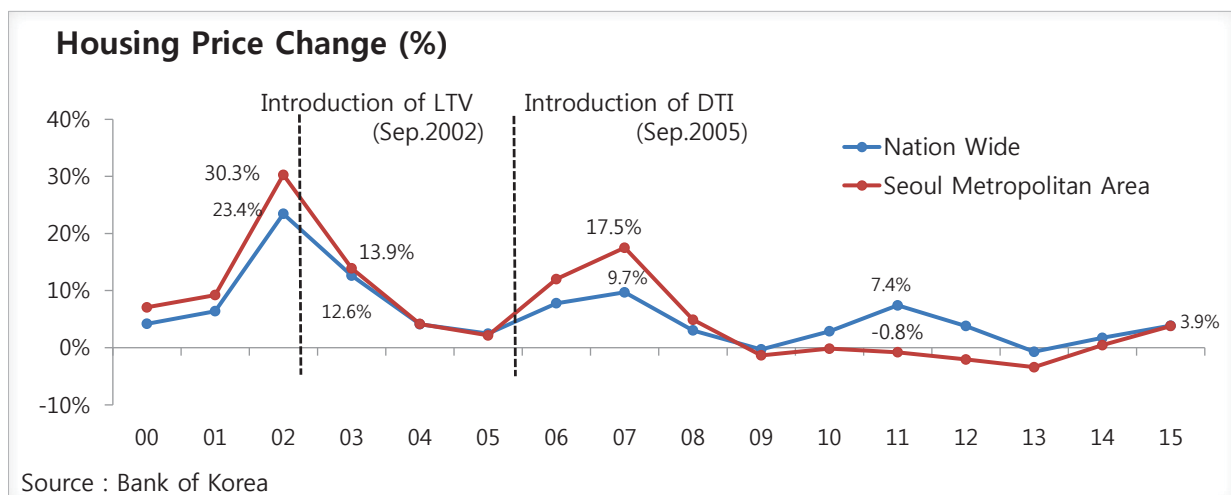
10

3. Consumer Credit Crisis (2003)

- Government responded by creating **new credit rating system**
 - ✓ By fostering **Private Credit Bureaus** and combining information from **Public Credit Registry**
 - ✓ It has allowed efficient and effective **credit information system**



4. Property Bubble(2002–2005)



- Government introduce **macro prudential regulation LTV, DTI**
 - ✓ Introduced LTV to speculation-zones in 2002
 - ✓ Introduced DTI to speculation-zones in 2005
 - ✓ Differential, gradual regulatory adjustment depending on residential area, debt maturity, house prices, macroeconomics shock.

5. What did we learn ?

- Credit Cycles will happen
 - ✓ The fallacy of “this time it is different or we are not like them”
- Managing the credit-driven growth
 - ✓ How much is good and how much is risky ?
 - ✓ Rising debt + falling profit & growth = problem
- Beware of the “Policy Pendulum” effect
 - ✓ Going from “too loose” to “too tight”

13

5. What did we learn ?

- Lesson for managing the credit cycles
 - ✓ $GDP \% = f(\text{Sound Balance Sheet})$
 - ✓ Credit-driven excess capacity is **near term GDP positive** but **longer term economic and financial system negative** (Trade-off)
 - ✓ Avoid creation of country-wide “too big to fail” situations.

Who is in trouble ? The parable of \$1 million vs. \$100 million borrower who cannot pay
- The Mother of All Credit Cycle : G7 policies do not work for us
 - ✓ Eliminating business cycles for political gain is piling up risk for economy
 - ✓ We cannot fix credit cycles with more credit
 - ✓ This is the perils of medium-sized open economy including Korea

14



Thank You..

China and EM Crisis Taxonomy

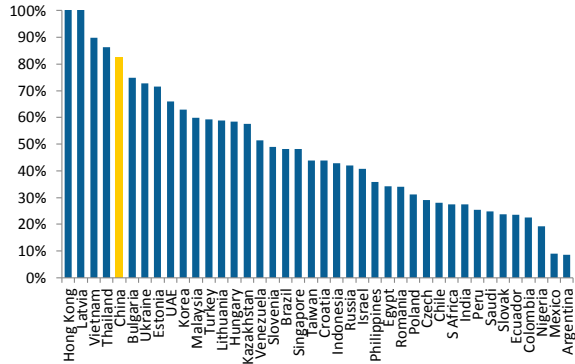
Jonathan Anderson
Emerging Advisors Group
April 2016

jonathan@emadvisorsgroup.com

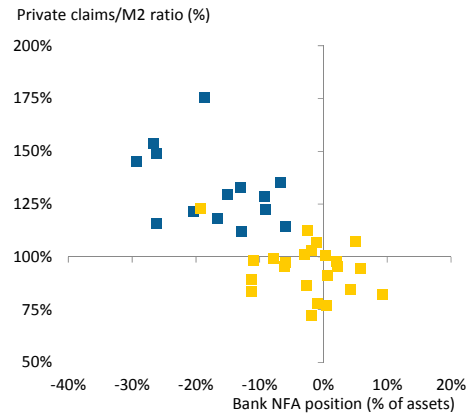


Peak historical credit booms

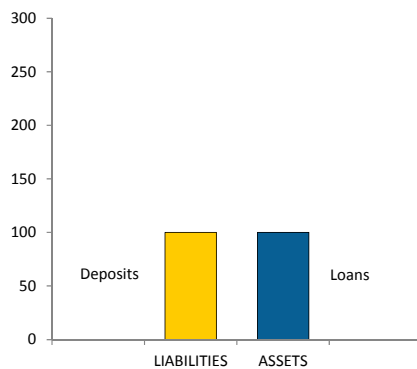
Maximum trough-peak increase in a 10-year period (% GDP), 1990-2015



And financial crisis results

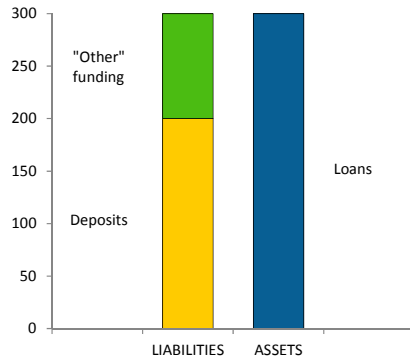


A crisis model



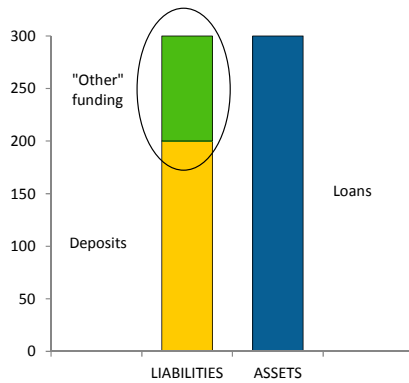
- Start with a simple bank
- Loan assets of 100 and plain deposit liabilities of 100

A crisis model



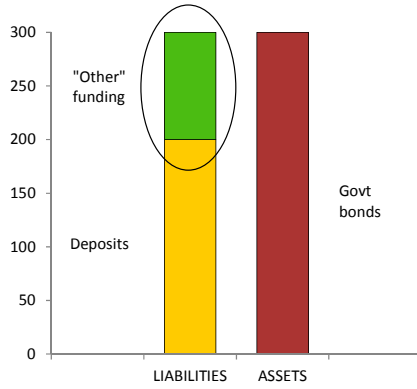
- Now assume a massive credit boom
- Loan assets jump to 300
- On the liability side, half of this boom is funded by plain deposits
- And half is funded by "other", including wholesale finance/fundraising through non-bank FIs

A crisis model



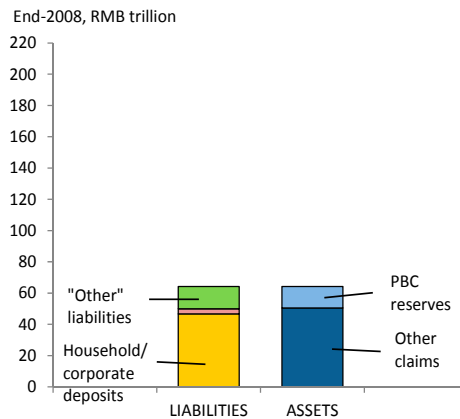
- Where is the crisis risk?
- It sits on the *liability* side, in the form of a sudden pullout of volatile and sensitive "other" funding

A crisis model

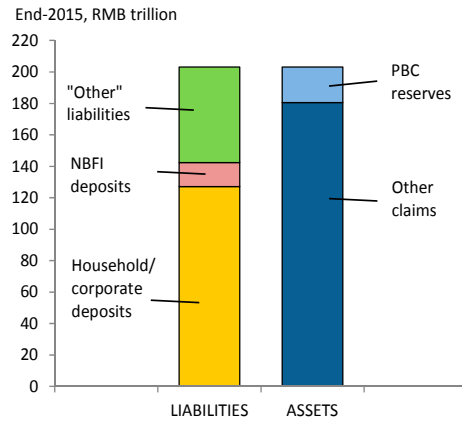


- And this is still true *even if* the government takes all asset-side risk off the books, i.e., completely replaces bad loans (or all loans) with government bonds

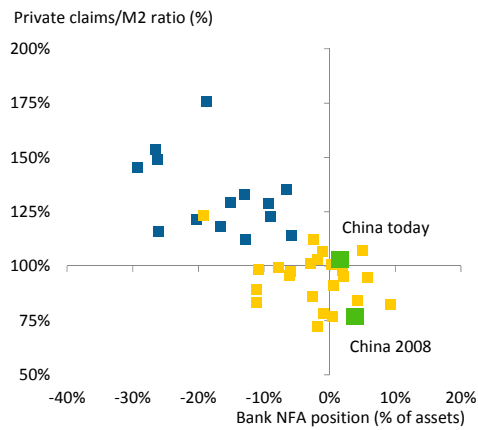
China banks, 2008



China banks, 2015



Where is China?



How Big a Problem is Debt and What To Do About It?

Markus Rodlauer and Wojciech Maliszewski,
IMF

(prepared by APD, LEG, MCM and RES
departments)

1

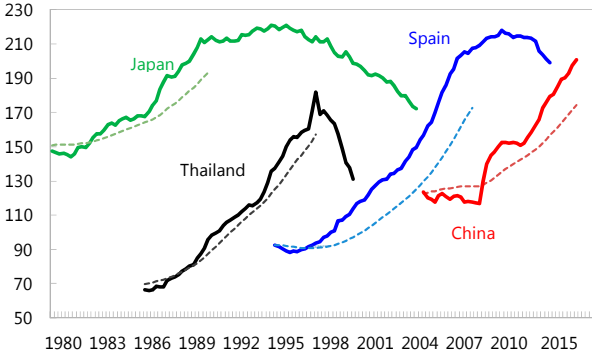
IS THERE A PROBLEM?

2

China's credit boom is similar to others

High Credit Growth and Credit Gap

(In percent of GDP)

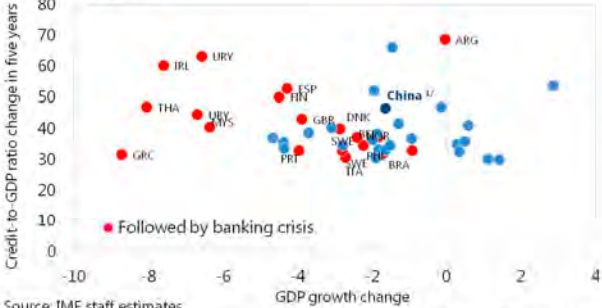


1/ Dot lines represent the credit trend.
Sources: BIS; and IMF staff calculations.

Cross-country evidence points to risks

Credit Booms Ended in Financial Crisis and/or Lowered Growth

(In percentage points)

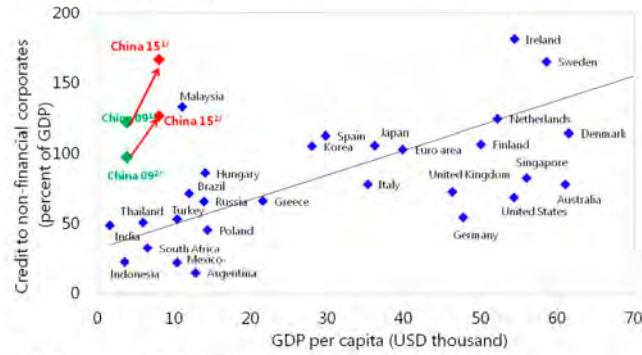


Source: IMF staff estimates
1/ Average growth differential between after 5 years and previous 5 years. GDP growth projection is based on April 2016 WEO. Credit number is based on adjusted TSF as of end-2015.

Corporate sector is the main culprit...

Credit to Nonfinancial Corporates much Higher

(Selected economies, 2014)



^{1/} Calculated as total social financing minus equity and household loans.

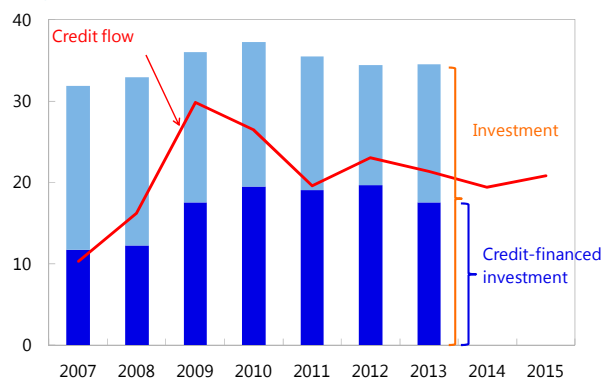
^{2/} Calculated as total social financing minus equity, LGFV borrowing and household loans.

5

...as credit financed investment...

Corporate Credit and Investment

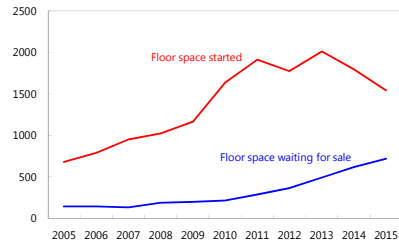
(In percent of GDP)



6

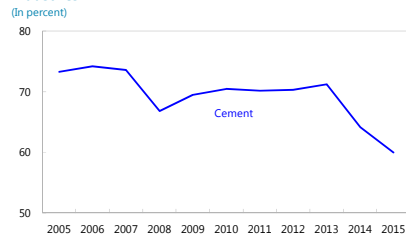
...flowing to construction and upstream industries...

Booming Construction Has Left Real Estate with Overhang
(In thousand of square meters)



Source: CEC Data Company Ltd.; and IMF staff calculations.

Exacerbating Overcapacity Problems in Upstream Industries
(In percent)



Sources: CEC Data Company Ltd.; and IMF staff calculations.

7

...has become increasingly inefficient...

Investment Efficiency Has Fallen
(In percent)



Sources: World Economic Outlook; and IMF staff calculations.
Note: t=0 is the year of peak credit boom.

While Credit Intensity Has Increased
(In percent; new credit per unit of additional GDP)

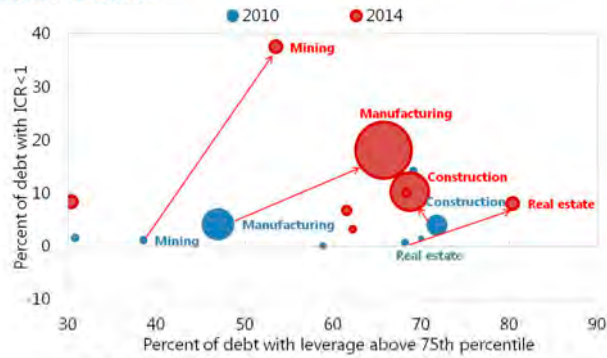


Sources: BIS, World Economic Outlook; and IMF staff calculations.
Note: t=0 is the year of peak credit boom.

8

...affecting corporates' debt-servicing capacity...

Impaired Assets in Manufacturing, Mining, Construction and Real Estate

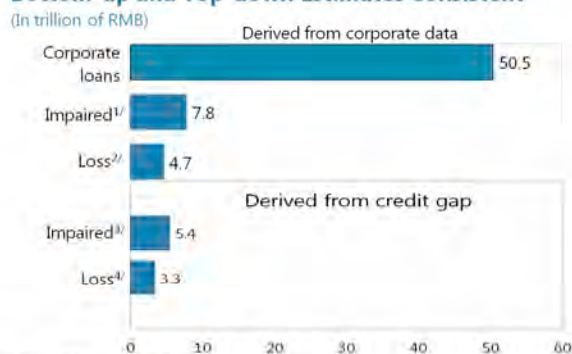


Sources: WIND database; and IMF staff calculations.
Note: Dot size indicates the size of debt in the sector.

9

...and banks' asset quality

Bottom-up and Top-down Estimates Consistent



^{1/} Share of loans with ICR < 1.

^{2/} Assuming 60 percent loss rate.

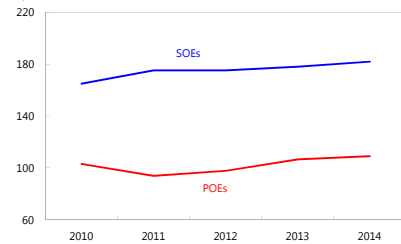
^{3/} From the relationship between credit gap and subsequent NPLs.

^{4/} From the relationship between credit gap and subsequent write-offs.

10

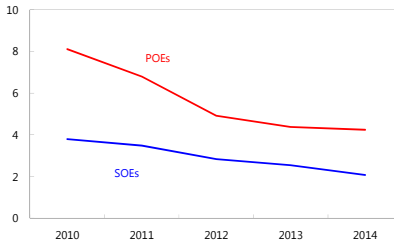
SOEs weaker than POEs...

SOEs Are More Leveraged
(In percent)



Sources: WIND database; and IMF staff estimates.

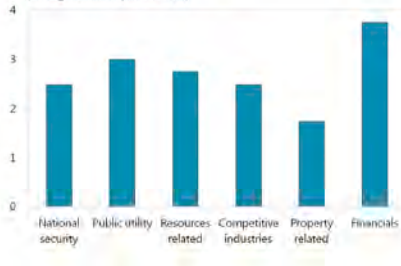
And Less Profitable
(In percent, return on assets)



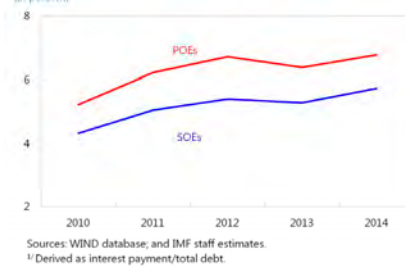
Sources: WIND database; and IMF staff estimates.

...benefitting from implicit guarantees...

Uplift in Ratings for SOEs
(Average notches uplift for SOEs)



Implied Interest Rate^{1/} is Lower for SOEs
(In percent)



Sources: WIND database; and IMF staff estimates.
^{1/} Derived as interest payment/total debt.

...but with some signs of differentiation in the bond market

More Visible in Overcapacity Sectors

(In bps, corporate bond over sovereign)



Source: Bloomberg LP.

13

CHARTING THE WAY OUT

14

Strategy—Key Elements

- **Triage.** Identify viable and non-viable companies.
- **Corporate restructuring.** Non-viable companies should exit. Viable but over-indebted should be restructured.
→ maximize value of corporation going forward.
- **Remove debt overhang.** Recognize losses, recapitalize, and develop supporting mechanisms for write-offs or other forms of restructuring.
- **Harden budget constraints.** Exits will improve financial discipline. But implicit guarantees need to be broken going forward. The change has to be carefully managed.

*Consistent framework key for system-wide solution.
Use of experts in valuation and restructuring.*

15

Strategy—Supportive policies

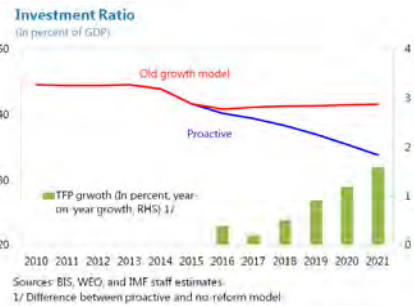
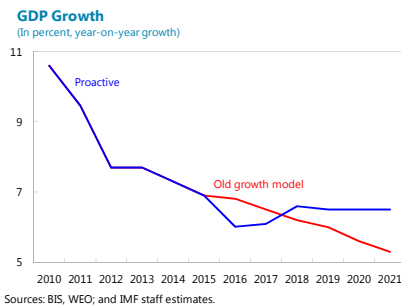
- **Enhancing legal framework.** A long-term goal is to improve legal institutions. But enhanced mechanisms needed to complement the existing framework.
- **Minimizing hit to near term growth and employment** (and helping those that are affected). Strengthening social safety net, retraining, and easing restrictions on migration—are needed.
- **Improving fiscal discipline at the local government level.**

16

ILLUSTRATIVE SCENARIOS

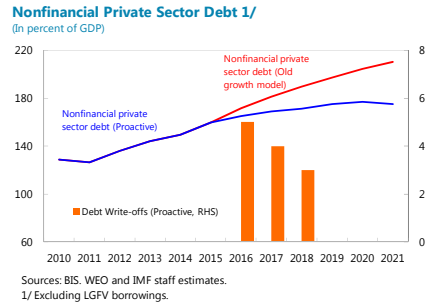
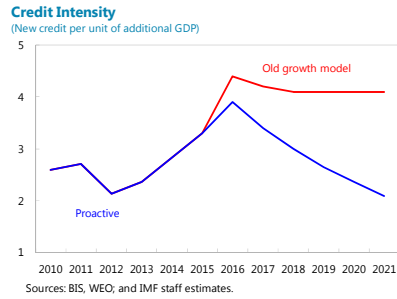
17

Pro-active deleveraging more sustainable
due to lower investment intensity...



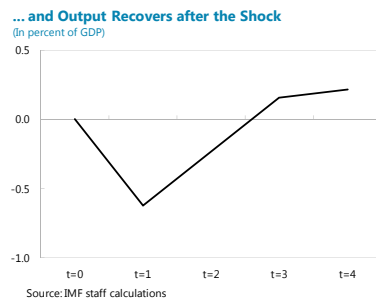
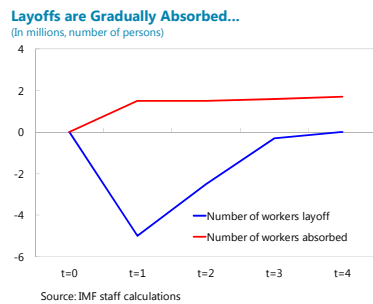
18

...and lower credit intensity



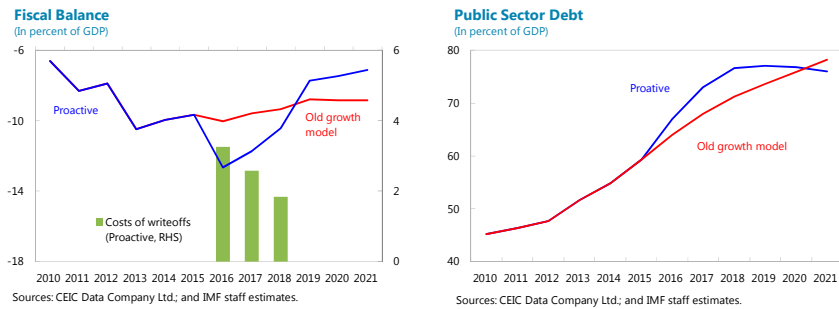
19

There are transition costs...



20

...but fiscally affordable



21

Authorities' plans

- 1st step done: recognition of the problem.
- The plan:
 - Tackling overcapacity sectors and zombies;
 - Create a sound corporate environment to allow for restructuring;
 - Mergers and acquisitions (M&As) seem to be preferable to liquidation.
- But:
 - Will the plan deliver a hardening of budget constraints?
 - What about excess leverage in other sectors?
 - What are implications for the financial system?

22

How to reduce corporate leverage in China

MA Jun
Chief Economist, Research Bureau
The People's Bank of China
April 28, 2016

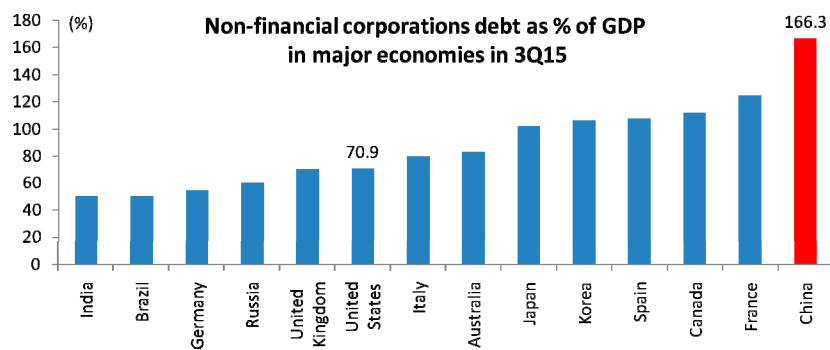
1

Content

- The leverage of the corporate sector
- Ways to reduce leverage
 - Structural reforms to improve corporate profitability
 - Transfer debt to governments
 - Debt-to-equity swaps
 - Develop multi-layer equity markets
 - Write off bad loans (exit of zombie firms)
 - Harden budget constraints, ratings, etc.
- Ways to reduce risks without changing leverage
 - Maturity transformation
 - Interest derivatives (swaps, futures, and CDS)
 - Securitization

2

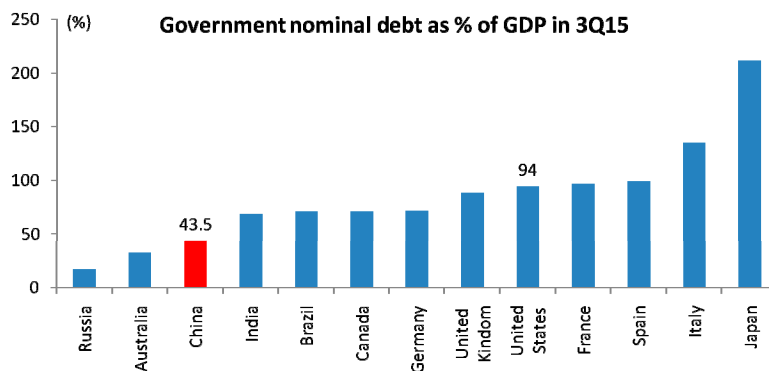
China corporate leverage: higher than in most countries



Source: BIS

3

China's government debt: lower than in many other countries



Source: BIS

4

Reducing leverage in a long term task

- M2 growth is expected to be 13% this year
- Nominal GDP growth is likely to 7-9% this year
- Leverage may rise in the near-term

Source: WIND

5

Ways to reduce corporate leverage

6

Improving corporate profitability is fundamental solution (which is the core of supply-side adjustment)

- Requires reduction in overcapacity
- Requires successful shift to profitable new sectors
- Requires technological innovations
- None of these are short-term in nature

Source: WIND

7

Transfer debt to govt by. e.g., cutting taxes

China can reduce corporate leverage by cutting taxes and increasing its fiscal deficit.



Source: WIND

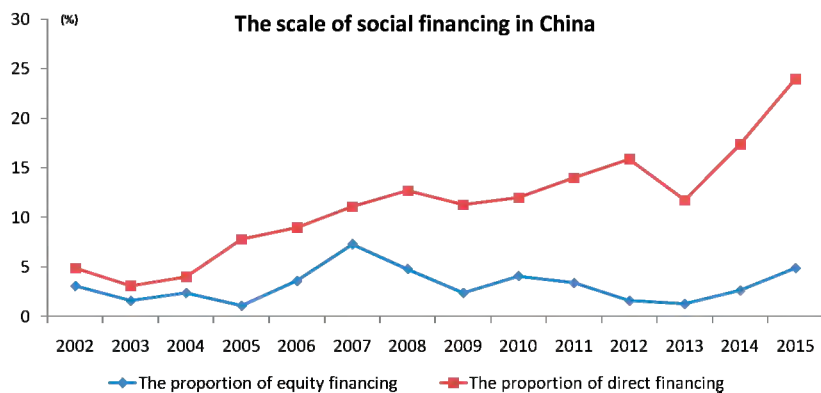
8

Debt-to-equity swaps

- But there are also several difficulties in debt-to-equity swaps
 - Banks are restricted in owning equities
 - Lack of qualified specialists in corporate turnaround
 - Lack of transparency of underlying assets
 - Govt-backed AMCs could be a fast approach, but it leads to higher govt debt

9

Developing multi-layer equity markets

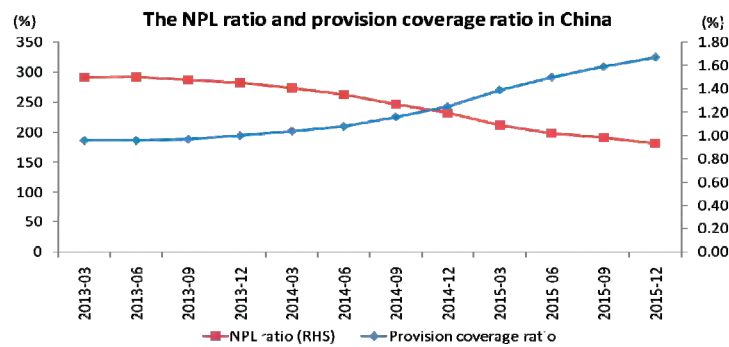


Source: WIND

10

Write off bad loans (exit of zombie firms, supported by fiscal subsidies)

Conditions for writing off NPLs: provision coverage ratio remains at high level



Source: WIND

11

Harden budget constraints and improve credit ratings

- Harden budget constraints on SOEs and LGFVs. With harder budget constraints, firms tend to borrow less.
- Improve corporate transparency. With higher transparency, firms with higher debt will borrow less.
- Improve credit ratings. Credit ratings should reflect true credit risks, so that firms with higher credit risks will borrow less

12

Ways to reduce risks without changing leverage ratio

13

Maturity transformation by refinancing loans with bonds or interest rate derivatives

The average maturity of bank loans is 1-2 years.

Refinancing them with medium- and long-term bonds or hedging maturity (interest) risk by interest rate swaps or bond futures can help reduce risks.

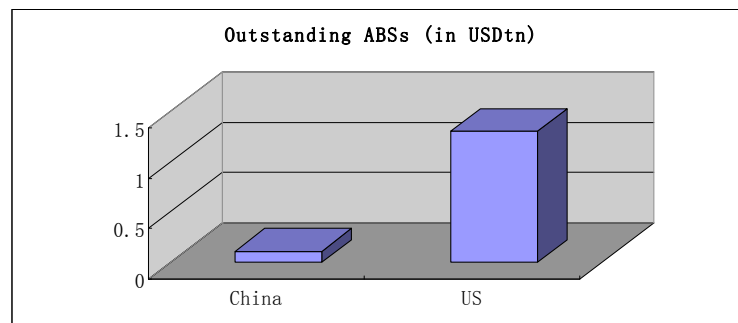
14

Develop the CDS market

- CDS market can allow the transfer of credit risks to investors that have higher risk tolerance than banks.

15

Asset securitization can also diversify risks and transfer risks to market



Note: 2016/4/13 data for China, 4Q15 data for USA
Source: WIND, SIFMA

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Conclusions

- Corporate leverage is high in China, posing risks to financial stability.
- Supply side reforms are critical to improving profitability, which may help reduce leverage in the long term.
- Other measures could include transfer debt to govt, debt-equity swaps, write-offs, developing equities markets, hardening of budget constraints, improving credit ratings, derivatives, maturity transformation, etc.

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Dealing with China's Debt Challenge

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April 2016

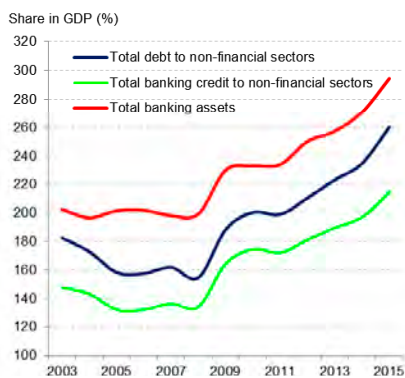
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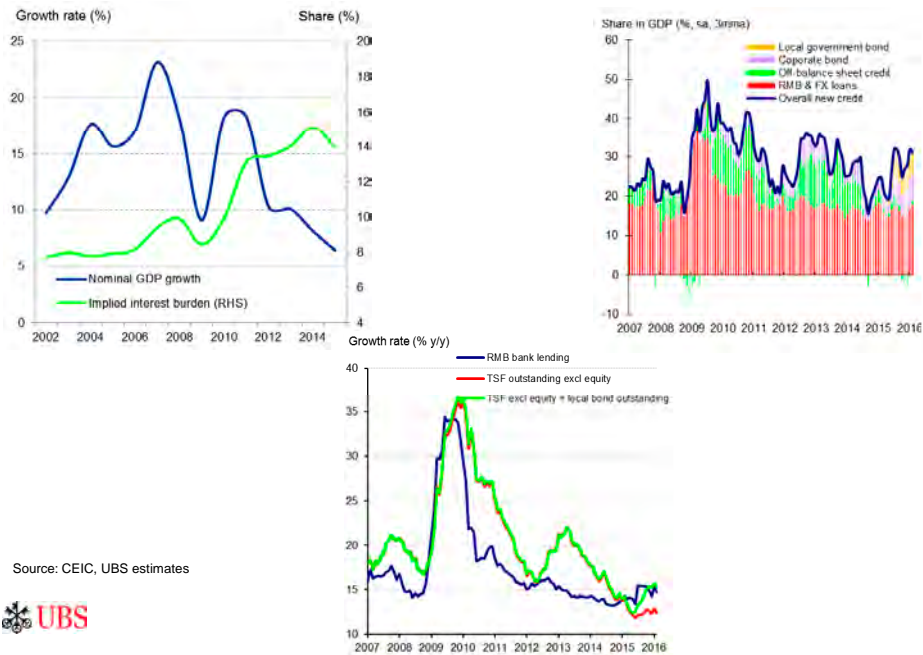


Total non-financial sector debt stood close to 260% of GDP

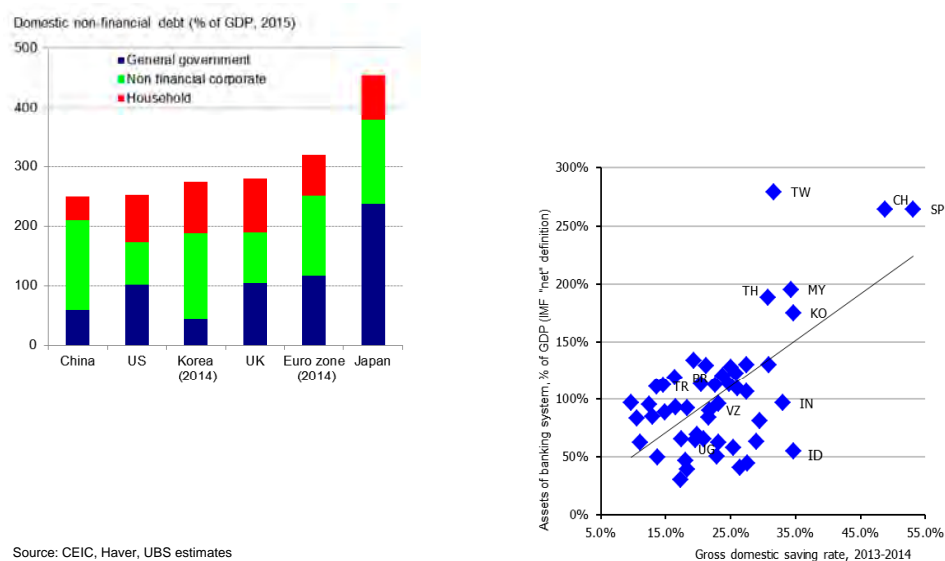


Source: CEIC, UBS estimates

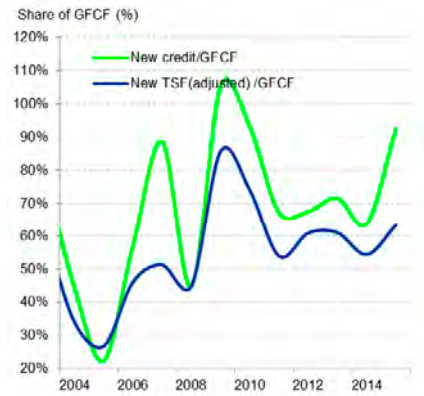
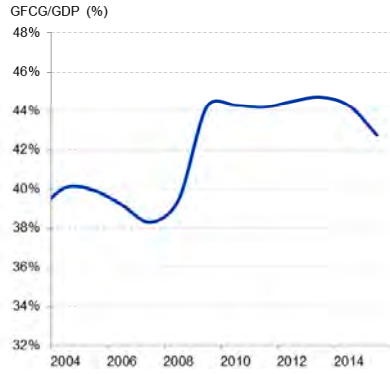
Interest burden rose significantly, but credit expansion remains fast



Corporate debt is over 150% of GDP, financed by domestic saving



Rise of debt used to finance investment...

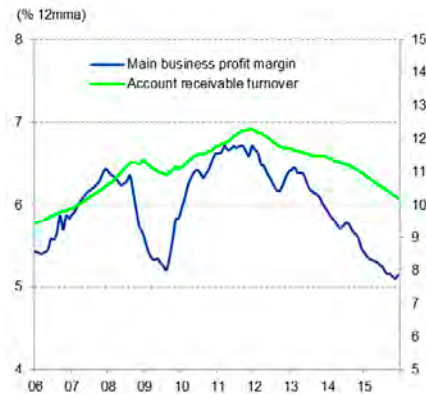
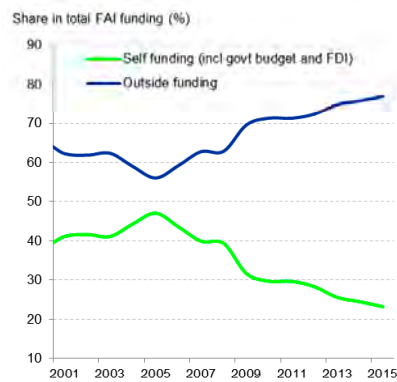


Source: CEIC, UBS estimates



4

...as external demand weakened and corporate earnings and own funding dropped



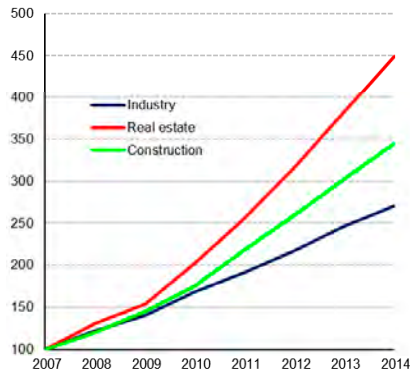
Source: CEIC, UBS estimates



5

Fastest asset accumulation was in "non-productive" real estate sector, fuelled by faster rise in debt

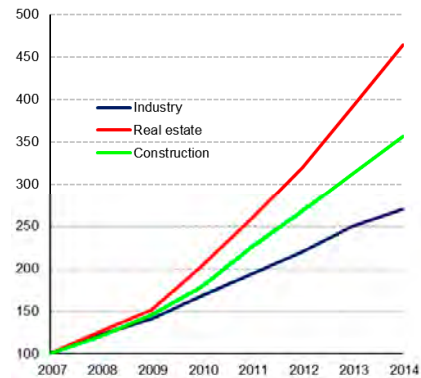
Assets of above-sized enterprises (2007=100)



Source: CEIC, UBS estimates



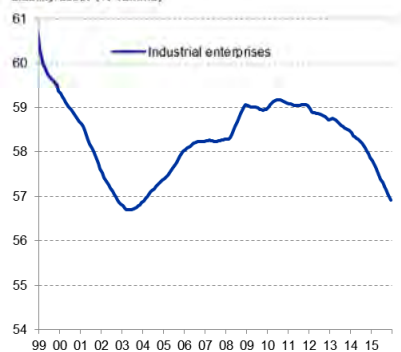
Liabilities of above-sized enterprises (2007=100)



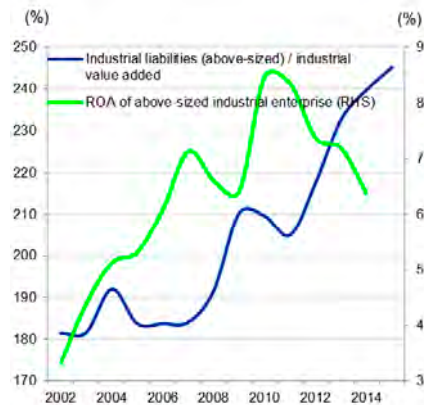
6

Industrial sector asset also rose, but ROA is declining...

Liability/asset (% 12mma)



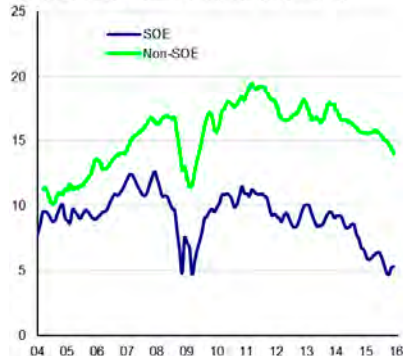
Source: CEIC, UBS estimates



7

SOEs have poor returns and take up more debt

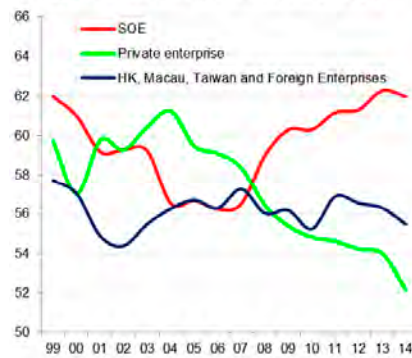
ROE of above-sized industrial enterprises (sa, 3mma, %)



Source: CEIC, UBS estimates



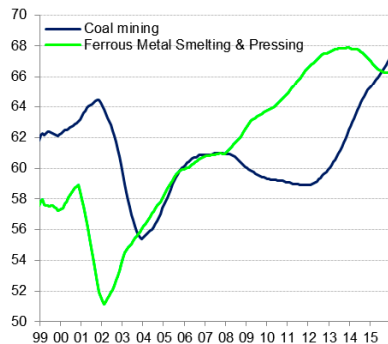
Liability-asset ratio of above-sized industrial enterprises (%)



8

Excess capacity industries: declining profitability and rising debt-asset ratio

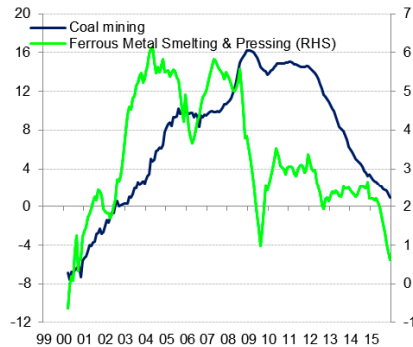
Liability/asset (% 12mma)



Source: CEIC, UBS estimates

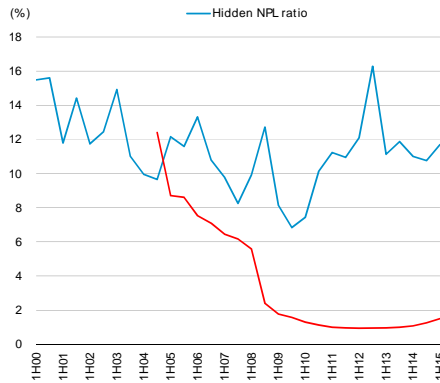


Main business profit margin (% 12mma)



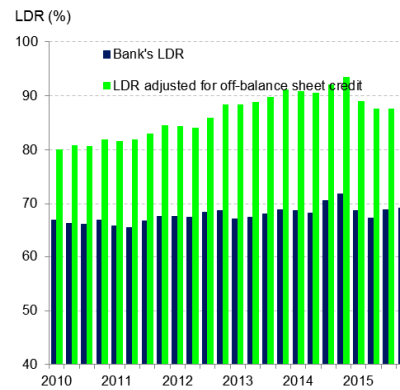
9

Bank NPLs will likely rise, but liquidity is not yet an issue



From UBS Bank team. Hidden NPL ratio refers to the percentage of total liabilities of A-share non-financial companies of which the ratios of EBITDA/financial costs are <1 or negative to total liabilities of all A-share non-financial companies.

Source: WIND, CEIC, UBS estimates



Source: PBC, CEIC, UBS estimates



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Worrying developments and danger signs

- **Rapid growth in shadow credit** often designed to hide loans and/or NPLs, and push up funding costs.
- **Overly broad Implicit guarantee** is encouraging excess risk taking and excessive credit risk
- **Large capital outflows** is reducing domestic liquidity buffer
- **Reluctance to restructure corporate and bad debt** so excess capacity sectors and bad companies occupy too much resources, and worsens moral hazard
- **Increased moral suasion** on banks
- **Potentially learning the "wrong" lessons** on financial supervision

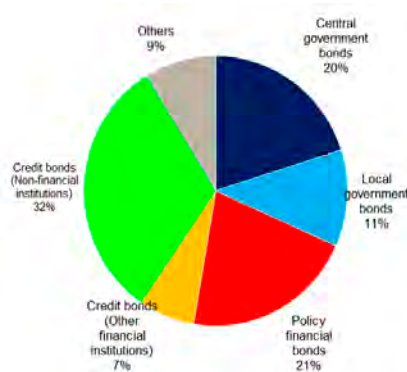


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How can China contain rising leverage?

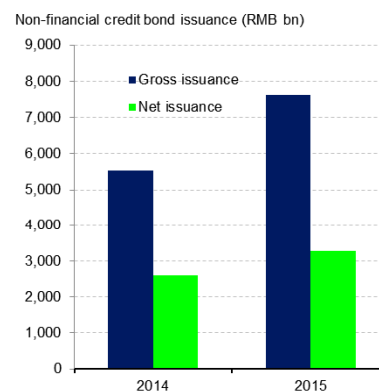
- **Stabilize nominal growth (denominator):** Increase fiscal spending, cut tax for labour and small businesses, improve social safety net/hukou reform, allow for accommodative monetary policy
- **Reduce financing costs (numerator):** lower market rates (helped by RRR cuts); develop bond market; use policy banks
- **Debt restructuring (numerator):**
 - expand local government debt swaps
 - start corporate debt restructuring
 - close excess capacity, write off bad debt
- **Balance need to deleverage and stabilize growth,** ensure adequate liquidity but cap overall credit growth; manage capital flows closely; prevent the spill-over of credit events
- **Raise capital:** for both banks and non-bank FI to facilitate debt write-offs

China's bond market: new bubble or new normal?

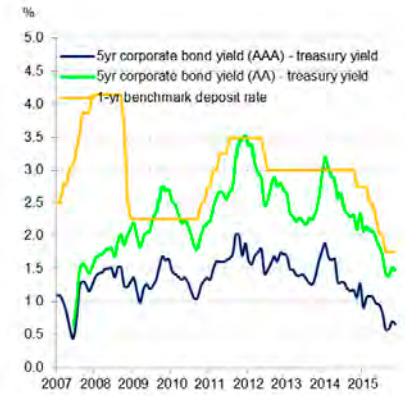
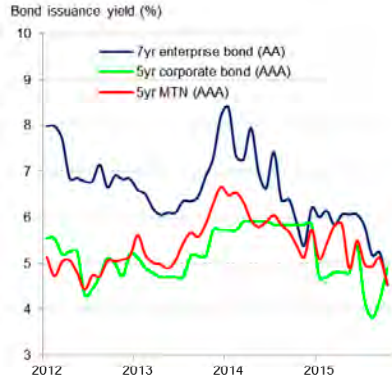


Note: Data as of April 13 2016

Source: Wind, UBS estimates



Credit spread has narrowed – is that a big concern?

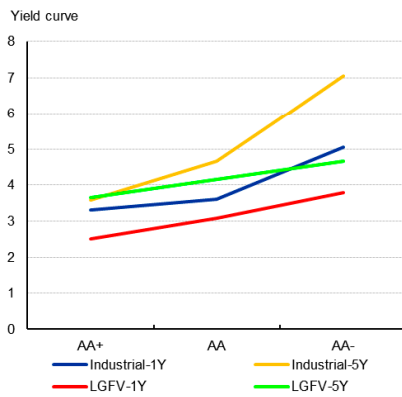


Source: Wind, UBS estimates



14

Market is trying to price risk

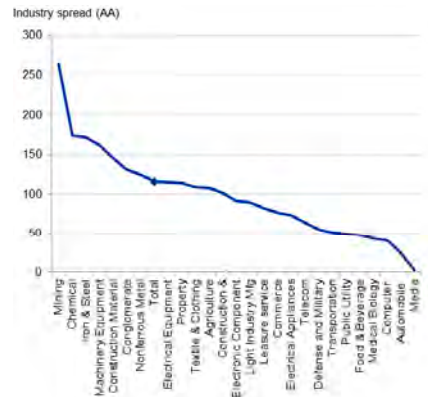
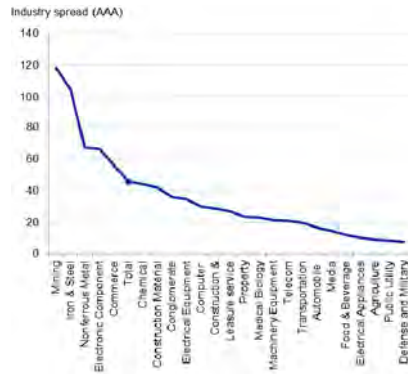


Source: Wind, UBS estimates



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Credit spreads across different sectors



Source: Wind, UBS estimates. Data as of April 1 2016



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**4th Joint Conference
People's Bank of China and International Monetary Fund
Beijing, April 28th, 2016**



**CORPORATE DEBT RESTRUCTURING: BEST PRACTICES AND
INTERNATIONAL EXPERIENCES**

**SEAN HAGAN
JOSE GARRIDO**

**Part I
The Ordinary Framework for Corporate Debt Restructuring**

**Part II
The Enhanced Framework for Corporate Debt Restructuring
(where there is a systemic corporate debt overhang)**

**Part III
Relevance of Cross Country Experiences to China**

Part I: The Ordinary Framework of Debt Restructuring

Reliance on the insolvency framework as a collective enforcement mechanism for creditor rights

Specific objective: maximize the value of creditors' claims

General benefit: by maximizing the value of creditors' claims, the availability of credit increases, for the benefit of all parties and the economy in general.

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The objectives are achieved through two types of procedures:

-Rehabilitation

-Liquidation

4

Choosing Between Rehabilitation or Liquidation Procedures:

The choice is made by creditors (by vote)

Based on an assessment of the viability of the business:

Concept of viability: *a company is viable if creditors would receive more in rehabilitation than they would in liquidation: i.e. the "going concern" value of the company (achieved through rehabilitation) is worth more than the piecemeal sale of the assets of the company (achieved through liquidation).*

With **safeguards:**

-*Hierarchy of claims:* in any liquidation or rehabilitation, secured creditors need to be treated more favorably than unsecured creditors, otherwise the value of security is undermined

-Accurate financial and operational information

-Analysis and valuation prepared by specialized professionals

-Oversight by court

5

Rehabilitation procedure:

Creditors approve a "rehabilitation" plan that demonstrates viability

Features of rehabilitation plan:

(1) Financial:

-*Debt rescheduling*

-*Debt reduction*

-*Debt/equity conversion*

-*Combination of any of the above*

(2) Operational: Restructuring of the company may include changes in:

-*business (e.g. products and services)*

-*fixed assets (e.g. factories)*

-*management*

-*workforce levels*

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Debt/equity conversions

- Based on **valuation** conducted by a professional, under the control of the court.
- If liabilities exceeds assets, shareholders have no value, i.e. only the creditors “own” the company.
- Creditors may decide that value of claims is maximized (and viability assured) by converting their credit into equity; i.e.. they will receive more as shareholders than as creditors.
- Debt to equity conversion are not a voluntary “swap” between the shareholders and creditors. It is mandatory for the shareholders, who no longer possess any value in the company.
- However, creditors may offer shareholders equity as a means of retaining management expertise.

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Liquidation

- Assets of non-viable businesses are sold
- Proceeds are distributed among creditors according to their priority, in particular, secured creditors need to be paid first.
- In the economy, assets of the liquidated business are **redeployed** to more productive uses.

8

Institutional Framework

Courts oversee the process:

- resolve disputes
- ensure integrity (e.g. valuation of creditor claims)
- final approval of Rehabilitation Plan (including its imposition on minority dissenting creditors (“cram-down”))

Insolvency professionals, often appointed by the courts, assist the process, especially in areas that require restructuring expertise:

- Control and management of the assets
- Analysis of financial information
- Assist in preparation of rehabilitation plan

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Part II: Enhanced Framework for Corporate Debt Restructuring

The enhanced framework applies where there is a systemic corporate debt overhang.

The problem of systemic corporate debt overhang:

From the corporate perspective:

- debt overhang limits *growth*: debt service payments prevent companies from investing.

From the financial system perspective:

- the high level of non-performing loans (NPLs) reduces the possibility of banks to extend *credit*;
- and also poses financial stability risks if the NPL problem is left unaddressed.

A Vicious circle – Constraints on credit exacerbate corporate distress, which in turn, amplifies non-performing loans.

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Experience demonstrates that reliance on the Ordinary Corporate Debt Restructuring Framework is not sufficient:

- Number of cases too high; courts overburdened
- Market failure: depressed price of assets creates a collective action problem: banks and corporates just wait for the situation to improve to “grow out of the crisis” -but inaction perpetuates the situation.

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In light of the problem, experience demonstrates the need for an enhanced framework that requires the *active participation of the State*, as part of a comprehensive strategy:

Coordination between relevant agencies : Central Bank, Ministry of Finance, Securities Regulator, sometimes through the establishment of a centralized agency or task force

The State supports an out-of-court debt restructuring framework that ensures timely corporate debt restructuring -Including positive and negative incentives (carrots and sticks) designed to ensure that companies and banks engage in restructuring.

The design depends on the circumstances of each particular country (examples: Indonesia, Malaysia, S. Korea, Thailand, in Asia; and more recently, Ireland, Portugal, Slovenia, and Spain in Europe)

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Key elements

Carrots and sticks:

Banks: strong *supervisory measures* that force banks to write down the claims.

Corporates: e.g., tax incentives (carrots) and threat of insolvency (sticks)

-Provision of professional *mediation* services.

-The State does not determine the *outcome* of the restructuring and the negotiations, it only creates the incentives (carrots and sticks) and a framework for negotiation

-Rather, outcome continues to be driven by the commercial principles that underline Ordinary Restructuring Framework; i.e. assessment of viability and value maximization on a company-by –company basis. Also, legal Procedures for Ordinary Framework relied upon to bind minority creditors to a Rehabilitation Plan.

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Additional features

In some systems, the State facilitates the process by becoming a **lead creditor**:

-Either through the purchase of claims, especially through a State-owned Asset-Management Company (**AMC**)

OR

-By effectively acquiring the claims through the recapitalization or resolution of banks

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Multiple benefits of the enhanced framework

- Sustainable restructuring (which includes both financial and operational elements) results in companies recovering their viability
- Restructured loans become performing loans
- Moreover, if the framework is sufficiently predictable, banks can transfer non-performing loans to specialized entities in the distressed debt market, reducing NPLs in the banking sector.
- Non-viable companies are liquidated and their assets are redeployed to more productive sectors in the economy.
 - However, minimum degree of economic stabilization and prospects for growth are needed in order for creditors to make an informed assessment of prospects

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Part III: Relevance of Cross Country Experiences to China

Cross country experiences reveal variety of approaches, but certain fundamental principles underpin these approaches:

- Assessing viability
- Restructuring viable companies
- Final ownership of restructured enterprises

The design of the approach needs to be tailored to the specific circumstances of the country.

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Assessing Viability

- It is necessary to ensure that assessments of viability are conducted on the basis of commercial principles, especially when both the creditors and the debtor are state-owned.
- While the state can play an important strategic role in identifying excess capacity levels in certain sectors, the downsizing of capacity should be done according to assessments of viability that are conducted *enterprise by enterprise*.
- The process needs to be founded on **credible valuations** and technical restructuring expertise, as provided by independent specialists.
- Assessments of viability should be based on hard budget constraints – there should be no assumption of unlimited state support (guarantees, subsidies, etc).

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Restructuring Viable Companies

- The state can play an important role in incentivizing debtor/creditor engagement, but the design of restructuring plans should be done by professionals, and be based on credible viability assessments.
- Where state-owned banks consider debt write-downs in the context of restructurings, international experience provides guidance as to how the relevant officials can be protected from civil or criminal liability in circumstances where their decisions are based on viability assessments that, in turn, are based on professional valuations.
- While the Chinese insolvency framework is broadly in line with international best practice, capacity to deal with a large-scale corporate debt overhang is limited. If restructuring processes are conducted out of court, the same viability assessments and preparation of plans by expert professionals should apply.
- While the restructuring/liquidation of enterprises will result in worker layoffs, addressing this important problems should be addressed by developing a dedicated strategy for reemployment (see APD note).

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Final ownership of restructured enterprises

Regarding the final ownership of enterprises, there is a broad range of possible outcomes.

- Debt/equity conversion is one of the possibilities, but shares of non-financial companies cannot remain indefinitely on the balance sheets of banks.
- The restructuring may also result in a merger or a sale of the enterprise to private investors
- Alternatively, the state may remain the owner of certain enterprises after restructuring the debt. However, in those circumstances, it would be necessary to engage expert professionals to restructure the enterprise operations and manage them to ensure long-term viability. A credible governance framework would need to be established to ensure this.
- If Asset Management Companies become owners of the restructured enterprises, they should also implement operational restructuring plans, but they should dispose of the enterprises within a specified time horizon.



Developing a Regulated and Healthy Local Government Debt Financing System

April 28, 2016

1



1. General strategies on regulating local government debt
2. Current risk status in local government debt
3. Next steps

2



1. General strategies on regulating local government debt

- ◆ Impose quotas on local government debt
 - Identify existing debt status
 - Institute statutory procedures of approval
 - Establish a long term quota mechanism



1. General strategies on regulating local government debt

- ◆ Integrate various types of local government debt into the corresponding category of the fiscal budget
 - General public debt to be included in the general budget
 - Special debt to become part of the government fund budget
 - Local borrowing to be approved by the legislature
 - Information on debt raising to be disclosed to the public



1. General strategies on regulating local government debt

◆ Local government bonds to be issued to replace existing debt

- Policy arrangements
- Issuance
- Results



1. General strategies on regulating local government debt

◆ Incremental local government bonds to be issued

- Size
- Purpose



1. General strategies on regulating local government debt

- ◆ Improve assessment and early warning mechanisms with regard to risks in local government debt
 - Legal requirements
 - Specific measures



1. General strategies on regulating local government debt

- ◆ Enhanced supervision of local government debt financing behavior
 - Legal requirements
 - Results



2. Current risk status in local government debt

- ◆ Debt risks generally under control
 - Size of government debt and risk indicators
 - Assets corresponding to government debt
 - Future economic growth



3. Next steps

- ◆ Strict adherence to quota and budget management and effective enforcement of debt repayment obligations;
- ◆ Ensuring replacement and proper disposal of existing debt via bond issuance;
- ◆ Commercialization of financing platforms and differentiation between obligations of the government and those of commercial corporations;
- ◆ Improve early warning and contingency mechanisms to control and mitigate risks;
- ◆ Sound debt monitoring and evaluation mechanisms for enhanced sanctions against unlawful granting of debt guarantees.

How To Resolve Risks in China's Local Government Debt?

Short-, Medium- and Long-term Countermeasures

Wei Jianing, Research Fellow
Macroeconomic Research Department

Disclaimer

- 1** The following ideas reflect only my personal view and not that of the institution I am affiliated with.
- 2** I am an academian who does not invest in the stock market. Therefore, my talk on macroeconomics has nothing to do with the stock market and my talk about reform has nothing to do with politics.
- 3** Any report on this talk by the media must be reviewed in advance, or I will not be responsible for its content.

I. Short-Term Countermeasures

A. Increase transparency; make pressure from public opinion felt.

- In the past, even though audit findings were made public, only aggregate data was released, without specific data by province and city, and local government did not feel the necessary pressure;
- For this reason, it was recommended that specific audit results on provincial and municipal debt be published as soon as possible, so that the pressure from public opinion borne by the central government was transmitted to its local counterpart, in order to enhance the watchdog role played by the the public and the market on local government debt, especially in the case of heavily indebted areas.

B. It is recommended that a committee for Local Government Debt be established to get ready to deal with emergency situations.

- I recommend the establishment, led by the State Council, of a “committee for managing risks in local government debt,” to be composed of the Ministry of Finance, the People's Bank, the SASAC, the NDRC, the financial regulators and academicians, to get ready to deal with any emergencies that may arise in the near term, to mitigate medium-term risks and to develop long-term strategies.
- The committee for managing risks in local government should be a cross-sectoral decision-making body on an ad hoc basis, but has not yet been established. This recommendation has been made before, but the committee has yet to be formed.

C. It is recommended that a risk mitigation fund be established to raise money from multilateral sources for debt rescue purposes

- I recommend the establishment of a “risk mitigation fund for local government debt” under the “committee for managing risks in local government debt”;
- There can be multiple sources of funding, including the use of existing fiscal surpluses, transfers, sale of state-owned assets, loans from the central bank and bonds guaranteed by the central government;
- The fund will be used mainly for providing rescue measures to distressed local governments, such as bridge loans, fiscal assistance and incentives for debt relief.

D. Develop contingency plans and establish guidelines on debt rescues

- Contingency plans for local government debt should be expeditiously put in place, establishing basic principles on debt rescues, approval procedures and specific rules. As a condition for receiving assistance, distressed local government should be required to implement mitigating measures, meet quantitative goals, carry out reforms and develop debt restructuring plans. They should also be required to devise appropriate road maps and timetables and will be responsible for monitoring their implementation.

E. The nature and degree of risks should be analyzed and different approaches adopted accordingly

- Based on international experience, risks in local government debt can be dealt with through three different approaches:

1. The deposit insurance model

- **The "deposit insurance model" (or Japanese model) can be applied to a local government whose debt indicators exceed the high risk threshold but have not yet reached distressed levels.**
- While stressing the principle of "responsibility residing with the party taking the risk," the committee for managing risks in local government debt will take **early intervention measures** by requiring the local government in a heavily indebted area to engage in fiscal restructuring, develop the relevant plans and seek their approval from the committee for managing risks in local government debt. After receiving such approval, the plans will be implemented by the local government under the supervision of the committee.

2. The IMF model

- The “IMF model” can be applied to a distressed local government not posing any systematic risk, forcing it to accelerate relevant reforms
- The committee will commit to provide necessary assistance but at the same time will put forward a series of remedies, requiring the local government to reach phased targets determined by the central government within the prescribed time limit, or assistance will be withheld or discontinued.

3. The New York City model

- The “New York City debt rescue model” can be applied to a severely distressed local government that may pose a systematic risk.
- A “state of fiscal emergency” will be declared, which allows the committee for managing risks in local government debt to take full control of decision-making on all key matters such as fiscal operations and personnel affairs. The committee will also form a debt restructuring team to serve as the “custodian” who is solely responsible for matters such as emergency measures and debt restructuring, until the crisis subsides, when the relevant authority will gradually be returned to the local government.

II. Medium-Term Countermeasures

- Existing risks in local government debt stem from a myriad of factors. Merely treating the risks from a fiscal perspective by characterizing them all as “contingent liabilities” may lead to a financial crisis; on the other hand, taking a purely financial approach and categorizing the risks all as “government debt” may lead to a fiscal crisis.
- Therefore, an integrated “package” solution, covering both financial and fiscal measures, must be developed by a cross-sectoral committee for managing risks in local government debt, which, together with a **plan for resolving the risks in local government debt during the next five years**, will contribute to the gradual resolution of all existing debt risks during the so-called “13th Five-Year Plan” period.

A. On one hand, in terms of **sources of local government funding**:

1. Accelerated **tax reforms**

- Tax reforms should be intensified to cultivate sources of revenue for local government so as to increase their independent funding;

2. More regular **transfer payments**

- Actions should be taken to make more general rather than special transfer payments, to mandate horizontal transfer payments, and to improve the regulation, formula basis and transparency of transfer payments, all for the purpose of enhancing the fiscal capacity of local governments.
- Particular attention should be paid by local government to avoiding moral hazard!

3. More regular debt financing arrangements for local government

- **Incremental debt:** local government should be allowed to engage in independent debt financing in capital markets, in an open and transparent fashion and through regular rather than irregular channels.
 - (Issue left unresolved by the new Budget Law: bonds issued by provincial government for municipal use)
- **Existing debt:** existing local government debt may be made more liquid through **debt securitization** and existing implicit debt may be made more visible, in order to enhance liquidity, prevent insolvency and mitigate risks to banks.
 - (Legacy issue related to debt roll-overs: commercial banks are ordered to lend as if under a planned economy)

4. Differentiation among local government financing platforms

- Local government financing platforms that are more oriented toward public goods and less driven by profitability should rely on the issuance of municipal bonds and loans from policy banks as their major sources of financing;
- Platforms that are less oriented toward public goods and more driven by profitability should adopt a share-holding format and rely on the issuance of corporate bonds and commercial bank loans as their major sources of financing.

5. Public-private partnerships (PPP)

- It is worth emphasizing that attracting private capital to municipal construction and other fields through public-private partnerships (so-called "PPP mode") may be one of the best ways to resolve the risks in local financing platforms.
- But we must note this is a "double-edged sword." As the government still decides who to serve, what service to provide and at what price, the PPP mode will not completely free the government from the relevant repayment obligations. Instead, these obligations are simply turned into long-term and implicit liabilities, with considerable long-term risks.
- If the State Council decides to suspend collection of highway tolls during holidays, corporate earnings will be directly impacted, which may lead to added debt burden for the local government.
- **State-owned capital must exit from sectors based on competition. Otherwise it enjoys an unfair advantage, which inhibits entry by private capital.**

6. Attracting foreign investment

- Additionally, China's external debt is at a relatively low level, which helps alleviate risks in local government debt, because it allows the purchase of local government bonds in reasonable quantities by QFIIs (Qualified Foreign Institutional Investors). This new way to attract foreign investment will win valuable time for digesting local government debt.
- This requires the involvement of rating agencies.

B. On the other hand, to mitigate risks at financial institutions:

1. We need to speed up the privatization of commercial banks

- Governments at all levels should reduce their stake in commercial banks as quickly as possible until they have exited completely in order to prevent "related transactions within the government" (i.e. various levels of government hold controlling shares at commercial banks, which allow them to dictate hiring and firing of bank executives, who order commercial banks to lend to government projects);
- This will eliminate risks in local government debt at its main source.

2. China Development Bank should be policy-oriented again

- The Bank should again become a policy-oriented financial institution specializing in loans to financing platforms for local government.
- Generally doing so will not result in mismatches and cost distortions from making long term loans by taking short term deposits and making long term investments by borrowing short term loans, since the sources of funding are different for policy banks and ordinary commercial banks. This eliminates potential risks associated with commercial bank loans to financing platforms for local government.

3. Non-performing assets should be stripped once again.

- Under certain conditions, bad bank debt resulting from lending to local governments should again be stripped and parked in asset management companies, who will carry out market-oriented disposal and recovery.
- For commercial banks with too many bad assets and not worth rescuing, bankruptcy procedures should be followed decisively subject to the establishment of deposit insurance.
- Risks may become reality faster than we expect. Therefore we must speed up the construction of a deposit insurance system, making it an independent body with appropriate staff, financial resources, material infrastructure and technical expertise, as soon as we can.
- We must guard against moral hazard and prevent conflicts of interest in asset management companies (diversified, commercial operations).
- An asset management company should be installed under the deposit insurance agency, à la Japan.

4. Asset securitization

- Finally, we should carry out securitization of local government debt on a pilot basis. This will be done on both the fiscal and monetary fronts (securitization of local government debt as well as bank loans), in order to release assets and enhance liquidity, thereby diversifying and reducing the liquidity risk faced by commercial banks.
- **Asset securitization (commercial banks) + debt securitization (local government)**
- It is imperative to have a Chinese version of QE, provided that we make effective use of the three oversight tools explained on the next page.

III. Long-Term Strategies

- In modern market economies, three mechanisms are often deployed for the **oversight** of local government debt:
 - **Top-down supervision;**
 - **Market discipline imposed by investors, intermediaries and rating agencies;**
 - **Bottom-up democratic process.**

A. Top-down supervisory system

- A system must be put in place for the central government to supervise local government debt, including risk indicators and an effective regulatory regime;
- It is better if central and local financial operations are managed separately (as in Japan and other countries), with a specialized agency independent from the central government in charge of supervising local government debt.

B. A horizontal mechanism of market discipline

- A mechanism of market discipline is deployed where local governments are allowed to engage in open, independent debt financing in capital markets, and where they are subject to market discipline imposed by credit rating agencies, financial intermediaries and investors.

C. Instituting bottom-up democratic supervision

- Finally, the fundamental strategy for dealing with risks in local government debt lies in **local (fiscal) autonomy**, through enhanced mechanisms of self-discipline and firewalls among various levels of government, including:
 - Increased supervision by **local people's congress (legislature)** of local government debt financing;
 - **Local treasurer** serving as a counterweight to the local chief executive;
 - Introducing a **democratic voting** mechanism regarding issuance of local government bonds; and
 - Establishing **bankruptcy procedures** for local government.

-
- In the final analysis, the issue of local government debt is the result of a long process and the convergence of many complicated causes. Therefore, it can be resolved neither by laissez-faire nor by quick fixes. The solution must combine fiscal and monetary tools, balance short and long term interests and target tactical as well as strategic factors.

My Past Research Related to the Current Topic

- 2003: Undertook a research project entitled "A Study on the Issue of Local Debt," jointly organized by the Comprehensive Policy Research Institute of the Japanese Ministry of Finance and Department of Macroeconomics, National Research Center of China
- 2009: Participated in a project organized by the Department of Technology and Economics, National Research Center, entitled "A Study on Local Infrastructure Financing," and was the lead researcher on the sub-topic "Local Government Financing Platforms."
- 2010-2011: Undertook projects respectively entitled "A Study on the Issue of Local Government Financing Platforms" (a project under a grant from the National Research Center), "A Study on Local Government Financing Platforms in Japan" (CF40) and "Theory and Practice of Local Government Financing in Foreign Countries" (a National Research Project in the Natural Sciences).
- 2013-2014: Undertook projects respectively "A Study on Financing for Urbanization" (Asian Development Bank) and "On Resolving Risks in Local Government Debt" (CF40).
- Oct. 2014: Published a treatise entitled "Resolving Risks in Local Government Debt and New Channels of Financing for Urbanization," Machinery Industry Press.

Thank you.
Comments, please.

Local Government Debt in China: Issues and Recommendations

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Local Government Debt in China: Issues and Recommendations

I. General condition of all types of local government debt and major issues

II. Relationship between tax reform and improving local government debt financing system

III. Preliminary assessment of risks related to local government debt

IV. Recommendations

2

I. General condition of all types of local government debt and major issues

A. General condition of all types of local government debt

1. General condition

An audit by the National Audit Office at end of June 2013 shows two categories of local government debt: one is direct debt, for which the local government concerned bears repayment obligation, and the other is contingent debt, for which they provide guarantee and bears a certain degree of responsibility of debt rescue.

3

I. General condition of all types of local government debt and major issues

Debt levels identified at end of June 2013: direct government debt = 10.8 trillion yuan, while contingent government debt = 2.6 + 4.3 trillion yuan. Direct debt is much larger than contingent debt. Of the latter, statutory debt is smaller than non-statutory (moral) debt. Local government debt limit stands at 16 trillion yuan in 2015 and will increase to 17.2 trillion yuan in 2017.

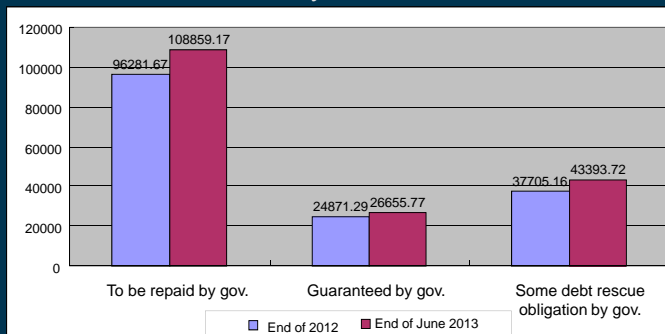


Fig. 1 Overall size of two types of local government debt (in 100 million yuan)

4

I. General condition of all types of local government debt and major issues

A. General condition of all types of local government debt

2. Status at various levels of local government

The audit at the end of June 2013 shows that debt for which local government bears repayment obligation occur mainly at the municipal and county levels, with municipal, county and provincial debt accounting for 44.5%, 39.2% and 16.3% of the total, respectively.

5

I. General condition of all types of local government debt and major issues

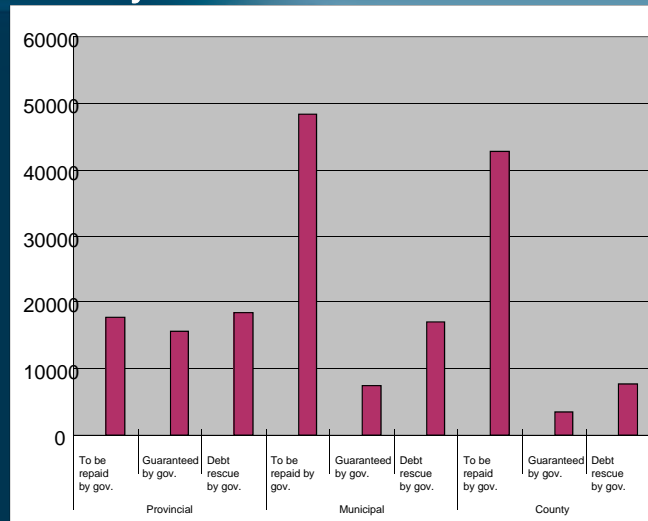


Fig. 2 Composition of two types of local government debt at the provincial, city and county levels, end of June 2013 (in 100 million yuan)

6

I. General condition of all types of local government debt and major issues

A. General condition of all types of local government debt

3. Borrower information

In terms of borrowers, aside from debt for which local government provides guarantee, debt raised through financing platforms for which government bears repayment and debt rescue obligations accounts for the largest share of debt among all borrowers. Local government departments and agencies are the largest of all debt guarantors.

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I. General condition of all types of local government debt and major issues

Figure 3 shows the borrowers of the three main types of debt. It can be seen that local government debt financing platforms and local government departments and agencies account for a large share (approximately 66%).

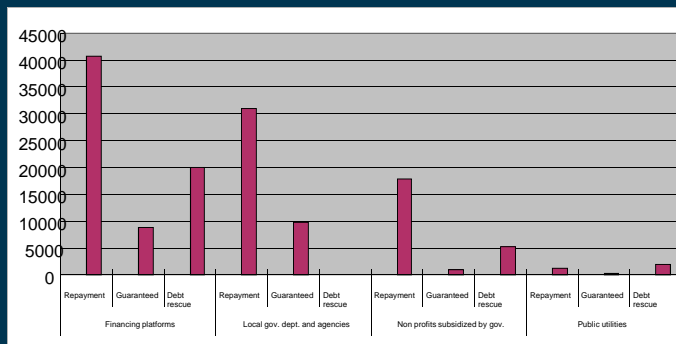


Fig. 3 Composition of major borrowers of local government debt, end of June 2013 (in 100 million yuan)

8

I. General condition of all types of local government debt and major issues

4. Repayment

The table below, based on the 2013 audit, shows maturities of local government debt in 2015 and thereafter. Overall, for the three types of debt, the amount due in 2015 is the highest during 2015 to 2017.

Table 2 Local government debt maturities for 2015 and later years (in 100 million yuan)

	2015		2016		2017		2018 and later	
	Amount	%	Amount	%	Amount	%	Amount	%
To be repaid by gov.	18577.91	17.06%	12608.53	11.58%	8477.55	7.79%	20419.73	18.76%
Guaranteed by gov.	3198.42	12.00%	2606.26	9.78%	2298.6	8.62%	11706.75	43.92%
Some debt rescue by gov.	5994.78	13.81%	4206.51	9.69%	3519.02	8.11%	16669.05	38.41%

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I. General condition of all types of local government debt and major issues

B. Major issues

The main problem associated with local government debt is a lack of transparency with regard to risks, which leads to uncertainty. This is reflected in the following areas:

1. There is a lack of regular inventory taking and publication of statistics on local government debt.
2. The recognition and measurement of local government debt are not supported by government accounting standards.
3. Tools need to be improved to better identify and assess risks in local debt.
4. Internal control needs to be enhanced to better manage local government debt.
5. There is lack of effective linkage between local debt management and local budget management.

10

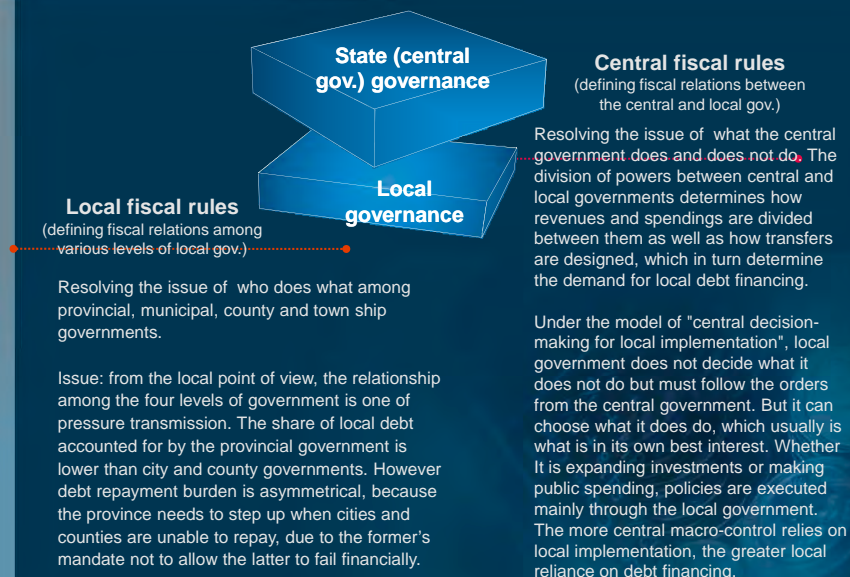
II. Relationship between tax reform and improving local government debt financing system

Local government debt financing is an offshoot of state financial operations, which designate the division of powers between the central and local governments. The institutional arrangements on local debt financing govern matters such as "how to borrow", "how to use" and "how to repay" for various levels of local government.



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II. Relationship between tax reform and improving local government debt financing system



12

III. Preliminary assessment of risks related to local government debt

Chinese local government debt is the result of years of accumulation, with accelerated expansion after 2008. Currently the risks in China's local government debt is generally under control.

1. Debt growth has been brought under effective control.
2. China's local governments have significant public resources and public assets and their balance sheet is only moderately leveraged.
3. Liquidity risk due to debt repayment has been basically brought under control through roll-overs. This process will continue in 2016.
4. The economy is bottoming out, providing the conditions and support for reducing the risk in local government debt.

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III. Preliminary assessment of risks related to local government debt

Risk in local government debt, while manageable on the whole, is significant and not to be taken lightly, especially in the long run.

1. Under the current economic environment (the "new normal"), growth of local revenues (including those from land transactions) has slowed considerably. Meanwhile, the rigidity of local government's public expenditure has increased, resulting in a widening payments gap and added financial pressure on such government.

2. The rapid urbanization process requires significant investment and financing, which gives rise to heightened risk from financing innovation by local government, especially from the expansion of contingent liabilities, which must be guarded against.

3. Risks are rising from the fast growth of internet banking such as P2P, and PPP, financial leases, policy finance, as well as local government-affiliated financial institutions and funds, especially in the absence of adequate fiscal and financial supervision.

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IV. Recommendations

A. Underlying ideas

1. Enhancing the rule of law.

After the passage of the amended Budget Law in 2014, it has become the primary task to regulate the borrowing behavior of local government through the rule of law. We should implement the provisions of the Budget Law through various policies.

The Budget Law amendment provides for limited power for local government to issue debt and applies quota to such debt, with strict rules regarding borrowing authority and purposes, and makes it part of the budgeting process, to be managed by category and supervised by the local people's congress (legislature). It strips financing platforms of their role in government financing, distinguishes government and corporate responsibilities, and ensures that corporate debt is not left for the government to repay. It also establishes mechanisms for assessing risk in local government debt, providing early warning, engaging in emergency response and enforcing accountability. No bail out is allowed by the central government. In addition, it contains the basic institutional framework for public-private financing partnerships. The related laws are being developed and drafted.

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IV. Recommendations

2. Improving the institution of local government debt financing.

This is a cross-cutting issue.

It is necessary to achieve short-term objectives by controlling the excessive growth of debt in order to avoid the derivative risks to China's economic development and social stability. On the other hand, we must serve long-term goals of local development and governance as well as lasting stability throughout the country.

Also, we need to start from the micro-level by establishing and improving mechanisms for controlling the size of debt and associated risks and by improving the effectiveness of government investment. Meanwhile, we must focus on the macro-level by engaging in multi-faceted reforms in the areas of economic operations, the legal environment and the financial system.

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IV. Recommendations

3. Improving the infrastructure for risk control.

There is a urgent need to establish a true, comprehensive, and timely statistical system of local debt, the associated internal and external reporting system and disclosure arrangements.

We also need to improve mechanisms for issuing, repaying and managing local government bonds.

We should gradually transition from the system of management debt through annual quota to one based on debt balance.

It is necessary to better match liability and authority with regard to the issuance and management of local government bonds.

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IV. Recommendations

4. In the medium to long term, with the country moving from a flat to a vertical governance structure that separates the central and local levels of government, we should also adopt such an approach to managing the debt risk, fiscal risk and public service risk at the local and the national levels, without losing sight of linkages between the two. The increasing complexity of modern society has give rise to an underlying trend toward such separation in governance. Therefore, the issue of local debt should be considered in the context of the country's vertical governance structure and should not be approached as a purely a matter of debt.

5. We need to give full play to laws, regulations and market discipline and regulate by legislation issues of administrative powers, property rights, taxation, fee-charging, and revenues and spendings of the central and local governments. It is also necessary to gradually give the local governments relatively complete powers to govern. Finally, we must build a debt financing management system that is jointly supervised by the central government, local authorities, the public and the market.

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IV. Recommendations

B. Specific recommendations

In view of the current environment, we need to take into account the following two aspects in controlling the risk in local government debt:

On one hand, we must ensure that resolving the risk in local government debt does not hinder the overall objective of steady economic growth, i.e. risk prevention and control must go hand in hand with steady growth;

On the other hand, we need to improve the effectiveness of government investment and prevent any crowding effect due to such investment. This is a major focus of our long-term risk prevention and control efforts.

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IV. Recommendations

1. Consider investment and financing in an integrated fashion, focusing on the overall effect of government investment. Link expanding demand to improving supply and short-term stability to enhanced growth potential.

2. Make full use of market mechanisms to attract private investors to participate in public investment, construction and management. Expand public good-oriented private investment, encourage entrepreneurship for social causes and create innovative mechanisms for supplying public services by multiple parties.

3. Further reform the public budgeting process, promote medium-term fiscal planning, establish medium-term budgetary framework, and improve temporal efficiency of fiscal funds.

4. Accelerate the establishment of government accounting standards by providing consistent rules for the recognition, measurement, accounting and statistics of government assets and debt.

5. Improve the projection of local government debt risk and the associated early warning and emergency response mechanisms.

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