



中国人民银行
THE PEOPLE'S BANK OF CHINA



INTERNATIONAL
MONETARY FUND
国际货币基金组织

PBC and IMF Fifth Joint Conference
**Strengthening Financial and
Exchange Rate Frameworks:
International Experience and
Relevance for China**

EDITORS

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中国人民银行·国际货币基金组织第五次联合研讨会
**增强金融和汇率框架：国际经验
及对中国的启示**

编辑

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SUMMARIES AND PRESENTATIONS

总结与报告

This is the official English version. For the Chinese translation please see:

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<http://www.imf.org/zh/Countries/ResRep/CHN>

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STRENGTHENING FINANCIAL AND EXCHANGE RATE FRAMEWORKS: INTERNATIONAL EXPERIENCE AND RELEVANCE FOR CHINA

INTRODUCTION

AI Ming and Alfred Schipke¹

China has embarked on comprehensive reforms to promote sustainable and quality growth. Among other things, this implies greater reliance on markets for an efficient allocation of resources. Although China's reform agenda remains large and complex, quite a bit of progress has been made, especially in the financial and external sectors. Among other things, the country has completed formal interest rate liberalization, established a deposit insurance scheme, and made progress in reforming the exchange rate regime.

As China's financial system continues to develop rapidly and financial innovations mushroom, a continuous strengthening of financial sector frameworks, including macro-prudential frameworks will be important. In the same vein, as China advances liberalization of its exchange rate system, important questions arise, such as what the ultimate exchange rate framework should look like and how best to get there.

The inclusion of the RMB in the IMF's Special Drawing Rights (SDR) basket recognized China's overall reform progress. Building on this—and with a view to maximizing the benefits of markets while minimizing vulnerabilities—the authorities are further strengthening policy frameworks, that is, the institutional foundation that underpins and guides market function, as well as governance.

¹ Editors and conference organizers, People's Bank of China and International Monetary Fund.

China's economy remains in transition and textbooks provide little guidance as to how to move forward. Also, policies and frameworks need to be calibrated constantly. Against the background of international experience, the People's Bank of China and IMF held a joint conference April 28, 2017 to discuss how to strengthen financial and exchange frameworks. In addition to the hosts, the conference brought together experts and policymakers, and staff from other relevant international and domestic institutions. The event focused on identifying practical policy solutions and evaluating the benefits and costs of different approaches.

STRENGTHENING THE EXCHANGE RATE AND SUPPORTIVE POLICY FRAMEWORKS

Over the past year, China has advanced exchange rate liberalization and is now referencing a basket of currencies. As the country moves toward a float, three interrelated questions arise: (i) what kind of a float should China adopt, (ii) how should it get there, and (iii) and how to intervene in the market—and in this context—ensure proper market functioning. Although the international experience is useful, the session also considered China's unique position in the world, including its size and the RMB's special status as a currency in the SDR basket.

STRENGTHENING FINANCIAL SECTOR AND MACRO- PRUDENTIAL POLICY FRAMEWORKS

This session looked at key drivers of China's rapidly changing financial landscape, future opportunities (including the development of derivatives markets), and key challenges.

Using insights from Financial Sector Assessments of the key G20 countries (including the United States), conference participants discussed how best to apply the lessons to China. In particular, the section looked at good practices for the development of macroprudential policy frameworks.

The conference is the result of very close collaboration between the People’s Bank of China and the IMF. We would like to thank the staff at the central bank’s IMF Division and the IMF Beijing office for making this event such a success. Special thanks go to LI Jing, who—among others—managed the production of this e-book, and SHAN Qiqi and YUAN Chunwang who were instrumental “in keeping all the balls in the air” and making sure that nothing fell through the cracks.

The following e-book includes short summaries, as well as the corresponding conference presentations. We hope you find them useful.

OPENING REMARKS

CHEN Yulu²

Distinguished guests, ladies and gentlemen,

Good morning. First, on behalf of the People's Bank of China, I would like to welcome you, especially those who travelled all the way to China to this Joint Conference. I express my gratitude to all of you. I would also like to thank the IMF and People's Bank of China (PBOC) staff for all your hard work in preparing this conference.

The conference mainly focuses on two broad issues. The first is to improve the exchange rate policy framework, and the second is to strengthening financial sector and macro-prudential policy frameworks. These two issues have also attracted extensive attention from policy makers and academia. I would also like to share my observations on these two issues.

On improving exchange rate policy framework. China has adhered to the principles of moving toward a market-based RMB exchange rate regime, and improved the managed floating exchange rate regime based on market demand and supply and with reference to currency baskets. In August 2015, China reformed the central parity system of the RMB exchange rate to let the market play a bigger role in determining the RMB exchange rate. In December 2015, the China Foreign Exchange Trading System (CFETS) published a RMB exchange rate index, putting more emphasis on referring to currency baskets, so that the RMB exchange rate against baskets of currencies would be more stable. These reform measures have been put in place for more than a year, and effects of the implementation to date indicate that the current mechanism has reached the right balance in relying more on market

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

demand and supply, maintaining basically stable against baskets of currencies and stabilizing market expectations.

China faced certain currency depreciation and capital outflow pressures not long ago. But recently foreign exchange markets have stabilized. On a medium-to-long term view, RMB has proven its strong and stable position in the international monetary system. Since the 2008 Global Financial Crisis, the Euro, Japanese yen and UK pound have fallen against the U.S. dollar by 25 percent, 6 percent, and 32 percent respectively, while the Chinese Yuan has depreciated only 1 percent and the real effective exchange rate (REER) and nominal effective exchange rate (NEER) have appreciated 29 percent and 23 percent, respectively. Although China's foreign exchange reserve has now dropped to about \$3 trillion from its peak of \$4 trillion in 2014, it is still the highest in the world.

Cross-border capital outflows significantly slowed in the first quarter of this year. The supply and demand on the foreign exchange rate have come close to equilibrium. This reflects the development that our cross-border capital flows have gradually converged to a balanced status. The improvement of capital flows in the first quarter is closely related to the positive developments of the Chinese economy. On the one hand, more robust domestic growth momentum has boosted market confidence. The Chinese economy has made a good start in the first quarter. Growth and efficiency have both recovered, and market expectations have improved.

Domestic demand, especially consumption, has contributed more to overall growth. New technologies, products, and services have emerged and developed rapidly. Industrial upgrading and transformation has accelerated. The balance of payments has also improved.

The external environment was also more favorable in the first quarter. The U.S. dollar exchange rate has become relatively more stable and international financial market conditions have improved. Under the influence of both internal and external factors, the RMB exchange rate has been basically stable since the beginning of this year, moving in both

directions against the U.S. Dollar, and market expectation has also become more stable.

We fully understood that long-time and large-scale capital controls are not effective to deal with outflow pressures. Since China experienced capital outflows, relevant Chinese authorities have not introduced any new measures on money exchange and cross-border payments, and instead have required banks to follow the existing rules and regulations on foreign exchange management and strengthened background scrutiny. China's laws and regulations on foreign exchange management have not changed.

For the next step, the People's Bank of China will continue to move toward a market-based exchange rate regime and improve the central parity system of "closing exchange rate+exchange rate changes of basket currencies". We will make the exchange rate policy more rules-based, transparent, and market-based to better reflect changes in market demand and supply. By doing so, the flexible exchange rate regime with two-way movements and based on market conditions will be improved in an orderly way, which will help the RMB exchange rate stay around equilibrium and let the exchange rate become an automatic stabilizer of the balance of payments.

Since the global financial crisis of 2008, central banks have generally realized that pro-cyclical volatility in financial systems and asset price fluctuation are the main factors behind crisis. The robustness of individual financial institutions does not mean that the overall financial system is stable. Macro and counter-cyclical prudential policies are needed to effectively prevent and address the systemic financial risks to maintain overall financial stability. Macroprudential policies have become the focus of the reform of global financial regulation and macro-management framework.

The People's Bank of China has been actively exploring the establishment of a macroprudential policy framework tailored to China's specific circumstances. In 2004, we introduced differential required reserves and credit policies to support the development of certain areas

while containing others, which embodied the thinking of macroprudential policy.

In 2009, we began to study macroprudential policies comprehensively. A differential reserve adjustment system was introduced in 2011 and upgraded to a macroprudential assessment system in 2015 that covered monitoring foreign exchange liquidity and cross-border capital flows.

Now, we have made it clear that we are developing a two-pillar policy framework, which combines and coordinates monetary policy and macroprudential policy. Generally speaking, China's macroprudential policy played a very important role in maintaining the overall stability and preventing systemic financial risks.

Going forward, drawing on international practice and experience, we will focus more on systemically important financial institutions(SIFIs), financial infrastructure, and the statistics in the financial sector to prevent systemic crisis.

This is the fifth seminar jointly organized by People's Bank of China and the IMF. I believe the seminar will be more meaningful with your active participation. I hope you can open your minds, talk freely, and contribute.

Finally, my best wishes to all of you and great success to this seminar.

Thank you.

SESSION I

STRENGTHENING EXCHANGE RATE AND SUPPORTIVE POLICY FRAMEWORKS

PART I: EXCHANGE RATE FRAMEWORKS

REDUCING INTERVENTION IN THE FOREIGN EXCHANGE MARKET

MA Jun³

The following summarizes the key points:

- While the short-term objective of a central bank's foreign exchange market intervention is to stabilize the spot rate, a more important objective should be to stabilize exchange rate expectations. ***Please also see the corresponding presentation at the end of the book.*** If intervention manages to stabilize the spot rate but leads to a deterioration in exchange rate expectations, the cost required to stabilize future expectations will increase and outweigh the short-term benefits. Empirical studies using data on various countries suggest that central bank intervention in the foreign exchange market is likely to lead to a deterioration in exchange rate expectations. In other words, selling foreign exchange by central banks could lead to greater depreciation expectations. The likely mechanism for this is that, as a central bank intervenes and reduces its foreign reserves, the market expectation becomes stronger that a sudden sharp depreciation will occur in the future.
- Capital controls can improve the balance of payments in the short run by limiting capital outflows, but are likely lead to a deterioration in the balance of payments in the medium and long terms. The main reason for this is that capital outflow controls would curb future capital inflows.
- After the new round of foreign exchange reforms in China in the past two years, acceptance of exchange rate volatility by the public and investors has significantly improved. This trend has provided important room for the People's Bank of China (PBC) to reduce

³ MA Jun is Chief Economist, Research Bureau, People's Bank of China.

intervention. Not fully understanding this change may lead to misjudgment in the direction of exchange rate reform.

- It is proposed to reduce foreign exchange intervention more quickly, to substantially increase exchange rate flexibility, to relax control over foreign exchange outflows, and to advance reforms that will expand channels for capital inflows, such as the opening-up of China's bond market.

EXCHANGE RATE FRAMEWORKS: FOREIGN EXCHANGE INTERVENTION IN LATIN AMERICA

Alejandro Werner⁴

Since the early 1990s, large Latin American economies have progressively transitioned to inflation targeting, which by construction requires exchange rate flexibility. **Please also see the corresponding presentation at the end of the book.** Nevertheless, they still closely monitor their exchange rates, not only because of pass-through to inflation, but also because other risks that sharp exchange rate movements may entail.

For example, excessive exchange rate appreciation can lead to a loss in competitiveness and cause costly adjustments as activity shifts from the tradable to the non-tradable sector. Excessive volatility, particularly large and abrupt depreciations, can lead to financial stability concerns due to the potential effects of currency mismatches on balance sheets.

In Latin America, exchange rate pass-through has been declining, as central banks have built up their credibility. Financial resilience has improved significantly, as borrowers have shifted toward safer liability structures (such as borrowers without a natural hedge moving away from foreign currency debt). However, central banks still find it useful to intervene in the foreign exchange market (while remaining committed to price stability as their monetary policy mandate).

Countries in Latin America accumulated a significant stock of international reserves when they were receiving large capital inflows. That helped these economies achieve adequate precautionary external buffers, and may have also moderated appreciation pressures. Some

⁴ Director, Western Hemisphere Department, International Monetary Fund.

countries have also deployed reserves to cope with depreciation as capital inflows declined or reversed.

These operations can be part of a strategy of foreign exchange intervention, which can take a variety of forms. A taxonomy of these dimensions includes: rules based versus discretionary; intervention on spot markets versus through swaps and other derivatives; sterilized versus unsterilized intervention; and public/transparent versus secretive intervention.

The largest Latin American economies' recent experience spans most of the range of this taxonomy, as illustrated by the Venn diagram on the presentation. Given that the largest economies in the region are inflation targeters, all their recent interventions have been sterilized. Both spot and derivative-based foreign exchange interventions have been common in the region. In principle, intervention through derivatives should be equally effective if markets are well functioning and there is no significant convertibility risk.

One dimension in which the region stands apart is the transparency of the foreign exchange intervention. There is a long tradition of using rules-based intervention, including during times when countries were accumulating reserves. For example, when Colombia and Mexico were building-up their reserves, they used options with a strike price based on the 20-day moving average of the exchange rate. That helped time their foreign exchange purchases to take place when appreciation pressures were stronger. Rules have also been used to sell foreign exchange during depreciation pressures. For example, Colombia used a similar rule based on the 20-day moving average, and Mexico used minimum price auctions to trigger foreign exchange sales when the one-day depreciation exceeded a threshold.

It is also common for countries to pre-announce their interventions, even for spot purchases or sales. For example, in 2011 Chile pre-announced that it would purchase 12 billion dollars through daily spot purchases of 50 million dollars. The Central Bank of Brazil in 2013 announced daily currency swap sales of 500 million dollars plus weekly 1-billion-dollar spot sales. The stock of swaps sold through that

program and its extensions eventually reached over 30 percent of reserves, making it one of the largest episodes of intervention under a floating regime. In 2015, Mexico announced daily spot sales of 200 million dollars, and in February 2017 it announced that it would sell up to 20 billion dollars through swap operations. Even when foreign exchange intervention has been discretionary, it has still been transparent, typically providing a clear a communication of the operations and mechanisms involved.

The effectiveness of foreign exchange intervention is still debated. Early empirical work, focused on advanced economies found little evidence for its effectiveness, not surprisingly given the small size interventions relative to the large and deep bond markets in advanced economies.

More recent empirical literature focusing on emerging markets, however, finds more supportive evidence. Intervention seems to have some traction in Latin America, with studies typically finding some reasonable effect. And some market response in the aftermath of announcements of intervention rules has been significant. For example, Chamon, Garcia, and Souza (JIE forthcoming) estimate the exchange rate to have appreciated by over 10 percent as a result of the Brazilian foreign exchange swap program. That said, it is worth stressing that the very nature of the exchange rate makes it hard to assess whether this effect is permanent or transitory, even in the studies that find supportive evidence for foreign exchange intervention.

Even if we take the view that foreign exchange intervention has traction, a number of important questions remain unanswered. Such intervention plays a central role in fixed exchange rate regimes. But it remains unclear what should be its role under a floating regime.

The macroeconomic literature provides little guidance. However, policy makers often need to act and cannot afford to wait until these questions are settled to design their optimal foreign exchange intervention strategy. The conventional wisdom in some policy circles, including the IMF, sees a role for foreign exchange intervention under “disorderly” market conditions.

But what role should foreign exchange intervention play over the global financial cycle? This question may come to the fore if a significant reversal in global financial conditions arises. As noted, several countries accumulated international reserves when they were receiving large capital flows—during the “boom” phase of that cycle. Should they take a symmetric approach and steadily deploy reserves as capital flows decline or even reverse? Or should they hold on to reserves as less benign global financial conditions heighten precautionary motives? These questions are compounded by the difficulties in assessing in real time which shocks are permanent and which are transitory.

Another key question is how best to communicate the foreign exchange intervention strategy to the private sector so as to mitigate over-reaction and leverage the effect of foreign exchange intervention through an increase in confidence. Effective communication strategy also needs to highlight the complementary role of foreign exchange intervention relative to interest rate policy in a context where price stability is the key objective of the inflation targeting central bank. It is unlikely that these open questions will be settled anytime soon. In the meantime, policy makers can learn from the experience of other countries, including from the rich and varied experience of foreign exchange intervention in Latin America.

A STABILITY-ORIENTED EXCHANGE RATE POLICY FOR CHINA

Joseph E. Gagnon⁵

INTRODUCTION

From 1995 through 2014, China managed its exchange rate in terms of the U.S. dollar, alternating between periods of extreme stability and of controlled but slightly variable appreciation (the solid line in Figure 1). ***Please also see the corresponding presentation at the end of the book.*** Beginning in 2015, China allowed its currency to depreciate against the dollar, which may reflect a switch in focus to a broader measure of the exchange rate.

The JP Morgan real effective exchange rate (REER) for China (the dashed line in figure 1) has depreciated since late 2015, but that may be viewed as reversing a sharp spike in 2014–15 and returning to the upward trendline that had emerged in 2010–13.⁶ In terms of the dollar, the renminbi has depreciated substantially since 2015, but then so have most other currencies.

The REER is a better measure of the exchange rate for economic policy than the bilateral dollar rate. But it does not follow that stabilizing the REER is the best policy. A better policy for China would be to focus its external policy on the economically more important objective of stabilizing the current account balance, while keeping monetary policy focused on stabilizing inflation and employment.

⁵ Senior Fellow, Peterson Institute for International Economics. This paper reflects the views of the author and does not necessarily reflect the views of the Peterson Institute or other members of its staff. The empirical analysis has not been subjected to a peer review.

⁶ There are other measures of China's REER. Use of the JP Morgan REER in this paper in no way implies that it is the preferred measure.

FOCUS ON IMBALANCES: A REFERENCE RATE APPROACH

China's REER exhibits a clear appreciation trend over the past 20 years. As long as China's productivity growth is faster than that in the rest of the world, continued appreciation is likely to be required. As China's productivity growth slows down, we would expect the pace of real appreciation to also decline, but it is difficult to estimate this relationship with any accuracy. Also, it is possible that measures to open up the Chinese economy, including reducing barriers to imports of goods and services, would temporarily reverse the REER appreciation trend.⁷

Rather than focus on the exchange rate, per se, the People's Bank of China should focus on the ultimate goal of exchange rate policy, which is stability and sustainability of the current account balance. The exchange rate is uniquely salient in the eyes of the public, which is why it is often chosen as a policy target. But the reason people care about the exchange rate is because it influences their ability to buy and sell goods and services in global markets. The current account balance is a far better indicator of an overvalued or undervalued exchange rate than any comparison of the exchange rate with historic levels. A reasonable goal for China is a current account near zero, with temporary deviations allowed (for mainly cyclical reasons) of no more than +/- 3 percent of GDP.⁸

Current account imbalances matter both economically and politically. In economic terms, the current account determines whether a country is a net lender or borrower with the rest of the world. Given China's stage of development, one might expect it to be a net borrower.

⁷ Standard economic theory argues that trade barriers cause a country's exchange rate to appreciate.

⁸ This range was suggested for most countries by Cline and Williamson (2008).

However, factoring in China's high rate of private saving, a zero balance may be a reasonable norm.⁹

Current accounts have important political repercussions. The persistent large US current account deficit played an important role in the election of U.S. President Donald Trump, as his message resonated more with workers who either lost their jobs because of imports or felt at risk from import competition. Even with balanced trade some imports produce job losses and calls for protection are made, but these pressures elicit greater support from the public when trade is in deficit rather than surplus.

Figure 2 shows that current account imbalances of the major economies peaked about 10 years ago and narrowed sharply during the Great Recession. They were moderately large and stable for a few years, but now appear to be widening again. If it were not for the sharp decline in oil prices, the widening of the US deficit in 2015 and 2016 would be more apparent, and it is likely to become even more so over the next two years given the lagged effects of recent dollar appreciation (Cline 2016).¹⁰ Despite the fall in commodity prices, which should have boosted its current account, China's surplus fell in 2016.¹¹ Thus, China is not

⁹ In its 2015 *External Sector Report*, the International Monetary Fund specified a current account norm of 0 for China. In the 2016 *External Sector Report*, the norm was raised to 1 percent of GDP and no explanation was given for the change. The 2016 norms for major economies all moved toward actual values and may be indicative of a desire to ratify existing imbalances in order to avoid conflict with authorities of member governments. Alternatively, it may be that imbalances are increasingly supported by unexplained market forces rather than observed policy differences. However, markets have frequently proved poor allocators of capital across countries.

¹⁰ In its October 2016 forecast, the IMF did not project a significant widening of the US deficit, but the IMF historically has failed to project widening imbalances.

¹¹ Brad Setser suggests that recent changes in statistical techniques overstate Chinese tourism imports. But even a generous correction would not put China's 2016 current account above 3 percent of GDP (<http://blogs.cfr.org/setser/2017/04/04/chinas-confusing-trade-and-current-account-numbers/#more-8371>).

contributing to the return to widening global imbalances. The euro area has been a more important factor in recent years.

The effect of the REER on China's current account is very clear, especially when one allows for the normal two-year lag. A rise in the REER from 1995 through 2002 was associated with a small and stable current account, as shown in Figure 2 (the red portion of the bars). The decline in the REER from 2002 through 2005 led to record current account surpluses in 2005–07. The appreciation since 2005 has returned the current account below 3 percent of GDP, although the absolute dollar amounts shown in Figure 2 did not decline as much because China's GDP has grown so rapidly. Some have argued that increasingly integrated global supply chains, in which China is a key player, reduce the effect of exchange rates on trade imbalances. Recent research at the IMF finds little evidence of any change in the overall effects (Leigh and others 2017).

As an issuer of one of the world's reserve currencies, China should allow its exchange rate to float freely. However, that does not require accepting unlimited volatility in either the exchange rate or the current account balance. The right approach is the reference rate strategy first proposed by John Williamson (2007, 2016). Figure 3 displays how reference rates would operate, placed in the context of China's historical current account balance. The long-term target balance is 0, with cyclical deviations of as much as +/- 3 percent of GDP allowed, as shown by the dashed lines. When the current account is above 3 percent of GDP, buying foreign exchange is not allowed but selling is encouraged.¹² When the current account is between 0 and 3 percent of GDP, purchases would be discouraged but not absolutely prohibited and selling would still be encouraged, albeit less strongly as the current account approaches 0. Symmetrical rules apply when the current account is below 0, as displayed in the figure. For simplicity, these rules have been specified in

¹² Reserve sales would not be encouraged if a country's reserves were below a minimum adequate level. A minimum level for China is discussed in the next section.

relation to the contemporaneous current account, but ideally they should be cast in terms of the projection of the current account up to two years ahead.

It is important to stress that a reference rate system implies absolutely no restrictions on the exchange rate. It is merely a set of guideposts for when and in what direction to conduct foreign exchange intervention. The key point is that intervention should always lean against excessive current account imbalances. In so doing, intervention helps to minimize imbalances. Recent research documents the important effect of foreign exchange intervention on the current account (Gagnon and others 2017).

To the extent that the reference rate strategy is clearly communicated to financial markets, it is likely to dampen excessive volatility in the exchange rate as well. Financial markets are prone to bouts of excessive optimism and pessimism, which drive unsustainably large flows of capital across borders and cause exchange rates to become misaligned. An official policy of leaning against these excessive swings in capital flows would not only help to reduce imbalances but should also mitigate exchange rate misalignments. Many factors influence a country's exchange rate, and it is often difficult to know when an exchange rate is misaligned based solely on its historic behavior. The current account balance (and its near-term projected value) is the only useful indicator of misalignment.

TRANSITION TO THE NEW FRAMEWORK

To operationalize the reference rate strategy for China, it is first necessary to determine a minimum level of foreign exchange reserves. Two common benchmarks are three months' equivalent of imports and 100 percent of short-term external debt in foreign currency.¹³ Figure 4

¹³ IMF (2015) proposed an alternative reserve metric that is considerably higher than the common benchmarks for China because it is heavily influenced by the broad money
(continued)

displays these along with China's foreign exchange reserves. The figure also displays an alternative definition of reserves, net official assets, which adds in non-reserve foreign assets of the central bank and foreign assets held by the sovereign wealth fund and subtracts public and publicly guaranteed external debt. Both of these reserves measures are far above the standard adequacy benchmarks. Probably the best measure of minimum adequate reserves for China is short-term external debt, which is just below \$1 trillion.

China should resist downward pressure on the REER by selling foreign exchange reserves as long as reserves exceed about \$1 trillion and the current account is projected to remain in surplus. As reserves approach \$1 trillion, some combination of REER depreciation and reserve sales should be employed. Below \$1 trillion, the REER should be allowed to depreciate freely. Any upward pressure on the REER should not be resisted, unless the current account is likely to become negative within two years or reserves are below \$1 trillion. The REER trend is likely to remain upward as long as productivity grows faster in China than elsewhere.

It has been widely reported that Chinese authorities tightened restrictions on capital outflows, or at least enforced existing restrictions more vigorously, after August 2015. In the long term, China should open its capital markets. But it is best to move slowly, with a higher priority placed on improving financial supervision and regulation and liberalizing domestic markets. As long as the renminbi is part of the IMF's Special Drawing Rights basket, reflecting China's desire to make the renminbi an international reserve currency, one step that should not be reversed is the opening of China's bond market to foreign investors.

Some might argue that a reference rate strategy cannot work in an economy with independent monetary policy and open capital markets. This conclusion holds true in a model with efficient capital

supply. For a country with a flexible exchange rate, the domestic money stock should not be a major consideration in determining reserve adequacy.

markets. In reality, however, financial markets are not efficient. Research shows that sterilized foreign exchange intervention is more powerful in the presence of capital account restrictions, but, even in economies with no legal restrictions on capital flows, intervention retains an important effect (Gagnon and others 2017). For example, Switzerland, with a fully open capital account, has intervened massively in foreign exchange markets to retain a large current account surplus over the past eight years (Bergsten and Gagnon 2017).

THE CURRENT SITUATION

In the context of the current global imbalances, China is the only major economy whose currency policy is consistent with a reference rate strategy. The euro area, Japan, the United Kingdom, and the United States are not intervening and thus are not in conflict with a reference rate strategy. But the euro area's surplus, at 3.4 percent of GDP in 2016, is in a range where sales of foreign exchange would be strongly encouraged to support the value of the euro.¹⁴ The United Kingdom and the United States, with current account deficits, would be encouraged to buy foreign exchange to weaken their currencies.¹⁵

The very high rates of saving and investment in China pose major risks for China and the global economy. A collapse of investment could cause a recession in China and widen China's current account surplus. The spillover to the rest of the world would be even greater if the recession were associated with an abrupt depreciation of the renminbi. The rebalancing of China's economy is proceeding too slowly. To reduce excessive and unsustainable saving and investment, consumption should be encouraged to grow even faster than it has done over the past few years.

¹⁴ Current account data are available at <https://www.ecb.europa.eu/press/pr/stats/bop/2017/html/bp170217.en.html>.

¹⁵ The UK deficit is wider than -3 percent of GDP, but the depreciation of the pound since June 2016 suggests that it may narrow somewhat over the next year or so.

Research shows that public spending on social safety nets (in health and education) has an enormous positive effect on consumption—at least 50 cents and as much as a dollar per dollar spent—even when the spending is fully financed by tax increases (IMF 2012, Gagnon 2013). Expanding household consumption by improving the social safety net would be a win-win policy for the entire world. It would reduce the buildup of risky investment in China, raise household living standards in China, and reduce its trade surplus with the rest of the world.

CONCLUSION

China's policymakers clearly value economic stability. However, a stable exchange rate—whether measured bilaterally against the US dollar or on a trade-weighted basis—will not deliver stability in China's external balance, which is fundamentally more important. A better policy for China would be to focus its external policy (foreign exchange intervention) on the objective of stabilizing the current account balance, while keeping monetary policy (interest rates and money supply) focused on stabilizing inflation and employment with some help from fiscal policy. Structural reforms to reduce excessive saving are also essential. Liberalization of international capital flows is desirable in the long term, but should not take precedence over domestic financial reforms.

A reference rate strategy with a norm of zero for the current account balance is a good framework. Accordingly, China would not buy foreign exchange reserves when its current account balance exceeds 3 percent of GDP and it would not sell reserves when its current account falls below -3 percent of GDP. It would be encouraged to sell reserves when its current account balance is above 0 and buy them when the balance is below 0. Although not targeted at exchange rate stabilization per se, a reference rate strategy is likely to deliver a meaningful reduction in exchange rate volatility.

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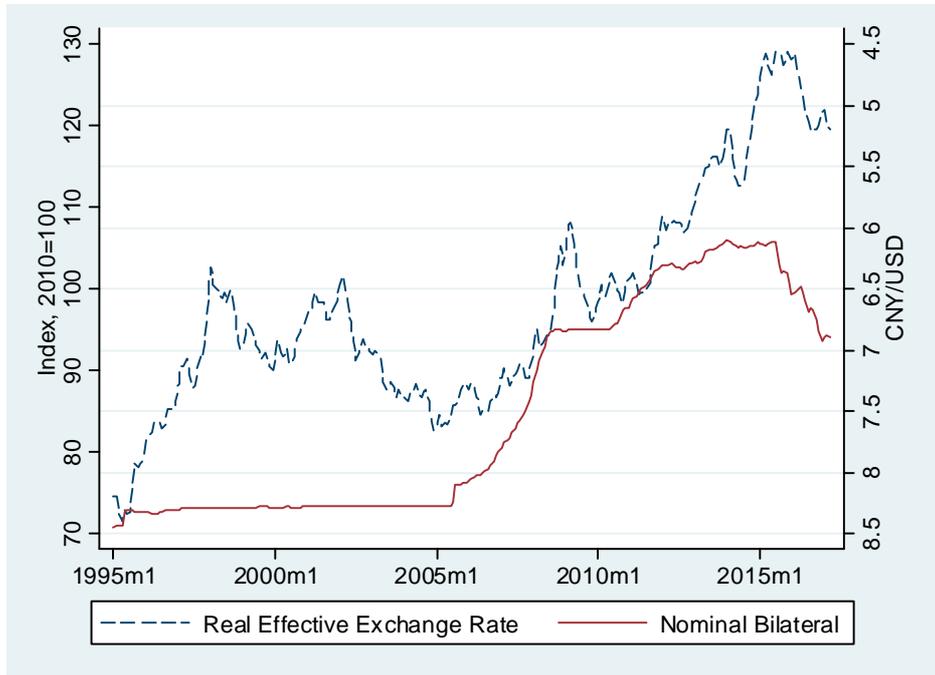


Figure 1. Trend appreciation of China's exchange rate, January 1995 to March 2017
Source: Haver Analytics.

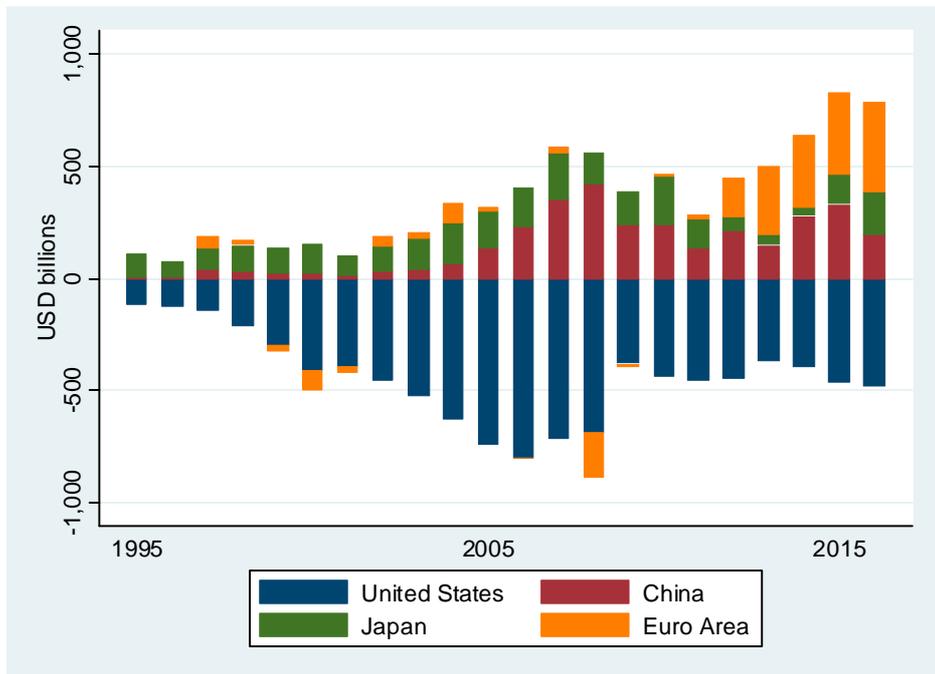


Figure 2. Current account imbalances widening again, 1995 to 2016
Sources: IMF *World Economic Outlook* database and Haver Analytics for 2016 observation.

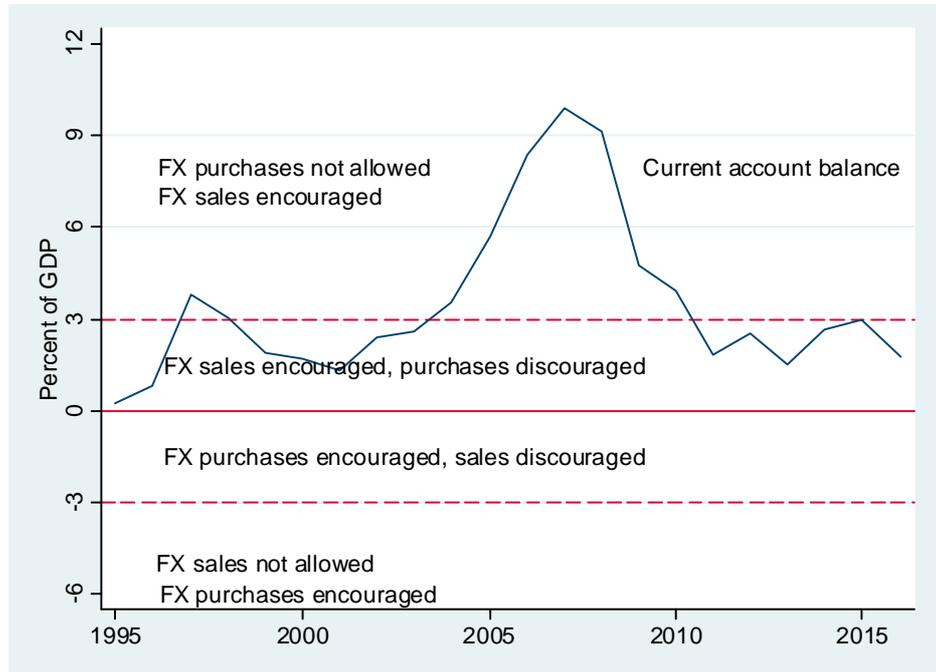


Figure 3. A reference rate strategy for China, 1995 to 2016
 Sources: IMF *World Economic Outlook* database, Haver Analytics, and author's illustration.

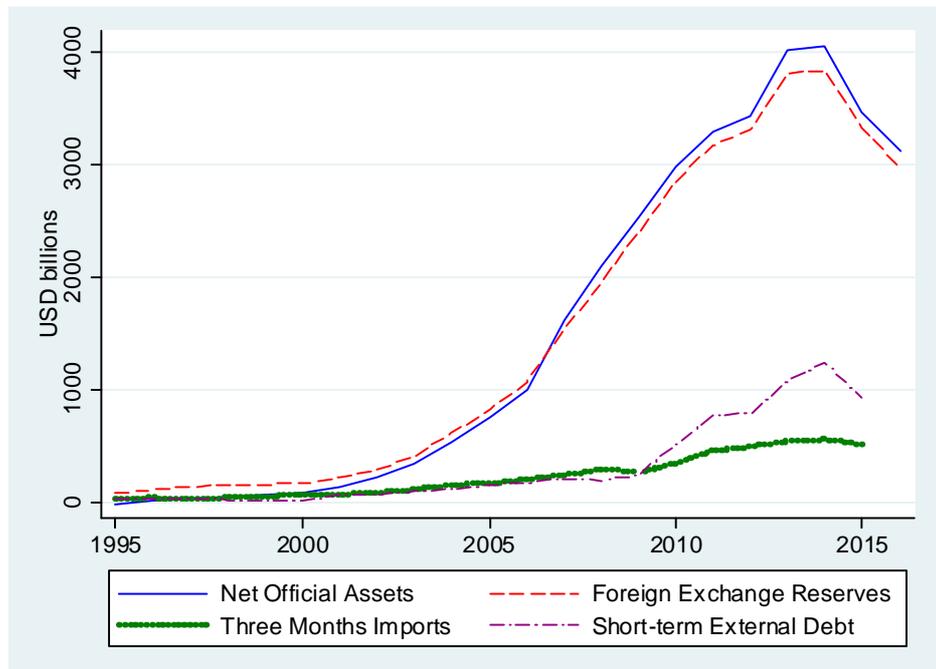


Figure 4. China reserve adequacy, 1995 to 2016
 Sources: IMF *Balance of Payments* database, World Bank *External Debt* database, and Bergsten and Gagnon (2017).

REMARKS ON STRENGTHENING EXCHANGE RATE REGIME AND SUPPORTING FRAMEWORK¹⁶

Lawrence H. Summers¹⁷

China should continue to move opportunistically toward a free-floating exchange rate regime, but during transition should not completely rule out intermittent interventions to prevent excessive volatility. At the same time, capital market liberalization should proceed cautiously.

A clear direction is to move toward a free-floating exchange rate regime for China.

- Fixed or quasi-fixed exchange rate regimes have played a central role in almost every major financial crisis, even though countries always enter such regimes with high hopes. Examples include Mexico's forced devaluation in 1994, the Asian Financial Crisis in Thailand, Indonesia, and Korea in 1997–98, and the Russian and Brazilian crises in 1998.
- Pegged exchange rate regimes are much easier to enter than to exit. For political reasons, countries generally do not abandon fixed or pegged exchange rates if there is no pressure to do so. Yet, when pressures surge, exchange rates are unable to absorb the shocks, and authorities are left to face the damage this causes to their credibility. And the few cases of successful fixed exchange rate regimes still cause other serious problems, such as the sharp fluctuations of real

¹⁶ Prepared based on the transcript at the PBC-IMF 5th Annual Conference on Strengthening Financial and Exchange Rate Frameworks: International Experience and Relevance for China on April 28, 2017.

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estate prices in Hong Kong SAR and the large-scale troubles in the Eurozone that still need to be dealt with.

- The longer a fixed exchange rate regime is successfully maintained, the more traumatic it will be when the regime eventually ends. For a large country like China, with many trading partners and no natural nominal anchors, pegging the currency essentially invites disaster. As China has enormous reserves, it will likely be slow-motion distress rather than a fast-motion crisis. However, the experience of the last 18 months should make clear that even sizeable reserves can dwindle distressingly quickly. This brings the potential problems to the fore.

I would hope that the Chinese authorities consider the experience of the last 18 months when strategizing the exchange rate regime and that the appropriate end-state must be a floating exchange rate regime, which is more common for the other countries in the SDR basket.

It is tempting to find a middle way. But when one explicitly floats the exchange rate within a band, one could either never approach the band or will find itself very near the edge of the trading band, causing essentially the same problems associated with a peg.

A floating exchange rate also helps mitigate trade and political tensions. Given high savings in China and the envy or frustration from other countries seeing China's strong growth, trade tensions involving China will likely be a feature of the current economic landscape as well as that of the next generations. Adopting a floating regime will be seen as China participating in the same practice as in other large economies, which helps manage any inevitable trade, growth, and investment tensions.

Key consideration will fall on how to transition toward a free-floating regime.

- **Prioritize greater exchange rate flexibility over capital market liberalization.** Under the current managed foreign exchange regime, there is always the possibility that the stability will be tested. As such, authorities may be subject to a severe loss of credibility, substantial

distortions of monetary policy, or significant loss of foreign exchange reserves. But when there is a clear, two-way expectation, the virtue of stability in the exchange rate would discourage short-term speculative flows. Currently, the still-limited sense of two-way expectations in RMB is worrying, particularly given the degree of capital control measures and the pace of reserve depletion. Therefore, the authorities should loosen up exchange rate management.

- **Be opportunistic on the transition.** Regarding the timing of the transition, the risk of market overshooting is much greater in practice than in theory, opportunistic transition will be a better option than over a forced move.
- **Openness in capital markets is encouraged but not an imperative.** An open and liberal capital market is a hallmark of a modern society and an effective economy. I have no doubt that the capital markets in China will be far more open a decade from now, but progress toward openness should not be an imperative. The degree of control in capital markets should not be based on international norms established by the IMF or OECD. It should be based on the extent to which such controls are creating substantial distortions and/or encouraging corruption through over-invoicing and the like. Priority should be in removing those controls that are circumvented or unenforceable.
- **Intermittent foreign exchange interventions should not be completely ruled out.** An extreme form of floating regime like the United States in the last 50 years takes almost no account of the exchange rate level in determining monetary policy and does not engage in foreign exchange intervention. Such a floating regime is not applicable to China. For an emerging economy like China with less-than-perfect capital mobility, intermittent surprise interventions can be modestly efficacious in supporting stability. Foreign exchange interventions should not be completely ruled out as a tool, or quasi-ruled out as in other major industrial countries. The Chinese authorities should announce that on occasions there will be interventions to support exchange rate stability.

- **During the transition, exchange rate policy can still influence monetary policy indirectly.** The level of the exchange rate should not be an independent element in the reaction function of China's monetary policy setting, which is already burdened with other objectives such as maintaining growth, price stability, and financial stability. Rather, the level of exchange rate will feed through inflation and real-sector activity that influence the monetary policy stance.

SESSION I

STRENGTHENING EXCHANGE RATE AND SUPPORTIVE POLICY FRAMEWORKS

PART II: EXCHANGE RATE AND SUPPORTING MONETARY POLICY FRAMEWORKS

PRACTICAL STEPS TO FLOATING

Michael Spencer¹⁸

EXCHANGE RATE REGIME CHANGES ARE COMMONLY DIFFICULT

The Chinese authorities are committed to gradual evolution toward an exchange rate regime that allows greater flexibility. ***Please also see the corresponding presentation at the end of the book.*** This is reasonable. As such a large economy it would be inappropriate for China to link its monetary policy closely to that of another country, like the United States, with whom it is unlikely to face similar shocks or have a closely aligned business cycle.

But as China's financial system grows and becomes more complex, and as its engagement expands with international markets for goods, services, and capital, a flexible exchange rate will provide some insulation from external shocks. It also requires the development of supporting foreign exchange and money markets and the evolution of the monetary policy framework towards more autonomy for policymakers, and clarity of monetary policy objectives.

The IMF classifies countries' de facto exchange rate regimes under ten possibilities, ranging from hard pegs to pure floats. In recent years, each year, about 10% of the IMF's member countries have changed their exchange rate regimes. Often, transitions from fixed or closely managed exchange rate regimes to flexible exchange rate regimes occur during periods of stress or crisis, when the levels at which currencies have been stabilized become divorced from the fundamentals. The Asian Financial Crisis in 1997/98 is a recent example.

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Chinese authorities have the advantage in making this transition more gradually, without the intense market pressure that builds up during a balance of payments crisis.

Less dramatic foreign exchange regime changes in Asia followed the breakup of the post-war dollar exchange standard when currency pegs to sterling in Australia, Hong Kong SAR, and Singapore gave way to pegs to the US dollar, and then different paths, as each country chose a different way to restore order to currency regimes. Hong Kong SAR eventually pegged to the U.S. dollar after a disorderly float, Singapore managed its exchange rate with reference to a basket of currencies, and Australia transitioned from a hard peg to a pure free float through a nominal effective exchange rate (NEER) targeting regime that was in place for about a decade.

The market is aware of the Chinese policymakers' intent, but seems unsure of how to interpret—or categorize—the renminbi. Most market participants still seem to view the renminbi through a U.S. dollar lens (Figure 1). There, one sees an iterative process from a fixed exchange rate since the mid-1990 to a crawling peg from mid-2005, an essentially fixed exchange rate from mid-2008 to mid-2010, then a more flexible exchange rate, albeit with more intervention in 2013–14 as the currency appreciated more. The August 2015 devaluation, admittedly very small, triggered a change in market dynamics. Most investors interpret the past 18 months as a period during which the authorities have been struggling to stabilize the U.S. dollar exchange rate.

We see instead a transition from a managed float of the USD/CNY exchange rate to a new emphasis on the trade-weighted value of the currency (Figure 2). From that perspective, the past 15 months has been one in which first the authorities were targeting—not formally or publicly—a gradual depreciation of the renminbi against its trade-weighted exchange rate basket until about the middle of 2016, since when the objective has been to maintain stability of the currency in trade-weighted terms. The addition of upper and lower target bands in Figure 2 likely over-states the degree to which the trade-weighted basket constrains policy, but is meant to convey a sense that there is likely a

permissible degree of variability of the currency in trade-weighted terms, in addition to the explicit volatility band around the U.S. dollar.

We draw two, perhaps less obvious observations from the experience of these more tranquil transitions. First, in later transitions it was capital flows that forced regime changes. International private capital flows are much larger today than in the 1970s and 1980s and we would assert that unless controls on capital flows are maintained and frequently tightened to close loopholes—which we think is inconsistent with the direction the Chinese authorities want to go in the coming years—the transition from fixed to essentially floating in China will occur more rapidly than it did in Australia, for example.

Second, large economies are less likely to be able to sustain NEER pegs than small ones. We observe, for example, that when the morning CNY fixing moves significantly in response to overnight developments in currency markets, the announcement of the fixing itself causes other major currencies to move in the same direction. There is, therefore, an inherent instability in which the CNY fixing process can amplify market moves until there is news of sufficient importance to overcome this dynamic or the People's Bank of China (PBOC) sets the fixing differently than market expectations.

Singapore, by contrast, doesn't have this problem: it is of little import to USD/JPY or USD/EUR whether there is a modest change in USD/SGD.

We would also argue that managing a currency against a trade-weighted basket confers less policy independence relative to a peg to a single currency than might have been expected. Our interpretation of the way the authorities are managing the renminbi today implies that there were decisions made in late 2015 and mid-2016 about the desirable level or path of the trade-weighted value of the currency in the same way that decisions were made in mid-2005 and mid-2010 about the desirable level and path of the value of the currency against the USD. As investors adopt a trade-weighted way of thinking about the renminbi's value, they will position in preparation of anticipated changes in the targeted trade weighted value just as they do in anticipation of changes

in U.S. dollar pegs. Moreover, even loosely pegging to a basket would constrain the ability to pursue an interest rate policy significantly different from the same basket of interest rates unless stringent capital controls are maintained.

PRACTICAL STEPS TO INFLATION TARGETING

One consequence of the transition from a fixed exchange rate to a flexible exchange rate is the potential loss of a nominal anchor for the economy. Indeed, exchange rate flexibility can introduce a new source of inflation risk to an economy even if the peg hadn't been seen as an important anchor to inflation expectations. Arguably, this is less of a concern in China, where the fixed exchange rate regime was maintained not so much by aligning interest rate policy to that of the U.S. Federal Reserve as by the imposition of capital controls restricting interest rate arbitrage and the use of credit quotas or window guidance to reconcile the low level of real interest rates and the high potential growth rate of the economy. Since policymakers did not rely on the fixed exchange rate to provide credibility for their monetary policy program, the loss of exchange rate stability need not damage credibility.

But we think a more flexible exchange rate will gradually, if not suddenly, require a re-think about the monetary policy framework. Indeed, already, the rapid increase in sophistication and complexity of the Chinese financial system has made a money supply-based monetary policy framework less effective. A commitment to exchange rate flexibility and capital account liberalization should be combined with a new monetary policy framework.

We think a more transparent and less complicated monetary policy framework in China is desirable. This would start with a clarification of a small number of policy objectives—if not a pure inflation targeting framework in which inflation is the only objective of policy then at least a clarification that monetary policy is set with a smaller number of objectives—likely inflation and some output-related objective, some clarity on how these objectives are defined and, as we'll discuss below,

some clarity on the instruments by which monetary policymakers will seek to achieve these goals.

Even this limited institutional change will be hobbled by the lack of credible measures of unemployment or the output gap and the lack of a stable relationship between money (or interest rates) and inflation (Figure 3). As we noted above, money supply and inflation objectives have in the past been reconciled through administrative measures.

This need not prevent clarification of an inflation target, though. We note that India recently, and Indonesia some 16 years ago, adopted inflation targets as the main objective of monetary policy without a stable mapping from money supply or interest rates to inflation. Arguably, we think that over time the observation that central banks raise interest rates when inflation rises above the target and cut rates when inflation falls below it, helps to accumulate credibility. In Indonesia, for example, after early years in which even core inflation regularly exceeded the target, the last few years have seen a more stable core inflation rate and consensus (and our own) forecasts predict that inflation will remain within the target band over the coming year or two (Figure 4). We also observe that the pass-through from exchange rate changes to inflation has been much weaker recently than in the early years under inflation targeting.

STEPS TOWARDS A SUPPORTIVE INTEREST RATE REGIME

If monetary policy needs to be more firmly oriented towards inflation to provide the nominal anchor that the fixed exchange rate used to provide, policy also needs to become more transparent, at least in terms of the instruments and policy decisions. The authorities only recently introduced alternative policy instruments to the traditional benchmark lending and deposit rates. Arguably, there are now too many instruments—repo and reverse repo rates at myriad maturities in addition to short-term (SLF), medium term (MLF), and long-term (PSL) liquidity facilities and many more market rates (Shibor, market repo rates, government and corporate bond yields). There is genuine

confusion in the market today about which, if any, of these instruments matter for policy or might be interpreted as policy instruments.

Our view is that while the authorities have not explicitly adopted an interest rate corridor, we think in practice one can be identified as represented by the 7-day reverse repo rate (the floor), the 7-day SLF rate (the ceiling) and the 7-day PBOC repo rate in the middle (Figure 5). Other money market rates have, since October, risen much more than these “policy rates”, but investors are increasingly looking to these—and not the benchmark rates—for signals about policy intentions.

To improve the transmission of monetary policy to the real economy, we think the benchmark rates should either be linked to the interest rates used to manage interbank liquidity or ideally be de-emphasized or abandoned completely. Banks should be encouraged to price credit more flexibly to reflect their (increasingly wholesale market-determined) cost of funds and credit risk.

However, there is a technical difficulty in adopting a more market-based mechanism for monetary policy transmission. Only primary dealers have access to the PBOC repo facility. Actual market repo rates vary quite significantly from the “policy rate” during this period of tightening liquidity (Figure 6). We would recommend that the PBOC should open up its repo facility to all banks. We think the PBOC should also conduct overnight repos and reverse repos (there are overnight market repo/reverse repo rate) but it may not be appropriate to use the overnight rate as the official policy rate. We think the PBOC should also be more proactive in providing liquidity to banks to smooth short-term fluctuations in rates around the target and should provide more timely data on liquidity operations to improve transparency.

STEPS TOWARDS A SUPPORTIVE FOREIGN EXCHANGE MARKET

Moving towards a free float presupposes that there’s a properly functioning market for the currency. In addition, internationalization of the RMB is not only policymakers’ stated objective, it is probably

inevitable for the currency of such an important economy. That means there will be both onshore and offshore markets for the currency.

Moreover, greater exchange rate flexibility means greater exchange rate risk. Again, the Chinese authorities are in an enviable position as they allow more exchange rate flexibility in that foreign debt is only about 13% of GDP—and some of this is in renminbi—and domestic foreign currency loans are only about 7% of GDP. Nonetheless, this is enough foreign exchange risk that borrowers will want to hedge. Here, we see a need for more market development. Onshore forward turnover has not risen much over the years—total turnover in April 2016 was barely higher than it was in 2013, and all the increase over the past year has been in overnight forwards which likely reflects banks' response to spot foreign exchange intervention by the PBOC (Figure 7).

It is evident throughout Asia (and history) that firms will only hedge properly when compelled to either by the authorities or after experiencing foreign exchange losses. But at present, hedging is discouraged by the 20 percent reserve requirement on U.S. dollar forward positions (20 percent on the notional principal of long dollar options), which we estimate adds 20–30 basis points to the cost of hedging. These reserve requirements should be removed as they increase the cost of hedging when instead policymakers should be encouraging it. In addition, in practice, only commercial exposures appear to be considered legitimate “underlyings” eligible for hedging—all others are presumably deemed speculative. But all foreign currency exposures legitimately undertaken, including foreign currency borrowing, should be eligible for hedging.

Current policies also discourage hedging by offshore counterparts. The lack of liquidity in the CNH market, for example, means that the offshore market presents a very different—and apparently more bearish—view on the expected future path of the renminbi (Figure 8). While the authorities are keen to attract foreign investors into the onshore bond market, for example, the lack of liquidity in the offshore CNH market means that such investors are compelled to hedge onshore. Not all are able or willing to do so. (Re-)unifying the onshore and offshore foreign exchange markets—by allowing onshore and offshore

participants to access both —is both part of the authorities' commitment to capital account liberalization and a necessity for a more efficient foreign exchange market.

Lastly, we would add that the development of more liquid onshore money markets—including a unified and therefore likely less volatile repo market—would also facilitate liquidity in the foreign exchange market.

FEAR OF FLOATING, OVERSHOOTING AND FEAR: CAN EXCHANGE RATE REGIME TRANSITIONS BE SMOOTH?¹⁹

MIAO Yanliang²⁰

The question I raise and try to answer here is whether China’s exchange rate regime transition can be both gradual and smooth. *Please also see the corresponding presentation at the end of the book.* China’s RMB was firmly pegged to the U.S. dollar until July 2005, and crawling pegged until August 2015. It has since embarked on a transition towards a clean float. Historically, exits from pegs often ended up with excessive currency movements, as seen in the 1992–93 crisis in the European Exchange Rate Mechanism (ERM) and the 1997–98 Asian financial crisis. Fear of floating and overshooting has since become pervasive.

But the fact is that successful and smooth exits did exist. IMF (2007) highlighted classical examples of gradual and yet orderly exits from pegs including in Chile, Israel, and Poland. Some small open economies under the “basket-band-and-crawl” regime moved their currencies rather frequently and yet smoothly. Contrary to popular belief, exits from pegs can be both long and do not necessarily end up in crises.

Then, what are the conditions conducive for smooth exits from pegs? I juxtapose four factors here. First, little foreign exchange debt and currency mismatches so no debtors need to front run currency movements. When the borrowing country is highly indebted, dollarized,

¹⁹ An earlier version was presented on July 19, 2016 at the Bank of Korea, [Peterson Institute for International Economics](#), and the [Korea Institute for International Economic Policy](#) international conference on “Monetary Policy Options for Small Open Economies.”

²⁰ Miao Yanliang is Senior Advisor to the Administrator and Head of Research, SAFE Investment Center (SAFEIC).

and with debt concentrated in short maturities, sudden reversal of flows may trigger a depreciation spiral. Second, consistent macroeconomic frameworks to underpin the exchange rate policy. Poor fundamentals and twin deficits often predated crisis. Third, a large war chest of foreign exchange reserves to maintain confidence and to defend against attacks, if needed. The tricky part here is that no amount of reserves can be larger than the central bank's own balance sheet (M2), so maintaining confidence and flexibility are both important. Fourth, capital flows management (CFM) and macroprudential measures to alleviate flow pressures. Since 2011, the international finance and policy community has increasingly recognized capital flows management as part of the standard toolkit.

How does today's China stack against these criteria for a gradual and smooth exit? Overall, the conditions seem to be there for a gradual and smooth transition. Firstly, the fundamentals are supportive. The ratio of external debt to GDP is only 12 percent and currency mismatch is not severe. The overall debt level is rising, but deleveraging measures have been taken and assets are ample for the sectors that have accumulated large debt.

Second, China has been undergoing internal and external rebalancing with the current account surplus narrowed to 2 percent of GDP and fiscal deficit kept to 3 percent of GDP.

Third, China's reserves have stabilized at around \$3 trillion since the beginning of 2017, which is more than adequate by most metrics.

Fourth, capital flows and macroprudential measures have been deployed to contain fickle capital flows. In a way, forex reserves and capital flows management are substitutes for each other as they both address the foreign exchange markets through the quantity channel. Moreover, the RMB has depreciated by around 11 percent against the dollar since August 2015, alleviating pressures through the price channel. Adjusting for productivity, the RMB no longer seems much overvalued among its emerging market economy peers.

Several important questions remain. First and foremost, is gradual transition optimal? Suppose we know the destination is a clean

float. The question then becomes how to get there. Like crossing a street with heavy traffic, some observers prefer a fast move, a jump, or a quick run. For them, the only fear is fear itself. Others prefer walking while observing the incoming traffic.

My focus is not to argue which way is optimal, but that China has the policy room to choose the way it conducts the transition. Its economic fundamentals are in a relatively good position. And it is all relative when it comes to exchange rates. With ample foreign exchange reserves and capital flows management, it can adjust the ongoing traffic (flows) so it can cross the street opportunistically.

Second, what is the end game here? We have to view exchange rate regime as part of the macroeconomic policy framework and the exchange rate as both a relative price for exports and an asset price for financial stability. Two decades ago, the bipolar view was gaining popularity in theory, that is, a country can only choose between a free float and a truly hard peg. But the theory was not borne out by practice. More and more countries have chosen to be in the middle, that is, a managed float with certain flexibility. It apparently worked. Can China follow suit and manage the impossible trinity with a certain degree of monetary independence by giving up a certain degree of exchange rate stability? Last but not least, how will superpowers cope with the transition? Under the peg, China and the United States formed a de facto monetary union. To exit fully from the peg is like to unwind a union, which needs to be carefully managed.

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Transitions and Financial Stability

Tommaso Mancini-Griffoli²¹

Transitioning to greater exchange rate flexibility is daunting for many countries. Not least because of the long list of recommendations found in the literature. One that is often missing, is the importance of financial stability. That is the emphasis of this chapter; ***Please also see the corresponding presentation at the end of the book.***

Financial stability can help smooth transitions, while well-managed transitions—facilitated by tailored foreign exchange intervention rules—help support financial stability. Causality runs both ways.

FROM FINANCIAL STABILITY TO TRANSITIONS

The usual recommendations for countries attempting to transition towards greater exchange rate flexibility are well-founded and helpful. They usually come in two forms: the “haves” and “dos” of modern monetary policy (namely, the desirable features of frameworks and policy making). In short, the “haves” are: a clear mandate and accountability to the public, a medium-term inflation objective, an internally consistent framework, operational independence, and sufficiently developed markets and financial sectors to eventually rely on the interest rate as an operational target. The “dos” are forward-looking and risk-based monetary policy, effective operations, well-oiled internal processes supported by a culture of open debate, and clear communications. These principles are discussed in IMF (2015).

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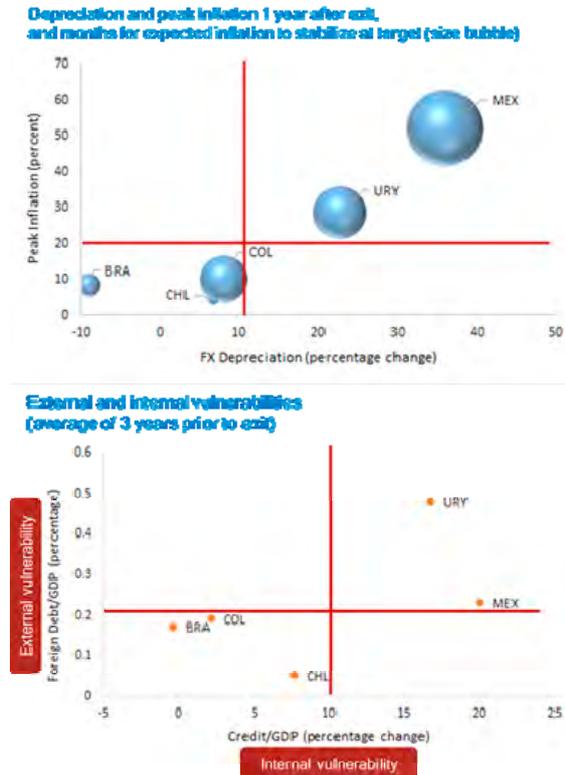
In addition, financial stability seems to be an important ingredient for successful transitions. Fears of floating, often expressed by countries in transition, do not seem to materialize as vividly when the financial system is sound to begin with.

Economies with lower financial stability risks at the time of transition seem to do better relative to each of the three common fears of floating: (i) their post adjustment depreciations are smaller, (ii) their inflation rates are lower, and (iii) they tend to more quickly establish credibility—measured as stable and well-anchored inflation expectations.

Why might this be the case? The hypothesis is that if financial stability is weak and left unguarded by prudential policy, monetary policy feels compelled to contain major risks to financial institutions. In transitions, this raises costly tradeoffs with price-stability. The exchange rate depreciation or volatility, and higher interest rates that typically accompany transitions may worsen risks to financial stability. This arises especially when banks or their clients have foreign currency liabilities (dollarization), high leverage following periods of ample credit growth, and/or are exposed to unstable funding. A vicious circle may set in if higher financial stability risks undermine investor confidence and induce capital outflows, further weakening the currency or increasing credit spreads. In these cases, pressure naturally mounts on monetary policy to stray from its price stability mandate and postpone its transition towards exchange rate flexibility, at the cost of credibility.

Selected Latin American case studies seem to support this hypothesis. Mexico's and Uruguay's transitions to greater foreign exchange rate flexibility came with greater post-adjustment depreciation, higher inflation, and lower monetary policy credibility, as opposed to the cases of Brazil, Chile, and Colombia (Figure 1, left panel). The pattern seems correlated to countries' financial stability risks going into the transition—measured according to internal and external vulnerabilities

(Figure 1, right panel). Mexico's and Uruguay's transitions coincided with banking crises (occurring just prior in Uruguay, and just after in Mexico).²²

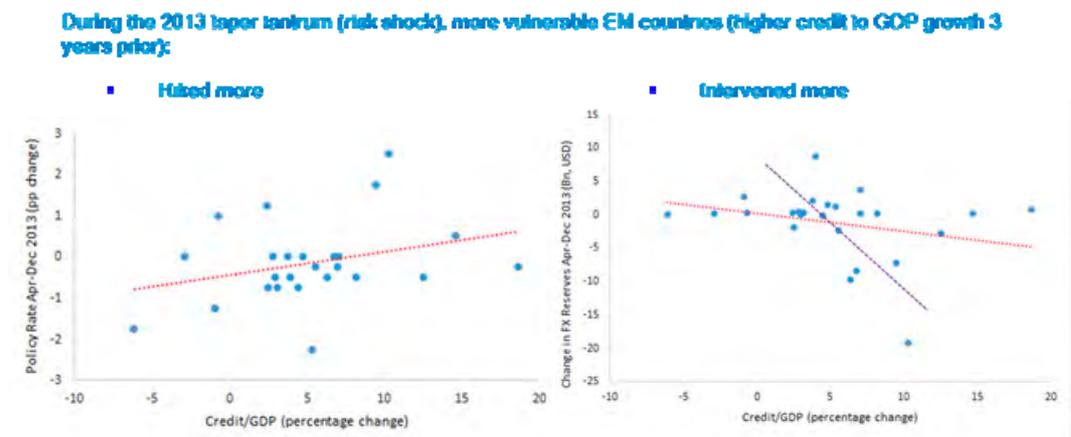


How much can really be extracted from 5 case studies? Clearly, conclusions are at best suggestive, though they point to the fact that financial stability risks constrain monetary policy and its ability to freely pursue domestic price stability objectives.

²² It is harder to explain the heterogeneity in country experiences purely based on countries' preparedness, such as the degree of central bank independence, clarity of mandate, operational capacity, institutional quality, and market development, though we know these factors also favor smooth transitions (see Asici Ivanova and Wyplosz 2008; and Gelos and Ustyugova 2017).

This seems to be true even in more stable times and among a wider sample of countries, according to initial evidence. Among emerging market economies having transitioned to inflation targeting, countries with greater financial stability risks seem to exhibit less monetary policy independence. In these countries, monetary policy is most correlated to foreign monetary policy, over and above what can be explained by correlations in business cycles. In the extreme, monetary policy becomes pro-cyclical, as documented by Vegh and Vuletin (2013).

Figure 2 illustrates this point. Lack of monetary policy independence is captured by the percentage point hike in policy rates, or the degree of foreign exchange intervention following the 2013 “taper tantrum” (a risk premium or monetary policy shock taken to be orthogonal to the United States’ or other countries’ growth and inflation prospects). Again, based on a very simple regression, countries with riskier financial systems (measured here according to internal vulnerabilities) hiked more and intervened more.



These results are coarse and preliminary, but are suggestive. They shine the spotlight on financial stability as a key factor behind successful transitions from fixed or managed exchange rate regimes, to more credible and independent monetary policy frameworks.

More generally, the degree of financial stability may be the pivot point around which countries’ perceived policy dilemma (between open

capital accounts and independent monetary policy—see Rey (2013) for instance) turns to the more traditional trilemma (as in Obstfeld, Shambaugh, and Taylor (2004) and Alan Taylor in this same volume). In other words, only when financial systems are stable can countries have open capital accounts and independent monetary policies (see illustration in presentation).

FROM TRANSITIONS TO FINANCIAL STABILITY

But it would be too simplistic to think only of the link running from financial stability to successful transitions. Exchange rate regimes and financial stability are closely intertwined. For instance, the greater the foreign exchange mismatches on bank balance sheets, the more policy makers will seek to minimize foreign exchange volatility. But in doing so, they encourage banks to take on currency risk. A similar link exists with the amount of foreign hot money invested domestically. Likewise, market development, such as for hedging instruments, remains subdued the more a peg is expected to remain in place. But the thinner are markets, the more policy makers fear with the consequences of greater foreign exchange flexibility, and thus the longer they maintain the peg. These self-perpetuating cycles remain in place until pegs break, and banks experience large losses.

Greater foreign exchange flexibility can help break these cycles and thereby support financial stability. Causality thus also runs from transitions to financial stability.

To smoothly transition away from a pegged or highly managed exchange rate regime, it is useful to rely on an intervention rule aiming to dampen second moments (namely volatility), not first moments (namely the level of the exchange rate). In other words, this class of rules suggests leaning against excessive short-term moves, without fighting against trends in the exchange rate. On average, the exchange rate is market

determined, not unlike the theme raised by Lawrence Summers in this same volume.²³

Why have a rule at all? First, limiting volatility is helpful to create a “safe” environment for households and firms to learn to deal with foreign exchange risk, and for markets to develop appropriate trading and hedging instruments. Second, a rule helps guide markets and reinforce the shift in the nominal anchor. Third, a rule provides instructions to central bank traders, keeping them and their managers from giving into old interventionist reflexes. Finally, a rule helps shield central banks from political pressures.

In addition to clarity, rules should satisfy three other design features. The first is realism, meaning rules must recognize, and adapt to, the amount of foreign exchange reserves available at the central bank. Second, rules must be supportive of central banks’ frameworks and price stability mandates by limiting interventions, and of market development by allowing for two-way risks to emerge. Third, rules should be robust to shocks and the evolution of market development and monetary policy credibility. In other words, rules should be designed so that the parameters affecting interventions can be adjusted over time, without requiring major overhauls, or their temporary suspension depending on circumstances.

One such intervention rule is illustrated in this presentation. Its main features are a mid-point that is reset every morning based on a moving average of past close rates, and an intervention frontier specifying how much can be spent on interventions as the spot rate evolves. Importantly, this frontier is continuous, so interventions always give into market pressures, while leaning against them; interventions never aim to draw and defend a line in the sand, thus should not attract market speculation. Finally, if central banks have limited reserves, the

²³ See BIS (2013) for an overview of foreign exchange intervention rules, as well as Daude, Yeyati, and Nagengast (2016), Chutasripanich and Yetman (2015), and Adler and Tovar (2014) for an evaluation of the effects of foreign exchange interventions.

rule can also specify a maximum daily intervention limit. Because the rule allows the mid-point to adapt to market pressure from one day to the next, the intervention limit is unlikely to be hit on multiple consecutive days.

In summary, this presentation emphasizes the importance of a stable financial system to support transitions towards greater exchange rate flexibility. It also argues that a well-managed transition can help strengthen financial stability. To this end, clear, realistic, supportive, and robust rules can help guide interventions.

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SESSION II

STRENGTHENING FINANCIAL SECTOR AND MACRO-PRUDENTIAL POLICY FRAMEWORKS

PART I: CHINA'S RAPIDLY CHANGING FINANCIAL SYSTEM: DRIVERS AND FUTURE DEVELOPMENT

Positioning, Opportunities and Challenges for the Insurance Industry in a Rapidly Changing Financial System

LUO Sheng²⁴

STRUCTURAL PROBLEMS IN CHINA'S FINANCIAL SYSTEM

Financial problems are a composite reflection of the economy and society. Financial system development is essentially the self-improvement of financial markets, and the dynamism of problem-solving is the driving force behind this development. In my view, certain structural contradictions and problems exist in several corresponding relationships in China's financial system.

(1) THE RELATIONSHIP BETWEEN FINANCE AND THE REAL ECONOMY

In the context of the historical development of China's economy since the institution of reforms and opening, the real economy, represented by the manufacturing sector, is the foundation of efforts to build the country.

Over the last several years, three "straw men" of the real economy have appeared in public opinion. The first is the internet economy. The second is the real estate sector, which, although it originally belonged to the real economy, now seems to be regarded as an alien element. And the third is the financial sector dressed up in western clothes.

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Looking at the financial system from the perspective of the real economy, it primarily has the following problems: first, financing is difficult and expensive. Second, in the circulation of funds in the financial system, financial institutions “hold the ball” too long, resulting in excessively high financing costs, lower efficiency, and superimposed risk. Third, the financial system has preempted profit margins and sucked up vast social resources, including talent and capital, resulting in the neglect of the real economy, flagging competitiveness, and increasingly difficult development.

In essence, the relationship between finance and the real economy is a relationship of interdependence for survival and one of competitive gaming. On one hand, finance is the manager of the time value of money. According to the Marxist view of economics, this time value primarily originates in the labor value created by the real economy.

Fundamentally, the existence of the financial sector is dependent on the real economy; otherwise, it becomes a money game for self-enjoyment. If the real economy isn't up to the task, the income from financial products fills the gaps, a relationship that aptly reflects the meaning of the idiom “when the lips are lost, the teeth will be cold.” On the other hand, it is inevitable that a competitive relationship exists between the financial sector and the real economy, consisting of a positioning game, a profit-sharing game, and the scramble for resources.

The current situation, in which the financial sector is strong and the real economy weaker, has historical causes and contributing policy factors. The first is that the real economy finds itself in a period of dynamic transition from old to new, which has produced its own problems. The second is the risk-weighting factor in the pricing of financial products, which has arisen because of rigid debt redemption and a lack of integrity and ineffective protection of property rights. The third is the historical advantage referred to as “capital is king” that has taken shape due to scarcity of long-term capital, license controls, and state ownership of the financial sector. The fourth is that the climb in asset prices driven by the circulation of money and credit has attracted capital from society to chase speculative financial assets and real estate, causing funds to circulate back and forth within the financial system. This

increases leverage at all levels and creates hidden dangers. In other words, the current relationship between the financial sector and the real economy is characterized by respective problems on both sides and social causes that have accumulated over the long term and are complex.

Regarding the “departure from the real toward the virtual” that has resulted from inappropriate financial sector policies and ineffective financial regulation, government intervention and adjustment are indispensable. The question of how to use finance to better serve the real economy is the state’s basic requirement and demanding task for the financial services industry. In the long term, the only enduring way toward coordinated development of the two sectors is to transition from relying on short-term, temporary policies toward relying on long-term, fundamental policies, promoting substantive reform, instituting bilateral deregulation, and channeling the direction of fund flows. This would promote fair competition with a greater market orientation among principals within industries, among industries, and between the real economy and finance to generate a new dynamic balance. By volume, China’s real economy is major, particularly its large manufacturing sector. Its finance sector is already a major one, and with time and continued economic development, the country should certainly become a financial power.

(2) RELATIONSHIPS AMONG THE VARIOUS INDUSTRIES IN THE FINANCIAL SYSTEM

The internal composition of the financial system can be divided in a variety of ways. Typically, the classifications of direct and indirect financing are used. As institutional investors have become the dominant force in the capital markets, it is my view that this classification does not fit the classic definition and is no longer very meaningful. If we classify the financial system by the targets of investment and the purposes of action, it can be divided into three systems: The first is the equity financing system, which refers primarily to the system consisting of the stock market and associated markets for mutual funds and so on. The second is the debt financing system, which refers primarily to the system

consisting of the credit market, the bond market and associated markets for trusts, and others. The third is the system of risk management tools, which primarily refers to derivatives markets and interbank lending markets. Naturally, these roles intersect and overlap.

Based on the special role of banks in the development of China's financial system and inherent factors such as the banks' exclusive franchise for monetary accounts and the statutory channels for the movement of funds—as well as branch networks and customer advantages that have accumulated over the long term—banks play an infrastructural role in the financial system and have held a dominant position all along.

Other financial operations are merely bit players on the great financial stage. Insurance has a degree of presence in all of the three markets and associated systems, with cross-market characteristics. Its position and role in the financial system are still growing, being explored, developing, and changing, and should continue to be observed from multiple angles, including vertically for the historical perspective, and horizontally for the realistic perspective.

Although everyone acknowledges that the financial services industry is one that should be regulated, China's financial markets are still routinely denounced for excessive and strict regulation. However, scholars have recently claimed that the various chaotic phenomena and problems that have arisen in China's financial markets since 2012 have all been the result of "over-liberalization." These views are diametrically opposed: who's right and who's wrong? It is my opinion that both views could make sense, which could simply be an indication of the existence in China's financial markets of the following situation: areas that should be regulated are regulated poorly, areas that should be controlled are not well-controlled, and areas that should be developed have yet to be developed. Viewed from another angle, on one side, financial services sector value added as a proportion of GDP exceeds that of countries with the most highly developed financial markets, such as the United States. On the other side, financial services lag behind, and the difficulty and expense of financing have become a universal social conundrum, a reflection of the serious structural imbalance in China's financial system.

(3) RELATIONSHIP OF SUPPLY AND DEMAND

With the continued rapid development of China's economy and increases in domestic wealth, household demand for wealth management will gradually become rigid. China has already gradually entered the age of wealth management, and managing wealth for customers will increasingly become a key function of the financial services sector. But after more than three decades of rapid change in Chinese society, during which household incomes and asset prices have risen dramatically and inflationary changes have been significant, the public lacks enduring and stable investing expectations. As a result, short-term financial assets will account for a substantial share of the asset allocation of household wealth management, and will become an important resource to which all sectors of the financial services industry will attach a high importance and for which they will all contend. At the same time, as financial markets develop and new financial products are created, financing tools will diversify, the product designs in different industries and among different institutions will tend to become homogenized, the boundaries of financial products will blur even further, and the various sectors will draw on each other's experience and mutually intersect, so that "playing the edges" will become the norm.

For the financial investments of the masses, high yields and certainty of returns form a contradictory pair. Owing to multiple social factors, a contractual mentality and risk awareness have yet to be universally established. Once broad investment risk occurs, considering the general need to maintain social stability, it is very difficult to completely obliterate rigid payment, and it is difficult to systemize and normalize financial institution bankruptcy. Enormous social resources are required to deal with every risk case. This has become a dilemma in the rationalization of relationships in China's financial system and a major impediment to improving it.

(4) RELATIONSHIP BETWEEN TRADITIONAL FINANCE AND INTERNET FINANCE

One important feature of the financial system is the substitute role that internet finance has played in the absence of sufficient development of traditional finance. In such fields as payment and consumer finance, internet finance has even become the dominant force, continues to lay siege, and is developing very quickly. From the international perspective, China's internet finance is already at the forefront in certain respects. Relative to traditional finance, internet finance is both a successor and a subverter.

Big-data technology is a major factor in this. Viewed in the context of information technology development, big data is merely the prelude to further developments in artificial intelligence. In future, therefore, as big data becomes more broadly utilized and breakthroughs occur in the development of artificial intelligence, internet finance may well catch up and even exceed the risk pricing and risk control capabilities of traditional finance, which have ensured its survival and given it the competitive advantage. This squeeze-out of traditional finance by internet finance, or "intelligent finance," could therefore accelerate.

But from another perspective, certain shortcomings of China's traditional finance could be overcome at once by successfully "passing on the curve" in its competition with the international financial sector. In this sense, this is an important strategic opportunity for China's financial services industry to achieve development by great strides. Of course, judging from the comprehensive improvement in internet finance, many of the finance houses selling themselves as internet finance are not the genuine article at fair prices, completely lack any innovation, and some are even nothing more than financial frauds. In any case, it is my view that regulatory agencies should hold a more proactive, open, and tolerant attitude toward true internet finance.

THE POSITIONING OF INSURANCE IN CHINA'S FINANCIAL SYSTEM

The state's orientation for insurance industry makes it a key industry and basic means of managing risk in the modern economy, and forms a component of the health care and retirement security and the financial systems. In a completely modern financial system, how exactly should insurance position itself?

(1) THE FINANCIAL ATTRIBUTES OF INSURANCE

Insurance has multiple attributes, one of which is as a risk-management tool, that is, it's a security attribute. Another is its financial attribute. No one should dispute the former, but views differ about the latter. In fact, both attributes have been present in insurance since the industry's inception, particularly for life insurance. The former is the basic attribute, while the latter is a derivative attribute.

According to the traditional view, insurance investing is a background process, a way to resolve the problem of preserving and growing the value of precipitated funds in the course of insurance business operations. Based on this view, at the time of initial insurance legislation, the restrictions on the channels for the use of insurance funds were very strict, and insurance investing was generally handled by the finance department.

With innovations in insurance products and the massive accumulation of insurance funds, the financial attribute of insurance has become increasingly pronounced, everyone has become aware of the importance of investing, and it is only this process that has allowed insurance investing to take higher priority. Legally, a variety of restrictions on the scope of insurance investing have been lifted, so that insurance funds have successively gained access to many fields, including the capital markets. And underwriting and investing have become equally important in insurance operations, forming what are known as the "two wheels." Insurance is becoming a major force to be reckoned with in the financial system.

In recent years, some insurance companies have gone to the extreme of viewing insurance purely from the perspective of the financial attribute. As such, they view the collection of insurance premiums entirely as a financing means, are reckless in the investing field, and take risks in pursuit of high returns, thus forming the so-called “asset-driven” model. This approach completely abandons the basic attribute of insurance, and should be resolutely checked.

Given this situation, stressing the core operational concept that “surely forms part of the word insurance” is the right approach, very much needed, and must be resolutely implemented. At the same time, it is my view that this concept should not be considered a denial of the financial attribute of insurance. If we go to the opposite extreme by limiting the scope of insurance to risk management alone, this approach is neither in line with the state’s basic orientation for the insurance industry nor does it conform to the common development experience of the global insurance industry. Much less does it begin to bear the weight of the development aspirations of the industry as a whole.

As of year-end 2016, insurance industry assets totaled 1.5 trillion yuan, that is 5.3 percent of the financial sector. Considering this enormous amount, plus such factors as long liability durations, the broad scope of investments, and high availability, insurance funds are nothing to be trifled with in social and economic construction. Because of this, the questions of the exact role insurance should play in the financial system, to what extent the financial attribute should be developed, and what kind of relationship should take shape between insurance and the capital and debt markets should be answered jointly by all participants in the financial system. This is a major topic worthy of deep discussion.

(2) INSURANCE LIABILITY MODEL

The hierarchical classification of China’s insurance products is essentially the same as in the international insurance industry. Generally speaking, the insurance liability model is relatively diversified and very

complex. Imputed according to insurance premiums, insurance products can be divided into two major types.

One type has no cash value, and payment is made when an insured event occurs; if none occurs, no money is refunded. This is also known as the consumer type of insurance, and primarily includes property insurance, accident insurance and some health insurance. This type of product reflects in a more concentrated fashion the risk management attribute of insurance.

The other type has cash value, and includes traditional life, retirement, and investment-type life insurance products. The existence of this type of product proves that insurance has a financial attribute. For products with cash value—apart from the risk premium component, which abides by risk-pricing principles—the determination of the interest rate abides entirely by investment return principles.

In the past, because of selling costs and other factors, in most situations, these two functions could only be superimposed into a single insurance product, or the different functions could be reflected as additional insurance. With the appearance of network marketing channels and internet commerce scenarios, fragmented products became feasible, the direction of customer demand for insurance became clearer, and the two functions of insurance were no longer necessarily bundled together for sale. It was entirely possible for them to be achieved separately.

In fact, driven by customer demand, a good many companies have now adjusted their product strategies, with a very clear separation of security-type and investment-type insurance products. Customers have access to more affordable products, while also enjoying a greater right to know. Judging from information reported by the relevant companies, the actual results have been good. In this sense, we can say that, to a great extent, even certain traditional insurance products are substitutes for savings and other financial investments, and can essentially be considered a kind of investment and wealth management.

The investing requirements for insurance funds formed by different types of premiums are very different. The funds for investment

of world-renowned investor Warren Buffett primarily come from insurance premiums. He has many fans in China's financial sector who copy or study his investing style. The difference is, Buffett's investment funds primarily consist of float consisting of property insurance premiums, or what is known as unearned premium reserves.

But his students in China are primarily using life insurance premiums, and particularly investment-type insurance premiums. The two are worlds apart. It is precisely this kind of mismatch that has triggered the series of risks and problems that have appeared in the insurance market in recent years, and have attracted the concern of society at large.

Regarding the liability model of life insurance companies, the most pressing questions at present are: first, should insurance companies be permitted to allow investment-type insurance products to become an option for household wealth management to meet the short-term wealth management demand of households? If not, in addition to solvency requirements, is it necessary to set certain ratio limits? If so, what should such limits be? And should different companies be permitted to have different ratios? Second, why has the sailing been smooth for mature products similar to universal life insurance abroad, while in China things have been so turbulent? What is the reason for such a substantial alienation, and what special regulatory measures should be adopted? For the time being, it appears that policy answers have been reached for these questions, but from the long-term view, continued observation and more intense study might be needed to arrive at complete answers to the questions outlined above.

(3) INSURANCE INVESTING MODEL

In the scope of investment permitted by policy, insurance funds have the broadest of any type of fund in China's financial system. Except for certain ratio restrictions, they can be invested in virtually any financial market, and might well be referred to as "broadband funds". This kind of policy space is not unique to China, and China is far from the most lenient

internationally. However, owing to rapid industry development and inadequate market maturity, to a certain extent, the phenomena of a focus on quick, short-term gains and overanxious pursuit of perfection are present in insurance investing. Some deviations have occurred in the operating principles of some market principals, and a small number of companies are even driven by improper motives, for which the insurance industry has paid bitterly.

Summarizing the lessons, we can arrive at several points of consensus: first, the robustness of insurance investing should receive higher priority. Naturally, this robustness means a sort of comprehensive balance and general assurance, and does not mean that heavy investment in equities is aggressive, while heavy investment in bonds is more stable and sound. There is no equivalence between the two.

Second, financial investing principles must be upheld. There should be more stringent policies, rules and systems covering the conduct of insurance capital in capital markets, and, unless it arises from the need for essential integration of the industry chain, the utilization of insurance funds—and particularly insurance funds arising from investment-type insurance premiums—to engage in corporate acquisitions should be strictly limited.

Third, investment in financial derivatives should be strictly limited. All derivative investments should be based on spot transactions for hedging purposes. From the perspective of the long-term development of the insurance industry and the overall coordinated operation of the financial system, determining how to establish an optimal insurance investing model and how insurance companies should establish overall investing capabilities that afford them a competitive advantage, are questions that must be considered seriously and answered carefully by the industry as a whole.

FUTURE DEVELOPMENT CHALLENGES FOR THE INSURANCE INDUSTRY

Regarding the risks and challenges the insurance industry faces, some are internal problems in the insurance market and insurance regulatory policy issues. Others are a local reflection in the insurance industry of economic, financial, and even social problems. The problems are multifaceted. In my view, those set forth below deserve our key concern:

(1) THE CHALLENGE OF MATCHING ASSETS AND LIABILITIES

On one hand, the complex and diversified liability model and the wide-ranging scope of asset allocation through multiple channels and markets offer ample depth and breadth for the utilization of insurance funds. But they also place very high demand on the ability of insurance companies to manage asset-liability matching. Judging from the current situation, a good many problems remain in asset-liability matching in the insurance industry, some of which will be difficult to solve in the near term.

The first problem is maturity mismatch.. On one hand, long-term funds are used for short-term needs. The lack of fixed-income assets with longer durations in domestic financial markets has left liability maturities exceeding asset maturities in the life insurance industry as a whole. The gap for assets with maturities of more than 15 years alone is 5.4 trillion yuan. On the other, short-term funds are used for long-term needs. To expand in scale or respond to pressures for redemption upon maturity and policy cancellations, some companies utilize massive sales of high cash value products that actually have shorter maturities and higher costs. To satisfy income requirements, the insurance premiums received are often invested in equities or other assets with lower liquidity, which implies greater liquidity risk.

The second problem is yield mismatch Insurance funds are characterized by counter-cyclical; when market equilibrium investment yields fall, collecting insurance premiums becomes easier, but investing insurance funds is more difficult. Conversely, when insurance investing is easy, collecting insurance premiums becomes difficult. In recent years, insurance premiums for the industry as a whole have continued to grow rapidly, but there are fewer and fewer high-quality assets with high

yields. If the assets available for investing in the market are unable to cover the cost of funds, the insurance company will experience spread losses. If a product's real interest rate does not meet customer expectations, the insurance company will face greater cancellation pressure, and individual companies may risk inadequate cash flow.

The third problem is the great difficulty of operational restructuring. Currently, the policy orientation of insurance regulation favors longer-term products, while there are more stringent controls on the aggregate total of products with medium- and short-term validity periods, to push insurance companies to accelerate restructuring. However, owing to such factors as path dependence in the companies' development and inadequately developed operational capacities, restructuring too rapidly can also imply certain risks.

(2) CORPORATE GOVERNANCE CHALLENGES

The more we promote market reforms, the more important financial institution corporate governance becomes. The main question that needs to be solved by corporate governance is how to achieve the taming of capital, or more specifically, how to use penetrating supervision to resolve such problems as false funding or self-cycling of funding by shareholders, to prevent malevolent shareholders from using insurance companies as "ATMs" and depleting insurance company coffers through the illegal funneling of profits. Failure to resolve this problem will make many of the defenses provided by financial and capital regulators practically useless.

The difficulty lies in the fact that, from the global perspective, internal fraud and shareholder manipulation are the primary causes of failure of corporate governance systems, and there is no single practical and effective solution or ready-made experience to draw upon. In China's financial and insurance markets, this problem happens to be particularly serious.

Another difficulty is that corporate governance is not simply a question of allocating internal power, establishing procedures, and supervising the checks and balances in a financial institution. More to the point, full development of the operation and effects of its mechanisms depends on the perfection of the social and cultural environment, the legal system, and fundamental elements of the market. In this sense, perfecting corporate governance is a long-term, systematic project. The challenge now faced in insurance corporate governance work is how to quickly identify the points where breakthroughs can be made to promote real company reform and social construction.

(3) INSURANCE REGULATORY CHALLENGES

From the perspective of the historical development process, China's insurance regulators bear an excessively heavy historical mission. Recently, regulatory thinking has changed, with a clear emphasis on "regulation as part of the insurance regulators' name." According to this thinking, the orientation of insurance regulation has become clearer, and the objectives are more focused. Now, the principal task faced by insurance regulation is to determine how to liberalize the front end and ease restrictions on one hand, while also effectively controlling the back end and resolutely cracking down on market chaos. Based on its study and borrowing of the advanced experience in foreign countries, China has formed a relatively systematic regulatory model and framework. However, in actual practice, because the adversaries and problems faced by regulatory agencies in China differ from those faced abroad, a more localized and flexible system of regulatory rules should be established, and more targeted regulatory means should be utilized to truly resolve the various unique problems in China's insurance market.

In their overhaul of the market, on one hand, regulatory agencies must prevent a "hard landing" in the restructuring of insurance company operations and large-scale retreat of shareholders and capital, which would impact the stable development of the insurance market and create a new source of risk. On the other, they must prevent the development

of a systematic mistrust of private capital, the singular pursuit of security, and the adoption of differential treatment for state-owned capital and private capital, all of which would affect the vitality and efficiency of the insurance market.

In the current situation in which regulatory agencies are insufficiently professional, human resources are in short supply, and regulatory means and enforcement tools are limited, determining how to balance the various demands and accomplish difficult tasks is certainly challenging.

For now, unusual times require unusual measures. In my view, efforts need to be focused on implementing “two penetrations” and accomplishing “two dares.” The two penetrations referred to are as follows: First, equity penetration. Focus on performing penetrating reviews of the related party relationships and share capital of shareholders to prevent insurance companies from being inappropriately controlled. Second, investing penetration. Ensure that insurance investing is true and secure, and is ultimately placed in the real economy and not misappropriated for other uses or funneled to shareholders.

The two dares referred to are as follows: First, dare to hand cases over for prosecution. For illegal market conduct, acts deserving of severe punishment must be punished severely and, if criminal activity is suspected, cases must be resolutely handed over to judicial authorities with absolutely no leniency or coddling. Second, dare to embrace bankruptcy. For institutions whose risk problems are severe enough to cause bankruptcy, consideration should be given to bankruptcy treatment, at least achieving “small enough to fail” first, to allow the hand of the market and the hand of the regulators to exert their effects by firmly grasping the problem with both hands.

In these remarks, I have offered a bit of my own superficial understanding of these issues. Thanks to all!

STRENGTHENING AND DEVELOPING CHINA'S FINANCIAL SYSTEM

Miquel Dijkman²⁵

In the past decade, China has made major strides in developing the financial system. ***Please also see the corresponding presentation at the end of the book.*** The financial system has continued to expand in size and depth, as evidenced by its continued rapid growth and increasing sophistication. Important progress has also been made in the development of capital markets, with the Chinese equity and bond markets now among the largest in the world. Lastly, major progress has been made with respect to financial inclusion, with the vast majority of Chinese citizens now enjoying access to formal financial services.

These advances have been achieved as a result of continued reforms. The Chinese leadership has reiterated its commitment to deepening financial sector reforms, and has recognized the need to promote the role of markets in resource allocation. Key reforms enacted over the last years include interest rates liberalization, banking commercialization, and the introduction of financial safety nets. Exchange rate reform and the inclusion of the Renminbi (RMB) into the SDR have also given an important impetus to improve financial system efficiency. The overarching policy objective is to reduce the economy's dependence on credit and transition towards a more sustainable consumption and service-driven growth model.

The rebalancing of the economy requires the financial system to fulfil a new role. Historically, the Chinese financial system has channeled China's high savings at low cost to strategic sectors, particularly large corporates. The new overarching policy objective for the financial system has shifted in line with China's new economic priorities of greener, more

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inclusive, more innovative and productivity-based growth, and to increase the market's role in resource allocation. From a developmental perspective, it is important that the financial sector's potential in contributing to these objectives is seized. In this context, it is critical to:

- Strengthen the financial sector's allocative function;
- Build a more diverse financial system with more active roles for capital markets and nonbank financial institutions (NBFIs); and
- Build a more inclusive financial system that better addresses the needs of the so-far underserved, in particular households and small and medium-sized enterprises (SMEs).

This presentation discusses these three aspects with a selective analysis of recent developments.

(1) STRENGTHENING THE FINANCIAL SECTOR'S ALLOCATIVE FUNCTION

On an aggregate level, there are some indications that banks are channeling resources to newer and more productive sectors, but the transition is more prolonged than expected. Breakdowns of bank corporate loans in the period of 2010-15 reveal a steady decline from 55 to 45 percent in the sectoral share of utility, infrastructure and manufacturing sectors (considered the so-called "old economy"), while that of construction and real estate stayed stable around 17 percent. Among the remaining share of 38 percent for primary and tertiary industries in 2015, the trade sector experienced a most noticeable expansion. As global economic headwind began to affect Chinese corporate profitability more profoundly since 2011, the nonperforming loans (NPL) ratio has edged up in areas such as agriculture, mining, manufacturing, and trade, where the private sector is in the lead.

At the same time, the banking sector experienced a structural shift from large, state-owned commercial banks towards smaller, more region-based joint-stock and city commercial banks. While the balance sheet of large commercial banks amounted to about 114 percent of GDP

in both 2010 and 2015, the combined asset size of other banking institutions (excluding policy banks) expanded rapidly from 99 to 148 percent of GDP in the same period.

The question remains whether region-based banks are filling the financing needs of less productive sectors that is left by the retreat of large commercial banks. As a share of total lending, larger banks now lend more to households and less to corporates, whereas small banks show an opposite trend.²⁶ Joint-stock and city commercial banks tend to have higher proportions of on-balance sheet investment assets compared to the largest banks. This asset class is primarily allocated to corporates and local government financing vehicles through bonds, receivables, and other arrangements. This could be an indication that these banks are filling the financing gap left by larger banks, although data limitations preclude a more exhaustive and conclusive analysis.

Although some financial system segments such as private equity and venture capital are facilitating the emergence of a new economy, it is necessary that the financial sector is enabled to refocus to more productive sectors. Doing so will require hardening budget constraints vis-à-vis ailing borrowers, reducing perceptions of implicit state guarantees, so as to alleviate the extent of moral hazard that keeps financial intermediaries from pricing risks on a fundamentally commercial basis. It can also be prudent to initiate further corporate restructuring and prepare for orderly exit of firms. Under more adverse scenarios, a decisive and comprehensive strategy to resolve associated NPLs will likely be necessary.

(2) A MORE DIVERSE FINANCIAL SYSTEM

²⁶ Aggregate data about the composition of the loan books of banks, differentiated per category, are not readily available in the public domain. This complicates the monitoring of the evolution bank's loan portfolios.

Furthering the development of capital markets and NBFIs is a priority both from a developmental and a stability point of view. Capital markets refer to equity, bond, commodities and derivative markets, while NBFIs refer to risk pooling and contractual savings institution such as insurance companies, pension funds, and mutual funds. They can enhance the risk management capacity of households and enterprises, and improve access to long-term finance which banks are typically not well-suited to provide.

Although China's financial sector is still bank-dominated, its capital markets have expanded rapidly, and their volume compares favorably with emerging market peers. The size of the domestic private debt market has increased from 34 to 47 percent of GDP during 2010-15, with the share of nonfinancial corporation debt among total debt outstanding rising from 26 to 43 percent. While stock issuances in the two national exchanges are still primarily done by relatively few larger firms, the growth-oriented Shenzhen Stock Exchange has become increasingly important as illustrated by its increasing share in overall market capitalization. By the end of 2015, the sum of equity, public and private debt market capitalizations reached 144 percent of GDP, though it is fair to say there is still much unmet demand for market-based finance by private nonfinancial entities.

NBFIs have grown rapidly in recent years, although the development of private pension funds and mutual funds has not kept up with overall market trends. This may be partly explained by the unique Chinese context that wealth management products (WMPs) and trust companies in practice share many features with traditional NBFIs in resource mobilization. Traditional NBFIs assets amounted to 31 percent of GDP in 2015, up from 19 percent in 2010. WMP and trust company assets accounted for 34 and 24 percent of GDP respectively in 2015. These entities may lack the long term orientation that is usually attributed to institutional investors.

As is often the case in young, developing markets, retail investors populate a significant majority of equity market space. Maturing capital markets will require a stronger institutional investor base, with a longer-term investment orientation. Among others, this will require enhancing

the efforts to improve the enabling environment, including a further strengthening of gatekeeper functions (including sponsors, auditors and rating agencies) and public and private rights.

(3) A MORE INCLUSIVE FINANCIAL SYSTEM

The authorities recognize the importance of the expansion of financial inclusion as a key priority for the further development of the financial system. The provision of accessible credit, deposit, payment, insurance and other risk management services to households and SMEs has become an important component of the economic rebalancing strategy. Public policies have hitherto focused on expanding outreach to underserved groups in, for example, rural areas and the agriculture sector. As a result, measured by account metrics, China has made major strides in expanding individual financial access in comparison to peer countries. On the firms' side, various evidences suggest SMEs still face frequently tight financing constraints when credit is needed for investments and working capital.

With a market-based approach, the national financial inclusion strategy could, in principle, target a broader set of objectives beyond the "last mile" to offer appropriately designed financial products for all underserved groups. Achieving this will require a shift in focus. So far, the drive to expand financial inclusion has relied heavily on government-promoted policies. Going forward, and in line with the overarching vision for the rebalancing of the economy, it would be important to transition towards a more market-based approach, wherein public policy focuses on creating the enabling environment for providers to serve the underserved in a commercially sustainable manner.

SESSION II

STRENGTHENING FINANCIAL SECTOR AND MACRO-PRUDENTIAL POLICY FRAMEWORKS

PART II: REGULATORY FRAMEWORKS AND MACRO- PRUDENTIAL POLICIES

KEY ATTRIBUTES OF MACROPRUDENTIAL POLICY: THE EXAMPLE OF THE UNITED KINGDOM

Donald Kohn²⁷

The financial systems of the United Kingdom (UK) and China differ in several ways, but both face potential challenges to financial stability from leverage and maturity transformation among intermediaries and from debt build up in the private sector. ***Please also see the corresponding presentation at the end of the book.*** This presentation draws upon my experience with macroprudential policy in the UK to identify the crucial organizational structure and capabilities of macroprudential policy authorities that should help maintain financial stability.

A CLEAR MANDATE FROM THE GOVERNMENT TO MAINTAIN FINANCIAL STABILITY

A clear mandate to the macroprudential authority to maintain financial stability is essential, in that it signals that government recognizes the problem and is committed to solving it. That commitment means that the committee addressing financial stability needs the tools to do so and the independence to use them in ways not always in the short-term government interest.

In the UK, the Financial Policy Committee is the macroprudential authority charged with identification, monitoring, and acting to remove or reduce systemic risks to protect and enhance the resilience of the UK financial system. Financial stability is understood to mean that the

²⁷ Donald Kohn is Senior Fellow in the Economic Studies program, Brookings Institution, and Former Vice-Chairman of the U.S. Federal Reserve. He is currently an external member of the Financial Policy Committee at the Bank of England.

financial system should be able to continue to deliver essential services at reasonable prices, including credit intermediation, even after a severe shock. The Financial Policy Committee also has a secondary objective to support government policies, including for growth and employment, provided this does not interfere with the primary objective of financial stability. In practice, this secondary objective has come into play as the Financial Policy Committee considers alternative courses of action under its primary objective.

THE SKILL TO IDENTIFY RISKS

The ability to identify risks needing macroprudential action requires that macroprudential committee members have appropriate skill sets. In practice, that means the central bank needs to be deeply involved. The central bank has the macroeconomic perspective and the understanding of markets that comes from the formulation and implementation of monetary policy. The Financial Policy Committee sits in the Bank of England, which supplies the staff and almost half the policymakers.

The macroprudential committee should also have representatives from other regulatory authorities that may be needed to meet macroprudential objectives. That includes the head of the conduct authority and of the microprudential regulator of banks and insurance companies.

The presence of several outsiders with expertise in financial institutions and markets and in policymaking has also been useful. In addition, the outsiders are expected to bring fresh perspectives to policymaking to resist the groupthink that can occur when only insiders are making decisions.

It is important that policymakers recognize the special character of macroprudential risks. The policymakers are mostly looking for tail risks; expected outcomes are already priced into markets, and it is the unexpected that can expose vulnerabilities from leverage and maturity mismatch. And the macroprudential authorities are concerned about externalities, the amplification mechanisms and spillovers that markets

cannot price by themselves. It is macroprudential policy that causes these externalities to be priced into financial transactions.

AUTHORITY TO ACT

The macroprudential authority must be able to take the needed actions against systemic risks. In the UK the Financial Policy Committee has powers of direction—it can adjust some regulations itself, without needing the assent of the microprudential regulators or the government. This power encompasses some parts of the capital regime for banks and, importantly, several aspects of real estate lending, which has been the cause of many financial cycles.

In addition, the Financial Policy Committee can make recommendations to anyone on anything related to financial stability. Typically, it has asked other regulators or the Bank of England to drill down for more information to assess lending standards or liquidity issues; it has recommended that the microprudential authorities make sure banks are prepared for particular tail risks; and it has recommended adjustments in the capital requirements. It has looked each year at the regulatory perimeter to make sure that risks are not migrating to more lightly regulated sectors in ways that might threaten financial stability.

Two key authorities to protect financial stability are stress tests and orderly liquidation. The stress tests are at the heart of macroprudential regulation since the Global Financial Crisis because they are designed to make sure the system would be resilient to shocks of the severity that froze the financial system in late 2008. Those tests should be countercyclical in the sense that the shocks get larger the more ebullient are the markets and the more leveraged is the lending.

Orderly liquidation of systemically important institutions will allow these institutions to fail without requiring taxpayer support and without endangering the system. The techniques that have evolved globally also help end too big to fail because they involve the possibility that creditors will bear losses, enhancing market discipline.

COMMUNICATION AND COOPERATION WITH MICROPRUDENTIAL AND MONETARY AUTHORITIES

Macroprudential, microprudential, and monetary policies interact in complex ways. What each policy does can affect the objectives of the others, making communication and collaboration important. Each policy has separate and distinct objectives in the way it contributes to financial and economic stability and requires somewhat different skills, so they are best carried out by separate committees. But the interactions mean that each committee must understand what the others are doing and what the other committees hope to accomplish. That way each committee can shape its decisions to meet its objectives in ways that minimize the adverse effects on the ability of the other committees to meet their objectives.

In the UK, there are separate committees for each policy, but collaboration and understanding are promoted through overlapping membership and joint meetings on topics of common interest.

REGULATORY FRAMEWORK AND MACROPRUDENTIAL POLICY IN THAILAND

Daranee Saeju²⁸

Thailand's financial system has evolved and is now more complex and interconnected. ***Please also see the corresponding presentation at the end of the book.*** Commercial banks remain at the core, accounting for about half of the total financial sector's assets. But nonbank financial institutions (NBFIs) such as mutual funds, insurance companies, and savings cooperatives, in asset size, have grown in the double digits in the past three years, with implications for financial stability.

Banks and nonbank financial institutions are interconnected not only through arms-length links (inter-group), but also through financial conglomerates links (intra-group). This means risks arising from nonbank financial institutions could affect the banking sector and overall financial stability. Indeed, despite their relatively small asset size, these institutions tend to involve many people, giving them the potential to disrupt the overall financial system during shocks.

Several agencies are charged with supervising financial institutions, financial markets, and payment services. The main regulatory bodies are the Bank of Thailand (BoT), the Office of Insurance Commission (OIC) and the Securities and Exchange Commission (SEC), with responsibilities bestowed by the Ministry of Finance. Coordination across these regulatory agencies is crucial throughout the process for system stability, starting from sectoral surveillance, identification of systemic risk and moving through policy design and implementation.

²⁸ Daranee Saeju is Senior Director, Financial Institutions Strategy Department, Bank of Thailand.

The Bank of Thailand, even though no laws, including the Central Bank Act,²⁹ grant it an explicit mandate for financial stability, has nonetheless long presumed that responsibility for itself. It therefore takes the lead in efforts to strengthen the national financial stability framework.

The central bank has set up Financial Stability Subcommittee at the decision-making level as an internal platform for synchronizing systemic risk analyses and macroprudential policy discussion. Issues are then elevated into the semi-annual joint meetings between the Monetary Policy Committee (MPC) and Financial Institutions Policy Committee (FIPC), where interagency coordination takes place between the Securities and Exchange Commission, Office of Insurance Commission, and the Ministry of Finance. At the working level, the Financial Stability Unit (FSU) was established in 2016 to coordinate financial stability work, not only within the Bank of Thailand, but also with other relevant authorities.

Nonetheless, challenges remain for creating an effective macroprudential policy framework:

- First, coordination among regulators to achieve financial stability is difficult because financial stability is not a central mandate of all regulators. Institutional arrangements, especially inter-agency, are being discussed for improvement.
- Second, ensuring financial stability requires data and tools. Reliable and high-frequency data and analytical tools help policy makers better identify the sources of systemic risk and react in a timely and effective manner. The Bank of Thailand is therefore working to lessen the data gap and enhance technical capacity by exploring alternative data sources and exploiting new technology, such as big data analytics. It is also developing systemic risk analysis toolkits such as scenario planning and macro stress testing.

²⁹ The Central Bank Act specifies three explicit mandates, monetary stability, financial institutions stability, and payment system stability.

- Third, crucial human resource capacity remains an important challenge. By nature, financial stability is multi-disciplinary, bridging financial institutions, financial markets, and macroeconomics. Thus a mix of skillsets is required to manage macro-financial linkages, systemic risk assessment, and macroprudential policy making.

In short, the Bank of Thailand and the other regulatory agencies are continuously strengthening institutional arrangements for a macroprudential policy framework that can ensure overall financial stability.

MACROPRUDENTIAL POLICY—LESSONS FROM INTERNATIONAL EXPERIENCE

Erlend Nier³⁰

This presentation draws on emerging international experience with macroprudential policy. ***Please also see the corresponding presentation at the end of the book.*** It discusses some of the challenges and highlights ways of addressing them found useful elsewhere. These mechanisms may also be interesting for articulating the macroprudential policy framework in China, including given the potential for further capital account liberalization.

Macroprudential policy is challenging everywhere and requires strong institutional foundations. Two challenges are deeply rooted.

Macroprudential policy is subject to biases that favor inaction or insufficiently forceful and timely action, known as “inaction bias,” and first examined in Nier (2011). This flows from the nature of the policy problem: macroprudential policy manages a tail risk. This means that the benefits of action only accrue in the future and are difficult to measure, while the costs of actions are typically more visible and felt immediately, by financial firms and borrowers. This issue is inherent to macroprudential policy and will tend to reduce the willingness of policymakers to take early and forceful action. And the bias can be compounded when macroprudential policy is subject to lobbying and capture by the financial industry or by political pressures and competing objectives on the part of agencies.

The second challenge is that the financial system evolves dynamically. This means that the level, source, and distribution of systemic risk are subject to change. This issue is also deeply rooted, since

³⁰ Erlend Nier is Deputy Chief, Monetary and Macroprudential Policies Division, Monetary and Capital Market Department, IMF.

the financial system will tend to evolve to seek profitable opportunities. We have seen that it can evolve in response to financial (technological) innovations; the regulatory constraints themselves that are put on parts of the system; and distortions caused by other policies, for instance fiscal distortions that favor debt. The experience is that the dynamic evolution of the financial system can open up “policy gaps” and requires coordination across policy fields. And the need for coordination can in turn reinforce inaction bias.

Strong institutional arrangements are therefore essential for macroprudential policy to be effective. These arrangements should assure willingness and ability to act, in addition to cooperation in risk assessment and mitigation (IMF 2013, IMF 2014, IMF-FSB-BIS 2016).

- Willingness to act can be fostered by a clear assignment of the mandate to someone (a body or committee), ensuring a strong role for the central bank in macroprudential policy, and objectives and accountability mechanisms established in law.
- Ability to act requires the establishment of powers and tools with range and reach sufficient to contain risks, including powers to collect information, calibrate tools, and designate financial institutions or services as systemically important.
- Mechanisms to ensure cooperation in risk assessment and mitigation can go beyond the establishment of a council. For instance, to ensure cooperation, microprudential agencies and securities regulators should be given a financial stability objective (as in Australia and the United Kingdom)

International experience is that macroprudential policy is subject to domestic “leakage”, potentially causing blind spots and regulatory gaps. Such leakage can be addressed by expanding the scope of macroprudential intervention, in at least three ways.

- Establishing mechanisms to collect and share information, such as back-up powers to collect information directly from firms (as assigned to the U.S. Office of Financial Research) and the establishment of (credit) registers and common data platforms (as envisaged in China).

- Expanding the perimeter of regulation beyond banks to substantial nonbank intermediaries. For instance, the U.K. Financial Policy Committee can make recommendations to the Treasury to expand the perimeter of regulation.
- Adopting a functional approach to regulation, to capture risks inherent in products and services. For instance, Loan-to-Value (LTV), and Debt-Service-to-Interest (DSTI) restrictions can be enforced on all providers of credit (as in Hungary, Korea, and the Netherlands).

Further capital account liberalization can be useful over the medium term, with benefits well-known for the efficient allocation of savings and investments. Liberalization can also reduce domestic leakage: when savings are no longer bottled up within the country this may reduce domestic search for yield. On the other hand, capital flow liberalization may stimulate cross-border credit, thereby reducing the effectiveness of domestic macroprudential tools in managing systemic risks. For instance, when macroprudential policy tools are tightened, such as the Countercyclical Capital Buffer, this can increase provision of credit from across the border.

The increased likelihood of cross-border credit may in future call for cross-border (perhaps regional) coordination of macroprudential action. This can, for instance, involve “reciprocity” agreements, which call on home authorities to impose the same constraints on exposures into the host country. Such reciprocity is already agreed among Basel Committee members for the Basel III Countercyclical Capital Buffer. It can also be agreed regionally, as is the case among members of the European Union for tools beyond the Countercyclical Capital Buffer.

Liberalization can also lead to new risks from larger and more volatile capital flows, which can be managed using new macroprudential tools.³¹ In particular, increases in wholesale funding, including in foreign

³¹ See IMF. 2017. “Increasing Resilience to Large and Volatile Capital Flows: The Role of Macroprudential Policies.” IMF, Washington, DC.

exchange, can lead to vulnerable funding structures. Incentives can also exist for households and corporates to borrow in the foreign exchange market, increasing default risk. Such incentives can be strong, especially when domestic interest rates are higher than those of the major carry currencies (such as the U.S. dollar, yen, or Swiss francs).

New risks can be addressed by targeted macroprudential tools. This can include liquidity requirements (such as Liquidity Coverage Ratio, LCR, Net Stable Funding Ratio, NSFR) potentially differentiated by currency (as introduced in Korea, Iceland, and Sweden), and higher capital requirements or tighter loan restrictions on foreign exchange exposures (as in Hungary, Poland, and Russia).

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A RAPIDLY CHANGING ECONOMIC AND FINANCIAL STRUCTURE: DOES CHINA NEED A PUBLIC ADMINISTRATION REFORM?

Alfred Schipke³²

In China's decades of rapid growth - making it the world's second largest economy - dramatic structural transformation has shifted it from agriculture to manufacturing and more recently to services.³³ ***Please also see the corresponding presentation at the end of the book.*** The financial system has grown even more rapidly, becoming more complex and interconnected.

During this period, the government has been deeply involved in the economy, either directly through state-owned enterprises and local governments or indirectly by providing strong guidance. And although the public sector has declined as a share of the economy, it remains very large and the scope for the private sector to play a bigger role is widely recognized.

Nonetheless, it remains likewise true that the country needs—in many areas—a larger public sector at the center/headquarters.

WHY THIS APPARENT CONTRADICTION?

This paradox arises out of the fact that, although the structure of the economy and financial system have changed dramatically, this has not always been mirrored in the structure of the public administration,

³² Alfred Schipke is Senior Resident Representative to China, International Monetary Fund. See also Lam, Rodlauer, and Schipke (2017)

³³ In purchasing power parity terms, China is now the largest economy in the world.

possibly leading to bottlenecks and vulnerabilities. Staffing at the center/headquarters is especially small.

As in most countries, the design of policies and reforms, identification of emerging risks, and the development of new rules and regulation are often spearheaded at headquarter ministries and agencies rather than in local offices and branches. In China, the strain is growing on headquarter ministries and agencies, reflecting the following:

- **Reform push.** Since the 3rd Party Plenum in 2013 and the 13th Five-Year Plan (2016–2020), China’s leadership has correctly emphasized the need for reforms to address growing imbalances, improve the allocation of resources, and move the economy toward a new growth model. This is frequently dubbed “rebalancing”. Given this reform push, headquarter ministries and agencies are tasked to develop vast amounts of reform blueprints and workplans.
- **Rapidly developing, complex, and interconnected financial system.** China’s rapidly changing financial sector, the mushrooming of new products and institutions, the development of new markets, and increased financial global interconnectedness, requires financial regulators to constantly assess new risks, increase the perimeter of financial sector regulation, and strengthen regulation and supervision overall.
- **Increasing global footprint.** China’s increasing global footprint and “Going Global” strategy presents another challenge for many government ministries and agencies that, among other things, need to adopt their frameworks do cope with these developments and with their global counterparts. China’s increasingly active role in key global forums and bilateral dialogues add to the strain on public administration.

Despite these challenges, resources, especially staffing, at key central government ministries and regulatory agencies are extremely small and have remained largely unchanged. A public administration reform that increases resources at the center might hence be warranted. This becomes even more urgent as the country moves from a transactional government to one where the state is more of a facilitator

to foster the allocation of resources through the market by focusing on strengthening policy frameworks.

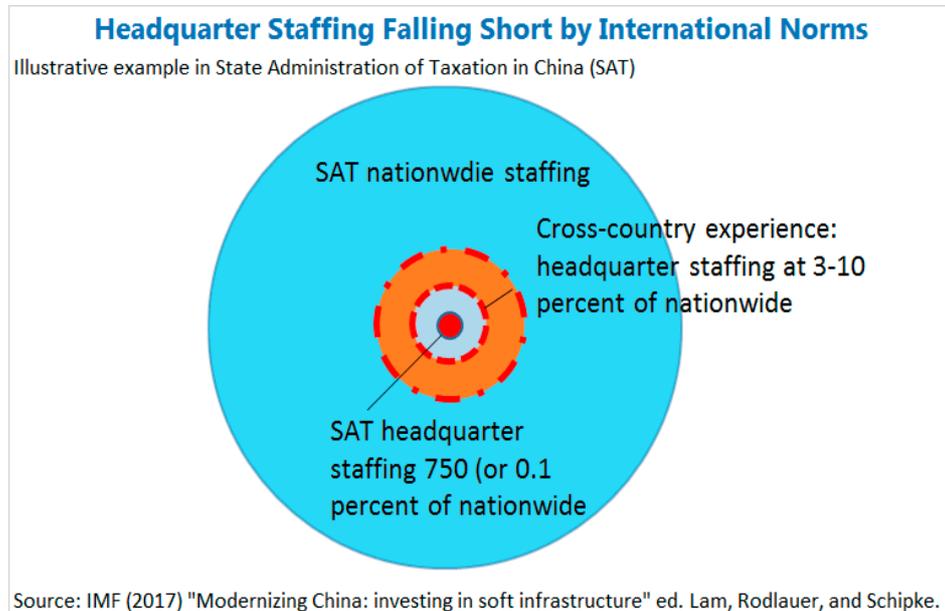
The lopsided public administration structure becomes particularly apparent in an international context. In addition, China's relatively flat civil service salary structure, combined with fast-growing wages in certain sectors (such as the financial sector) will make it more difficult to continue attracting and retaining highly qualified public-sector employees, especially when they are needed the most. Eastern Europe, for example, experienced similar challenges during its transition period in the 1990s.

To demonstrate these points, the following are a few examples covering institutions related to public finances (such as the State Administration of Taxation and the Ministry of Finance) and China's financial sector regulators.

STATE ADMINISTRATION OF TAXATION (SAT)

China's tax administration—which is separate from the Ministry of Finance—faces several key challenges. Reflecting the Going Global strategy, more and more Chinese companies are starting to operate worldwide. As do other globally operating companies, these companies have incentives to minimize tax burdens. At the same time, many of the very dynamic and newly established companies in China are not yet always part of the tax net (some 5.5 million enterprises were founded in 2016 alone), while companies in declining traditional sectors are faced with more difficulties, leading to increased compliance issues.

To keep up with these changes and to protect its revenue base, the State Administration of Taxation needs to constantly revamp and modernize tax administration.



But how large is the tax administration and how does it fare in an international context? While the whole system employs some 750,000 people, only 750 people work at Beijing's headquarters, and are entrusted with many of the tax administration reforms mentioned above. While each country is different, a comparison with other good tax authorities would suggest a different ratio; instead of 0.1 percent of the total system, the comparison would suggest that 3–10 percent should be employed at the center, or 7,500 to 22,500 people.³⁴

MINISTRY OF FINANCE

The same is true of the Ministry of Finance. The ministry is tasked with designing and ensuring implementation of reforms ranging from tax policy (such as value-added tax, personal income tax, property tax), social security, state-owned enterprises, and medium budget frameworks. Also, in a short period, the government created a large local government bond market that reached RMB10.6 trillion in 2016. The rapid rise of this bond

³⁴ See also Brondolo and ZHANG (2017).

market (initially through a loan-bond swap program) calls for sound rules and regulation adding to the workload. These changes and reforms are complex and require significant staffing. Again, with only some 1,000 staff, the center is very thin.

FINANCIAL SECTOR REGULATORS

The same applies to institutions entrusted with ensuring the stability of China's financial system, comprising the China Banking Regulatory Commission, the Securities Regulatory Commission, and the Insurance Regulatory Commission, as well as the central bank, the People's Bank of China.

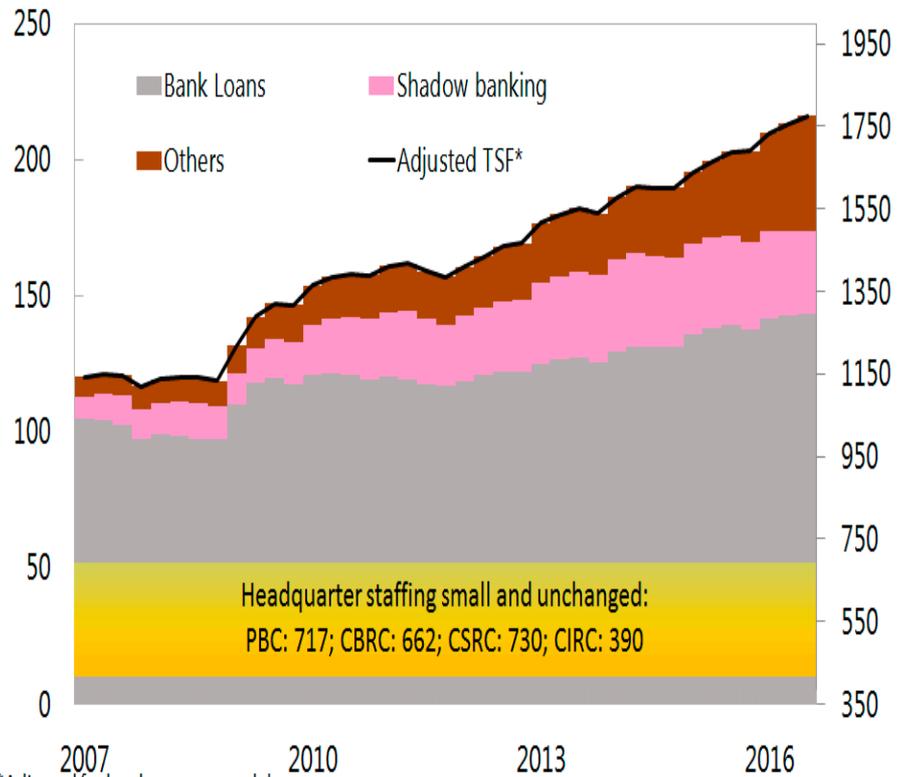
As noted, the financial system has grown even more rapidly than the economy, reflecting financial sector development and deepening. The largest banks in the world are now Chinese, the equity market is now the second largest, and even the still nascent bond market is already the third largest in the world. During the past decades, the financial system has been gradually liberalized, experienced rapid credit growth, a sharp increase in nonbank financial institutions, the emergence of more complex financial products, and new markets (such as derivatives markets). These developments are challenging for any regulator.

But it is not only the change itself that is challenging, but also the speed with which new financial products emerge. For example, Alibaba's Yuebao money market fund went from zero to 85 million customers within one year; people-to-people (P2P) platforms have mushroomed over the past couple of years.

Also, given the increased complexity of the system and increasing importance of China's financial system in and for the global economy, more coordination among regulators both within in China and the world is required. This also calls for better and timely communication, adding to the burden on the centers of the regulatory agencies.

Rising Pressures for Headquarter Staffing

(Total social financing in percent of GDP (LHS); number of headquarter staffing (RHS))



*Adjusted for local government debt swap

Source: Modernizing China: investing in soft infrastructure

However, the size of the headquarter agencies has remained largely unchanged, as can be reflected in the following figure. As the figure below reveals China's financial sector has doubled as a share of GDP over the past 10 years and the structure changed significantly, a fact reflected especially in the emergence of shadow banking. As the figure also reveals, with headquarter staffing of only about 400 to 750 people, respectively, Chinese regulatory agencies are extremely small. Already, China's IMF/World Bank 2011 Financial Sector Assessment Program recommended a strengthening of staffing.

In addition to the size, the shifting of resources between departments within agencies are very constrained. A public administration reform that ensures adequate and well-paid staff,

especially at headquarter agencies, will be important for the safe and sound development of China's financial system.

Table: International comparison of headquarter/total staffing

	Headquarter ¹	Headquarter/total (in percent)	System-wide
China			
People's Bank of China (PBC) ²	717	0.7	105,980
Ministry of Finance (MOF) ³	1,023	0.2	488,192
State Administration of Taxation (SAT)	750	0.1	750,000
China Banking Regulatory Commission (CBRC)	662	2.8	23,683
China Securities Regulatory Commission (CSRC)	730	23.6	3,097
China Insurance Regulatory Commission (CIRC)	390	13.9	2,802
United States			
Treasury	2,120	2.52	84,050
Federal Reserve (Fed)	2,700	12.45	21,686
Australia			
Treasury	2,144	28.23	7,596
Reserve Bank of Australia (RBA) ⁴	1,232	91.46	1,347
United Kingdom			
Treasury	n.a.	n.a.	1,238
Bank of England (BOE)	n.a.	n.a.	3,680
Germany			
Federal Ministry of Finance	1,864	n.a.	n.a.
Bundesbank	4,623	47.98	9,636

Source: Annual reports of respective agencies, Overseas development institute report

1. Headquarter staffing or staffing at the federal level.
2. Excluding printing and minting companies and other PBC-owned companies and public institutions.
3. Excluding MOF-owned companies and public institutions.
4. Excluding printing and minting companies.

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CONCLUDING ROUNDTABLE

EXCHANGE RATE POLICY: REMARKS BASED ON THE CHILEAN EXPERIENCE

Rodrigo Vergara³⁵

I wish to thank the PBC (People's Bank of China) and the IMF for their invitation to participate in this conference.

I will talk about the Chilean experience. I will do so because, of course, it is the country I know best and I was asked to explain what our experience has been since we moved from a peg to a semi-peg and eventually to a free-floating exchange rate system. But, also, I will do so because my view is that Chile's experience is a very rich one, since we have experienced almost every single possible exchange rate regime during the last four decades. We moved gradually to a free float system that has been successfully in place for close to 20 years. Of course, there are still people in Chile reminisce about the fixed and semi-fixed systems and would like to go back to them, but I would say they are in a significant minority. As in the case of China today, there were many concerns and unknowns in Chile when we started this process, but I think it was worthwhile for the reasons I will explain in a minute.

At the beginning of the 1980s, Chile had a fixed exchange rate system to the U.S. dollar. Then, when the debt crisis arose in Latin America, there was a major financial and balance of payments crisis in Chile and the peg was abandoned. After a period of turmoil, a crawling exchange rate band system was adopted. Initially (1984) the band was very narrow (± 0.5 percent) but it was gradually widened.³⁶

During that period capital controls on capital outflows were imposed as the country was just coming out of a major crisis. But

³⁵ Rodrigo Vergara is Former Governor, Central Bank of Chile

³⁶ See Vergara (1994).

everything changed in the early 1990s. The country had just returned to democracy and there were huge capital inflows. The exchange rate moved to the most appreciated part of the band and, to defend it, the central bank implemented huge sterilized interventions. These interventions implied significant losses to the (central) bank as the carry was negative.³⁷

In addition, the band was widened to ± 5 percent and the central parity fixing was changed from the U.S. dollar to a basket of currencies. Capital controls on outflows were lifted. As the pressure on the domestic currency continued, this time the bank imposed controls on capital inflows. They took the form of a reserve requirement that affected all inflows, especially short-term inflows.

Notably, the option to lower the monetary policy interest rate to international levels was never really considered as a valid one. The reason was that inflation was still high (10–20 percent annually in the first half of the 1990s) and the newly independent Central Bank (it became independent in December 1989) had the explicit mission to reduce inflation. Hence, a more lax monetary policy was considered to affect the credibility of the central bank in its commitment to price stability. Control of inflows was seen as a way to avoid the impossible trinity. In terms of Alan Taylor's presentation in this conference, the central bank always saw the problem as a trilemma, not a dilemma.³⁸

Regarding capital controls, most evidence shows that they were fairly effective at the beginning, but as time passed they started to lose that effectiveness. In practice, markets find ways to circumvent the restrictions. From what I have heard from the Chinese authorities during this conference, it seems that you may be having a similar problem here in China.

³⁷ The Central Bank of Chile has had negative capital for a long time. In part, this is precisely because of the sterilized interventions during this time and in the 2000s (see Archer and Moser-Boehm 2013).

³⁸ See Rey (2015).

Most of the time during those years, the exchange rate remained in the most appreciated part of the band, despite all measures taken. As Larry Summers pointed out this morning, while the exchange rate is in either of the limits of the band it is not that different from having a peg. And in our experience, more often than not, the exchange rate was in one or the other end of the band.

Things changed dramatically again in the late 1990s. First the Asian crisis hit, then the Russian crisis made capital flow out of emerging markets. The Chilean currency depreciated significantly, as was the case in most emerging markets, and the exchange rate went from the most appreciated to the most depreciated part of the band in a very short time.

In what was a very controversial measure, the central bank defended the band by hiking interest rates by more than 500 basis points. The economy went into its first recession in almost two decades and in 1999 GDP fell 0.4 percent.

To allow for more exchange rate flexibility, the band was widened to ± 8 percent and then gradually to ± 12 percent. At the end of 1999 the band was abandoned and the exchange rate was allowed to float freely. In addition, all capital controls were removed.

Hence, it's been close to 18 years that in Chile we have had a free-floating exchange rate regime and no capital controls at all. However, the central bank reserves the right to intervene in the foreign exchange market under "exceptional circumstances". These are defined as when the exchange rate is off its equilibrium level by a significant margin for significant time. Of course, the definition of both what is a significant deviation from its equilibrium or long-term value or what is a significant period is blurry, even though the central bank has models aimed at calculating the equilibrium real exchange rate. The argument of accumulation of reserves has also been used to justify an intervention. This may apply when the currency is clearly over-appreciated and international reserves, after a long period without intervention, have declined as measured by any metric (GDP, imports, and so on.). In these cases, a build-up of reserves may justify an intervention.

In practice, there have been only four periods of exchange rate intervention in Chile since the adoption of a free float. The first two in the early 2000s when external events (the crisis in Brazil) produced a big depreciation of the Chilean peso, which was not warranted by fundamentals according to the authorities of the time. Rather, small and short-lived interventions (sale of foreign exchange) had the desired impact on the exchange rate.

The other two took place in exactly the opposite circumstances in 2008 and 2011. The massive capital inflows in 2007 and early 2008 produced a major appreciation of the Chilean peso. The central bank decided to implement a sterilized intervention in a very transparent way. It announced a program of purchase of foreign exchange for a given amount for the whole year, divided evenly for each working day. So, markets knew the exact amount the central bank would auction each day.

As the global financial crisis erupted and capital flew out of emerging markets, the peso depreciated and the intervention program was discontinued before completion. The second intervention was in 2011, again in the presence of massive capital inflows. It took the same form and the program was completed at the end of that year. Since then, there has been no intervention at all. During my tenure as governor of the Central Bank of Chile, we did not intervene in the foreign exchange market.

During these 18 years, the free float system has worked well. Of course, each country has to decide what regime is better for its particular case, but I tend to agree with what Larry Summers said this morning, that there are many examples of crises or at least economic difficulties in emerging markets that are associated one way or the other with fixed exchange rates. In our case, the big crisis of the early 1980s and the small recession of 1999 are good examples. My view is that in the case of Chile during these 18 years, the exchange rate has acted as an effective and efficient shock absorber.

I will finish with some remarks related to issues that were discussed during the previous sessions, that I think are very important to

have in mind when deciding on the exchange rate regime that is better suited for a given country.

- In a flexible exchange-rate regime, there is more exchange rate volatility than in a peg or in an exchange-rate band. For many agents, the exchange rate is such an important price that they need to have access to a deep market for hedging. So, it is important that when moving to a float all the conditions are set to develop deep derivative markets.
- One of the reasons for “fear of floating³⁹” in some countries is because there are large currency mismatches in the corporate or the household sector. If, for instance, companies are heavily indebted in a foreign currency a depreciation can be very damaging and eventually produce a financial crisis. Many financial crises in emerging markets have come together with a balance of payments crisis precisely because of this. Hence, it is important to monitor currency mismatches and to inform the corporate sector of the risks of having open positions when there is a flexible exchange rate regime in place. Our experience in Chile shows that currency mismatches are to a large extent endogenous. Indeed, they have fallen significantly since the free float was implemented.
- Another factor behind fear of floating is the exchange rate pass through (ERPT), which is the effect on inflation of the changes in the exchange rate. This is particularly relevant for countries that are resource dependent and that, because the prices of commodities are volatile, frequently face terms of trade shocks. There is plenty of evidence that ERPT has declined in most economies during the last decades. On the other hand, ERPT is larger in emerging markets than in advanced economies. Among emerging markets it is higher in commodity exporters than in non-commodity exporters.⁴⁰ All these

³⁹ See Calvo and Reinhart (2002).

⁴⁰ See Vergara (2015).

considerations lead me to think that this should not be a big issue for China should it move to a more flexible exchange rate system.

- I totally agree with what was said in previous sessions regarding the importance of financial stability to achieve a successful transition from a semi-peg to a flexible exchange rate. The experience of Latin America presented by Alejandro Werner and Tommaso Mancini-Griffoli in this conference is quite suggestive in this matter.

Thank you very much.

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REMARKS ON STRENGTHENING FINANCIAL AND EXCHANGE RATE FRAMEWORKS

Arminio Fraga⁴¹

- China's monetary and exchange rate regime has been evolving. After a decade pegged to the U.S. dollar ended in 2005, the People's Bank of China has been gradually moving toward a more flexible system that responds to economic fundamentals and, more recently, takes as reference a basket of the more relevant currencies. This strategic move has been supported by many institutional and operational improvements that have paved the way for the inclusion of the renminbi among component currencies of the IMF Special Drawing Rights (SDRs)
- The adoption of a more flexible exchange rate regime makes perfect sense, as China clearly does not belong to the optimal currency area of another region or country. It follows from the same logic that over time it makes sense for China to move to an even more flexible regime, probably a free floating exchange rate. The current focus on a basket has proven to be an effective transition regime, but it is my view that China would benefit from de-emphasizing the basket and moving to a fairly free float.
- This does not mean giving up on the ability to intervene in foreign exchange markets, but it suggests intervention should take place mostly in extreme circumstances of high market volatility and, especially, low market liquidity. Intervention could also take place as part of any future effort at exchange-rate coordination among the larger currency blocks, something not on the table at the moment.

⁴¹ Arminio Fraga is Founding Partner, Gávea Investimentos, and former President, Central Bank of Brazil.

- Another relevant topic of discussion is the use of capital controls. The historical experience of most if not all countries seems to be that, as economies and financial markets become more sophisticated, capital controls lose their efficacy. China's economy is large, complex, and ever more sophisticated, so my view is that over time the only controls that make sense are those related to either a more prudential nature (such as temporary taxes on short-term inflows) or related to transparency and anti-money-laundering efforts.
- The consolidation of a floating exchange-rate regime will require the strengthening of the monetary, fiscal, and financial frameworks. I take each in turn.
- On the monetary front, the move away from a managed exchange rate will require a clearer nominal anchor, such as that of a target for inflation, preferably one that preserves some flexibility to help smooth the business cycle. This is an important point as the use of direct credit controls as a monetary policy tool entails relevant efficiency costs.
- Fiscally, China confronts important long-term challenges, not unlike most countries on the planet these days. They include the implications of the dramatic and upcoming demographic changes, the unsustainable financing of local governments through land sales, and potential losses stemming from state-owned enterprises (SOEs) and the financial sector.
- Financial sector risks are a key focus of attention and comprise the second major topic of this conference. The core issue is the accelerated growth in credit observed in recent years and its disconnect with the growth in the economy. In plain words, it has taken an ever-growing increase in credit to deliver the high (but naturally declining) rate of economic growth that China (and the world) have grown accustomed to. This disconnect now begins to show signs of exhaustion, and represents a significant challenge. The sheer size of the credit/GDP ratio is a flashing sign of danger when compared to the historic record of most banking and financial crises.

- What to do then is no mean task, but one that is still doable. China has been facing immense challenges since it embarked on its amazing market-based development strategy. This is one more such challenge.
- Part of the problem may be driven by the adoption of short-term, demand-driven growth targets. This has often led to over-investment, excessive credit growth, and bubbles in the real estate and stock markets. A switch toward growth targets that are more flexible, longer-term, and more supply-side driven could be helpful here.
- On the regulatory and supervisory side, the authorities have presented impressive overviews of their efforts, leaving no doubt that they are focused on further strengthening banking and finance in China.
- A particularly complicated matter concerns the introduction of risk into the system. The widespread expectation of explicit or implicit guarantees by the government has led to excessive leverage and risk taking. The design of a gradual policy response is far from trivial. For example, the removal of implicit guarantees in one or another area of the system could ignite the fear that all guarantees are at risk, and therefore may lead to a sharp contraction in credit.
- An effective strategy is likely to include a global assessment of flows (losses) and stocks (balance sheets) based on conservative growth and stress scenarios.

TOWARDS LESS FOREIGN EXCHANGE INTERVENTION

MA Jun⁴²

The following highlights key takeaways from today's discussions:

EXCHANGE RATE

- The People's Bank of China's (PBOC) adoption in early 2016 of a formula-based daily fixing system made significant progress toward transparency and substantially reduced the market expectation of one-off depreciation of the renminbi (RMB).
- The consensus among today's conference participants is that China should move toward greater exchange rate flexibility by reducing foreign exchange intervention and refraining from additional measures to control capital flows. Larry Summers stated explicitly that the basket system should be viewed as an intermediate step in China's transition toward—rather than the final goal of—a flexible exchange rate regime.
- Foreign exchange intervention tends to be ineffective in affecting exchange rate expectations and may even worsen exchange rate expectations. Empirical studies by the Bank for International Settlements and Ma Jun show that foreign exchange intervention has led to deterioration in exchange rate expectations, using data from Brazil, China, Korea, Malaysia, and Peru (for example, central bank selling of foreign exchange worsens depreciation expectations).
- Capital controls tend to be less effective than perceived. Even if capital controls effectively limit hard currency outflows, they may increase RMB outflows and substantially reduce future inflows.

⁴² MA Jun is Chief Economist, Research Bureau, People's Bank of China.

- Social and market acceptance of two-way volatility of the CNY/USD exchange rate has increased substantially in the past two years. Fully understanding this growing market acceptance could help convince policy makers to avoid excessive foreign exchange intervention and unnecessary capital controls.
- The PBOC has substantial scope to improve transparency of monetary and exchange rate policies. For example, the market is confused about why the central bank needs so many different policy rates and it is unclear who is setting these.
- It is also important to protect and develop the foreign exchange hedging market and reduce hedging costs. The resulting increase in foreign exchange hedging will provide an important basis for acceptance of two-way volatility of the RMB exchange rate.

MACROPRUDENTIAL FRAMEWORKS AND POLICIES

- De-emphasize the GDP growth target to reduce tensions between growth and financial stability. Historically, excessive attention to GDP growth has been a source of political pressure for monetary stimulus and a rapid increase in macro leverage ratios.
- Regulators should avoid sending signals of implicit guarantees on price levels to participants of financial markets, including the FX and stock markets. Such implicit guarantees could encourage speculation and may contribute to market bubbles and excessive volatility.
- Expedite reforms to allow loss-making state-owned enterprises to exit and to reduce borrowing by inefficient enterprises.
- Introduce property taxes in more cities to replace land revenue as a major source of fiscal income to reduce local government incentive to boost property inflation and property-related leverage.
- Devote more regulatory resources to cover shadow banking activities.

- Significantly increase staffing at the headquarters of financial regulators (including the PBC, China Banking Regulatory Commission, China Securities Regulatory Commission and China Insurance Regulatory Commission), boost their compensation, and introduce a "revolving door" mechanism to ensure the necessary skills and financial market knowledges to deal with financial stability issues.
- Extend stress testing from static analysis on individual institutions to "dynamic analysis" by including contagion effects and assessing impact of "shocks" on the entire financial system.
- Develop contingency plans on whether and/or to deal with sudden market crashes and how to ensure orderly resolution of failing financial institutions.
- Improve communications of prudential policies and coordination of policies from various regulators. State clearly the intentions of such policies and their expected market impact. Use forward guidance to influence behavior of market participants to avoid "shocking" the market.
- Improve coordination among regulatory agencies not only at the ministerial level, but also at the working level by setting up various interdepartmental working groups.
- Study and prepare for new risks arising from financial innovation and capital account liberalization, such as those related to excessive use of wholesale funding and excessive foreign exchange borrowing.

CONTAINING SYSTEMIC FINANCIAL RISKS IN CHINA

HUANG Yiping⁴³

From late 2017, China's leaders have repeatedly emphasized the importance of controlling systemic financial risk.

The Government Work Report delivered by Premier Li Keqiang in early March, for instance, highlighted the need to steadily advance financial regulatory system reform, systematically resolve risk factors, consolidate financial order, and build a firewall against financial risks.

So, what has caused policymakers to worry about systemic financial risk?

Starting about three years ago, financial risks began stalking different sectors of the financial system, first equity and wealth management product markets, and then property and foreign exchange markets. This is reflected in the increased volatility in equity markets in 2015. The Shanghai A-share Index, for instance, rose from 3,258 on January 5, 2015 to 5,174 by June 15, but then dropped again to 3,052 by September 30 that year. Of course, equity markets go up and down, but this downturn became particularly worrisome because equity investors started to leverage the trust and banking sectors.

Since 2009, the property market has gone through three cycles, with the first cycle of rising prices peaking in July 2011, the second in December 2013, and the latest in September 2016. Each time, price jumps became sharper and more broad-based. This raised concern that potential consolidation in the property market had become a serious financial risk, especially for the banking sector.'

This latest episode of financial market volatility consists of significant pressure for currency depreciation and capital flight. Triggered by the

⁴³ HUANG Yiping is Professor of National School of Development, Peking University.

central bank's reform of the setting of daily central parity on August 11, 2015, the financial market strongly anticipated a weaker renminbi (RMB). Although the central bank took various measures to stabilize the value of RMB, including tightening capital account controls and using its foreign exchange reserves to intervene in the foreign exchange market, the renminbi has still depreciated in the last two years.

These events raised concern that China's financial risks had become systemic. Earlier studies have revealed that financial risks are highly contagious. For instance, occurrence of a bank crisis could increase probability of a currency crisis in the same country, and vice versa.

What changed during the past years to raise systemic financial risks?

China has been the only major emerging market economy to avoid a serious financial crisis, due to at least two factors.

One is undisrupted, rapid economic growth. During the first three decades of economic reform, the Chinese economy grew 10 percent annually on average, enabling it to resolve a lot of economic problems, including reducing financial risks.

The other is an implicit and explicit government guarantee. Borrowing by local governments, state-owned enterprises, and financial institutions was backed by the central government. For a long time, therefore, no default on financial products or bankruptcy of financial institutions occurred. Even during the Asian financial crisis, when the average ratio of bad loans reached 30–40 percent of total loans in the Chinese banks, there was no bank run.

Both factors are now changing. Growth decelerated from 10.6 percent in 2010 to 6.7 percent in 2016, leading to a deterioration of corporate balance sheets and an increase in bad assets.

Macroeconomic conditions also evolved into what the Bank for International Settlements once described as the risky trinity: rising leverage ratios, falling productivity, and narrowing policy flexibility. The trinity essentially means financial risks are much greater and the government's capacity for dealing with them is substantially curtailed.

Abundant liquidity in the system makes things worse. Broad money supply, M2, for instance, was already 208 percent of GDP at the end of 2016. By comparison, that proportion was only around 80 percent in the United States. This large money supply is certainly related to the fact that China's financial intermediation is dominated by the banking sector.

More importantly, there appeared to be a built-in acceleration mechanism for money supply. When the economy was doing well, money supply needed to accelerate to facilitate expansion of economic activities. And when the economy was not doing well, money supply also needed to accelerate to stabilize the economy and market. The latter was linked to the government guarantee.

High M2 did not necessarily cause trouble until recently. In the past, M2 growth was consistently faster than narrow money supply growth (M1). But in mid-2015, M1 growth suddenly took off and grew significantly faster than M2. This essentially means that terms on bank deposits shortened. In other words, depositors are no longer happy with low returns to term deposits and want to invest their savings somewhere else.

The combination of a large volume of investible funds and limited investment opportunities is the cause of rotating financial risks in recent years. Where the money goes, the market booms and bubbles quickly emerge. The booming and cooling of equity, property, and foreign exchange markets essentially reflected the same story: investors were desperately looking for investment opportunities. And this feature is not going to go away easily.

What should authorities do to contain systemic financial risks?

Dealing with systemic financial risk is a very delicate policy task. But the authorities should at least work on the following three issues.

First, the central bank should maintain relatively tight monetary policy conditions to gradually stabilize or even lower the aggregate leverage ratio. This can be done through more efficient use of money supply (financial resources). It can also be done by increasing the share of

direct financing (equity and bond markets) in total financial intermediation.

Second, the government needs to restructure the regulatory framework. Macroprudential policy is a first step toward averting systemic financial crisis. Coordination and collaboration among the central bank and three financial regulators are urgently needed to eliminate the gaps (potential sources of risk) in the regulatory system. And regulators should focus more on maintaining financial order rather than nurturing development of the financial industry.

Finally, the government needs to decide firmly to withdraw its unnecessary guarantees. In any case, it is no longer able to honor its implicit guarantees. In particular, zombie firms and banks should exit the market to reduce risks in the system.

CLOSING REMARKS

CLOSING REMARKS

MARKUS RODLAUER⁴⁴

Distinguished guests, colleagues, and friends:

In closing, allow me to thank all speakers and attendees for their participation and excellent contributions. We have had a busy and productive day and were able to share our experiences and insights to find practical policy solutions. Truly rich and frank discussions brought together Chinese policymakers and implementers with external experts and regulators.

I will not attempt to repeat the excellent summaries and takeaways presented by MA Jun, HUANG Yiping, Arminio Fraga, or Rodrigo Vergara.

But let me highlight a few points of broad consensus:

- **Exchange rate.** The direction is clear. China needs to move toward a more flexible exchange rate, and sooner rather than later.
- **Capital account liberalization.** This should be done carefully; currently, preconditions are not in place for an aggressive opening. Having said that, the long-term goal of integrating China's capital market remains clear.
- **Macro-prudential framework.** Three key issues need to be addressed to ensure success:
 - In the case of regulation, supervision, and structure, a clear mandate, ability to detect risk, power to act, as well as coordination and information sharing are needed.
 - So long as fiscal/quasi-fiscal dominance exists, so will the pressure for credit growth. To address this, it is important to move away

⁴⁴ Markus Rodlauer is Deputy Director, Asia and Pacific Department, IMF.

from hard and quantitative growth targets, which have contributed to local government investment and real estate spending biases.

- It will be paramount to eliminate widespread implicit government guarantees that have contributed to moral hazard and fueled the strong credit growth.
- **Transparency and communication.** At China's level of development and global footprint, transparency and improved communication becomes critical. This relates to its policy and reform objectives, frameworks, developments, and actions. It should be done a lot more frequently, that is, daily and weekly, for every action.

In closing, I would like to thank Deputy Governor CHEN Yulu for his opening remarks and, of course, our colleagues at the People's Bank of China for organizing this conference. Thanks also to staff of the Resident Representative Office for ensuring the success of this event and all presenters, discussants, and participants for joining us. Some of you have come from far away to be here.

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 the conference website in a few weeks (both in English and Chinese).

This marks the fifth joint People's Bank of China-IMF conference and I look forward to our continued collaboration and next year's event.

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.



LI Bo is Director General of Monetary Policy Department, the People's Bank of China. Mr. Li joined the PBOC in 2004, working in the Legal Affairs Department before moving to the Monetary Policy Department II as Director General in 2009. In 2015, Mr. Li was appointed Director General of Monetary Policy Department. Prior to joining the PBOC, Mr. Li was a practicing attorney with the New York law firm of Davis Polk & Wardwell. Mr. Li holds a Ph.D. degree in economics from Stanford University and a J.D. magna cum laude from Harvard Law School. He is a member of the Chinese and New York Bar.



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.



HUANG Xiaolong, PhD in Economics and Associate Research Fellow.

He graduated from the School of Economics of Peking University and majored in western economics. His main research areas include macroeconomics, financial stability and deposit insurance.



GUO Kai, Deputy Director General of the International Department of the People's Bank of China. His main responsibilities include United States, United Kingdom, G20 and IMF issues. Mr. Guo holds a PhD degree in Economics from Harvard University and worked as an economist at the IMF before joining the PBoC. His research interest includes the Chinese economy and international

finance.



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.



LI Wenhong is the 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 Department during 2006-2007.



RAN Hua is the Director-General of the Department of Futures Supervision at China Securities Regulatory Commission(CSRC). He worked for CSRC since 1997, and served successively as the Deputy Division Director, Division Director at the Department of Futures Supervisions, the Deputy Director-General of the First Department of Futures Supervision, Vice General Manager, General Manager of China Futures Market Monitoring Center(CFMMC). Mr. Ran has many years of successful experience in regulating the futures market. He holds a PhD in Economics.



LUO Sheng, Deputy Director General of Development and Reform Department, CIRC; Doctor in Management.

Once was: Director of Corporate Governance Regulation Division, Development and Reform Department, CIRC; Deputy Director General of Legal Affairs Department, CIRC; Executive Vice President, China Insurance Information Technology Management Co., Ltd.



MIAO Yanliang joined China's State Administration of Foreign Exchange in 2013 as Senior Advisor to the Administrator and Head of Research for SAFE Investment Center (SAFEIC), the organ that manages China's forex reserves. He oversees overall economic research at SAFEIC, formulating global macro views and leading the efforts in building a top-notch research platform for the world's largest reserve manager. Before SAFE, he was an economist with the IMF for over five years where he worked on emerging markets issues and the euro area crisis. Before the IMF, he was visiting the Bank of Israel as a special assistant to the Governor and taught economics at the Woodrow Wilson School of Princeton University. Mr. Miao is a member and research fellow of China Finance 40 Forum and a "Young Global Leader" of the World

Economic Forum. He holds a Ph.D., an M.A. and an M.P.A. all from Princeton University, an M.A. in economics from Fudan University and a B.S.E. from Shanghai University.



Huang Yiping is Jin Guang Chair Professor of Economics/Deputy Dean at National School of Development and Director of Institute of Digital 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.



Miquel Dijkman currently works as a Senior Financial Sector Specialist in the Finance and Markets Global Practice of the World Bank. Since joining the World Bank, his work program has covered a broad range of topics and different countries. He has participated in twelve Financial Sector Assessment Programs (FSAPs), responsible for assessing crisis preparedness, the Basel Core Principles for effective banking supervision and as a World Bank mission lead for the Belize and Nepal FSAP. He has also conducted and led many Technical Assistance missions covering a highly diverse range of countries and topics, including banking supervision and regulation, crisis preparedness and crisis management, cross-border supervision and systemic risk analysis.

Prior to joining the World Bank, he worked in several business areas of the Central Bank of the Netherlands; including Monetary and Economic Policy, Financial Stability and Financial Conglomerate Supervision. He also worked for six months at the European Central Bank as a National Central Bank Expert. Mr. Dijkman holds graduate degrees from Radboud University in international economics and in development studies.



Charles Feng currently is Managing Director, Head of FX, Rates and Credit Trading, Greater China at Standard Chartered Bank (Hong Kong). He joined Standard Chartered in 2009.

From 2007 to 2009, he was the Head of China Fixed Income Trading at Morgan Stanley based in Hong Kong. From 2002 to 2007, he was the Head of China Interest Rates Trading for Deutsche Bank based in Hong Kong and Shanghai.

Before he returned to Asia in 2002, he was an interest rate derivatives trader and research strategist with Credit Suisse in London and New York. He started his career in the financial markets with

Salomon Brothers as a fixed income research analyst in 1995 in New York.



Arminio Fraga, Founding Partner, Gávea Investimentos Ltda.

Mr. Arminio Fraga is the founding partner at Gavea Investimentos, an investment management firm he founded in August, 2003, based in Rio de Janeiro, Brazil. Mr. Fraga was the Chairman of the Board, BM&F Bovespa, Brazil's securities, commodities and derivatives exchange, from April 2009 to April 2013, and was the President of the Central Bank of Brazil from March 1999 to December 2002. From 1993 until his appointment as Governor of the Central Bank, he was Managing Director of Soros Fund Management in New York. From 1991 to 1992, he was the Director responsible for international affairs at the Central Bank of Brazil. Earlier in his career, he held positions with Salomon Brothers and Garantia Investment Bank. Mr. Fraga has taught at the Catholic University of Rio de Janeiro, the Graduate School of Economics at Getulio Vargas Foundation, the School of International Affairs at Columbia University and the Wharton School. He is a member of the Group of Thirty and of the Council on Foreign Relations, and serves on the boards of several NGOs. Mr. Fraga has published widely in the areas of international finance, macroeconomics, and monetary policy. Mr. Fraga earned his Ph.D. in Economics from Princeton University in 1985, and his BA/MA in Economics from the Catholic University of Rio de Janeiro, in 1981.



Joseph E. Gagnon is a senior fellow at the Peterson Institute for International Economics since September 2009. Prior to joining PIIE, he was visiting associate director, Division of Monetary Affairs (2008–09) at the US Federal Reserve Board. Previously he served at the US Federal Reserve Board as associate director, Division of International Finance (1999–2008), and senior economist (1987–

1990 and 1991–97). He has also served at the US Treasury Department (1994–95 and 1997–1999) and has taught at the Haas School of Business, University of California, Berkeley (1990–91). He is author of *Flexible Exchange Rates for a Stable World Economy* (2011) and *The Global Outlook for Government Debt over the Next 25 years: Implications for the Economy and Public Policy* (2011). He has published numerous articles in economics journals, including the *Journal of International Economics*, the *Journal of Monetary Economics*, the *Review of International Economics*, and the *Journal of International Money and Finance*, and has contributed to several edited volumes. He received a BA from Harvard University in 1981 and a PhD in economics from Stanford University in 1987.



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.



Donald Kohn is the Robert S. Kerr senior fellow in the Economic Studies program at the Brookings Institution. As the former vice chairman of the Federal Reserve and current serving member of the Financial Policy Committee at the Bank of England, Kohn is an expert on monetary policy, financial regulation and macroeconomics.

He advised Federal Reserve Chairman Ben Bernanke throughout the 2008-2009 financial crisis and also served as a key adviser to former Fed Chairman Alan Greenspan.

Kohn is a 40-year veteran of the Federal Reserve System. Prior to taking office as a member of the Board of Governors of the Federal Reserve 2002, he was an adviser to the Board for Monetary Policy (2001-02), secretary of the Federal Open Market Committee (1987-2002), director of the Division of Monetary Affairs (1987-2001), and deputy staff director for Monetary and Financial Policy (1983-87). He has also served as chairman of the Committee on the Global Financial System (CGFS), a central bank panel that monitors and examines broad issues related to financial markets and systems.

Since 2011, he has been an external member of the Financial Policy Committee at the Bank of England. The FPC is charged with identifying risks to the UK financial system and taking steps to protect and enhance the resilience of that system.

Kohn has written extensively on issues related to monetary policy and its implementation by the Federal Reserve and to financial stability and macroprudential policy.



Tommaso Mancini-Griffoli is a deputy division chief in the Monetary and Capital Markets Department at the IMF, in charge of work in monetary policy. He has advised country authorities and published widely on issues related to unconventional monetary policies, monetary policy spillovers, exchange rate regimes, and evolving monetary

policy frameworks. Prior to joining the IMF, Mr. Mancini-Griffoli was a senior economist in the Research and Monetary Policy Division of the Swiss National Bank, where he advised the board on quarterly monetary policy decisions. Mr. Mancini-Griffoli spent prior years in the private sector, at Goldman Sachs, the Boston Consulting Group, and technology startups in the Silicon Valley. Mr. Mancini-Griffoli holds a PhD from the Graduate Institute in Geneva.



Erlend W. Nier is Deputy Chief of the Monetary and Macprudential Policies Division within the IMF's Monetary and Capital Market Department. In this position, Erlend Nier is covering policy issues arising in the areas of macroprudential policy and financial stability, monetary policy and foreign exchange frameworks, and the management of cross-border capital flows.

Erlend has been leading the Fund's policy development in the area of macroprudential policy and is the main author of several IMF policy papers on the topic, including the Fund's Key Aspects of Macroprudential Policy, the subsequent Guidance Notes to Staff, as well as the most recent IMF-FSB-BIS Elements of Effective Macroprudential Policy. His country work has spanned FSAPs to Korea and Turkey, Article IV consultations with the euro area and Poland, as well as technical assistance missions on macroprudential policy.

Prior to joining the IMF in 2008, Erlend was Research Manager with the Bank of England's Financial Stability Directorate. Erlend Nier holds a PhD in Economics from the London School of Economics.



Markus Rodlauer is Deputy Director of the IMF's Asia and Pacific Department (APD). Among other leadership responsibilities, he oversees the Fund's China team, which has 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 Resident Representative to Poland and the Philippines. Dr. 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.



Daranee Saeju is currently the Senior Director of Financial Institutions Strategy Department at the Bank of Thailand. She oversees financial stability assessment and macro-prudential policies formulation, and directs the implementation of the Banks' Financial Sector Master Plan which includes financial development roadmap and liberalization plan, as well as ASEAN banking integration. Ms. Saeju has over 17 years of experience as a central banker working both as an economist on the policy front and a practitioner on the implementation front. She has worked extensively on monetary policy implementation and operations, foreign exchange intervention policy, capital accounts policy and exchange control regulation, markets developments, central bank acts and balance sheet issues. She also worked in the Regulatory Policy Department recently where her main responsibilities covered the formulation of prudential policy and regulations for banks in the areas of credit, liquidity, market and operational and risks, as well as Basel III capital implementation and other regulatory reforms. She was the Bank of Thailand's representative on several of the Basel Committee's Working Groups. During 2009-2011, she was seconded to the Monetary and Capital Markets Department at the IMF in her role as an expert on monetary and foreign exchange operations and market developments to participate in technical assistance and Article IV consultation missions.

Ms. Saeju obtained her Ph.D. in Economics from the University of Rochester in the United States, and a B.Sc. in Economics from the London School of Economics and Political Science in England.



Ratna Sahay is Deputy Director in the Monetary and Capital Markets Department (MCM) at the International Monetary Fund (IMF). She joined the IMF in 1989 and since then has worked in eight departments. During her tenure, she has led surveillance and program missions to several emerging market and low income countries, headed analytical projects and policy papers, and represented the Fund in various fora. She has also served as Advisor to Stanley Fischer (First Deputy Managing Director) and Advisor to Michael Mussa and Kenneth Rogoff (both Economic Counselors of the IMF).

Prior to joining the Fund, she taught at Delhi University, Columbia University, and New York University and holds a Ph.D. in Economics from New York University, New York.

She has published widely on financial market spillovers, financial crises, inflation, economic growth, fiscal policy, debt sustainability, transition economies, unconventional monetary policy and global spillovers, financial deepening, and financial inclusion.



Alfred Schipke is the IMF Senior Resident Representative for China. In this capacity he provides policy advice, leads the analytical work of the office, engages with academia, think tanks, and the media, and coordinates the IMF's training and technical assistance in 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 and the Western Hemisphere Department in charge of the Latin Caribbean and Eastern Caribbean Currency Union (ECCU) divisions. 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. His research focuses on economic integration and the linkages between macroeconomics and finance.



Mark Sobel is currently the U.S. representative in the IMF with responsibilities for helping formulate and articulate U.S. views on key global and country economic developments, IMF program countries, and general IMF economic and financial policies. From 2000 on, he served as Deputy Assistant Secretary for International Monetary and Financial Policy in the U.S. Treasury Department. In that capacity, Mr. Sobel led Treasury staff efforts in advising senior Treasury officials on a range of issues: coordinating the Department's participation in the G-7/20, including often serving as the U.S. representative and negotiator at these international gatherings, overseeing U.S. positions on financial and institutional policies in the IMF, providing analyses on global economic and U.S. balance of payments developments in addition to overseeing preparation of the Treasury Foreign Exchange report, managing the Exchange Stabilization Fund, developing foreign exchange policy and formulating international banking and securities market policies. In this latter regard, he oversaw technical level discussions between the US and the European Commission and European Supervisory Authorities in the context of the Financial Market and Regulatory Dialogue, which he created in association with the European Commission officials, and led the Department's preparations for the Financial Stability Board. He also chaired an international sovereign debt expert roundtable, which led to the creation of enhanced collective action clauses in sovereign bonds. He served as acting head of International Affairs during the 2001 and 2009 transitions, including through the G-20 April 2009 London Economic Summit.

Mr. Sobel has worked at the Department for over three decades. Prior to becoming Deputy Assistant Secretary in 2000, Mr. Sobel served, inter alia, in the U.S. office at the IMF, and was Director of the Department's International Monetary Policy and Transition Economy offices.



Michael Spencer is the Global Head of Economics Research and the Chief Economist and Head of Research in Asia Pacific of Deutsche Bank. He manages all of the bank's economists world-wide and oversees the bank's equities, fixed income, credit, foreign exchange and economics research throughout the Asia Pacific region.

Michael is a member of the Global Research Executive Council and of the Global Markets Asia Pacific Executive Council.

Prior to joining Deutsche Bank in 1997, Michael was Senior Economist in the Research Department of the International Monetary Fund, which pioneered the IMF's surveillance of capital markets and financial system soundness in all its member countries.

Michael has a Ph. D. and BA (Hons) from Queen's University, Canada and an MA from the University of Toronto and has published numerous articles on different aspects of financial economics in both academic and policy fora.



Lawrence H. Summers is the Charles W. Eliot University Professor and President Emeritus of Harvard University. During the past two decades, he has served in a series of senior policy positions in Washington, D.C., including the 71st Secretary of the Treasury for President Clinton, Director of the National Economic Council for President Obama and Vice President of Development Economics and Chief Economist of the World Bank.

He received a bachelor of science degree from the Massachusetts Institute of Technology in 1975 and was awarded a Ph.D. from Harvard in 1982. In 1983, he became one of the youngest individuals in recent history to be named as a tenured member of the Harvard University faculty. In 1987, Mr. Summers became the first social scientist ever to receive the annual Alan T. Waterman Award of the National Science Foundation (NSF), and in 1993 he was awarded the John Bates Clark

Medal, given every two years to the outstanding American economist under the age of 40.

He is currently the Charles W. Eliot University Professor at Harvard University and the Weil Director of the Mossavar-Rahmani Center for Business & Government at Harvard's Kennedy School. He and his wife Elisa New, a professor of English at Harvard, reside in Brookline with their six children.



Alan M. Taylor is a Professor of Economics and Finance at the University of California, Davis.

He read mathematics at King's College, Cambridge, and received his Ph.D. in economics from Harvard University. His research spans several areas including international economics, finance, growth, development, and economic history.

He is a research associate of the National Bureau of Economic Research in Cambridge, Massachusetts, and a research fellow of the Center for Economic Policy Research in London. In 2004 he was awarded a John Simon Guggenheim Memorial Fellowship. In 2009–10 he was named a Houblon-Norman/George Fellow at the Bank of England.

His publications include numerous articles in economics journals, essays on policy and commentary, edited volumes and the books *Global Capital Markets: Integration, Crisis and Growth* published by Cambridge University Press (with Maurice Obstfeld), and *Straining at the Anchor: The Argentine Currency Board and the Search for Macroeconomic Stability, 1880–1935* published by The University of Chicago Press (with Gerardo della Paolera).

He has been a visitor/consultant/speaker at many public sector organizations including the IMF, World Bank, IDB, ECB, BIS, various Federal Reserve Banks, and the central banks of the UK, France, Netherlands, Italy, Austria, Korea, Croatia, and Argentina. In the private sector he has served as a Senior Advisor at Morgan Stanley and has been a visitor/consultant/speaker at various asset managers.



Rodrigo Vergara is senior research economist at the Center of Public Studies. He was Governor of the Central Bank of Chile between 2011 and 2016, and was appointed member of the Board of the Central Bank of Chile in December 2009. Mr. Vergara graduated in economics from Universidad Católica de Chile in 1985. He holds a Ph.D. in economics from Harvard University (1991).

Between 1985 and 1995 he worked at the Central Bank of Chile, rising to the position of Chief Economist in 1992. In 1995 he joined the Center for Public Studies—an independent Chilean think tank—where he was coordinator of the Macroeconomics Department. From 2003 until his appointment to the Bank’s Board, Mr. Vergara was full professor at the Economics Department of Universidad Católica. He was also an economic consultant and member of the board of several companies.

Mr. Vergara has been economic advisor to the central banks and governments of several countries in Latin America, Eastern Europe, Asia and Africa, and has been an external consultant for the World Bank, the International Monetary Fund, the Inter-American Development Bank and the United Nations. He has authored numerous articles published in specialized professional journals and has edited several books.



Alejandro Werner assumed his current position as director of the Western Hemisphere Department of the International Monetary Fund in January 2013. A Mexican citizen, Mr. Werner has had distinguished careers in the public and private sectors as well as in academia and has published widely. He served as undersecretary of finance and public credit of Mexico from 2006 to 2010 and head of corporate and investment banking at BBVA-Bancomer from 2011 to 2012. Previously, he was director of economic studies at the Bank of Mexico and Professor at Instituto Tecnológico Autónomo de México (ITAM), Instituto de Empresa, and Yale University. Mr. Werner was named Young Global

Leader by the World Economic Forum in 2007. He received his doctoral degree from the Massachusetts Institute of Technology in 1994.

PRESENTATIONS

Towards less FX intervention

减少外汇干预

MA Jun (马骏)
Chief Economist
Research Bureau
The People's Bank of China
April 2017

1

Content (提要)

1. Excessive FX intervention may worsen exchange rate expectations (对外汇干预过度可能导致汇率预期恶化)
2. Capital control is less effective than it appears (资本管制的效果可能比想象的差)
3. Growing “social acceptance” for exchange rate volatility allows reduction in FX intervention (社会对汇率波动的接受程度已经逐步提高, 为减少干预提供了空间)
4. Conclusion: boost inflows, reduce FX intervention, increase ER flexibility (结论: 扩流入、减少外汇干预、增加汇率弹性)

2

Intervention may not affect ER expectations in a desirable way (外汇干预的效果可能比预期的差)

1. Miyajima and Motoo (2013, BIS paper No 73):

$$d\log(s_{i,t}^f) = a_i + b * I_{i,t-1} + c * (r_{i,t} - r_{i,t}^*) + d * Z_{i,t} + v_{i,t}$$

If b is positive, and statistically significant, it indicates a positive impact on FX intervention (I) on exchange rate expectation (i.e., FX purchase improves expectation of appreciation).

3

Empirical results: Intervention may affect ER expectations in a wrong way (实证结果：干预可能使汇率预期恶化)

Fixed-effect panel model of impact of intervention on exchange rate forecasts¹

Table 1

Period	June 2004–August 2012			
	1	2	3	4
Intervention	-0.027* (2.556)	-0.026 (2.320)	-0.029 (2.769)	-0.029* (2.763)
Interest rate diff (3m)		-0.003 (0.170)		0.007 (0.434)
Yield curve (12m less 3m)		0.050 (1.877)		-0.001 (0.022)
Change in EMBI spread			0.013** (4.089)	0.013** (4.015)
Adjusted R-squared	0.017	0.013	0.122	0.118

¹ Dependent variable is monthly difference of the log of three-month exchange rate forecasts. *, ** and *** signify statistical significance at the 10%, 5% and 1% levels, respectively. t values in parentheses are based on standard errors using the Huber-White sandwich estimator (Huber (1967), White (1980)).

Sources: BIS staff calculations.

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Our empirical model with China data delivers similar results (我们用中国数据的回归得出类似结论)

2010.01-2017.03				
	1	2	3	4
外汇干预	-0.19** (-3.37)	-0.108** (-2.01)	-0.182*** (-3.22)	-0.10* (-1.80)
利差		-0.16 (-1.82)		-0.18 (-2.0)
US INDEX		0.38 (5.50)		0.36 (5.41)
股票收益率			-0.022 (-1.61)	-0.02 (-1.63)
Adj R-squared	0.135	0.396	0.161	0.418

注：被解释变量为3月期NDF（无本金交割远期外汇交易）的月度变化；外汇干预为央行外汇占款变化；利差是指我国银行间1天回购加权利率与美国联邦基金隔夜利率之差。US INDEX为美元名义有效汇率指数变化。*，**，***分别代表变量在10%，5%和1%的置信水平下具有统计显著性。括号内为参数估计的t统计量。

Source: Ma Jun and Jia Yandong (2017)

5

Reason: intervention leads to erosion in FX reserves, which could worsen ER expectation (原因：干预导致储备下降，从而恶化预期)

This relationship may be non-linear: when reserve level gets closer to a psychological threshold, the change in reserves has a bigger impact on expectations. (储备变化与预期变化的关系可能是非线性的)

6

Capital control is less effective than it appears even in short term (资本管制的效果比感觉的差)

When capital control is imposed on currency conversion and cross-border FX flows, the cross-border RMB flows could increase as a way to by-pass the control.

Therefore, capital control would be less effective than it appears even in the short term. (控制了换汇和外汇流出, 可能导致更多的人民币流出到境外换汇)

7

Capital control tends to worsen ER expectation, thereby worsening BOP over longer term (对未来资本管制可能加强的预期会减少资本流入)

In my roadshow meetings on “Opening of the China Bond Market” with nearly 1800 global investors, in at least 50% of these meetings I was asked the question of whether China would impose stricter capital controls.

Investor calculation of expected return = [10%] probability of capital control * 100% loss in principal + 1% return after FX hedging = [-9%] return

Only if the perceived probability of capital control is less than 1%, would investors be willing to consider investing in China.

8

Capital control on outflows can undermine a country's credibility for a long time, and it is very difficult to reverse（对资本流出的管制可能导致对国家信誉的长期损害）

Unlike capital controls on inflow, which only restrict investor access to a market before they begin to invest, sudden capital controls on outflows are considered as a renege on previous promise, as funds are already in the country. Its damage to a country's reputation is much more serious than ex ante controls on inflows.

9

Growing social/market acceptance for FX volatility, paving the way for reduced intervention（社会对汇率双向波动接受度已明显提高，已为央行减少干预提供了空间）

Two years ago, a 0.5% move in CNY/USD rate makes headlines. It is not longer the case.

The annualized daily volatility of CNY/USD is now close to 5%, up significantly from only 2% about two years ago.

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Suggestion #1: Devoting more resources to removing barriers to inflows (i.e. CIBM market) than to controlling outflows (建议1: 将外汇工作重点从限流出转向扩流入, 加快债券市场开放步伐)

Once China bonds are included in major global bond indices, there would be USD700bn passive inflows to China in the following five years. Need to speed up the reform to improve market access, including streamlining the CIBM account opening process, launching the bond connect program, permitting foreign investors to use ISDA and to access repo, etc.

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Suggestion #2: At policy making level, better understanding the increased social/market acceptance for two-way ER volatility (建议2: 充分理解正在强化的社会/市场对汇率双向波动的接受度)

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Suggestion #3: Reducing FX intervention by following the principle (建议3: 遵循“只抑制短期过度波动”的干预原则, 减少干预)

principle for intervention should be to smooth out excessive short term volatility, rather than resisting long term trends. I.e., avoiding “too much” intervention for “too long”.

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Suggestion #4: More aggressively addressing macro/structural vulnerabilities, such as leverage, SOE, property bubbles, etc., as the on-going cyclical recovery provides a rare opportunity (建议4: 抓住目前经济周期性复苏的难得机遇, 着力解决包括杠杆率、僵尸企业、地产泡沫等宏观脆弱性问题。这些问题是导致长期汇率预期恶化的基本面因素)

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International Monetary Fund
China, April 2017

Exchange Rate Frameworks: Foreign Exchange Intervention in Latin America

Alejandro Werner
Director
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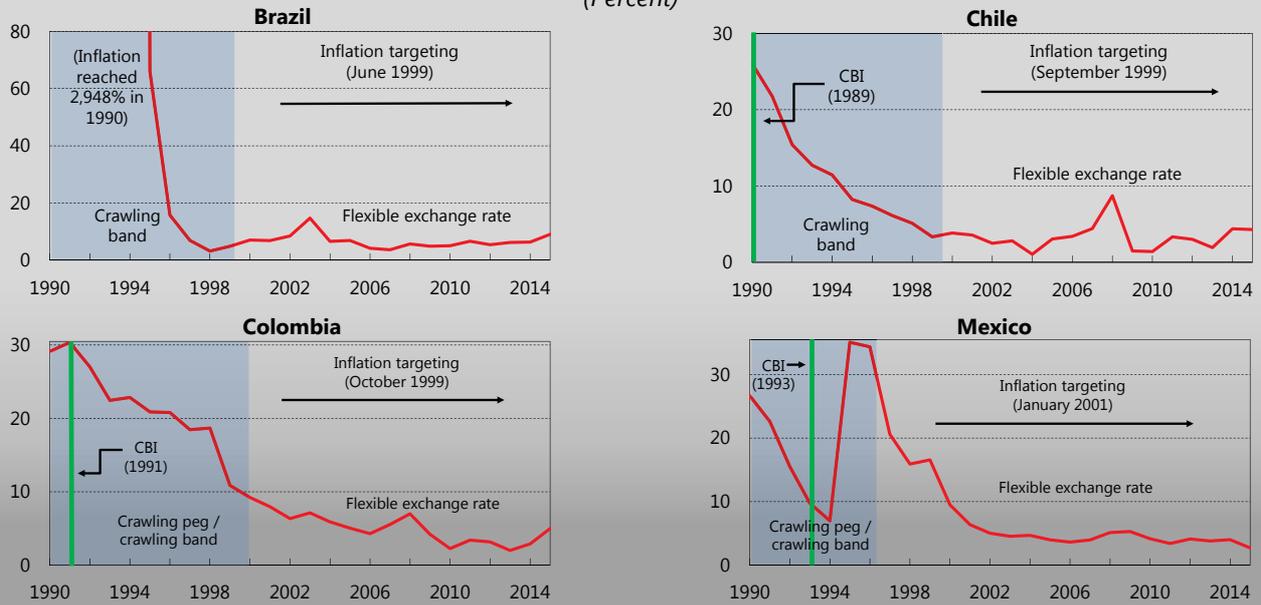


Motivation

- In the early 1990s Latin America started to transition to exchange rate flexibility and inflation targeting within a context of open capital accounts
- This helped lower inflation, anchor expectations, and lower exchange rate pass-through as central banks gained credibility
- On the back of capital inflows, Latin American countries accumulated international reserves
- Given the openness of their capital accounts, when necessary, central banks intervene in the foreign exchange market

Inflation targeting and exchange rate flexibility in Latin America

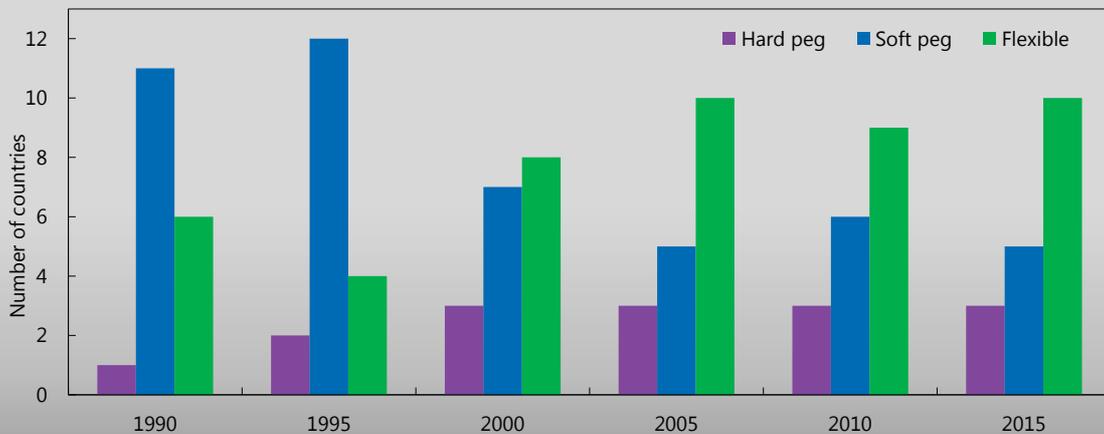
Inflation, Central Bank Independence, Exchange Rate Regimes, and Inflation Targeting
(Percent)



Sources: IMF, Annual Report on Exchange Arrangements and Exchange Restrictions; and IMF staff calculations.

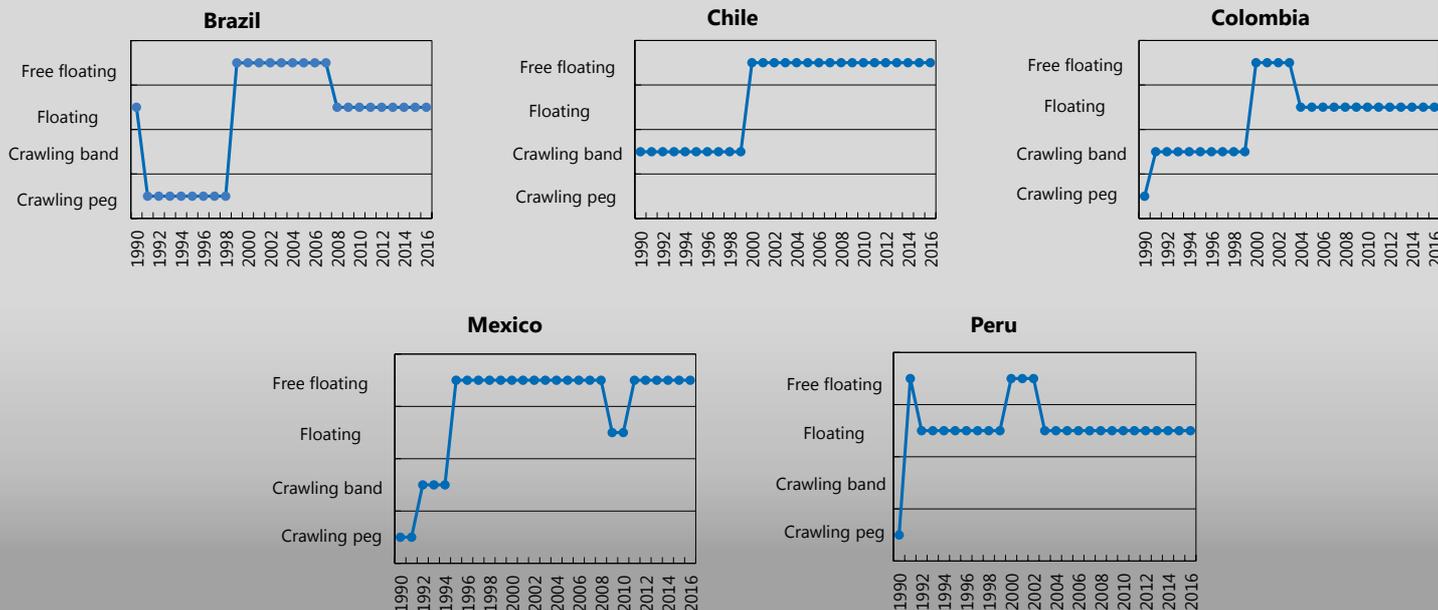
Latin America increased its exchange rate flexibility...

Exchange rate regimes in Latin America
(Number of countries by regime)



Sources: IMF, Annual Report on Exchange Arrangements and Exchange Restrictions; and IMF staff calculations.

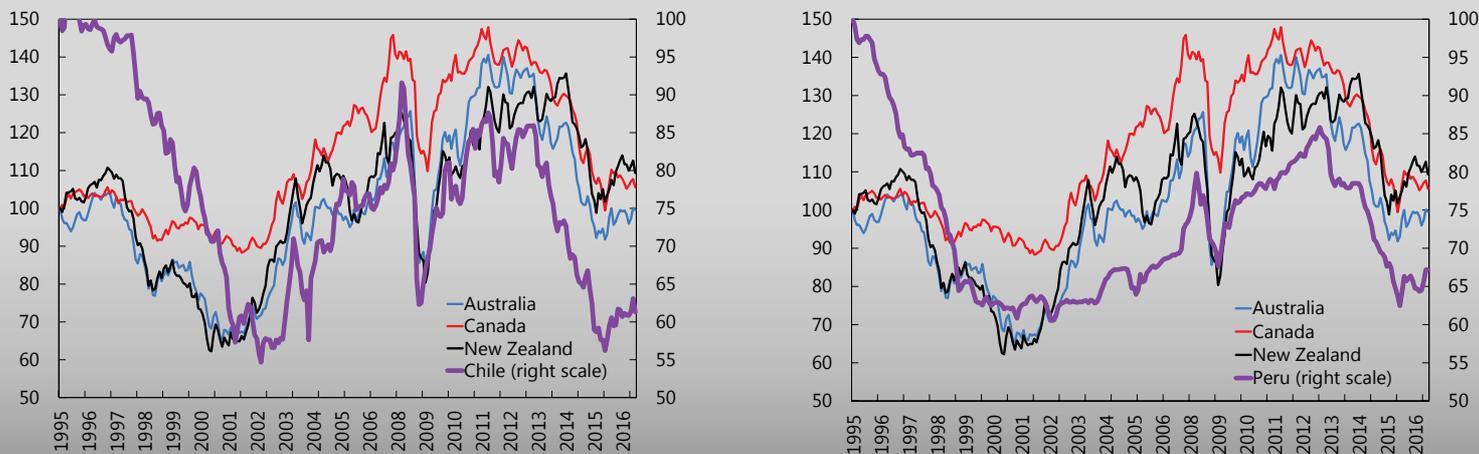
Latin America increased its exchange rate flexibility...



Sources: IMF, Annual Report on Exchange Arrangements and Exchange Restrictions; and IMF staff calculations.

... allowed exchange rates to float...

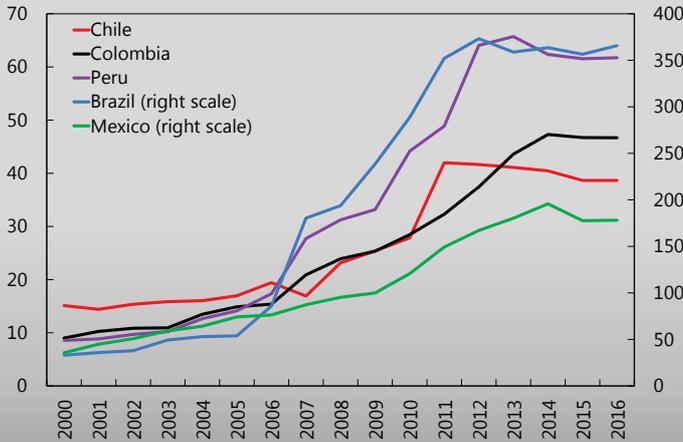
Exchange Rates in Latin America
(U.S. dollar per national currency, period average, Index: January 1995 = 100)



Sources: IMF, Information Notice System database; and IMF staff calculations.

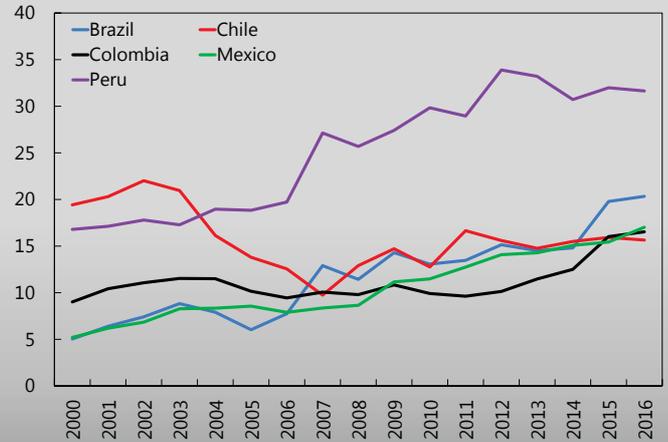
...while accumulating international reserves

Total Reserves Assets
(Billions of U.S. dollars)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.

Total Reserves Assets
(Percent of GDP)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.

FXI: Objectives

- Achieve adequate level of international reserves
- Avoid excessive appreciation (competitiveness) and depreciation (price stability)
- Minimize excessive exchange rate volatility (financial stability and improve FX market functioning)
- Minimize large and abrupt depreciation (financial stability; balance sheet effects and FX mismatches; avoid multiple equilibria/liquidity crunch)
- Smooth transitions to permanent shocks

FX Intervention in Latin America

- When coping with inflows and reserve accumulation:
 - Rules-based approach (Colombia and Mexico)
 - Ad-hoc approach
- When coping with outflows/depreciation pressures, largest economies in the region tend to rely on pre-announced rules-based approach for foreign exchange sales
- Announcing the intervention is in principle preferable from a signaling perspective
- Transparent rules can alleviate fears FXI send mixed signals about commitment to inflation target/primacy of inflation objective

9

FXI (sales): A taxonomy

Taxonomy dimensions of FXI

- Rules vs. discretion
- Spot vs. swap/derivatives
- Sterilized vs. unsterilized
- Transparent vs. secretive

10

FXI: Taxonomy in Latin America

Foreign Exchange Intervention Frameworks and Main Instruments and Gross Sales and Purchases

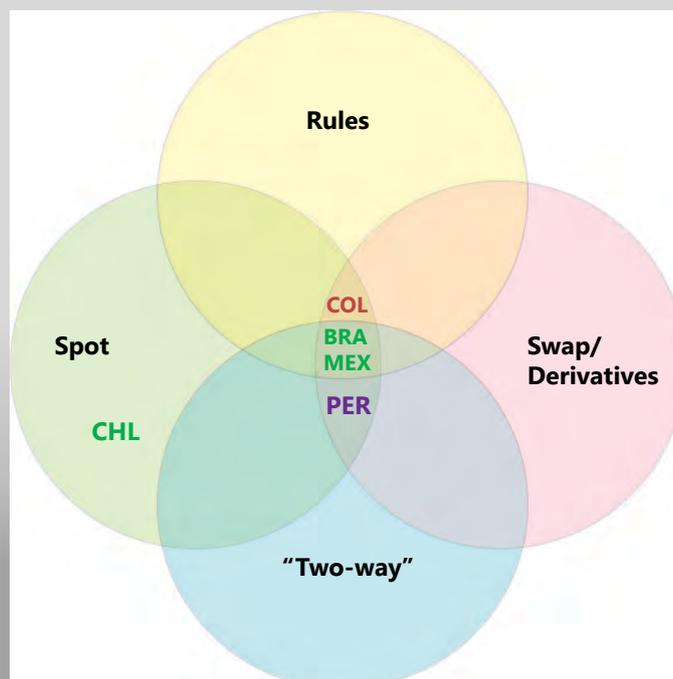
1. Intervention Frameworks												
Country	Rules vs. Discretion					Spot vs. Swaps/Derivatives						
	Rules		Discretion			Spot			Swaps/Derivative			
Brazil	√		√			√					√	
Chile			√			√						
Colombi	√		√			√					√	
Mexico	√		√			√					√	
Peru			√			√					√	

2. Gross Sales and Purchases (Billions of U.S. dollars)												
	Gross Foreign Exchange Sales						Gross Foreign Exchange Purchases					
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015
Brazil	0	6.7	26.2	130.4	153.3	122.6	42.0	66.4	30.4	5.5	16.8	8.3
Chile	0	0	0	0	0	0	0	12.0	0	0	0	0
Colombia	0	0	0	0	0	0	3.1	3.7	4.8	6.8	4.1	0
Mexico	0	0	0.7	0	0.2	24.5	20.6	23.2	16.9	17.3	14.3	2.8
Peru	0.04	10.3	2.9	10.5	16.9	22.2	9.2	10.3	13.0	6.3	6.3	8.7

Sources: National authorities.
Note: Gross sales and purchases include spot transactions and swap contracts.

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FXI: A visual taxonomy in Latin America



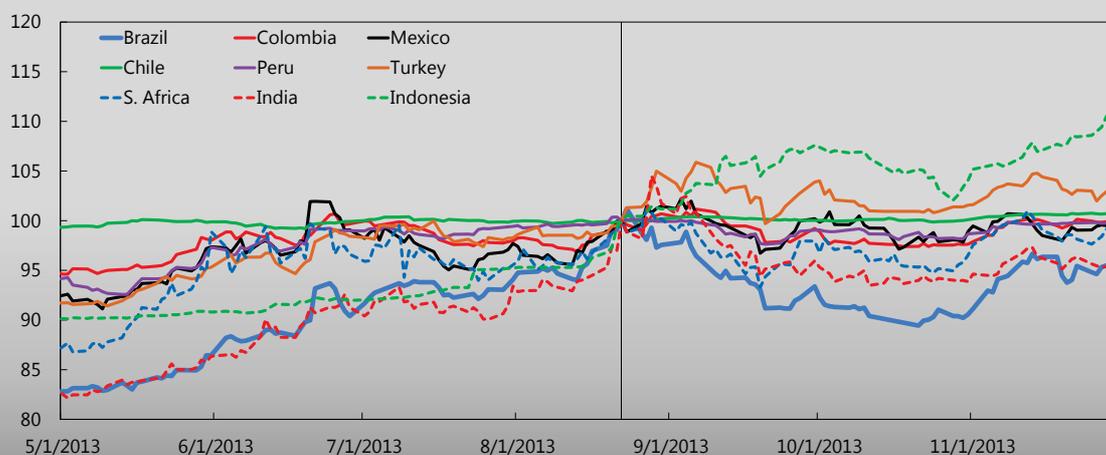
Examples of recent rules-based FXI in Latin America (sales)

- Brazil's announcement of daily currency swaps:
 - August 2013 announcement of daily sale of US\$ 500 million swaps plus US\$ 1 billion spot sales on Fridays until end-December 2013 (later extended)
- Mexico's FX sales (unconditional or based on price triggers):
 - December 2014 announcement of US\$200 million spot sales when one-day depreciation exceeded 1.5 percent (implemented as an FX auction with minimum price)
 - July 2015 announcement of daily auctions of US\$200 million (until end-September 2015, later extended); Feb 2017 announcement of up to \$20 billion in swaps
- Colombia's FX sales based on price triggers
 - October 2015 announcement of US\$500 million sale triggered by 7 percent depreciation in the 20-day moving average of the exchange rate (auction of call options)

13

Brazilian Real response to announcement

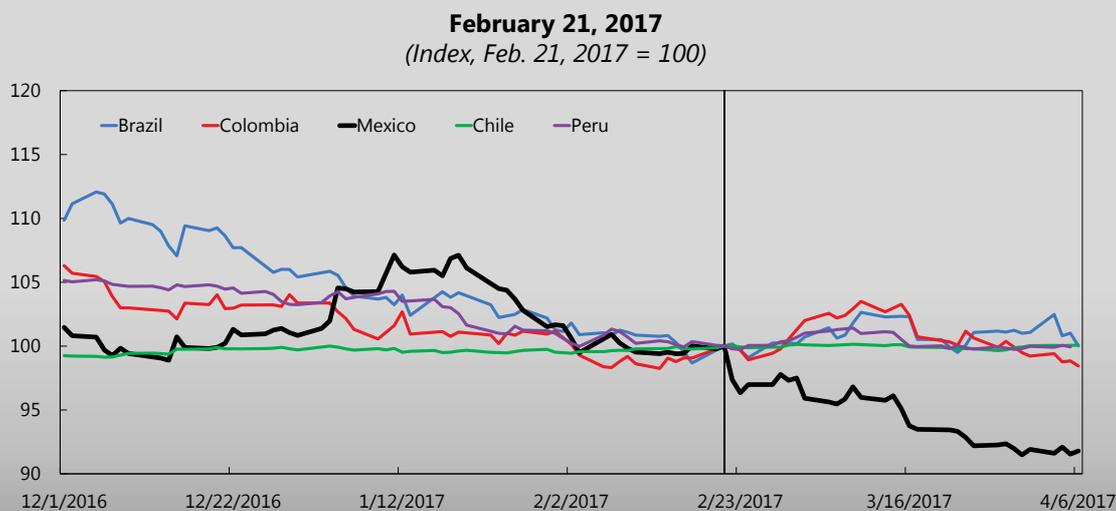
August 22, 2013
(Index, Aug. 22, 2013 = 100)



Sources: IMF staff calculations.

14

Mexican Peso response to recent announcement



15

Takeaways

- Intervention seems to have traction in Latin America
- Studies typically find some effect
- Significant market response in the aftermath of announcement of intervention rules
- Hard to estimate whether effect permanent or transitory
- But some episodes seemed to have fairly persistent impact

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A number of questions remain

- Conventional wisdom sees role under “disorderly” market conditions. But what role should it play over global financial cycle?
- Countries steadily accumulated reserves during capital flows “boom”
 - Should they take a symmetric view and steadily deploy those reserves as capital flows decline/reverse?
 - Or should they hold on to reserves, as less benign global conditions heighten precautionary motives?
- Can FX interventions be communicated to and internalized by the private sector, to mitigate over-reactions to FXI?



International Monetary Fund
China, April 2017

Exchange Rate Frameworks: Foreign Exchange Intervention in Latin America

Alejandro Werner
Director
Western Hemisphere Department



FX-intervention: Summary of effectiveness

Study	Impact
Cross country	
Adler and Tovar (2014)	0.1 of GDP foreign exchange intervention slows the pace of domestic currency appreciation by 0.3 percent.
Adler, Blanchard, and Carvalho (2015)	0.25 percent of GDP foreign exchange intervention reduces appreciation on impact by 1.5 percent.
Adler, Lisack, and Mano (2015)	1 percentage point of GDP foreign exchange intervention depreciates the nominal and real exchange rates by between 1.7–2.0 percent, and between 1.4–1.7 percent, respectively.
Daude, Levy-Yeyati, and Nagengast (2014)	1 percent increase in foreign exchange intervention weakens the domestic currency by 0.18 percent.
Brazil	
Barroso (2014)	US\$ 1 billion buy intervention => 0.45–1.18 percent depreciation. US\$ 1 billion selling intervention => 0.46–0.66 percent appreciation. Average: 0.5 percent change in domestic currency valuation
Chamon, Garcia, and Sousa (2015)	Appreciation in excess of 10 percent following the 2013 Swap Program Announcement
Kohlscheen and Andrade (2014)	US\$1 billion FX sale appreciates exchange rate by 0.29percent
Saborowski (2016)	US\$ 1 billion intervention moves exchange rate by 1 percent
Peru	
Tahu (2014)	Foreign exchange sales effective in reducing volatility and depreciation. foreign exchange purchases not effective.
Mexico	
Domac and Mendoza (2004)	Foreign exchange sale of US\$ 100 million strengthens the peso by 0.08 percent.
Chamon (2015)	Appreciation of about 2½ percent following 2015 foreign exchange intervention announcements.
Colombia	
Kamil (2008)	Foreign exchange purchase of US\$ 130 million weakens the peso by 1 percent during monetary policy easing cycle.

A Stability-Oriented Exchange Rate Policy for China

Joseph E. Gagnon
April 28, 2017

What Should Be Stabilized?

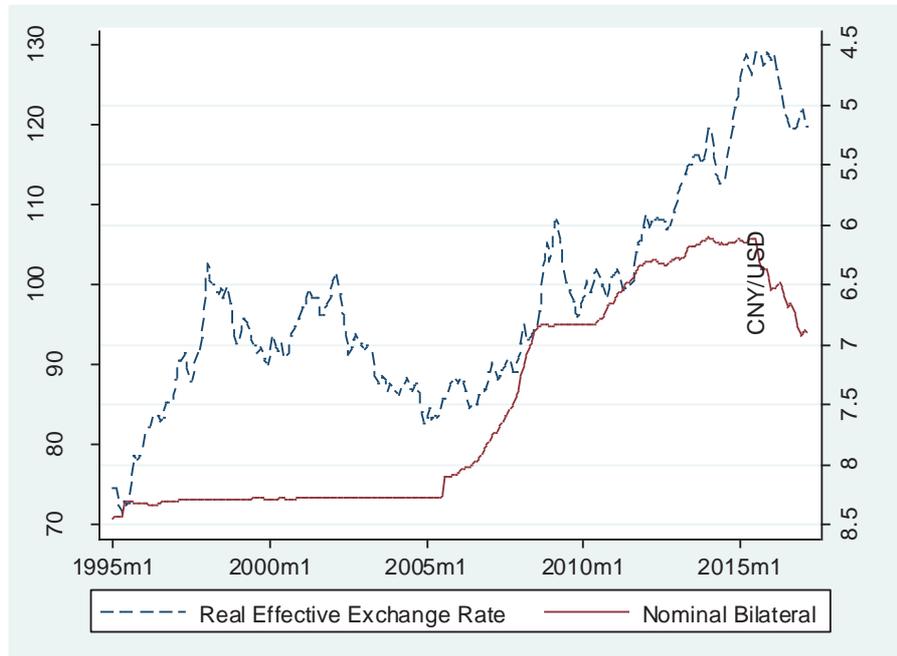


- China long focused on a stable yuan/dollar rate.
- Now it is focusing more on a trade-weighted exchange rate.
- But trade (current account) imbalances are more important than swings in exchange rates.
- Foreign exchange intervention should target a current account balance near zero.
- Monetary and fiscal policy are free to stabilize inflation and employment.



Chinese Exchange Rates: Trend Appreciation

January 1995 to March 2017



Source: Haver Analytics (JP Morgan real effective rate).

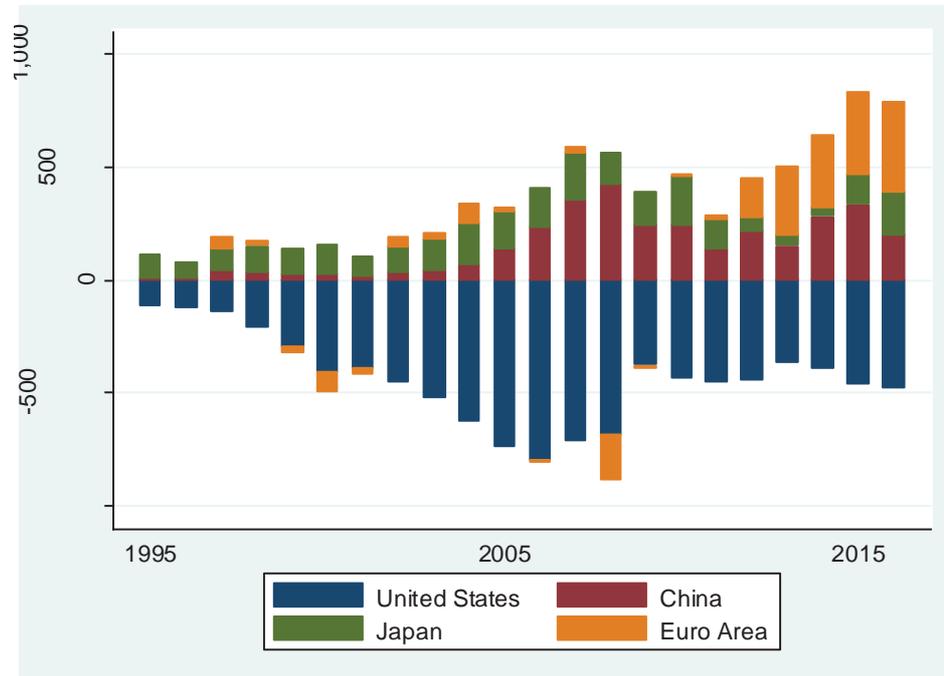


Imbalances Widening Again

- Current account imbalances of the major economies peaked in 2006-08.
- Imbalances narrowed in 2009 and remained moderate (but not small) for 5 years.
- Imbalances are now widening again, but China is not the main driver.
 - Euro area surplus and US deficit dominate.



Current Account Balances of Major Economies, 1995-2016



Sources: IMF World Economic Outlook database and Haver Analytics for 2016 observation.



Imbalances Matter

- Imbalances are more important than exchange rate volatility.
- Unsustainable borrowing and lending lead to painful adjustments.
- Protectionist threat driven more by imbalances than exchange rates.
- Foreign exchange intervention has powerful effect on imbalances, with a modest lag.
 - Gagnon et al. (2017).



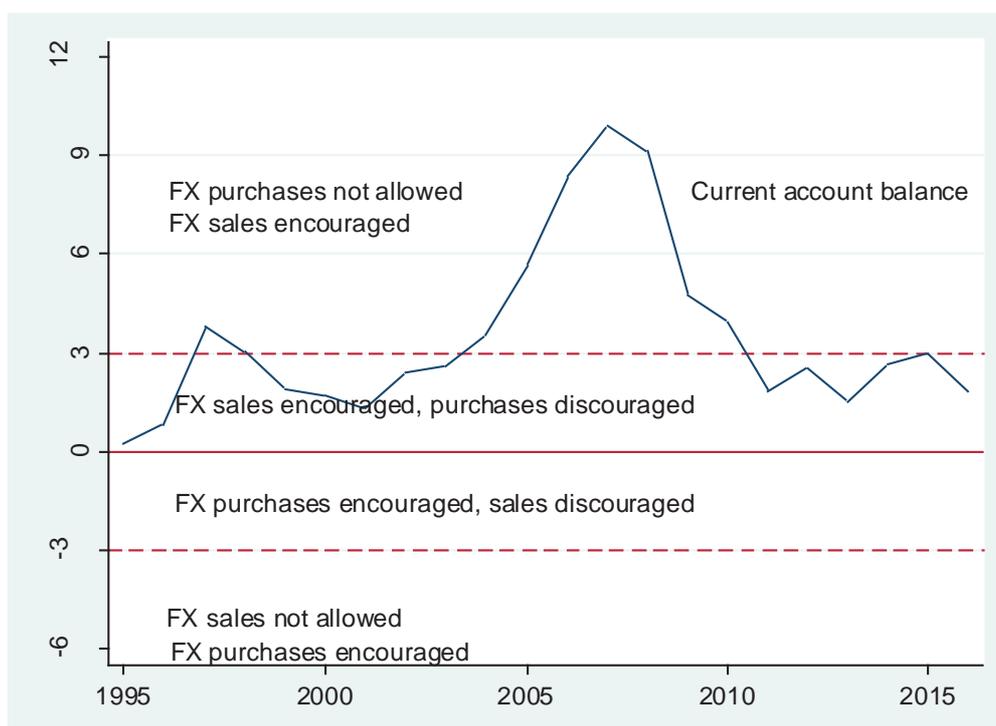
A Reference Rate Strategy

Williamson (2007)

- Target foreign exchange intervention to the projected current account (1-2 years ahead).
- When CA above 3 percent of GDP, no FX purchases.
- When CA below -3 percent of GDP, no FX sales.
- FX sales encouraged when $CA > 0$ and purchases encouraged when $CA < 0$.



A Reference Rate Strategy for China



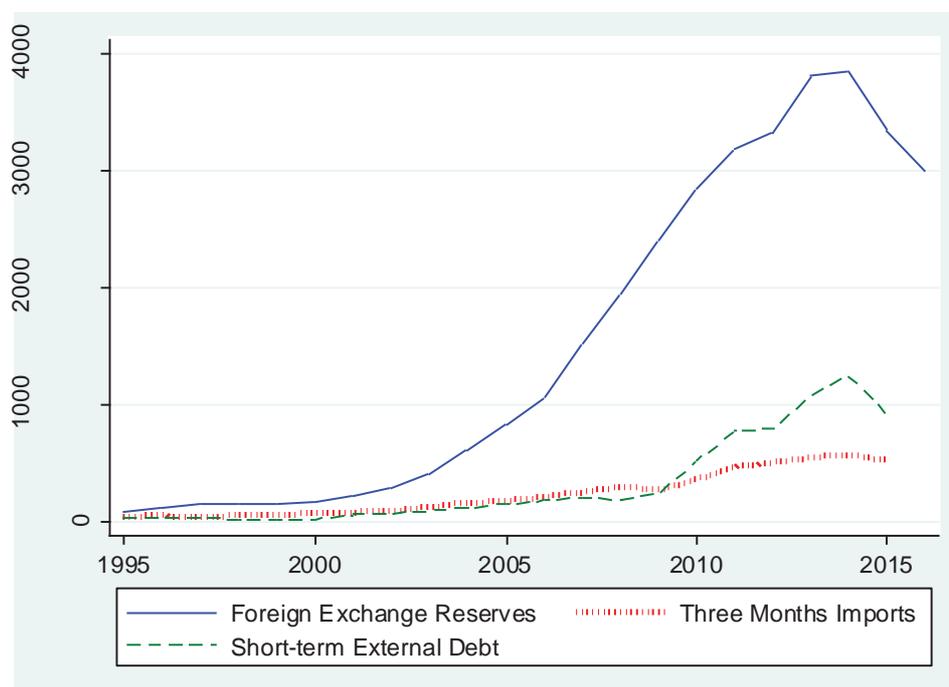


Minimum Adequate Reserves for China

- China's foreign exchange reserves still greatly exceed standard benchmarks of reserve adequacy.
- IMF's new reserve metric gives inappropriately high weight to money supply in a floating exchange rate regime.
- \$1 trillion is a reasonable minimum level of Chinese foreign exchange reserves.



China: More than Adequate Reserves



Sources: IMF Balance of Payments database and World Bank External Debt database.



Policy Prescription

- Resist depreciation of REER:
 - As long as $CA > 0$ and reserves $> \$1$ trillion.
 - As reserves approach $\$1$ trillion, allow some depreciation.
- Do not resist REER appreciation:
 - Unless $CA < 0$ or reserves $< \$1$ trillion.
 - Long-term REER trend is still upward.
- Monetary and fiscal policy focus domestically.
- Capital account liberalization should wait on financial reforms.
 - Reference rate strategy can work even with fully open capital markets.

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A Key Macro Risk

- Progress on domestic rebalancing is too slow.
- Saving and investment are too high, raising financial risks.
- Expanding social safety net (including hukou reform) is a powerful support to consumption.
 - IMF (2012) and Gagnon (2013) show that tax-financed health and education spending raise consumption by a lot without fiscal deficits.
 - Such policies are a win-win for China and the world.

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Conclusion

- China values stability.
 - Stabilizing CA imbalances is more important than stabilizing the exchange rate.
 - Keep monetary and fiscal policy free to stabilize inflation and employment.
- A reference rate strategy uses FX intervention to lean against incipient CA imbalances.
 - Allow greater exchange rate flexibility over time.
 - No hurry on capital account liberalization but no need to reverse liberalization for now.

13



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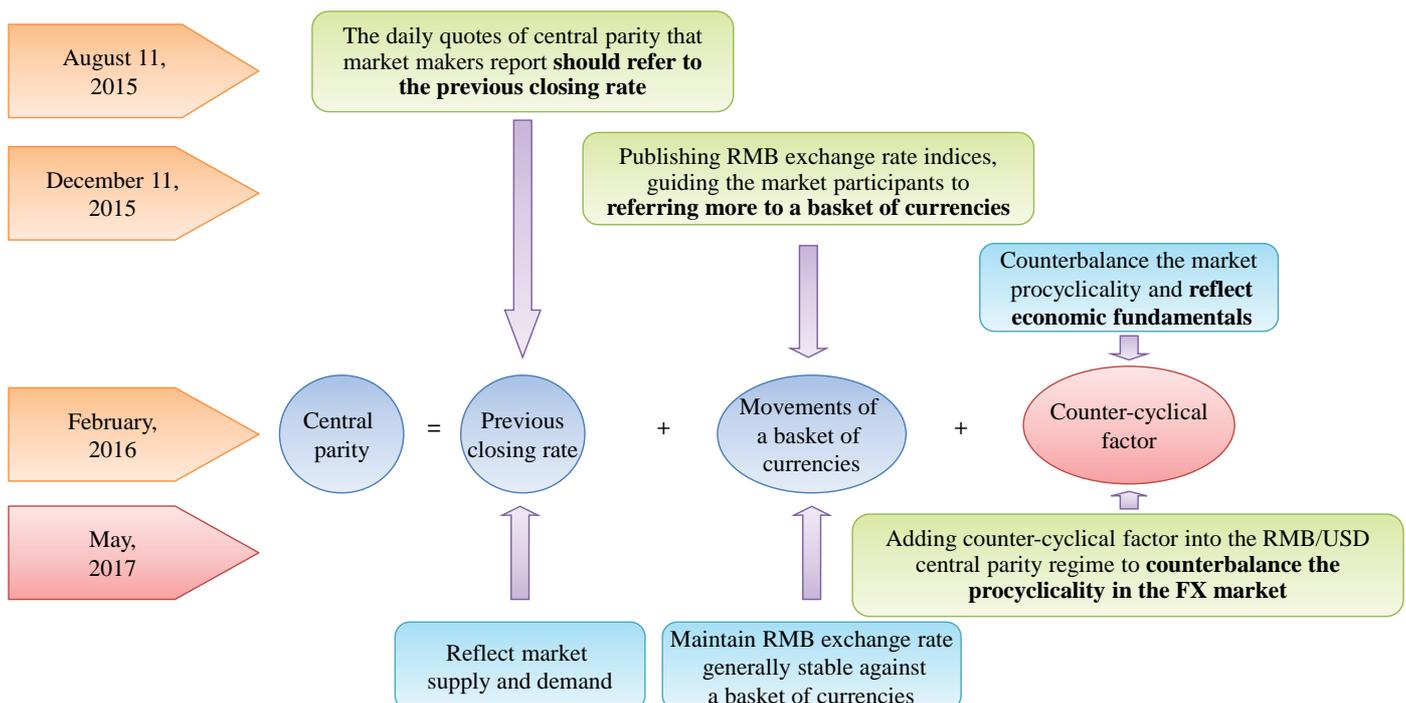
IMF (International Monetary Fund). 2012. External Balance Assessment (EBA): Technical Background of the Pilot Methodology (August 3). Washington.

Williamson, John. 2007. *Reference Rates and the International Monetary System*. Policy Analysis in International Economics 82. Washington: Peterson Institute for International Economics.

RMB Exchange Rate and Supporting Policy Framework

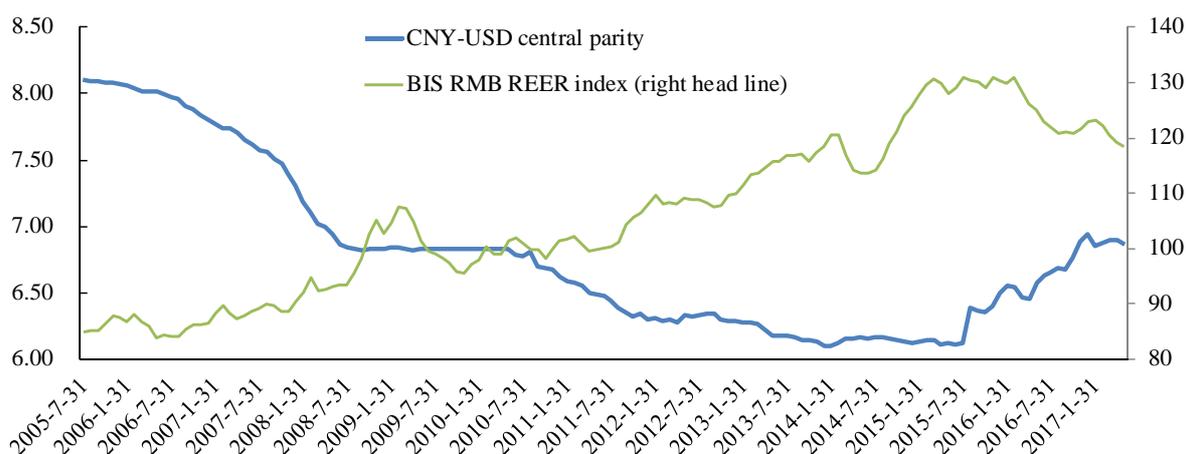
Jun. 26, 2017

Improving Market-based RMB Exchange Rate Regime: Recent Update



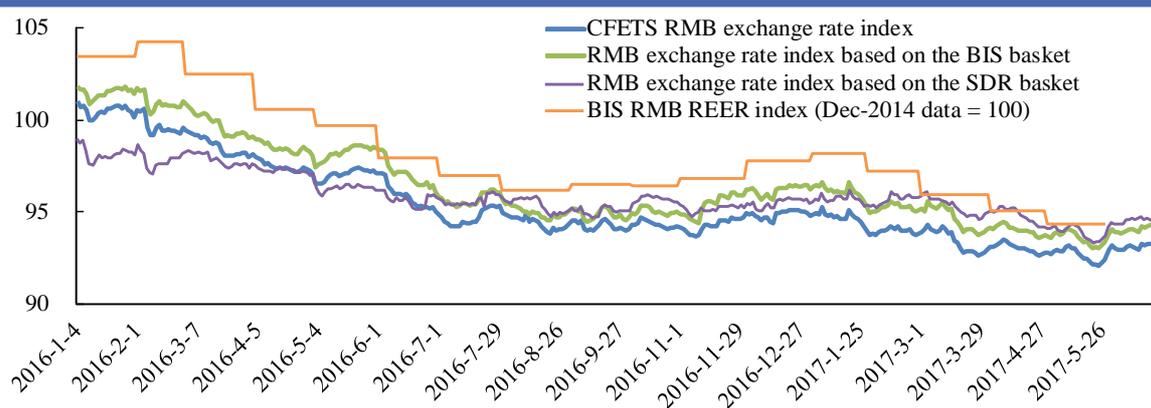
- Since the second half of 2015, China has further enhanced the RMB exchange rate formation mechanism, which is based on market supply and demand and with reference to a basket of currencies.

RMB Exchange Rate Has Appreciated Substantially since 2005



- In general, RMB appreciated against both USD and a basket of currencies since 2005.
- From June 2005 to May 2017, the CNY-USD central parity appreciated 17.98%, BIS RMB REER appreciated 39.20%.

RMB Exchange Rate against a Basket of Currencies

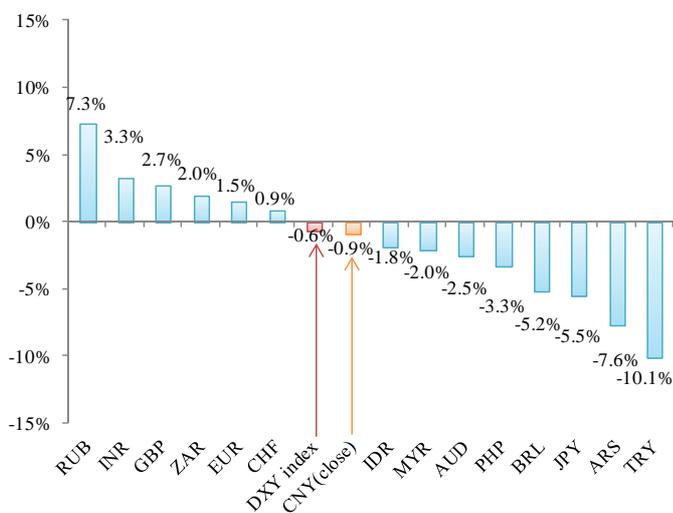


RMB exchange rate index	CFETS	BIS	SDR
Jun. 23 th 2017	93.22	94.20	94.51
Change since 2013 year end	1.02%	1.57%	0.44%
Change since 2011 year end	9.15%	8.88%	3.52%
Change since 2006 year end	26.30%	30.84%	27.36%

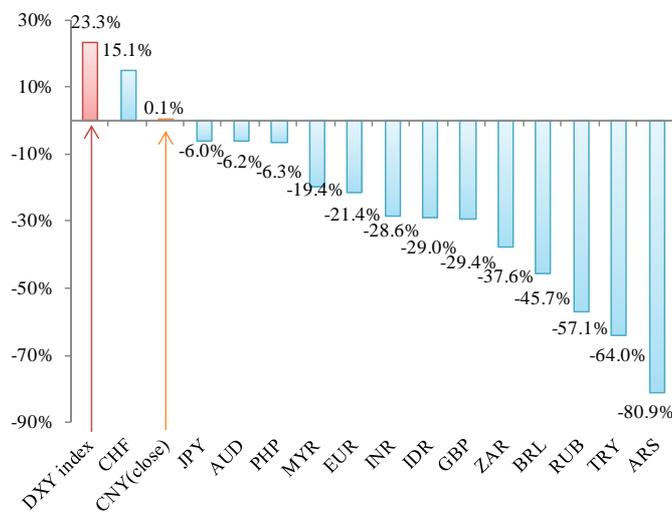
- On June 23th, 2017, the CFETS RMB exchange rate index closed at 93.22, losing 1.70% from the end of 2016; CNY-USD central was 6.8238, gaining 1.66% from the end of 2016; the market exchange rate closed at 6.8387, gaining 1.62% from the end of 2016.
- With reference to a basket of currencies \neq pegging to a basket of currencies

RMB Exchange Rate against USD

Movements of Major Currencies against USD since Donald Trump being elected in 2016

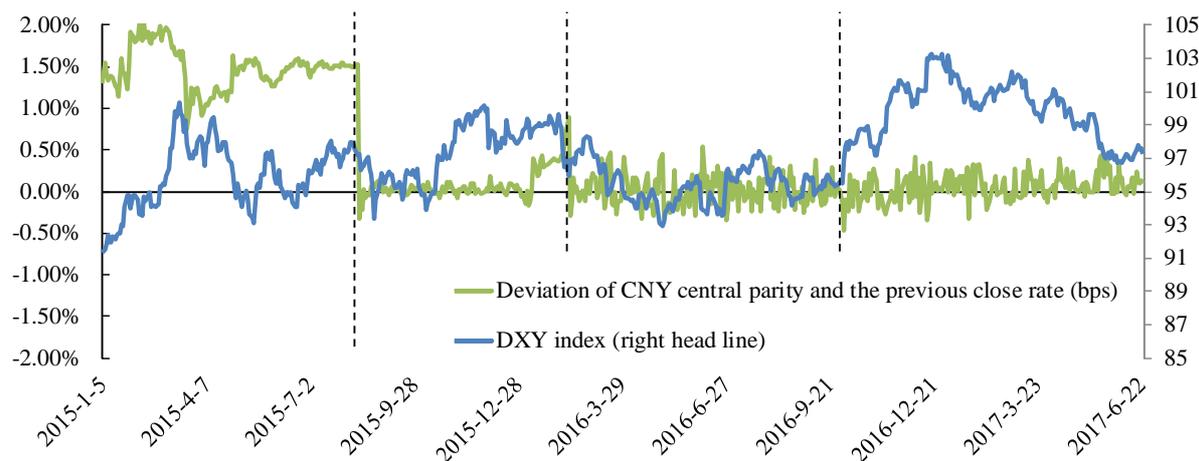


Movements of Major Currencies against USD since Lehman Brothers' Bankruptcy in 2008



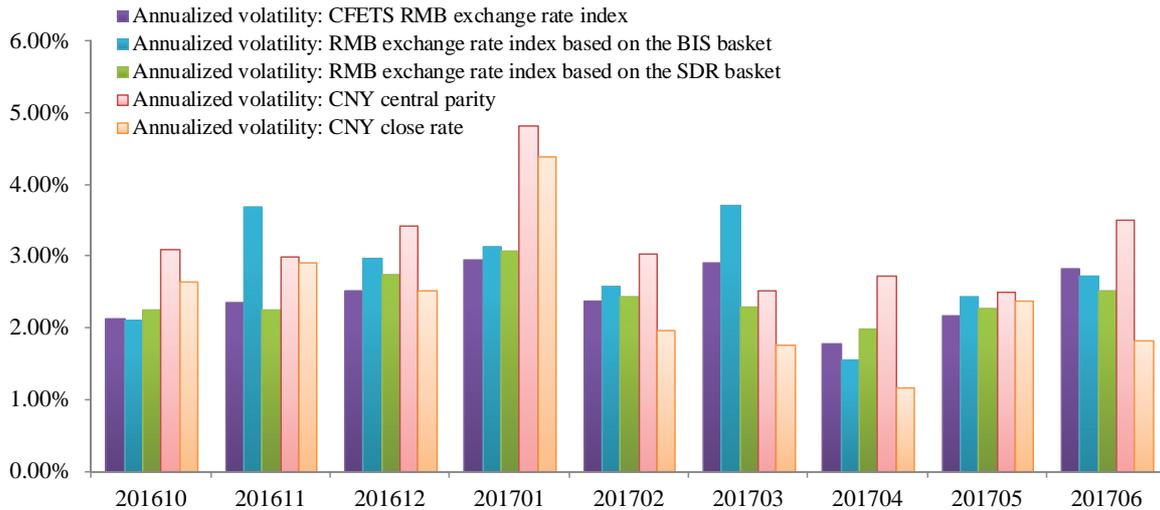
- Since Donald Trump was elected US president, RMB remained generally stable against USD.
- Since the 2008 Financial Crisis, RMB has been acting as a stable strong currency in the International Monetary System.

RMB Exchange Rate against USD (2)



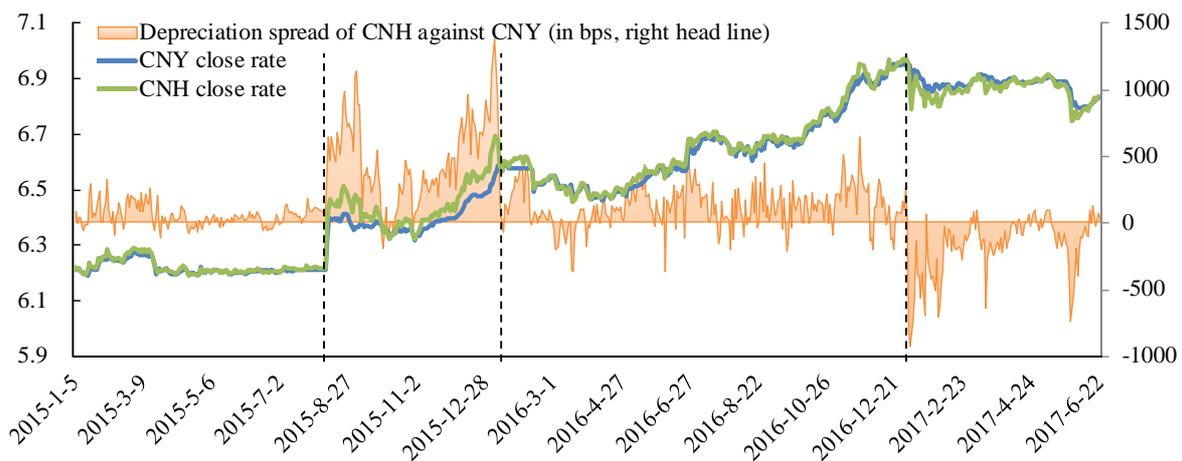
- After PBoC improved the quotation of CNY central parity on August 2015, the previous deviation between CNY central parity and the market exchange rate underwent a one-time correction.
- Since February 2016, the RMB/USD central parity has been operating orderly in accordance with the “previous closing rate + movements of a basket of currencies” mechanism. The flexibility of RMB/USD exchange rate has been increasing.
- Since October 2016, USD has generally been strong, while the movements of CNY central parity and market rate have been highly consistent with each other.

RMB exchange rate volatility: against USD vs. against a Basket of Currencies



- Since August 2015, PboC kept improving RMB exchange rate regime. Market supply and demand have played a bigger role in the formation of RMB exchange rate, and the elasticity of FX movements has been enhanced.
- In most of the period since October 2016, the volatility of RMB/USD exchange rate (central parity) has been higher than that of RMB exchange rate indices.

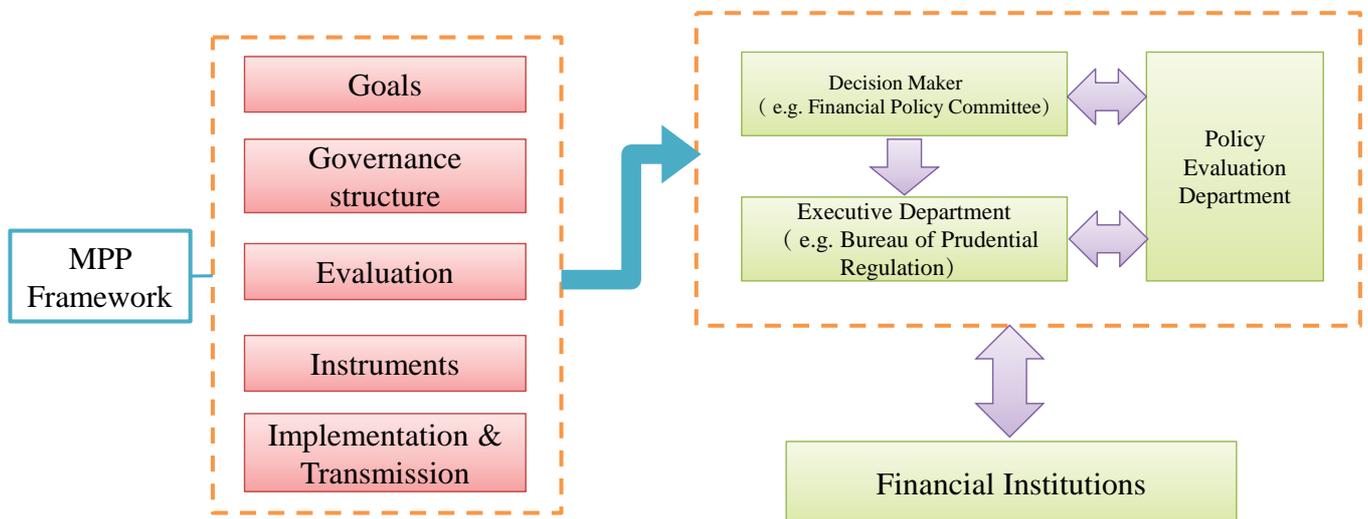
Market Expectation of RMB Exchange Rate



- At the end of 2016, the CNH-CNY spread reversed from consistent depreciation to appreciation. In most period since then, the CNH-CNY spread moved around 200bps.
- The market expectation of RMB exchange rate diverged. Some financial institutions started to raise their expected exchange rate level, firms and residents started to sell USD, movements of foreign exchange reserve has been stabilized and its balance increased back to above 3 trillion USD by the end of February.

What is Macroprudential Policy (MPP)

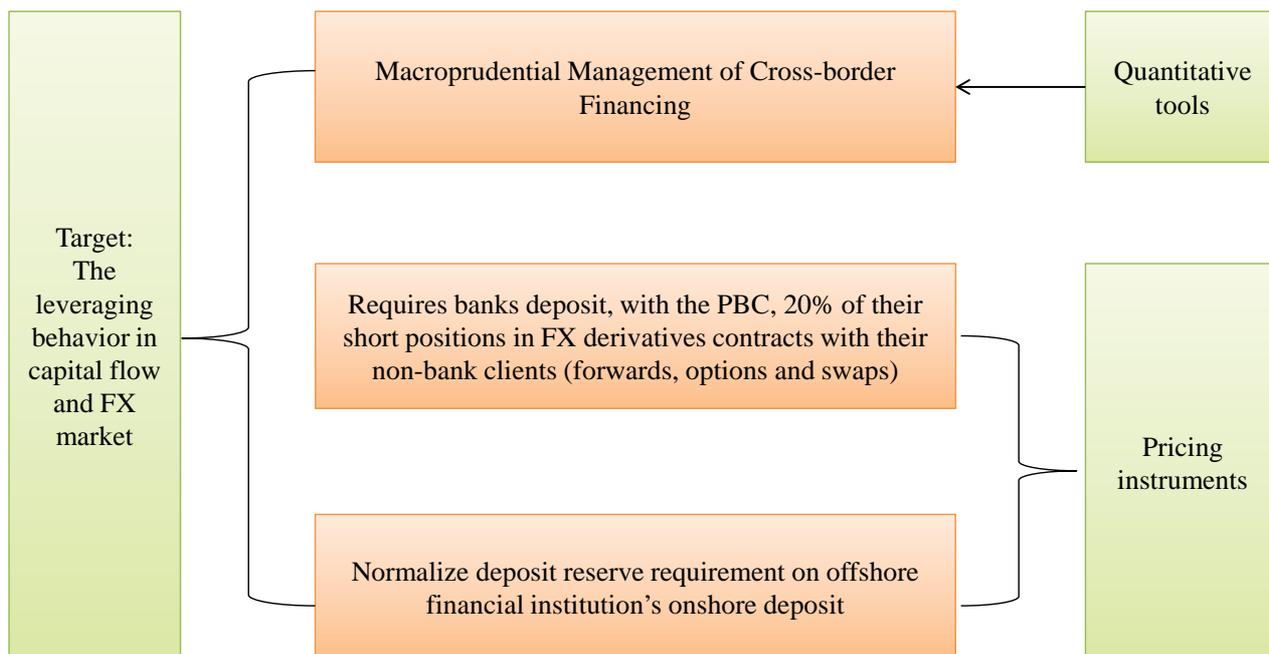
- Goals/instruments/governance/transmission
 - MPP framework includes policy goals, evaluation, instruments, implementation, transmission and governance structure.



PBoC's Practice on Conducting Macroprudential Policies

- Macroprudential Assessment (MPA)
 - Started to research on policy measures to enhance macroprudential management in 2009.
 - In 2011, officially introduced the dynamic adjustment mechanism of the differentiated reserve requirements. Initially built the macroprudential policy framework .
 - “Upgraded” the dynamic adjustment mechanism of the differentiated reserve requirements to MPA system in 2015 year end.
- Macro-prudential regulations on real estate loans :
 - Counter-cyclical adjustment on the down payment ratio (1 – LTV).
 - Requiring a maximum 50% Debt service-to-income ratio.
- Since 2015, PBC further improved the macroprudential policy framework by including FX liquidity and cross-border capital flow into the system (mainly focusing on the leveraging behavior in capital flow and FX market).
 - Implements nationally the macroprudential management of external debt.
 - Requires banks deposit, with the PBC, 20% of their short positions in FX derivatives contracts with their non-bank clients (forwards, options and swaps).
 - Normalize deposit reserve requirement on offshore financial institution's onshore deposit.

Macroprudential Management of Cross-border Capital Flow: General Framework



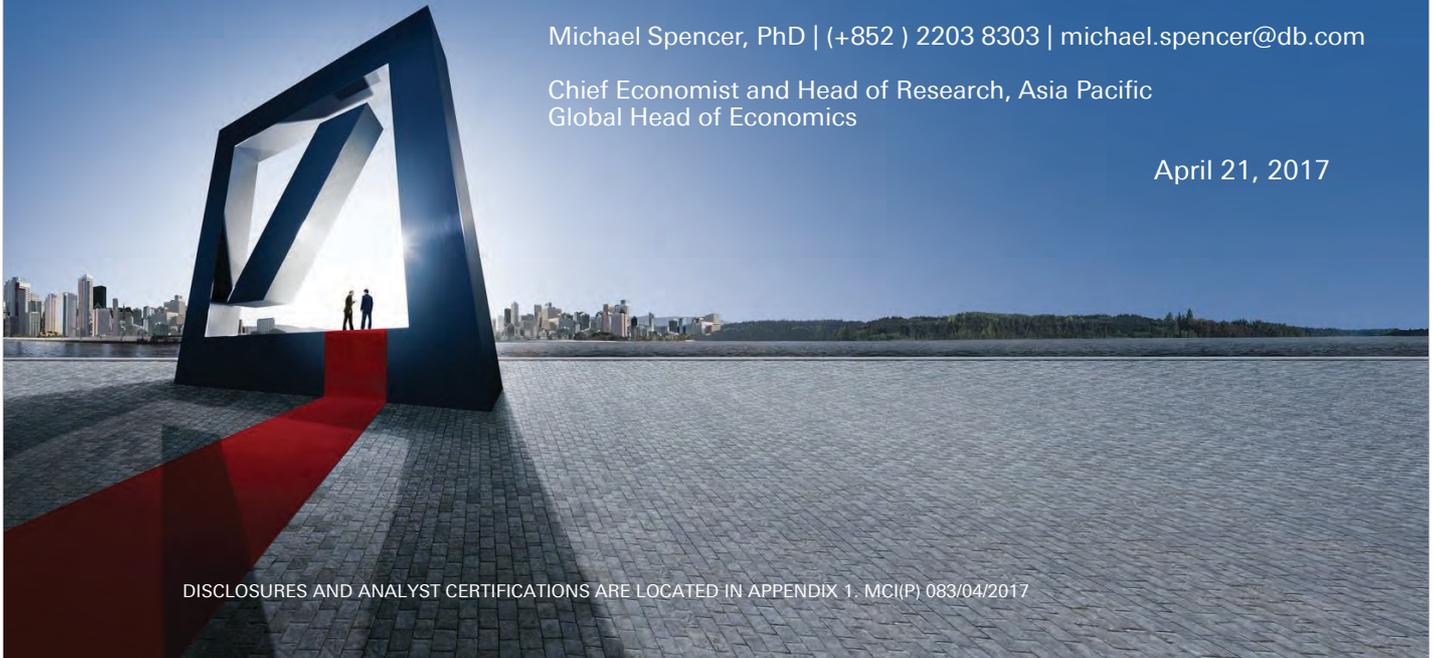


Practical steps to floating

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Global Head of Economics

April 21, 2017



DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MCI(P) 083/04/2017

Exchange rate regime changes are common(ly difficult)



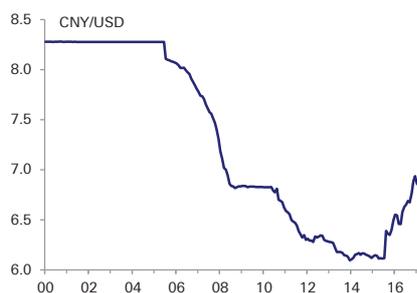
De facto, versus de jure, exchange rate regimes change frequently but often transitions are forced on countries by circumstances – a crisis forces a choice between flexibility or a harder peg. The end of the post-war fixed exchange rate regime resulted in turmoil in foreign exchange markets and regimes in Asia during the 1970s and 1980s. Without suffering crises, Australia, Hong Kong and Singapore went from pegs to sterling, to dollar pegs, to free floating and in Hong Kong back to a hard peg.

Historical evidence, in our view, suggests two less obvious observations regarding regime changes:

1. Capital account liberalization will force a faster pace of institutional change than was observed in the 1980s or 1990s – Australia took ten years to transition from fixed to floating, eventually abandoning a NEER peg because of volatile capital flows. China is unlikely to have the luxury of so much time if it opens its capital accounts.
2. Large countries are less likely to be able to sustain NEER pegs than small countries. When CNY fixings move significantly in response to overnight developments in currency markets, these announcements themselves cause other currencies to move in the same direction. Singapore doesn't have the same problem.

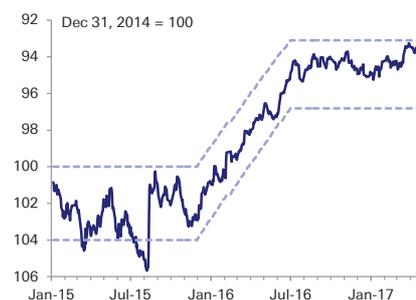
Since 1994, China has moved from a hard peg to the USD, to a crawling peg and back to a hard one then back to a crawl (at first appreciating, then depreciating) and in our view – but we are in a minority – to a NEER “targeting” framework since late 2015.

An evolving exchange rate regime



Sources: CEIC and Deutsche Bank Research

A NEER target?



Practical steps to inflation targeting



A transition from a fixed to a floating exchange rate risks the loss of a nominal anchor for the economy. Inflation targeting has been adopted by about one-fifth of countries (many more, like the US and Euro Area include inflation as one of a small number of policy objectives) to provide this nominal anchor.

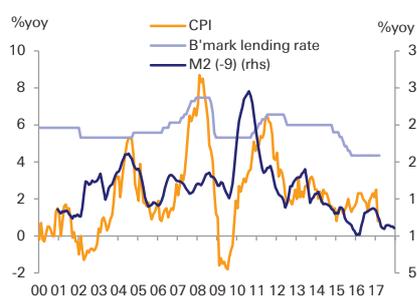
Inflation targeting in China today would suffer from the lack of a stable relationship between money (or interest rates) and inflation and unreliable data on unemployment and output gaps. Historically, policymakers targeted both quantities of money and interest rates, rationing credit where necessary to reconcile the two targets.

Is inflation properly measured? For example, in a country where more than 80% of households own their own homes, is market rent the appropriate measure of housing costs? Would higher interest rates have limited the property bubbles?

So policymakers would be embarking on inflation targeting with no credibility in the policy framework except that inflation has been reasonably stable around 2% for the past five years. But is 2% the right target?

Indonesia adopted inflation targeting without a well-defined model for inflation and in the early years this lack of credibility was a problem. But more recently, core inflation seems better behaved and FX passthrough has been lower, suggesting inflation expectations are becoming better anchored.

Money and inflation in China



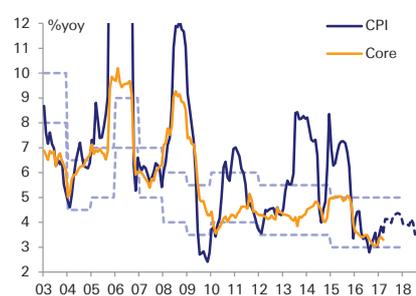
Sources: CEIC and Deutsche Bank Research

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Inflation in Indonesia



Steps towards a supportive interest rate regime



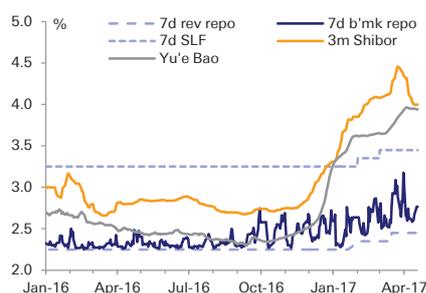
The authorities have only recently introduced alternative interest rate policy instruments to the benchmark lending and deposit rates. Arguably, there are now too many policy instruments – repo and reverse repo rates at myriad maturities in addition to short-term (SLF), medium-term (MLF) and long-term liquidity (PSL) facilities.

While an interest rate corridor has not been announced, we think in practice the PBOC has moved in that direction. We think it is represented by the 7-day reverse repo rate (floor), the 7-day SLF rate (the ceiling) and the 7-day PBOC repo rate in the middle. Other money market rates have, since October, risen much more than these “policy rates” but investors are increasingly looking to these – and not the benchmark rates – for signals about policy intentions.

To improve the transmission of monetary policy to the real economy, benchmark lending rates – to which the vast majority of bank loans are tied – should be de-emphasized. Banks should be encouraged to price credit more flexibly to reflect their (increasingly wholesale market-based) cost of funds and credit risks.

However, only primary dealers have access to the PBOC facility. So actual market repo rates vary quite significantly from the “policy rate” during this period of tightening liquidity. So we think the PBOC should open up its repo facility to all banks. We think the PBOC should also conduct overnight repos (there is an overnight market repo rate) although it may not be necessary or even appropriate to adopt the overnight rate as the target rate. PBOC should also, we think, be more proactive in providing liquidity to banks to smooth short-term fluctuations in rates around the target and should provide more timely data on liquidity operations to improve transparency.

Money market rates



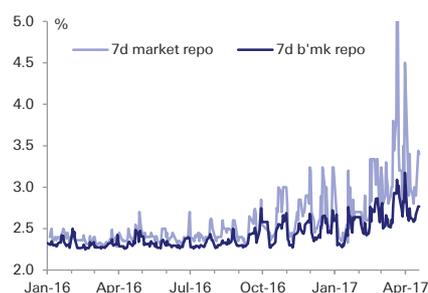
Sources: CEIC and Deutsche Bank Research

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April 21, 2017

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Market vs PBOC repo rates



Steps towards a supportive foreign exchange market



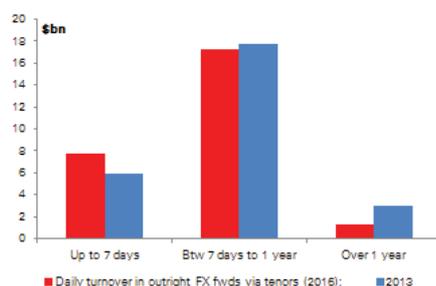
Moving towards a free float presupposes there's a properly functioning market for the currency. In addition, internationalization of the RMB is not only policymakers' objective it is probably also inevitable.

Greater exchange rate flexibility means greater risk. Total foreign currency liabilities are just over 10% of GDP – not very high, but enough that firms will want to hedge as exchange rate volatility rises. Forward market turnover has not risen much over the years and genuine transactions probably fell last year – almost all of the increase in 2016 is in overnight transactions in response to FX intervention. It is evident throughout Asia (and history) that firms will only hedge properly when compelled to by the authorities or after experiencing FX losses.

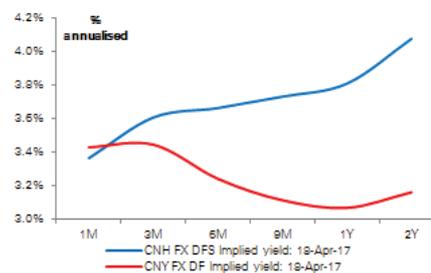
While the onshore and offshore spot markets are still closely matched – onshore and offshore forward foreign exchange markets show very different views about the expected path of the exchange rate.

To provide corporates, banks and investors with properly functioning forward markets the 20% reserve requirement on long dollar forwards (10% on long dollar options) should be dropped. Onshore participants should be allowed to trade in the offshore market and offshore participants should be allowed to trade onshore. Forward transactions can still be required to reflect a legitimate underlying need but more non-trade exposures should be viewed as legitimate. We would encourage the use of central clearinghouses to settle FX derivatives to contain systemic risk and encourage standardization (and therefore liquidity). The development of more liquid money markets – and less volatile repo rates – would also facilitate liquidity in the foreign exchange market.

RMB forward turnover, April 2013-16



CNY, CNH forward curves today



Sources: BIS, Bloomberg Finance LP and Deutsche Bank Research

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Appendix 1: Important Disclosures

*Other information available upon request



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Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor who is long fixed rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or the liquidation of positions), and settlement issues related to local clearing houses are also important risk factors to be considered. The sensitivity of fixed income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates – these are common in emerging markets. It is important to note that the index fixings may – by construction – lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. It is also important to acknowledge that funding in a currency that differs from the currency in which coupons are denominated carries FX risk. Naturally, options on swaps (swaptions) also bear the risks typical to options in addition to the risks related to rates movements.

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April 21, 2017

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Fear of floating, overshooting and fear: can exchange rate regime transitions be smooth?

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2017.4.18

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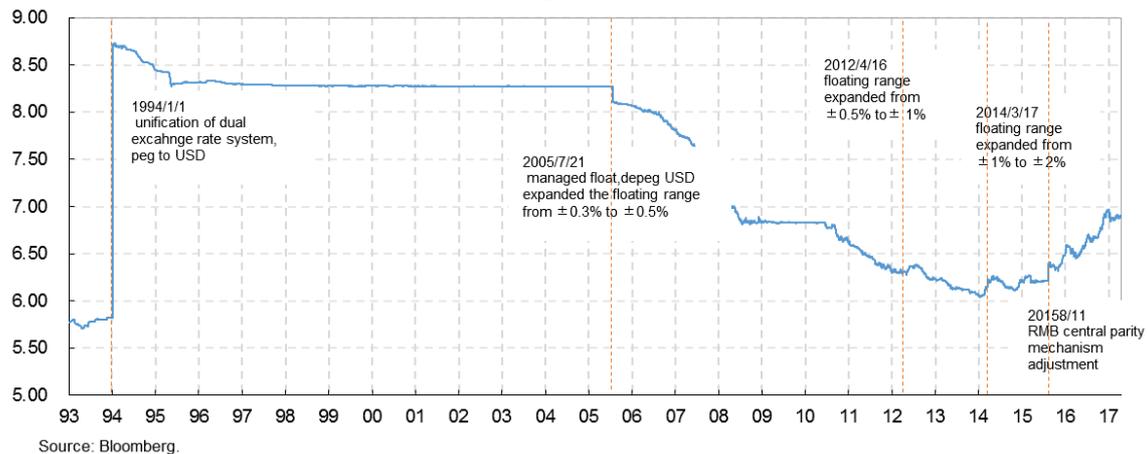
Summary of findings

- ❑ Exits from pegs can be long and yet smooth
 - Transitions can take long but do not necessarily end up in crises;
 - Historical examples of gradual and orderly exits include Chile, Poland and Israel;
 - Recent smooth and gradual realignments of exchange rates include India and Singapore.
- ❑ Four factors conducive to smooth transitions or realignments
 - Little forex debt and currency mismatches;
 - Consistent macroeconomic framework;
 - A large war chest of forex reserves;
 - Flexible use of all tools available.
- ❑ The conditions seem to be there for a smooth and gradual transition in China
 - The choice between corner solutions (peg vs. float) a false one?
- ❑ In the end, it is all about policy choice
 - Short term, the tradeoff is about the exchange rate as an asset price vs. it as a relative price;
 - Longer term, the tradeoff is about macroeconomic policy framework.

RMB regime in transition: can it be smooth and gradual?

- ❑ **Starting point:** July 2005 de-pegged from the US dollar and a reference basket introduced
- ❑ **Right now:** managed float with the central parity formed from “previous close + movements of a basket of currencies”
- ❑ **The goal:** clean float

RMB Exchange Rate Evolution

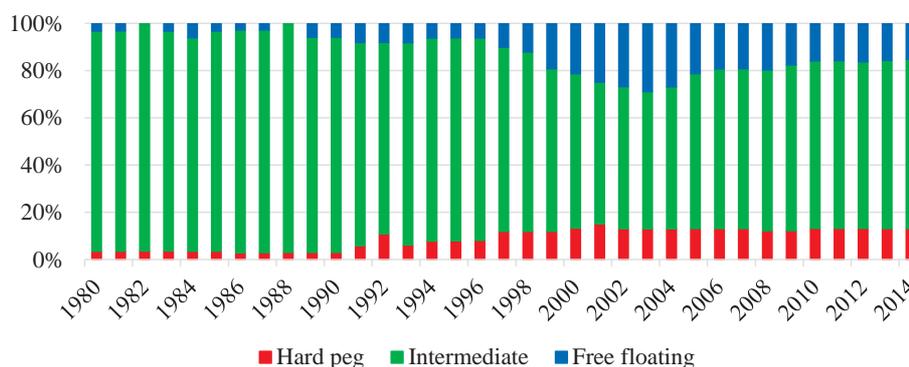


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Why change currency regimes?

- ❑ Countries switch exchange rate regimes all the time
 - Average duration of a currency regime lasts less than 10 years;
 - The optimal choice of regimes makes tradeoffs between stability (credible anchor) and flexibility (monetary autonomy);
 - No single currency regime is right for all countries or at all times (Frankel, 1999).
- ❑ Optimal regime shifts with country characteristics
 - Size, shocks and history all play a role;
 - Growth model also matters: China switching from export-led to consumption driven;
 - “Whatever exchange rate system a country has, it will wish at some times that it had another one.” (Stan Fischer, 1999)
- ❑ The hollowing out hypothesis (Fischer, 2001; Summers, 1999) did not really play out
 - More countries in the middle, particularly managed floats, than in the early 2000s.

Distribution of choices of currency regimes, 1980-2014



Source: Ghosh, Ostry & Qureshi (2014), IMF (2014)

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Regime switches (peg exits) take different forms

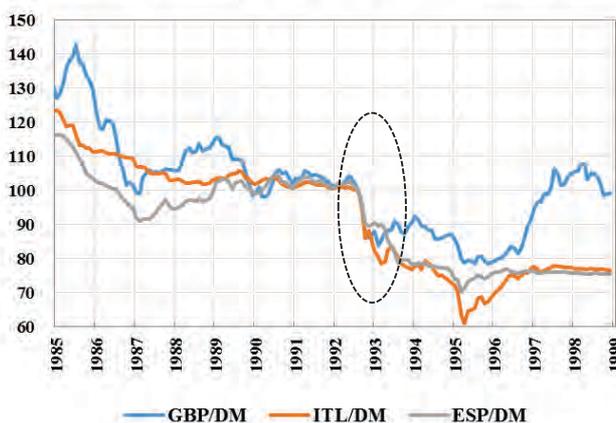
- ❑ Some ended up in currency crises
 - Usually happened under pressure and forced de-peg.
- ❑ Some overshot initially but stabilized later on
- ❑ Others exited rather smoothly and even appreciated
 - Eichengreen and Rose (2012) found 51 such cases since the 1960s and call de-peg “the decision to flex” though its impact on macro variables not conclusive;
 - They did warn that in some cases the decision to flex was followed by “a discernible slowdown in the rate of economic growth”, especially in high investment and rapid export growth economies, and that both conditions applied to China;
 - IMF (2007) highlighted three classical examples of gradual and yet orderly exits from pegs.

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Fear of floating/overshooting: exits seemed crisis prone

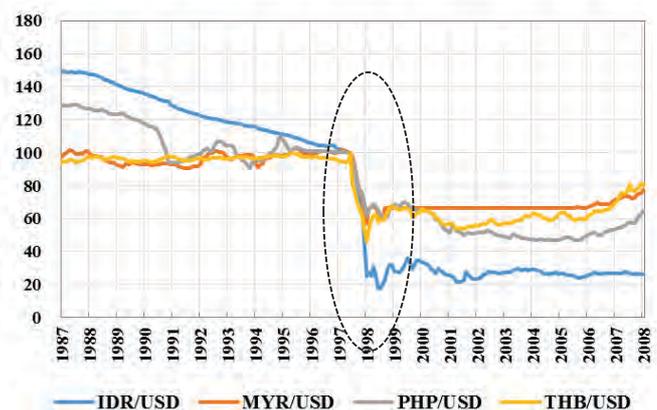
- ❑ De-pegs were often associated with large discrete currency declines
 - 1992-93 European Monetary System (EMS) crises (vs DM: -10%);
 - 1997-98 Asian crises (IDR/USD:-75%; THB/USD: -50%).
- ❑ Hence, Calvo and Reinhart (2002) “fear of floating”
 - “Countries that say they allow their exchange rate to float mostly do not--there seems to be an epidemic case of fear of floating.”

EMS crises: Peg to DM (1992m8=100)



Source: Haver

Asian crises: Peg to dollar (1997m6=100)

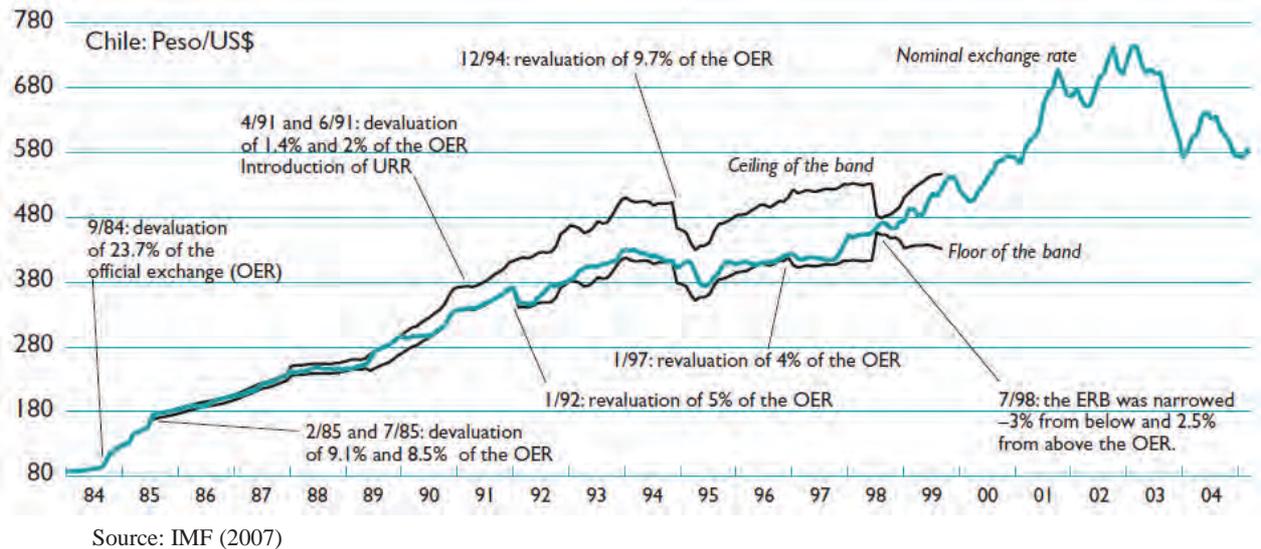


Source: Haver

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But there were many cases of smooth switches (1): Chile

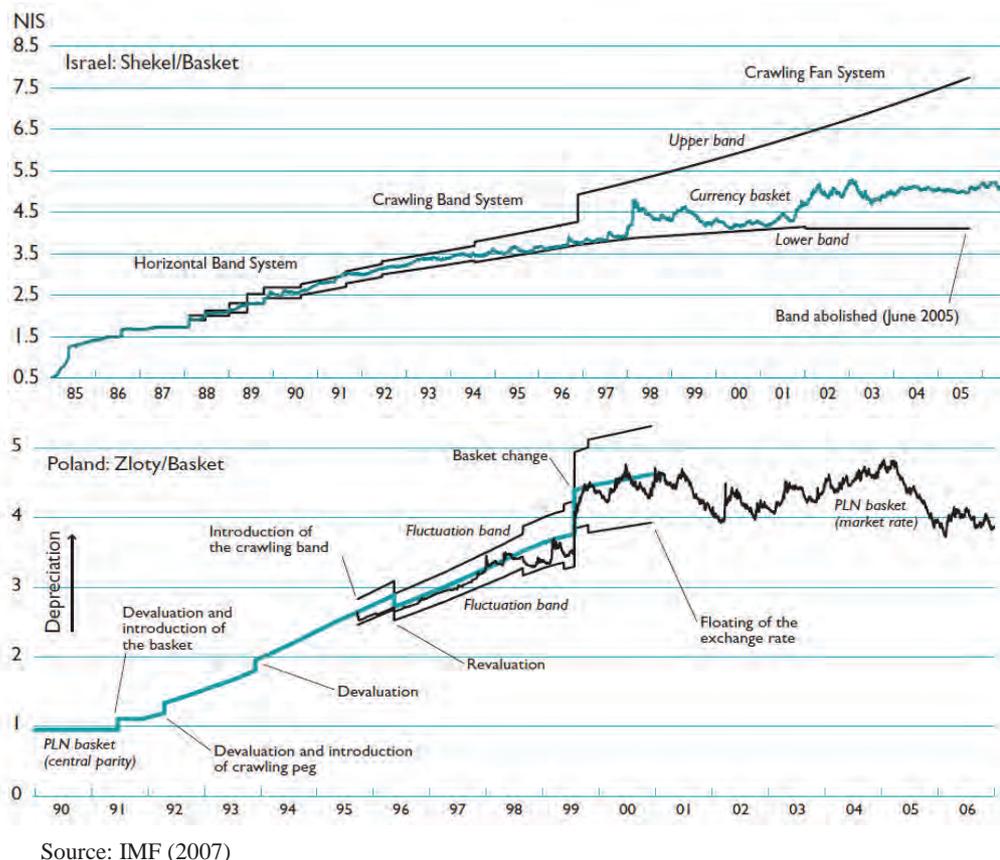
- ❑ Regime switches took multiple years and even decades
- ❑ Chile experience: mostly orderly and gradual (1984-99)
 - Crawling peg (Sep. 1982)->Crawling band (Aug. 1984)->Gradual widening of the band->Free float (Sep. 1999)



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But there were many cases of smooth switches (2): Israel and Poland

- ❑ Other cases: Israel (1985-2005), Poland (1990-2000)



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Factors conducive to smooth exits

- ❑ 1) Little forex debt and currency mismatches so no need to front run currency movements;
- ❑ 2) Consistent macroeconomic frameworks to underpin the exchange rate policy;
- ❑ 3) A large war chest of forex reserves to maintain confidence and to defend, if needed;
- ❑ 4) Flexible use of all tools available to alleviate excessive volatility.

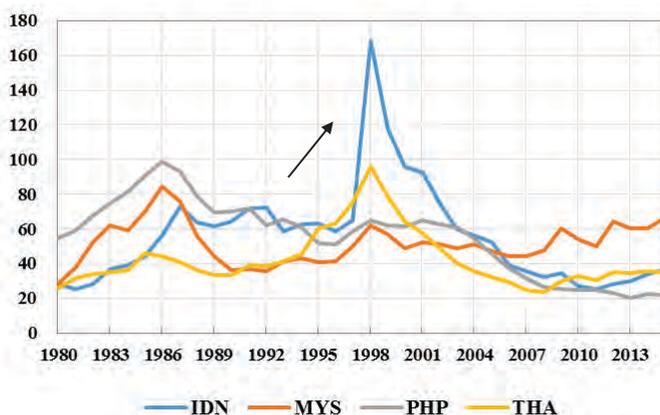
Taken together: little forex debt + strong fundamentals + adequate reserves + administrative capacity to take out the tail risk scenario so that a smooth and gradual process is possible.

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External debt and currency mismatches predated crises

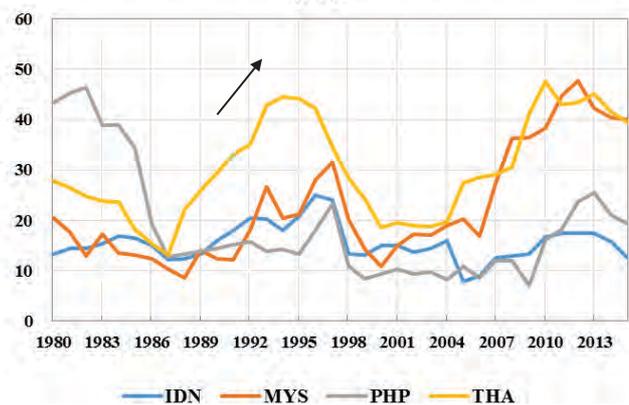
- ❑ When the borrowing country is highly indebted, dollarized, and with debt concentrated at short maturities, sudden reversal may trigger massive depreciation with balance sheet effect - one school of the third generation currency crisis model
 - 1994 Mexican Tequila crisis, 1997 Asian crisis, 1998 Russian ruble crisis, 2001-02 Argentine crisis;
 - Original sin hypothesis – incompleteness in financial markets, preventing countries from borrowing externally in its own currency, or long term even domestically.

Aisan crises: External debt/ GNI (%)



Source: Haver

Aisan crises: Short-term debt/External debt (%)



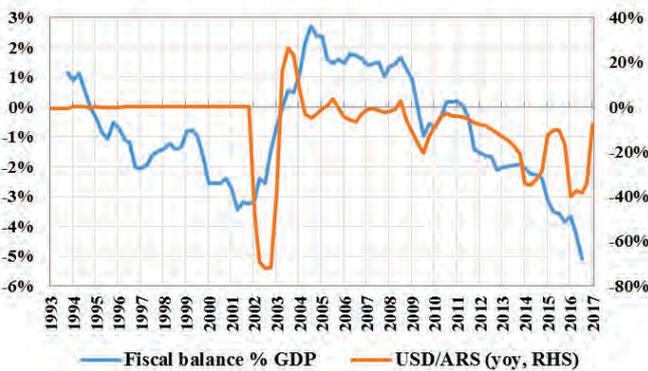
Source: Haver

10

Poor fundamentals and twin deficits predated crisis

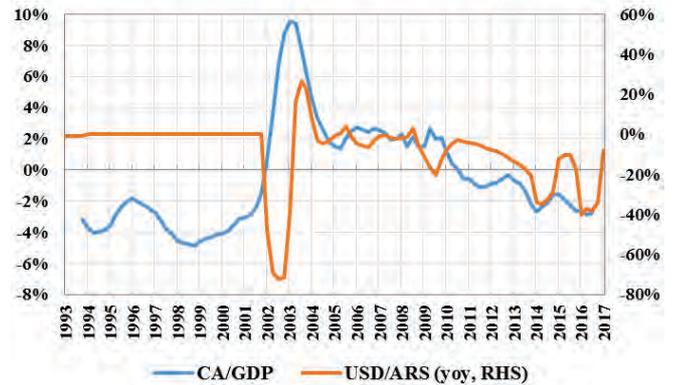
- ❑ Fiscal deficit: exchange rate commitment limits government's ability to raise seigniorage
 - First generation models (Krugman, 1979) - inconsistent macroeconomic policies;
 - Argentina 2001-02 crisis: investors lost faith in the country's ability to maintain a currency peg while also financing its growing fiscal indebtedness.
- ❑ Current account deficit: dependency on foreign financing can be vulnerable
 - Argentina 2001-02 crisis: appreciation of peso against the Brazilian Real and weakening demand of trading partners led to BoP crisis.

Argentina: Fiscal Indebtedness



Source: Haver

Argentina: Current account deficit



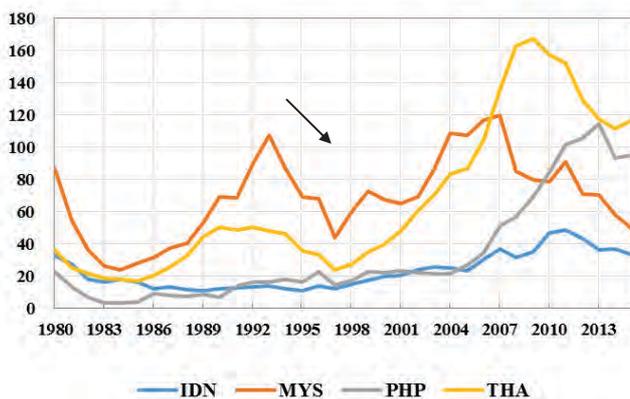
Source: Haver

11

Inadequate reserves predated crises

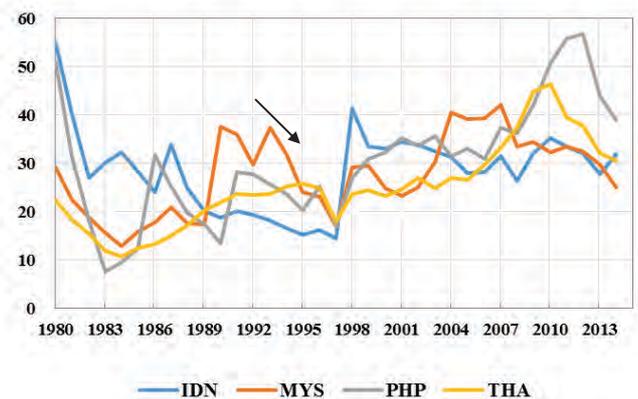
- ❑ Exchange rate pressures can be eased by either hiking interest rates or using forex reserves
 - Forex reserves can act as buffer and imply greater ability to respond to speculative attacks;
 - The tricky part is that no amount of forex reserve can beat the central bank's own balance sheet (M2), so maintaining confidence and flexibility are both important.

Aisan crises: Reserve/External Debt (%)



Source: Haver

Aisan crises: Reserve/M2 (%)



Source: Haver

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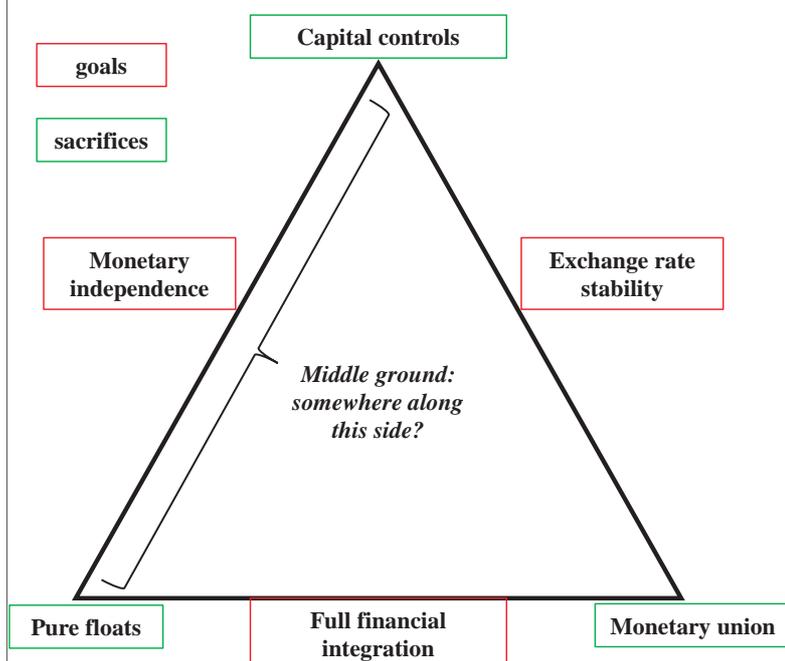
Capital controls carried stigma and were shunned

- ❑ Using controls seemed desperate and stigmatized
 - Afraid of alienating investors, open economies relying on external funding view it as last resort, e.g., Turkey.
- ❑ IMF (2012) gave green light for using capital flow management measures
 - CFMs alter the composition of flows (more FDI, less carry trades), if not its quantity;
 - It is useful after all: people respond to price signals.
- ❑ CFMs are just part of the standard toolkit
 - The line between CFMs and macroprudential measures is thick and blurry;
 - Encouraging price and currency based measures instead of quantity or residency based ones;
 - Brazil: 2009-2011 2% Tobin tax, aimed mainly at carry trade flows.
- ❑ CFMs still carries stigma
 - We came up with the term CFMs at the IMF to de-stigmatize capital controls but policymakers still afraid of saying it, if not deploying it;
 - Often it is not about imposing new rules, but enforcing existing ones.

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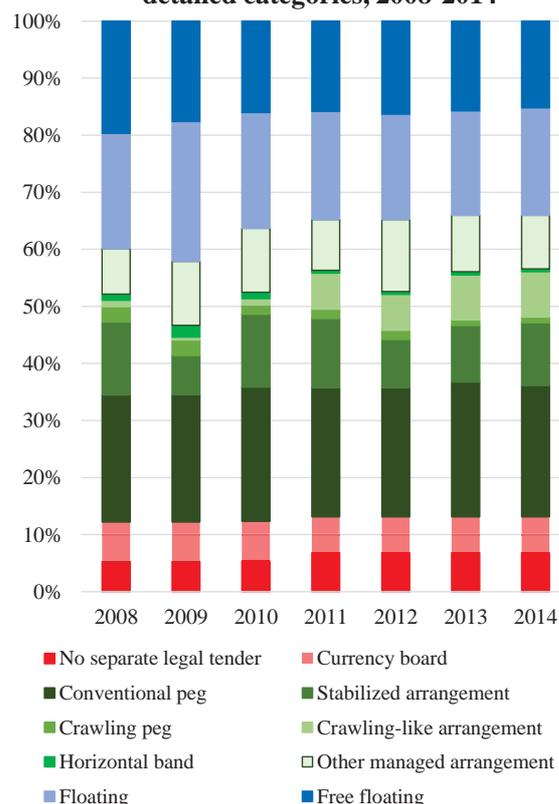
Before clean float: can there be a middle ground?

- ❑ Corner or interior solutions?
 - Corner solutions are appropriate for some;
 - Can there be half stability and half independence?
 - Trilemma vs. Dilemma? (Rey, 2013)



Source: Frankel (1999), Yi and Tang (2000)

Choice of currency regimes, detailed categories, 2008-2014



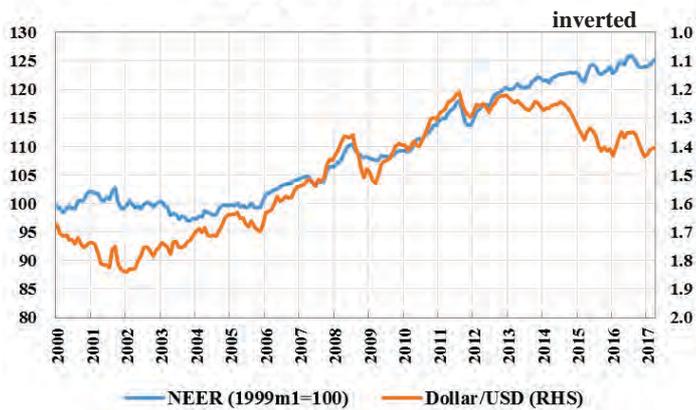
Source: IMF (2014)

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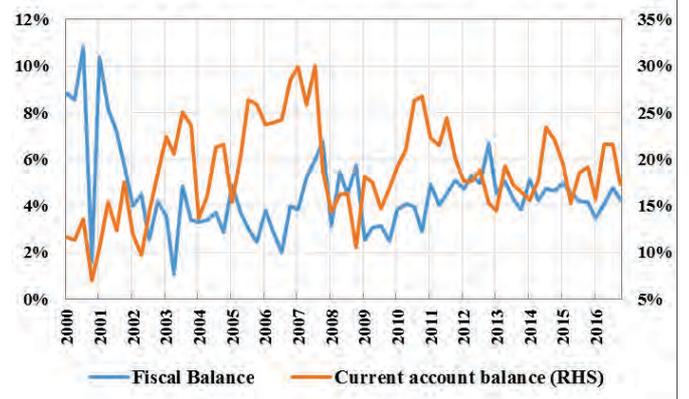
Realignments can be smooth and gradual: Singapore's BBC regime

- ❑ Since 1981, monetary policy has been centered on the exchange rate and the framework incorporates several key features of the basket, band and crawl (BBC) regime
- ❑ Multiple realignments happened within the BBC: NEER appreciated by around 1% per year since 2013 and depreciated against the dollar
- ❑ Positive factors: Limited external debt in foreign currencies, fiscal and current account surplus, large foreign reserves, and macro prudential policies

Singapore exchange rate



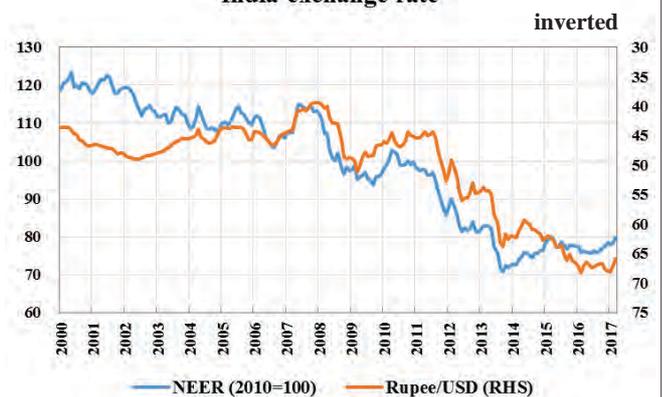
Singapore macro fundamentals (%GDP)



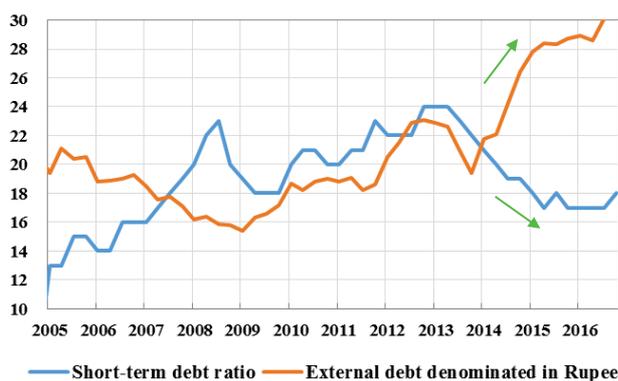
Realignments can be smooth and gradual: India's managed float

- ❑ Indian rupee depreciated by 4%-5% per year against the dollar in 2014-16 and exhibited greater stability than EM peers
- ❑ Positive developments since 2014 lent support to Rupee:
 - Decrease in currency and maturity mismatches;
 - Continued fiscal consolidation and significant reduction in CAD;
 - Rising forex reserve;
 - Improving fundamental: 2016 CPI 4.9%, growth 7.5%;
 - Political stability.

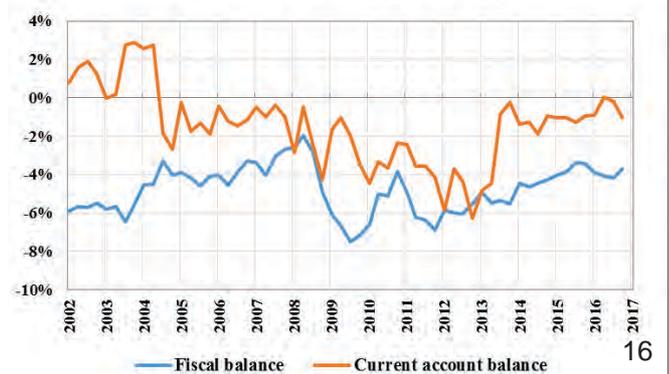
India exchange rate



India external debt (%)



India macro fundamentals (%GDP)



So, how does China stack against the four criteria?

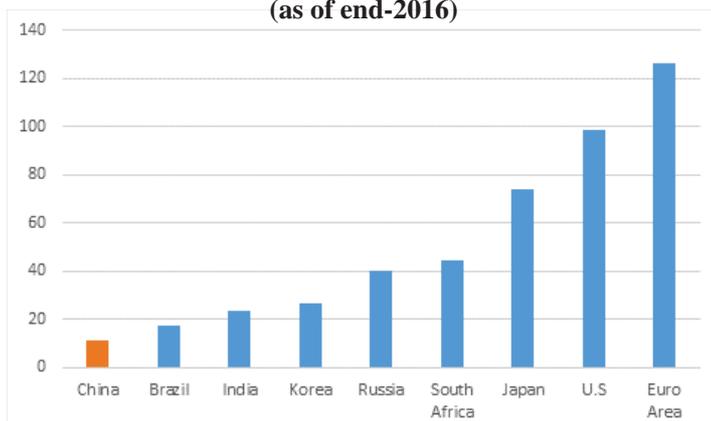
- ❑ External debt: less than 15% GDP and little currency mismatch;
- ❑ Fundamentals: economy slowing down but still positive CA and little government debt;
- ❑ Reserve adequacy: adequate by most metric;
- ❑ Valuation: RMB probably overshoot in the one way appreciation during 2005-14;
- ❑ Market sentiment and credibility of the PBC: challenging but improving.

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China's external debt is relatively small and healthy

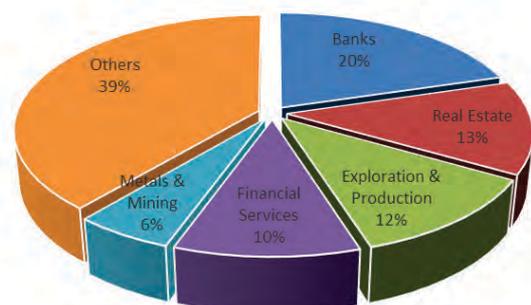
- ❑ The ratio of external debt to GDP is relatively low
 - China's external debt is just 11.5% of GDP in 2016, less than other major countries.
- ❑ Currency mismatch is not severe
 - Local currency debt is 34.3% of the total external debt in 2016;
 - Corporate debt currency mismatch concentrated in Real Estate and Metals & Mining sectors, 96.8 and 41.4 billion USD respectively, or about 20% total corporate external forex debt.
 - Rising external assets ensure stable funding for external debt repayment.

External Debt / GDP : International Comparison
(as of end-2016)



Source: QEDS, Haver

Distribution of Foreign Currency Corporate External Debt: By Industry (end-2015)



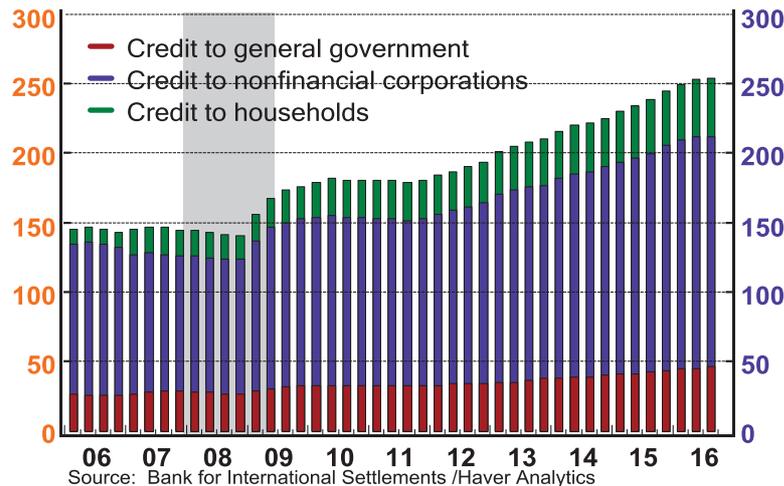
Source: Miao and Rao (2016)

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Overall debt level rising but measures taken

- China's overall debt burden is high, concentrating in the nonfinancial corporate sector.
 - According to the BIS, total outstanding debt of China's nonfinancial sector stood at 210% of GDP at the end of 2016Q3.
 - Nonfinancial corporate sector: 166% of GDP; Household and government sectors: 43% and 46% of GDP, respectively.
- While structural economic reforms are key to deleverage China's economy over the medium to longer terms, the authority has taken measures to roll over corporates' maturing debts and lower their financing costs.

Credit to China's nonfinancial sectors as % of GDP, 2006Q1-2016Q3

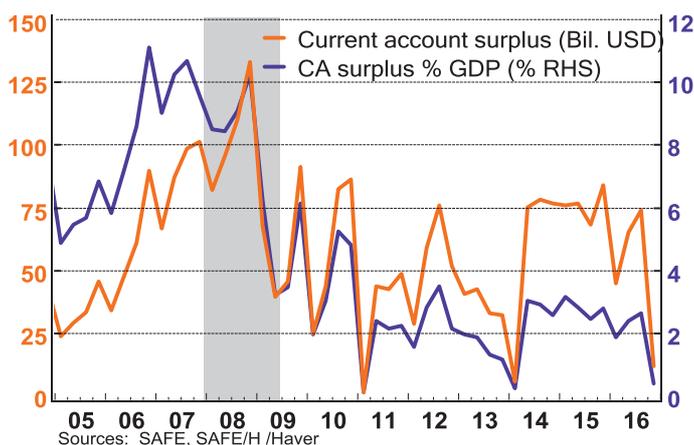


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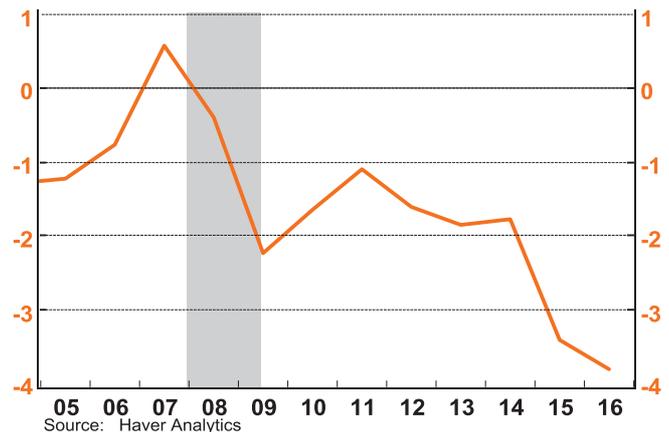
BOP and fiscal situations remain healthy

- China has been undergoing external rebalancing
 - 2014-2015, CA surplus has been fluctuating around \$300 bn per year, or 2.5-3.0% of GDP.
 - In the medium to long run, China's current account will likely be more balanced by increasing services deficit.
- Fiscal policy has become more active in recent years
 - The overall fiscal deficit, while expanding, has been kept low;
 - A more active fiscal policy has widened China's fiscal deficit from around 2% before 2014 to around 4% in 2016.

China's current account, 2005Q1-2016Q4



China's gov'n't budget balance, 2005-2016 (%)



Reserves adequate by most metric

- According to the IMF metric (2015), forex reserves need to be in the range of US\$ 1.8-2.7 trillion assuming fixed rate and with capital controls
 - Without capital controls, recommended range would be US\$ 2.9-4.4 trillion.
- China's forex reserves stabilized at around 3.0 trillion US\$ since 2017M1
 - Reserves and CFMs are substitutes for each other (Ilzetzki et al, 2017)

Reserve adequacy metric (Trillion USD, Q4 2016)

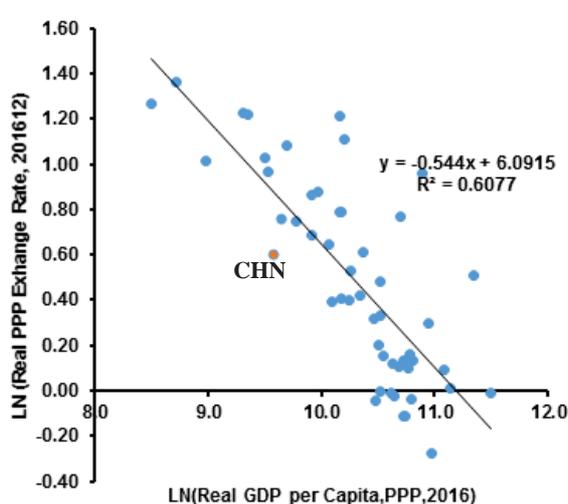
Components		With capital controls				Without capital controls			
		Fixed		Floating		Fixed		Floating	
		Weight	Lower Bound	Weight	Lower Bound	Weight	Lower Bound	Weight	Lower Bound
Short-term debt	1.00	30%	0.3	30%	0.3	30%	0.3	30%	0.3
Other liabilities	0.79	20%	0.2	15%	0.1	20%	0.2	15%	0.1
Exports	2.20	10%	0.2	5%	0.1	10%	0.2	5%	0.1
Broad money	22.34	5%	1.1	2.5%	0.6	10%	2.2	5%	1.1
Recommended range			1.8		1.1		2.9		1.6
			2.7		1.6		4.4		2.5

Source: PBC, Haver, Author's calculation.

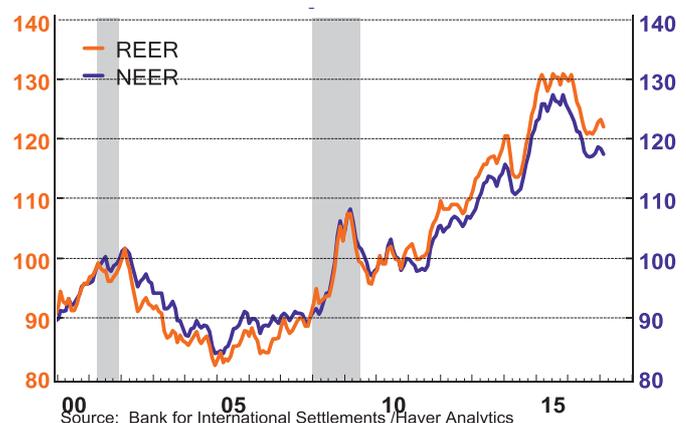
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Is the RMB overvalued?

- RMB appreciated slowly but steadily by 55 percent in REER term in 2005-14
- Adjusted for productivity, the RMB seems not much overvalued among EM peers
 - Many other measures and issues here, see Chin (2015) for 7 methods of assessing misalignments;
 - Warning: a large overvaluation plus fast credit expansion call for exchange rate flexibility. Or else, crises likely (Ghosh, Ostry and Qureshi, 2014).



China REER and NEER (2010=100)



Note: Real PPP Exchange Rate= Nominal Exchange Rate/ GDP PPP Conversion rate; PPP Conversion rate: national currency per current international dollar; Nominal Exchange Rates are on the base of direct quotation method.

Source: Haver/IMF/WB and SAFE Research, c.f. Berg and Miao (2010)

RMB exchange rate regime communication: facts and myths

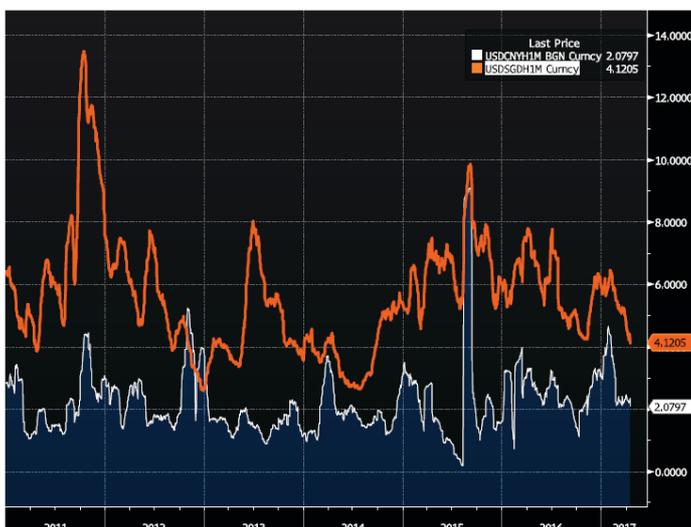
- ❑ Fact 1: It is about regime choice, not exchange rate level
 - Many discussions focus wrongly on choosing the right level of the RMB.
- ❑ Fact 2: Short term, the tradeoff is about output loss vs. financial stability concerns
 - Output loss from less than desirable relative price adjustment vs. potential loss of financial stability from large asset price movements.
 - Exchange rate both a relative price and an asset price.
- ❑ Fact 3: Longer term, the tradeoff is about macroeconomic policy framework
 - Monetary independence vs. exchange rate stability;
 - Can it be half independence and half stability?
- ❑ Myth 1: Clean float is the only choice for superpower
 - In a bipolar system, powers could coordinate to adopt a de facto peg?
- ❑ Myth 2: The weights of CFETS basket are secrets
 - They are actually disclosed on the website; most people don't know and just assumed it was not.
- ❑ Myth 3: The central fixing (parity) are "fixed" by the PBC
 - It was actually based on prices provided by market players.

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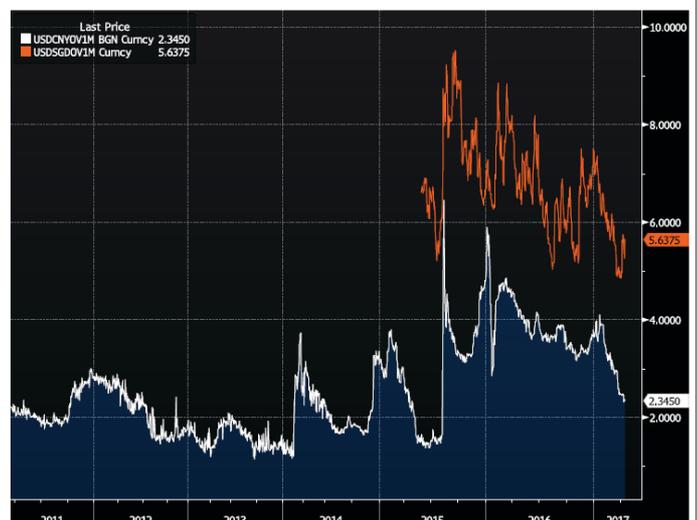
International constraint: break up of Bretton Woods II?

- ❑ China a de facto peg to the dollar until recently
 - Some went further to call it a monetary union (Narayana Kocherlakota, 2016).
- ❑ RMB volatility rose since August 2015 but still less than that of the Singapore dollar

Historical Volatility: RMB vs. SGD



Implied Volatility: RMB vs. SGD



24

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Anchoring the Nominal Anchor

Thoughts on Transitions to Inflation Targeting

Tommaso Mancini-Griffoli*

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IMF-PBoC Joint Conference, Beijing, April 28, 2017

* With valuable input from Zohair Alam, Federico Grinberg, Thomas Harjes, and Luis Jacome



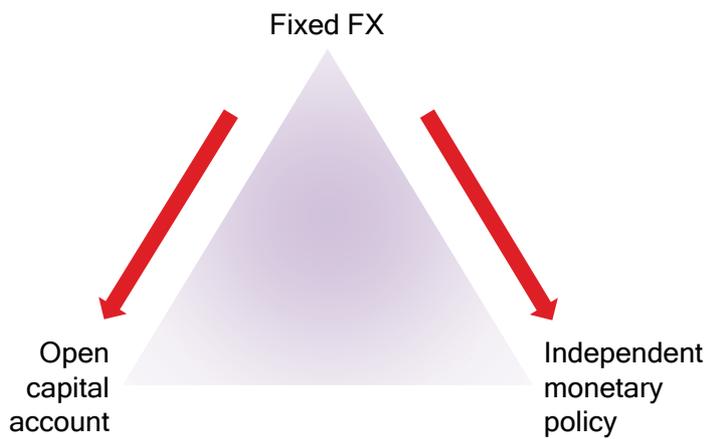
Agenda

- Financial stability necessary for transitions (IT)
- Transitions affect financial stability
- Intervention rules can help

- 1 Anchoring the nominal anchor
- 2 Case studies – Latin America in transition
- 3 Generalizing to normal times
- 4 An FX intervention rule for transitions & IT



The “must haves” and “dos” of transitions



Mandate & accountability

Medium-term inflation objective

Internally consistent framework

Operational independence

Market development

Forward looking, risk-based policy making

Effective operations, processes & culture

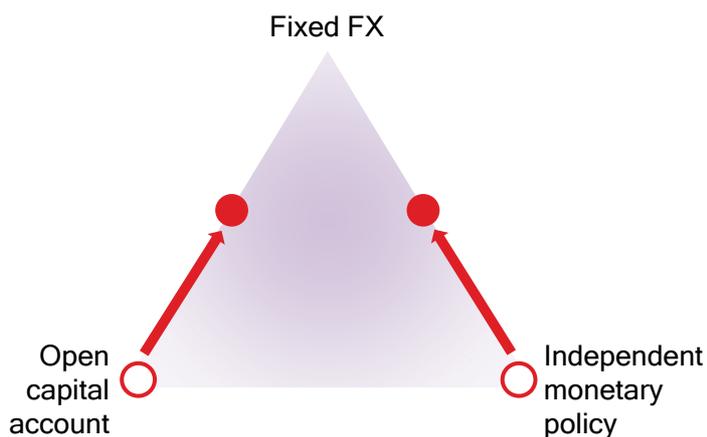
Clear communications

HAVES

DOS



Often difficult to fully transition

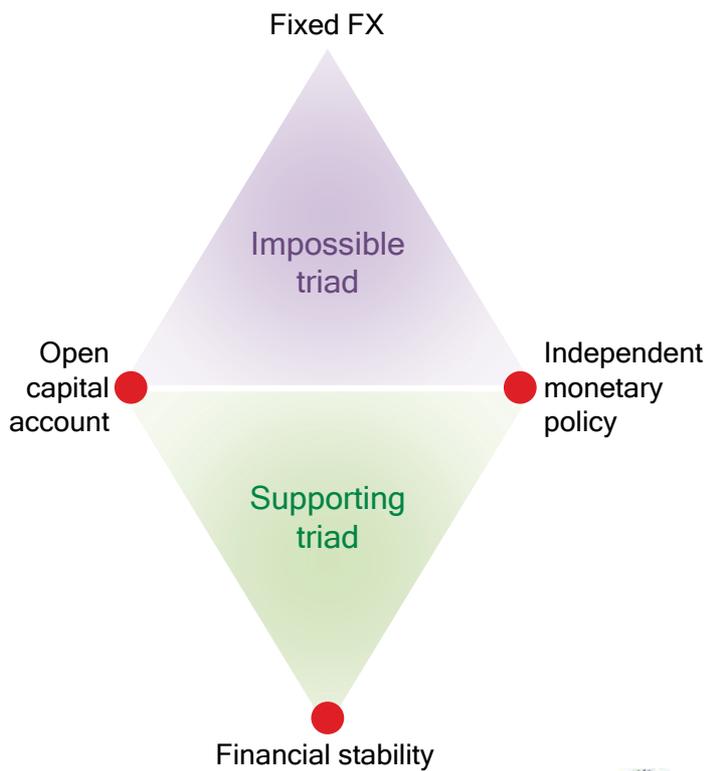


Financial Stability

- A de-facto,
- Competing objective
- Tradeoffs with monetary policy
- Especially in open economies



Anchoring the nominal anchor



Financial Stability

- A de-facto,
- Competing objective
- Tradeoffs with monetary policy
- Especially in open economies



Financial stability is necessary

Transitions

- Smooth
- Minimize risks (fears) of floating
 - 1 Inflation
 - 2 Depreciation
 - 3 Credibility

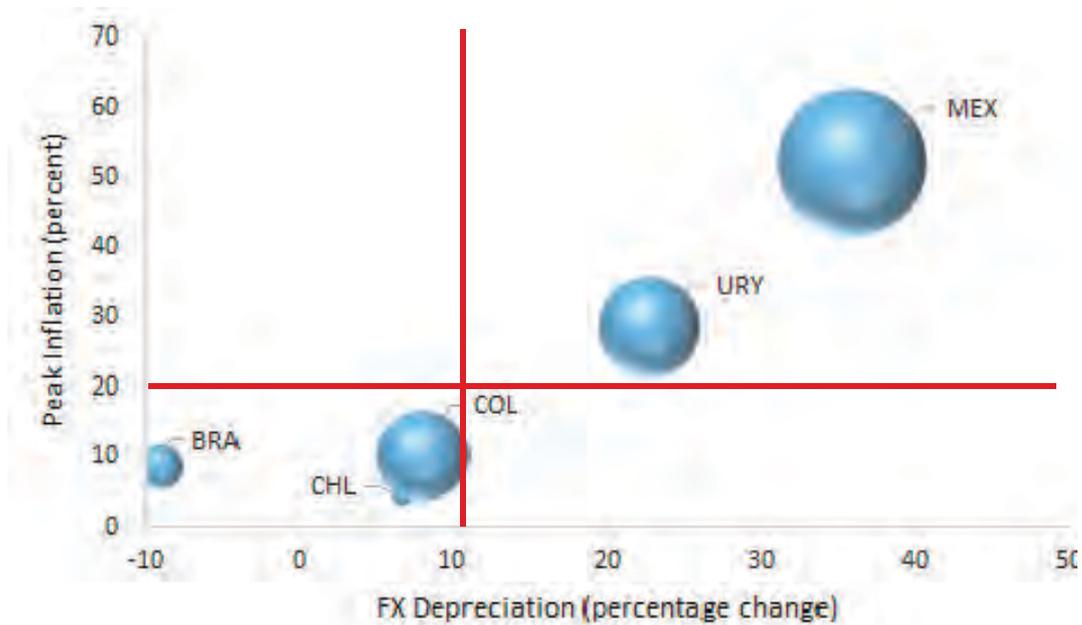
IT regimes

- Effective:
- Countercyclical,
- Successful,
- Credible



Transitions differ according to 3 fears of floating

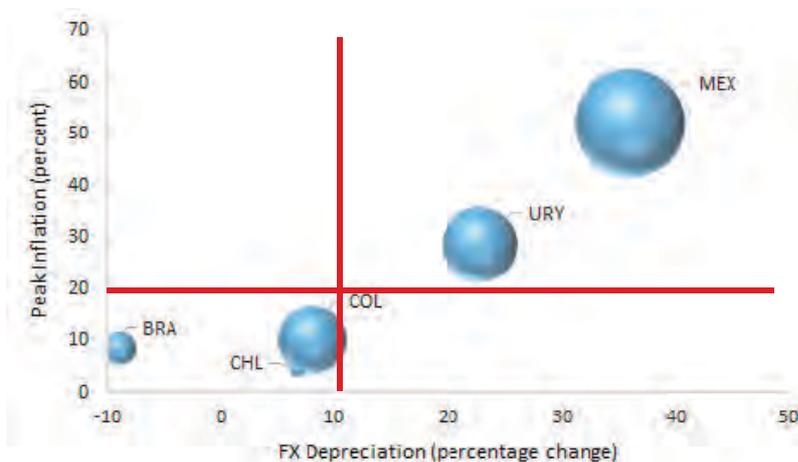
Depreciation and peak inflation 1 year after exit,
and months for expected inflation to stabilize at target



Months for expected inflation to reach target: Brazil (6), Chile (1), Colombia (25), Mexico (64), Uruguay (31).



No clear pattern explains success...



Independence

Clear mandate

Choice of regime

Operational
capacity

Market
development

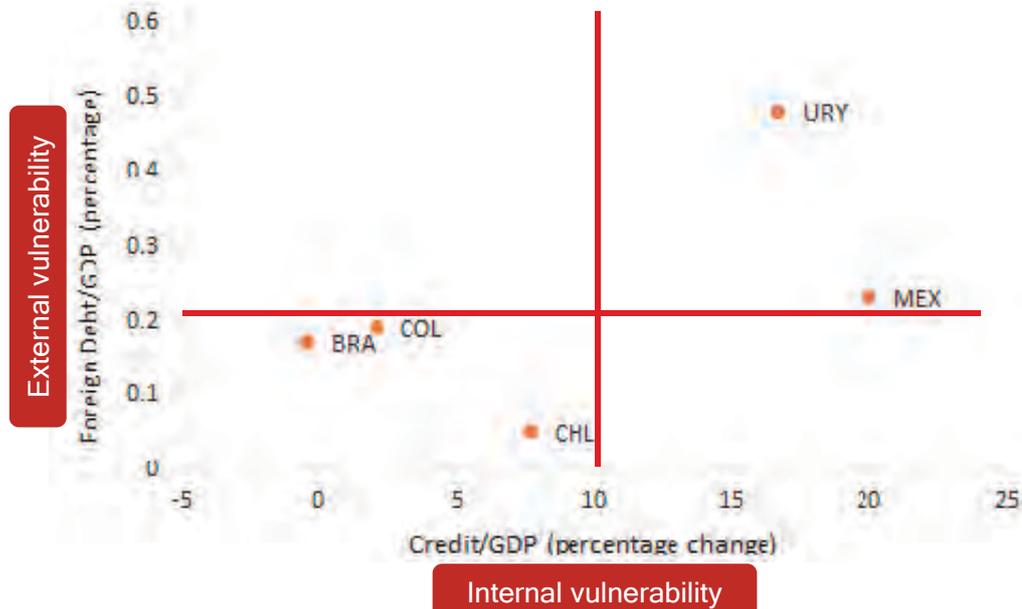
Slow v. fast
adoption

... except for financial stability



Hardest transitions, highest financial stability risks

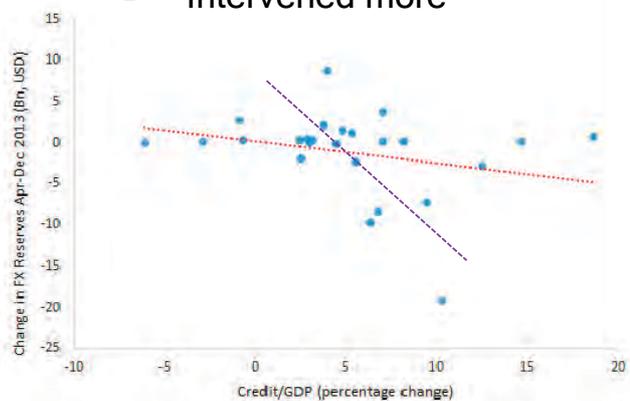
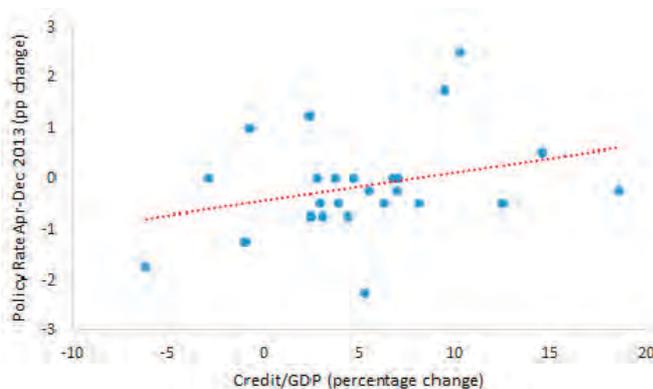
External and internal vulnerabilities
(average of 3 years prior to exit)



Even in normal times and IT countries: financial stability favors monetary policy independence

During the 2013 taper tantrum (risk shock), more vulnerable EM countries (higher credit to GDP):

- Hiked more
- Intervened more



Tentative conclusions

Transitions from managed FX regimes have benefits

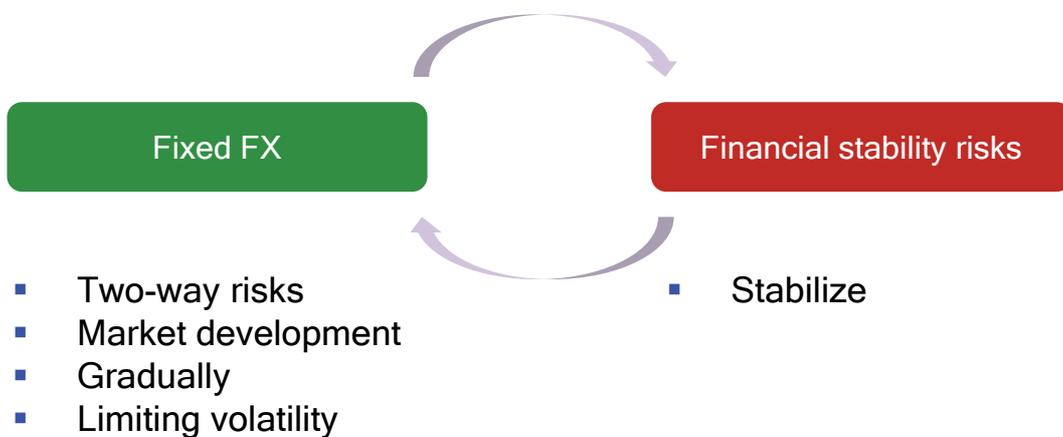
But require careful preparation

Especially relative to financial stability

- So “fears” less likely to materialize
- Transition can be successful and sustainable



FX regime and financial stability are related



A role for FX in transitions and steady state IT?

Design objectives

Realistic

Supportive

Limited

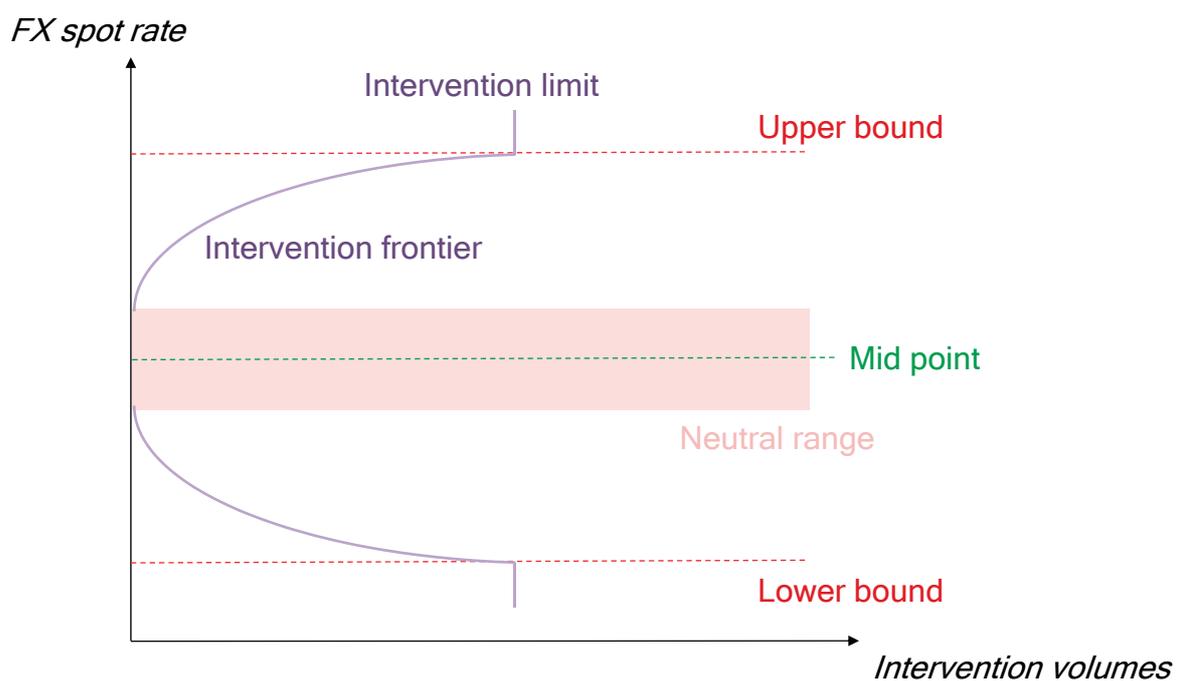
Robust

Clear

- Leans, does not fix
- Limits, does not eliminate
- Allows markets to determine rate, on average



Rule parameters – an illustration



Tentative conclusions

Transitions from managed FX regimes have benefits

But require careful preparation

Especially relative to financial stability

- So “fears” less likely to materialize
- Transition can be successful and sustainable



Need financial stability to transition

Transitions affect financial stability

- Well-designed FX rules can help
- Commitment, credibility, transparency, enable change



Macroprudential Supervision: Discussed from the bank regulator's perspective

28 April 2017



中国银行业监督管理委员会
China Banking Regulatory Commission

Contents

- ➔ ■ **Systemic risk analysis**
- **Macroprudential policy tools**
- **Supervisory cooperation**
- **Challenges**



Systemic Risk Analysis

- **Risk analysis of both individual banks and the banking system as a whole**

- Aggregate data, horizontal peer reviews and macroprudential analysis reports
- Risks, trends and concentrations
- Systemic risk early warning system

- **Closely monitor the impact of macroeconomic and market developments on the banking system**

- Developments and changes
- Domestic and overseas

- **Continuously monitor the market liquidity**

3



中国银行业监督管理委员会
China Banking Regulatory Commission

Systemic Risk Analysis (cont'd)

- **Stress testing**

- The Guidelines on Stress Testing : 2007
- Both bottom-up and top-down stress tests
 - ✓ 2010: stress tests on banks' exposures to the property sector in major cities
 - ✓ 2014: stress tests to analyze the impact of macroeconomic situations, property market conditions and changes in the financial market on banks
 - ✓ 2015: stress tests on credit risk, market risk and liquidity risk

- **Regular communications with banks**

- Quarterly meetings with major banks, attended by Chairmen and CEOs
- Communicate views on the latest macroeconomic conditions and potential risks facing the banking sector, and deliver supervisory requirements

4



中国银行业监督管理委员会
China Banking Regulatory Commission

Contents

- Systemic risk analysis
- ➔ ■ Macroprudential policy tools
- Supervisory cooperation
- Challenges



Countercyclical tools

- Countercyclical capital requirement
 - Since 2009
 - ✓ 2% capital buffer on top of the minimum capital adequacy requirement for all banks
 - ✓ 1% capital surcharge for five large banks in China
 - June 2012: *Regulations on Capital Adequacy of Commercial Banks*
 - ✓ Capital conservation buffer requirement: 2.5%
 - ✓ Countercyclical capital requirement: 0-2.5%
 - Analysis of Credit/GDP
- Leverage ratio
 - June 2011, updated in 2015: *Supervisory Rules on Leverage Ratio*
 - ✓ Minimum standard: 4%
 - ✓ 1 percentage point higher than the Basel III requirement



Countercyclical tools (cont' d)

■ Provisioning requirements

- 2009: banks were required to increase provisioning coverage ratio to 150%
- July 2011: updated *the Supervisory Rules on Loan Loss Provisioning*
 - ✓ Minimum provisioning coverage ratio requirement: 150%
 - ✓ Minimum provisioning/loan ratio requirement: 2.5 %

■ Liquidity risk management

- Closely monitor market liquidity conditions
- Allow banks to use HQLA during periods of stress

■ Dynamic loan-to-value (LTV) requirements

■ Loan-to-income (LTI) requirements

- 50% limit since 2004

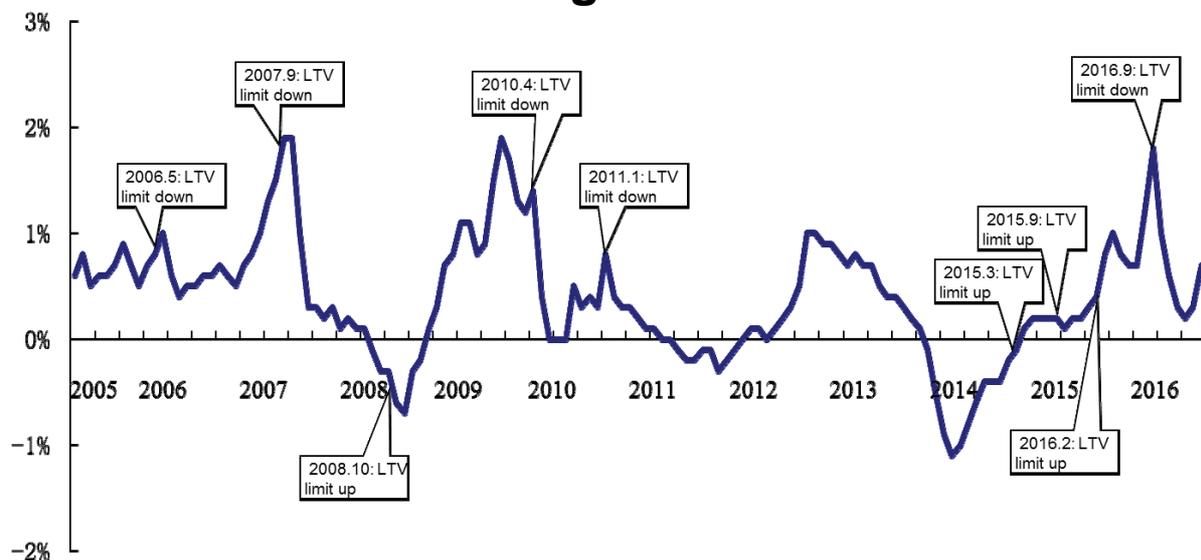
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中国银行业监督管理委员会
China Banking Regulatory Commission

LTV Requirements: an overview

Housing Price index



8



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China Banking Regulatory Commission

Policy Framework for G-SIBs

- Chinese banks have participated in the Basle G-SIBs QIS since 2009
- Four large banks have been identified as G-SIBs
- Issued the *Guidelines on the Disclosure of G-SIB Assessment Indicators for Banks in China*: January 2014
 - 12 indicators used in the G-SIB assessment methodology
 - Banks with a leverage ratio exposure measure exceeding RMB 1.6 trillion or identified as a G-SIB in the previous year
 - No later than four months after the financial year-end – and, in any case, no later than end-July

9



中国银行业监督管理委员会
China Banking Regulatory Commission

D-SIBs Identification

- **Methodology for identifying D-SIBs**
 - Four categories of systemic importance: size, interconnectedness, substitutability and complexity
 - Apply supervisory judgment based on additional quantitative and qualitative analysis
- **Assessment result**
 - Banks are allocated to buckets based on systemic importance
 - Inform capital surcharge decision
 - Take differentiated regulatory and supervisory measures according to banks' systemic importance

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China Banking Regulatory Commission

D-SIBs Supervision

■ Enhanced and intensified supervision

- More emphasis on corporate governance and risk management
- Off-site and on-site supervision
 - ✓ Increase supervisory frequency and intensity
 - ✓ Allocate more supervisory resources
- Consolidated banking supervision
 - ✓ Both cross-sector and cross-border dimensions



Recovery and Resolution

■ Recovery and resolution plans (RRPs)

- Require five large banks to formulate recovery and resolution plans (RRPs)

■ Crisis management group (CMG)

- Established for each of the four G-SIBs
- Members: Ministry of Finance, PBC, CBRC and relevant overseas authorities
- Meet on an annual basis

■ Resolvability assessment



Contents

- Systemic risk analysis
- Macroprudential policy tools
- ➔ ■ Supervisory cooperation
- Challenges



Cross-sector Cooperation

- Financial Crisis Response Group (FCRG) led by the State Council
 - Meet once every ten days during 2008-2009
- JMC among the PBC and three regulators
 - Established in 2013 and meet quarterly or when necessary
- Supervisory MOUs
 - Multilateral and bilateral



Cross-border Cooperation

- **Supervisory MOUs**
 - MOUs and Exchange of Letters (EOLs) with financial supervisory authorities in 68 countries and regions
- **Bilateral consultations**
 - Regular bilateral regulatory consultation meetings with US, UK, Canada, Japan, Korea, Singapore, Hong Kong, etc.
- **Supervisory colleges and CMGs**
 - Supervisory colleges for internationally active banks
 - CMG for G-SIBs



Contents

- **Systemic risk analysis**
- **Macroprudential policy tools**
- **Supervisory cooperation**
- ➔ ■ **Challenges**



Challenges

■ Systemic vulnerabilities identification

- Models are not sufficiently robust to predict crisis beforehand
- Qualitative discussions and judgments based on enhanced supervisory cooperation are important

■ Use of macroprudential tools

- Discretion vs. rules

■ Institutional framework and accountability

- Authorities need to make unpopular decisions
- Difficult to define the accountability of agencies
- Need to balance independence and accountability

■ Effectiveness

- It remains to be seen that how effective the macroprudential policies would be in practice





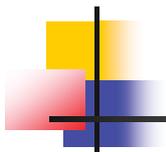
中国证券监督管理委员会
CHINA SECURITIES REGULATORY COMMISSION

Grasp the opportunity
To promote healthy and sustainable
development of futures and
derivatives market

Futures Regulation Department RAN Hua
April 2017



1



Overview

- I. **Achievements and function of the futures market**
- II. **Development opportunity for the futures and derivatives market**
- III. **Challenges for the development of the futures and derivatives market**



2

I. Achievements and function of the futures market

1. Increasing market size
2. Improving legal framework
3. Effective and special regulatory rules and framework
4. Effective in serving the real economy

1. Increasing market size

Basically covering all important areas of the national economy. Commodity futures cover major industrial sectors including agricultural products, metal, energy and chemical industry.

sector	products	No.
Agriculture and forestry	Sugar, cotton, soybean No. 1, soybean No.2, soybean meal, soybean oil, corn, strong wheat, strong flour, common wheat, early indica rice, rapeseed oil, palm oil, rapeseed, rapeseed meal, egg, japonica rice, fiberboard, plywood, late indica rice, corn starch, natural rubber, soybean meal future, sugar future	23
Metal	Copper, aluminum, zinc, lead, gold, rebar, wire, silver, iron ore, hot rolled coil, ferrosilicon (ferroalloy), manganese silicon (ferroalloy), tin, nickel	14
Energy and chemical industry	Fuel oil, coking coal, thermal coal, PTA, LLDPE, PVC, coke, methanol, glass, petroleum pitch, polypropylene	11
Finance	CSI 300 stock index futures, SSE 50 stock index futures, CSI 500 stock index futures, 5-year Treasury bond futures, 10-year Treasury futures, SSE 50ETF options	6

I. Increasing market size

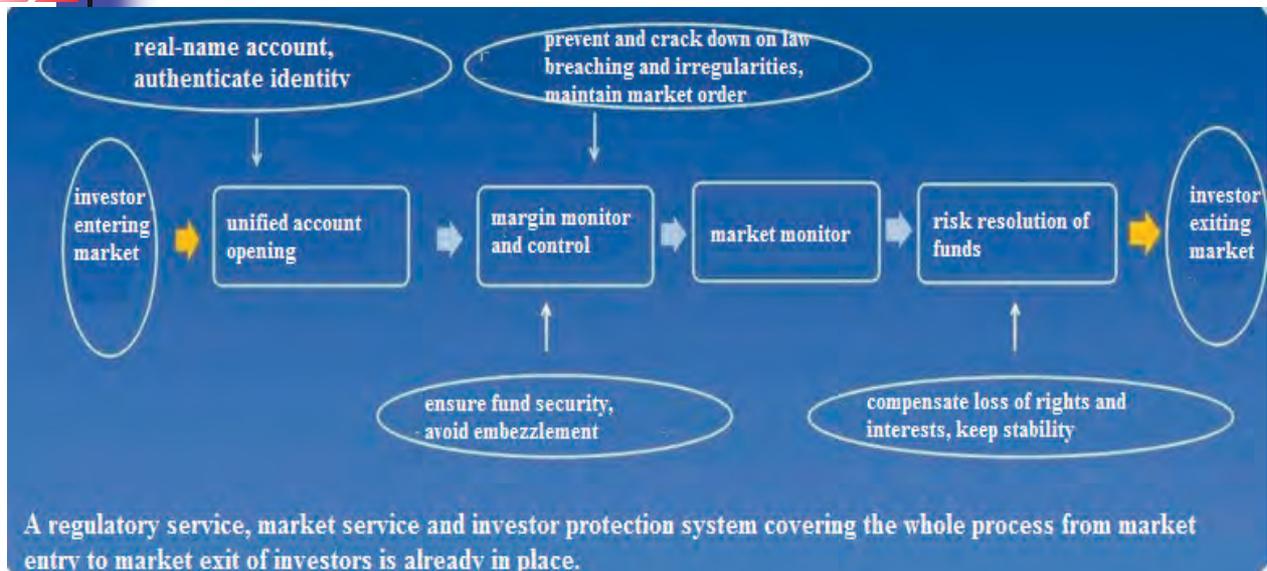
- Turnover on China's futures market was 4.138 billion contracts (excluding 50ETF futures), increasing by 15.71 percent year on year. Among this total, turnover of commodity futures registered 4.119 billion contracts, accounting for 99.6 percent; and that of financial futures reached 18 million contracts, accounting for 0.4 percent.



II. Improving legal framework

- First tier is *Regulation on the Administration of Futures Trading* enacted by the State Council, and judicial interpretation pertaining to the futures market;
- Second tier is sectoral rules and normative documents issued by the CSRC;
- Third tier is rules of futures exchange, including articles of incorporation of futures exchanges, rules and detailed rules;
- The *Futures Law* is not launched yet, but listed into second-category legislative plan of the 12th NPC

3. Effective and special regulatory rules and framework



Playing an important role for the CSRC to monitor and manage risks on the market



7

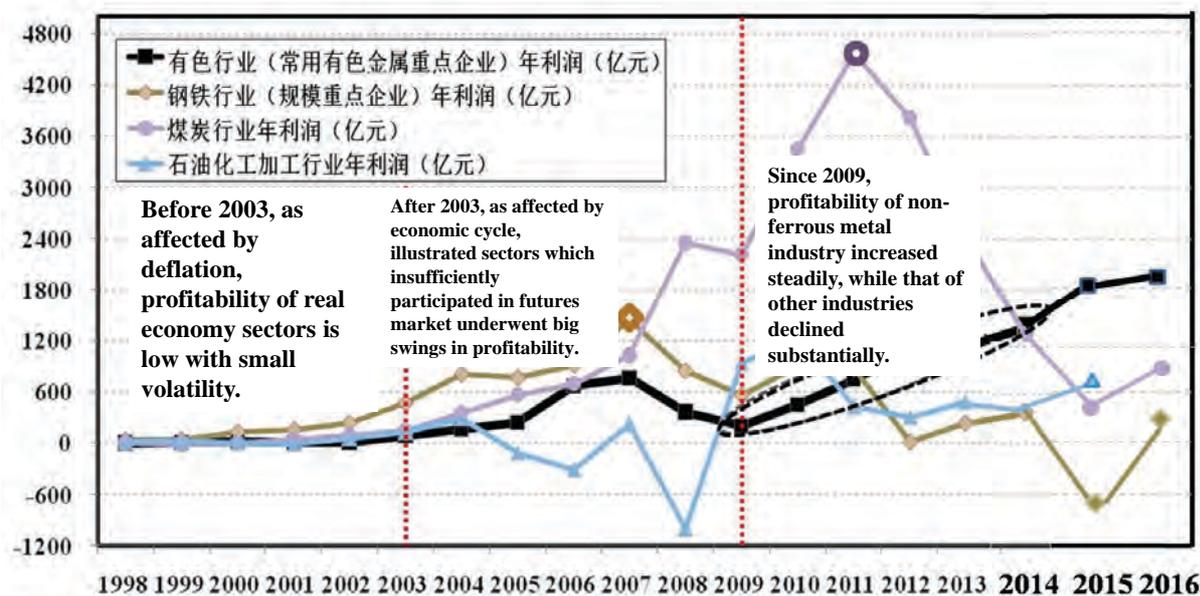
4. Effective in serving the real economy

- First, futures pricing enhances market efficiency, and ensures effective and orderly operation of the market.
- Second, futures hedge risks, and promote robust growth of enterprises and sound development of industries.
- Third, it lowers corporate funding cost and enhances efficiency for resource allocation.
- Fourth, futures market helps China integrate into global production and trade system.
- Fifth, it provide SMEs with risk management and financing support.



8

4. Effective in serving the real economy



II. Development opportunity for the futures and derivatives market

1. Opening-up of commodity futures market
2. Huge opportunity for the development of financial futures
3. Risk management needs of small and medium-sized products
4. Risk management needs of SMEs

Business model of risk management subsidiaries of futures companies



III. Challenges for the development of the futures and derivatives market

1. **Lack of experiences in cross-border regulatory coordination and relative institutional arrangements**
2. **Insufficient market regulation resources**
3. **Insufficient risk management awareness on part of market participants and enterprises, persistent criticism and blames on derivatives**

Strengthening Financial and Exchange Rate Frameworks

International Experience and Relevance for China

FIFTH JOINT CONFERENCE
PEOPLE'S BANK OF CHINA AND INTERNATIONAL MONETARY FUND

MIQUEL DIJKMAN
SR FINANCIAL SECTOR SPECIALIST
FINANCE AND MARKETS GLOBAL PRACTICE



April 28, 2017

Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks *China's Rapidly Changing Financial System: Drivers and Future Development*

High level developmental challenges for China's financial sector

- Opportune questions:
 - How has the Chinese financial system evolved in recent years?
 - How does its development compare to peers?
 - From a developmental perspective, what are the key challenges?
- A very **selective** and **subjective** stock take of financial sector developments

Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

Policy context – continued reforms

- The Chinese leadership has reiterated its commitment to further deepening financial sector reform and recognized the need to increase the market's role in resource allocation
- Comprehensive financial sector reforms
 - *Liberalization of interest rates*: removal of ceilings on deposit rates
 - *Banking reforms*: launch of private bank pilot program, removal of loan-to-deposit cap, introduction of deposit insurance, policy bank reform
 - *Capital markets*: Shanghai – Hong Kong and Shenzhen – Hong Kong Stock Connect Program, expansion of foreigners' access to the domestic bond market
 - *RMB internationalization*: inclusion of RMB in SDR basket
- Overarching policy objective is to rebalance the Chinese economy
 - Towards an environmentally more sustainable, more inclusive, more consumption and service-driven and less credit-dependent economy

Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

Three high level developmental challenges

- The financial sector can potentially play a powerful role in promoting economic rebalancing
- The question is to what extent has it delivered on its potential
- Three areas are particularly relevant from a developmental perspective
 - 1: **Strengthening the allocative function** of the financial sector, in line with official policy to reduce direct government intervention in resource allocation while promoting the role of the market
 - 2: **Building a more diverse financial system**, reduce the dependence on bank credit, with a bigger role for Non-Bank Financial Institutions (NBFIs) and capital markets
 - 3: **Building a more inclusive financial system** that better serves the needs of those that so far have been underserved, particularly households and Small and Medium-sized Enterprises (SMEs)
- What follows is a selective set of findings rather than an exhaustive analysis

Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

1: Strengthening the financial sector's allocative function

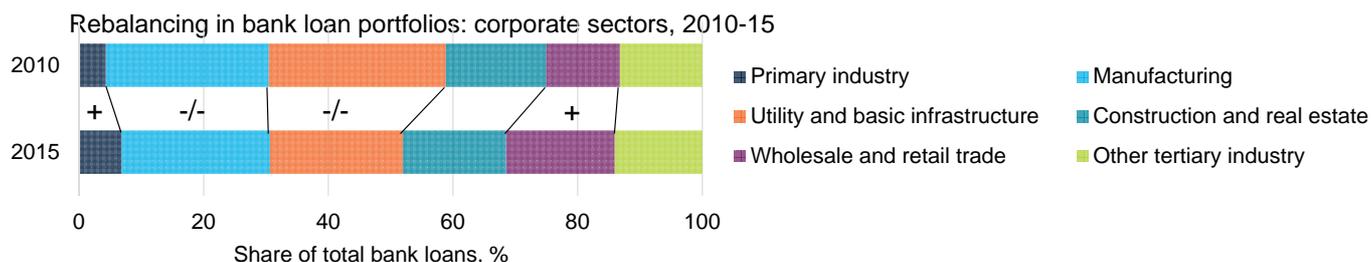
- The financial sector can fulfil an important role in rebalancing the economy by channeling scarce resources to their best economic use
- Thereby promoting a higher and more sustainable rate of productivity, and economic growth
- In order for the financial sector to be able to do so, it needs to be able to refocus lending activity from old to new sectors
 - Lending decisions on the basis of commercial considerations
 - Hardening of budget constraints vis-à-vis old, unviable economic sectors
 - Decisive and comprehensive strategy for the resolution of NPLs associated with "old" sectors
 - Also requires a sufficient level of ambition in corporate restructuring
 - Timely and orderly exit of unviable firms
 - Willingness to engage in true operational restructuring of potentially viable ones

Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

1: Strengthening the financial sector's allocative function

- (a) *The composition of banks' corporate loan book has shifted quite a bit*
 - Significant drop in share of manufacturing and utilities and basic infrastructure
 - Biggest increases occurred in wholesale and retail trade and primary industry
 - But the distinction between "old" and "new" sectors is not always clear-cut
 - Exposures to manufacturing and utilities/basic infrastructure still account for around 45 percent; and investment shows a similar pattern



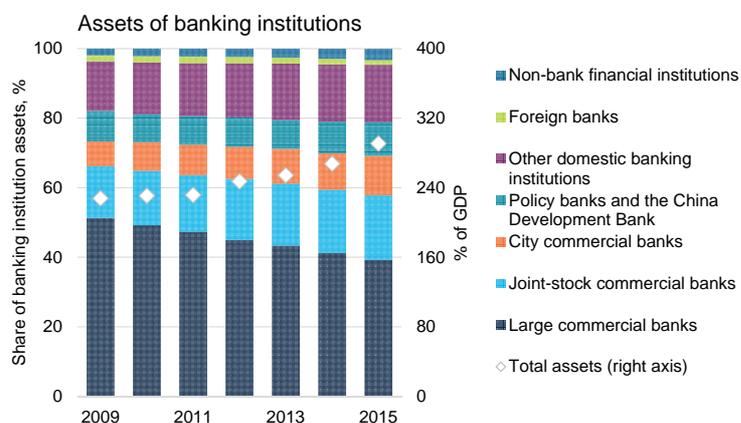
Source: Staff calculations, based on data from Annual Reports of China Banking Regulatory Commission.

Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

1: Strengthening the financial sector's allocative function

- (b) Joint-stock and city commercial banks have rapidly increased their market share, at the expense of the large commercial banks
 - The shift is all the more remarkable given the overall rapid development of the banking industry



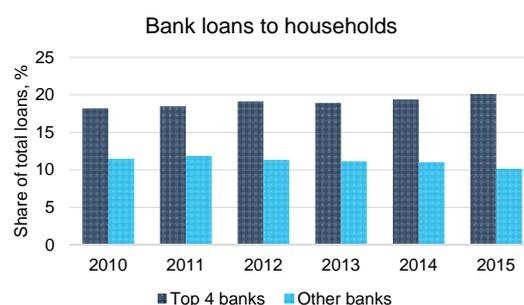
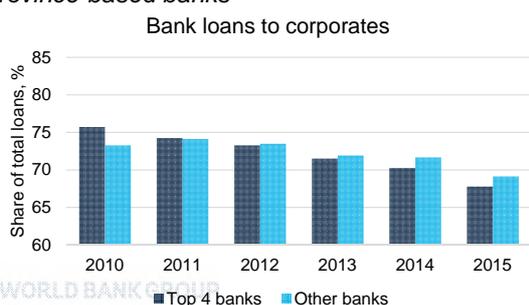
Source: Staff calculations, based on data from People's Bank of China, China Banking Regulatory Commission, and World Bank.

Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

1: Strengthening the financial sector's allocative function

- (c) How are the various categories of banks contributing to rebalancing?
- Lack of granular data**, particularly breakdown of loans by type of end user
- Complicates the tracking over time of the composition of banks' loan books, and **monitoring progress in rebalancing**
- However, there may be some **diverging trends within the banking sector**
- The big-four demonstrate a faster drop in the share of corporate loans and a moderate increase in the share of loans to households (which on average has dropped somewhat for the rest of the banking sector)
- The key question is to what extent the gap left by the big-four in financing old sectors is filled by rapidly expanding province-based banks*



Source: Jones, R., Nam, E., and Zhu, J. 2016. *The Chinese Banking Sector: Change, Innovation, and Risk*. Wigram Capital Advisors.

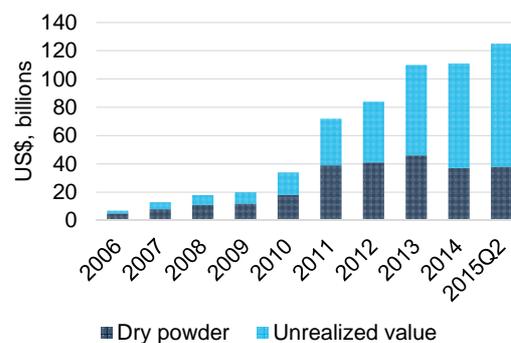
Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

1: Strengthening the financial sector's allocative function

- (d) Some segments of the financial sector are growing fast and are actively supporting the financing of new and dynamic sectors
 - Rapid growth particularly in the **private equity** and **venture capital** sectors – albeit from a low base
 - Uptick in aggregate deal value for private equity end-2015
 - Aggregate value just short of \$ 14 bln
 - Fewer but larger deals
 - Steady growth of venture capital since 2014, both in number of deals and aggregate value
 - >400 deals per quarter in 2015
 - Aggregate value just short o \$12 bln

Greater China-based private equity assets under management, 2006-2015Q2



Source: Preqin 2016. *Private Equity in Greater China*.

Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

2: A more diverse financial system

- China's capital markets have demonstrated tremendous growth and are now among the largest in the world
- Nonetheless, China remains a **bank-dominated financial system** with a comparatively minor role for NBFIs and capital markets
 - NBFIs = risk pooling and contractual savings institutions, i.e. insurance companies, pension funds and mutual funds
 - But wealth management products and trusts in practice have many NBF-like features
 - Capital markets = equity and bond markets, commodities/derivatives markets
- Furthering **capital market and NBF development** is a priority both from a developmental and a stability point of view
 - Enhances capacity of households and enterprises to manage financial risks
 - Improves access to long term finance
 - Relieves the banking sector that in and by itself is not well-suited to provide long term finance

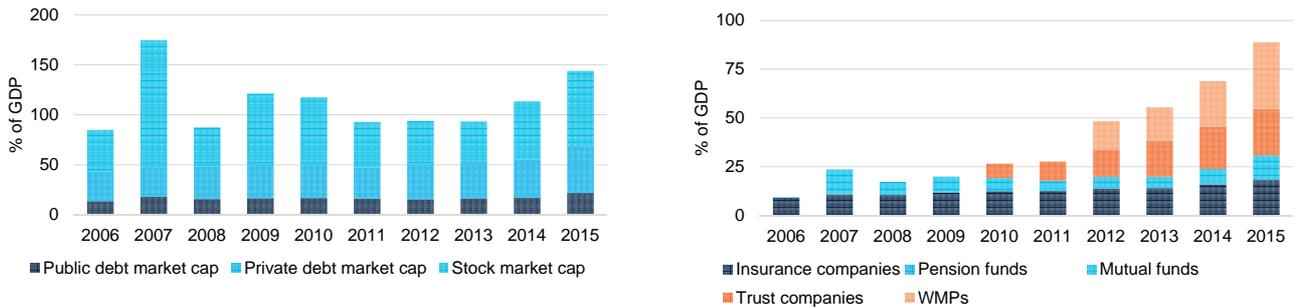
Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

2: A more diverse financial system

- (a) Steady development of debt and stock market capitalization
 - But issuance in the equity market primarily by a relatively small number of mostly larger firms
 - Government and financial institutions account for a significant share of bond market issuance activity
- (b) Growing importance of institutional investors, albeit from a low base

Capital market development and institutional investor base, 2006-15



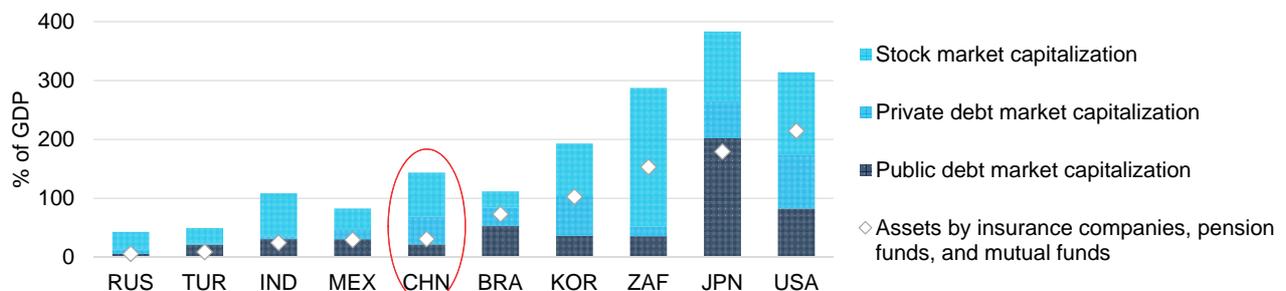
Session II: Strengthening Financial Sector and Macro-Prudential Policy Frameworks

China's Rapidly Changing Financial System: Drivers and Future Development

2: A more diverse financial system

- (d) Overall capitalization levels compare reasonably with other emerging market peers
- (e) But the institutional investor base is in the lower ranges

Capital market development and institutional investor base, 2015



Source: Staff calculations, based on data from Global Financial Development Database, World Bank.

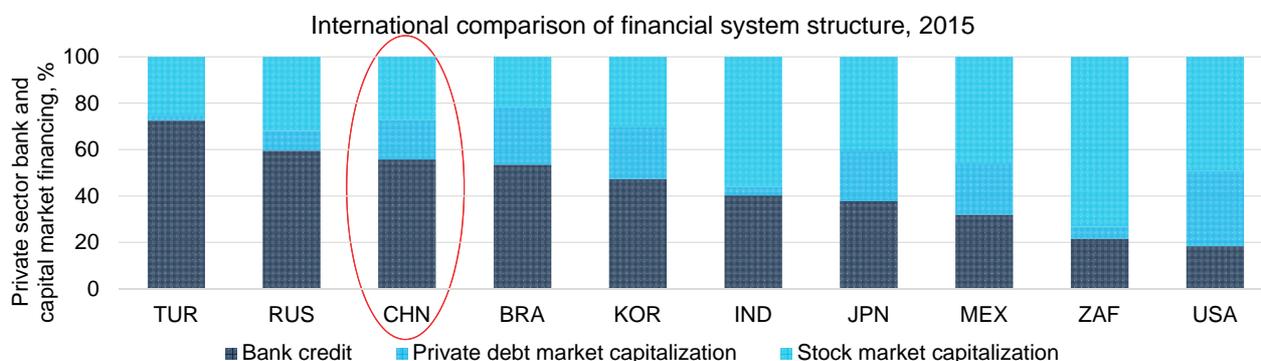
Note: Private debt market capitalization reflects latest available values

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China's Rapidly Changing Financial System: Drivers and Future Development

2: A more diverse financial system

- (f) China's financial system is still comparatively bank-dominated, though less so now than in the past



Source: Staff calculations, based on data from Global Financial Development Database, World Bank.

Note: Private debt market capitalization reflects latest available values

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China's Rapidly Changing Financial System: Drivers and Future Development

2: A more diverse financial system

- Good progress in **market deepening**, but challenges remain
 - Issuance activity in bond and equity markets is dominated by larger companies
 - Multilayer policy approach to promote trickle down, with important successes
 - Need to win the trust of investors to expand reach to smaller companies; promote long-term orientation; and strengthen price formation
- Diversification of the **investor base**
 - Although institutional investors are becoming more important, retail investors continue to dominate, which is typical for a young, developing market
 - Retail dominance with increasing complexity puts a high premium on efforts to monitor systemic risk
- **Maturing the market:**
 - Private pension funds appear to be particularly underdeveloped (and to some degree, WMPs, MMFs and Trusts are probably filling the gap)
 - Continued strengthening the functioning of *gate keepers* (including sponsors, auditors, and rating agencies) and *public and private enforcement* – good progress has been made

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3. A more inclusive financial system

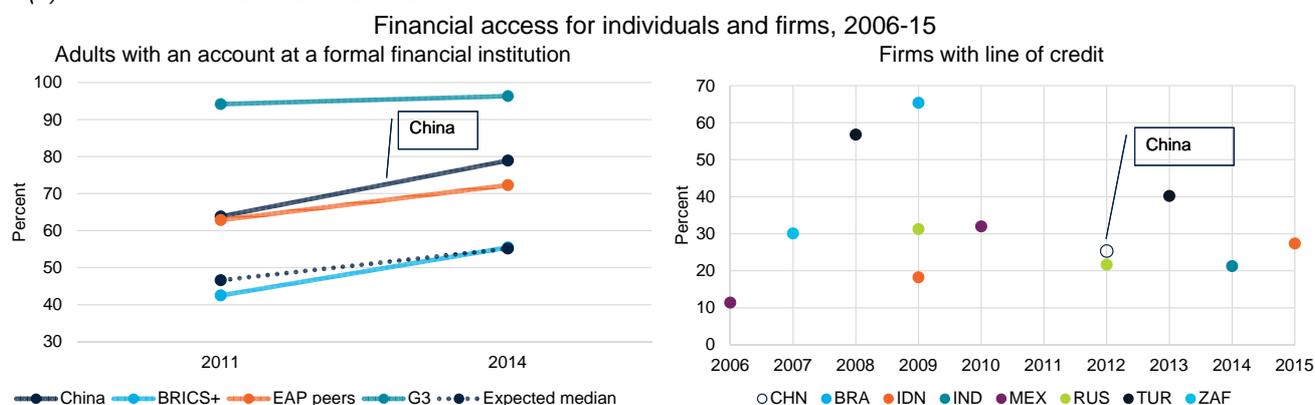
- The basic function that the financial system is to fulfill evolves as the economy transitions away from an investment-led growth model
 - Under the investment-led growth model: channel China's high savings at low cost to strategic sectors
 - In a rebalancing economy: strengthen the ability of individuals or enterprises to obtain financial services, including credit, deposit, payment, insurance and other risk management services
- Public policy has focused in reaching the so-called "last mile", expanding outreach to hitherto unserved population groups (e.g. rural, farmers, and agriculture)

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China's Rapidly Changing Financial System: Drivers and Future Development

3: A more inclusive financial system

(a) Good progress in expanding access, as measured by account metrics

(b) Firms' access to credit still on the low side



Source: Global Financial Inclusion Database (Global Findex) and Enterprise Surveys, World Bank.

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China's Rapidly Changing Financial System: Drivers and Future Development

3. A more inclusive financial system

- Next step would be for public policy to further evolve:
 - From “**last mile**” targets to **broader set of objectives**, including wider range of appropriately designed financial products for all underserved groups (e.g. payments, credit, savings, insurance)
 - Shift from government-mandated approach to **more market-based approaches**
 - Establish the **preconditions and enabling environment** for financial institutions to be able to serve underserved segments in a commercially sustainable manner
- Potential areas where additional gains could be made
 - Facilitate more cost-effective and innovative alternatives to “brick-and-mortar” branches which are expensive to build and operate – e.g. **agent-based banking** and **digital finance**
- Improving competition in rural areas to improve quality, availability, and costs of financial services
 - Revise restrictions on operations of village and township banks and microcredit companies
 - Improve governance of rural credit cooperatives

Key attributes of macroprudential organizations: The example of the United Kingdom

Donald Kohn

Robert S. Kerr Senior Fellow, Economic Studies at Brookings
 Member, Financial Policy Committee of the Bank of England

These views are my own and do not necessarily represent the views of my colleagues on the
 Financial Policy Committee

I. Clear mandate from government

- Commitment from government to financial stability
- Instructions to, and empowerment of, committee to accomplish that
- Standards for committee accountability

FPC

Our primary objective:

“The responsibility of the Committee in relation to the achievement by the Bank of its Financial Stability Objective relates primarily to the **identification of, monitoring of, and taking of action to remove or reduce systemic risks with a view to protecting and enhancing the resilience of the UK financial system.**”

Subject to that a secondary objective to:

“Support the economic policy of Her Majesty’s Government, including its objectives for growth and employment.”

- *Bank of England Act 1998, as amended in 2012*

2. Skill to identify risks

Make up of Macroprudential committee:

- Key role for central bank
 - FPC: Governor, plus 4 deputy governors (including head of PRA), plus executive director for financial stability, strategy, and risk
- Representation of other interested authorities
 - FPC: CEO of FCA; Treasury (nonvoting)
- Outside experts
 - FPC: 5 external members

Skill to identify risks

Particular nature of risks to financial stability

- Tail risks
 1. From leverage and maturity mismatches in particular markets or the broad state of the financial cycle
 2. Asset price levels and lending terms
- Externalities: Would the crystallization of risks be systemic? What is the externality not priced into markets?
 1. Financial sector amplification
 2. Private borrower behavior

3. Authority to take action

- FPC can give direction to regulators to adjust specific macroprudential tools:
 1. Countercyclical capital buffer
 2. Sectoral capital requirements
 3. Terms of residential mortgage lending
 4. Leverage ratio
- FPC can make recommendations to anyone on anything related to financial stability
 1. To other regulators on comply or explain basis
 2. To Treasury on regulatory perimeter

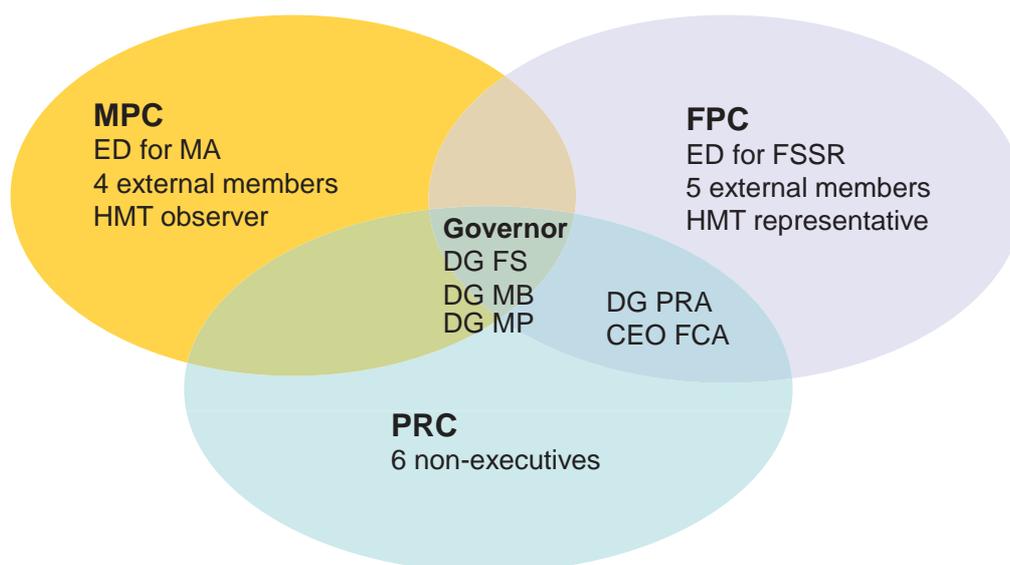
Authority to take action

- Stress tests: assessing resilience
 1. FPC: Annual cyclical scenario
 - Varying stresses countercyclically to same stressed outcome
 - Setting the countercyclical capital buffer
 2. FPC: Exploratory scenario
- Orderly resolution of systemically important institutions
 1. Enhance market discipline, while sustaining stability
 2. Effect on required liquidity and capital
 3. UK: Authority in Bank of England (not FPC)
 - Crisis response

4. Communication and cooperation with microprudential and monetary policy authorities

- Separate committees
 - Differences in objectives, types of risks, required skills
- But cross effects from one policy sphere to others
 1. Need to understand objectives and likely course of action
 2. Possibility of shaping policies to minimize conflict while accomplishing objective

Communication and cooperation with microprudential and monetary policy authorities--UK



Examples of cooperation

- Stress tests
- Brexit response



ธนาคารแห่งประเทศไทย
BANK OF THAILAND

Regulatory Framework & Macroprudential Policy: The case of Thailand

Fifth Joint Conference

People's Bank of China and International Monetary Fund

28 April 2017

Daranee Saeju

Senior Director, Financial Institutions Strategy Department, Bank of Thailand



ธนาคารแห่งประเทศไทย
BANK OF THAILAND

Topics for Today

- Thailand' Evolving Financial landscape
- Regulatory framework
- Macroprudential Policy Framework: Practices & Challenges
- Current Financial Stability Issues in Thailand

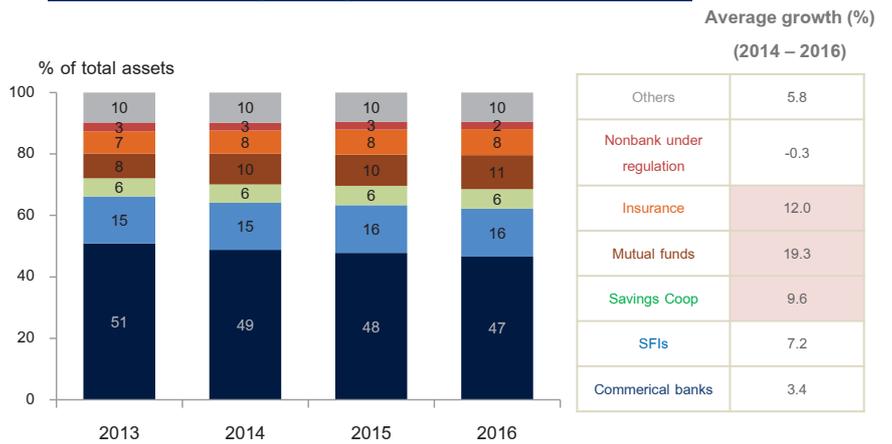




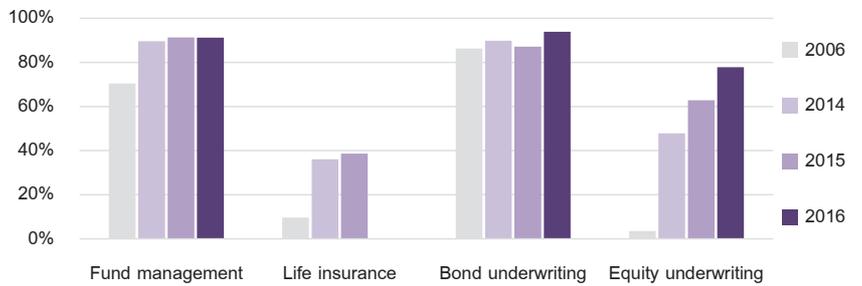
Thailand's Evolving Financial landscape

- Commercial banks remains at the core of Thailand's financial system
- Two key implications on financial stability:
 - Growing roles of savings cooperatives, mutual funds and insurance companies
 - Interconnectedness between banks and non-bank via financial conglomerate

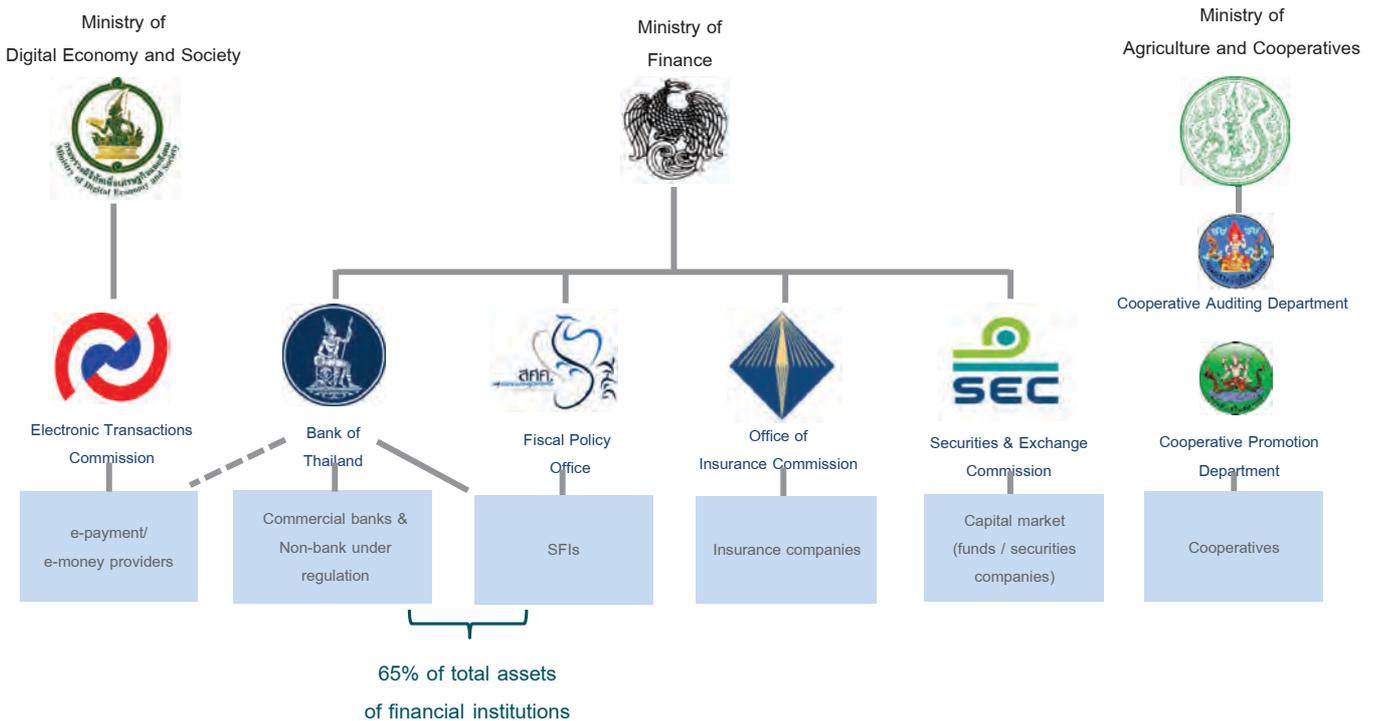
Thailand's financial system: by asset size of financial institutions

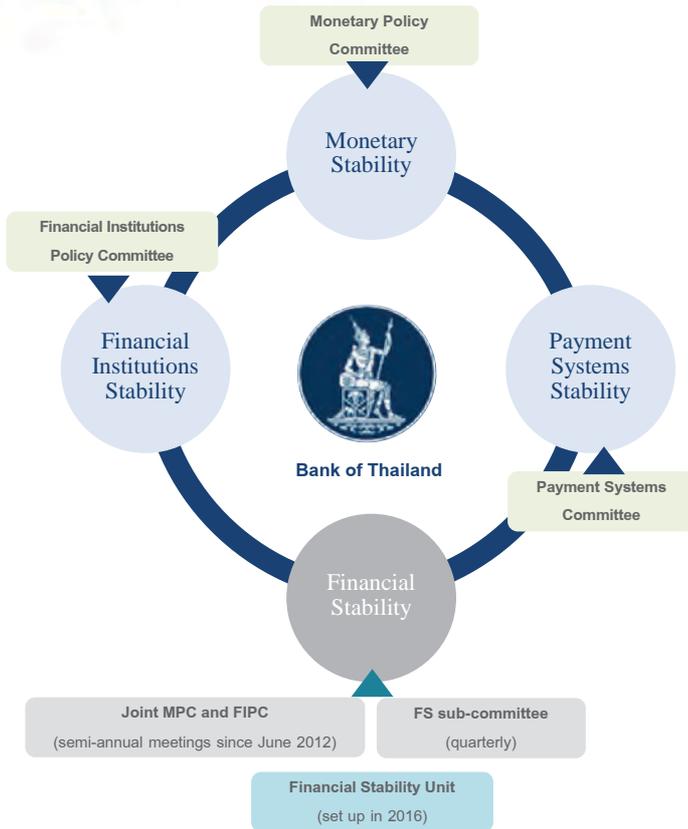


Market shares of banking groups' affiliates in other financial services



Structure of Regulatory Authorities




Policy Board Level:

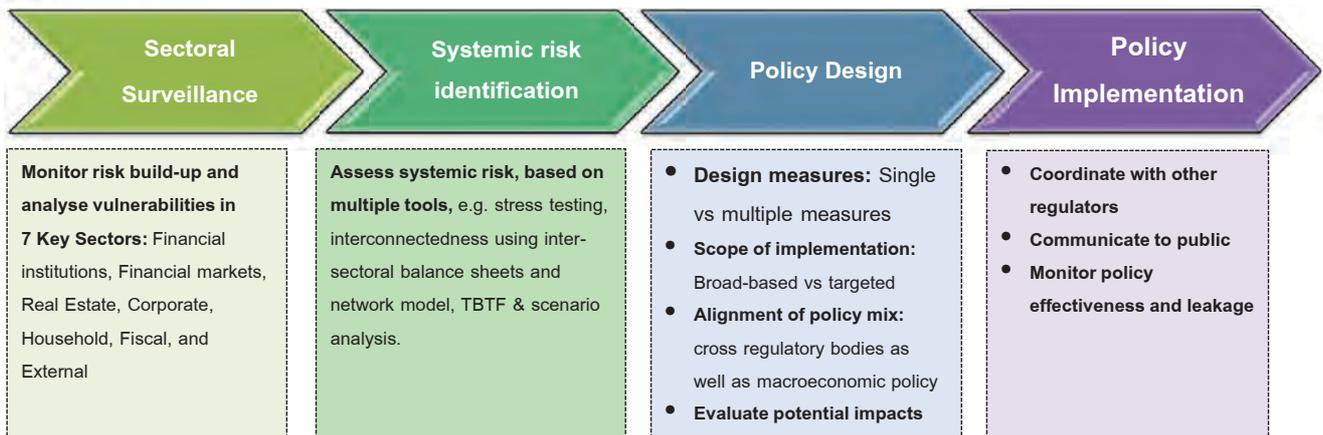
- **Financial Stability Subcommittee, quarterly meetings:** Internal platform for coordination and policy discussion on systemic risk issues
- **Joint meeting between MPC and FIPC, semi-annual meetings:** knowledge-sharing and coordinating body to discuss comprehensive risk assessments and policy implementations

Working level:

- **Financial Stability Unit**, set up in 2016, to centralize the works of cross-department working groups
 - center for systemic risk assessment and think-tank for technical and analytical development
 - Prepare macroprudential toolkits, and enhance policy framework, particularly via regulatory coordination as FS is not a central mandate of the regulators.
 - Secretariat to the policy committees, and also public communication, eg. as the FSR chief editor

● Explicit mandate under the Bank of Thailand Act (2008)

5


Ongoing Challenges:

1. Close data gap & develop analytical tools to better identify sources of systemic risk
2. Improve institutional arrangements conducive to effective policy implementation

Prerequisites for FS work:

Data

HR

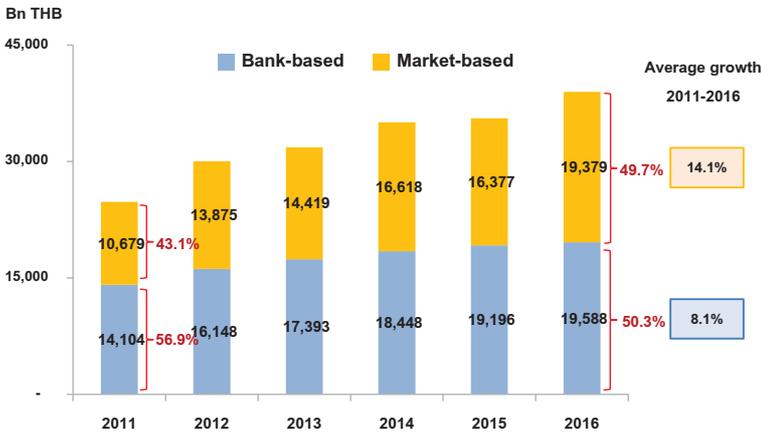
Organizational
StructureFS Mandate &
shared responsibilitiesBoard /
Inter-Agency Council

6

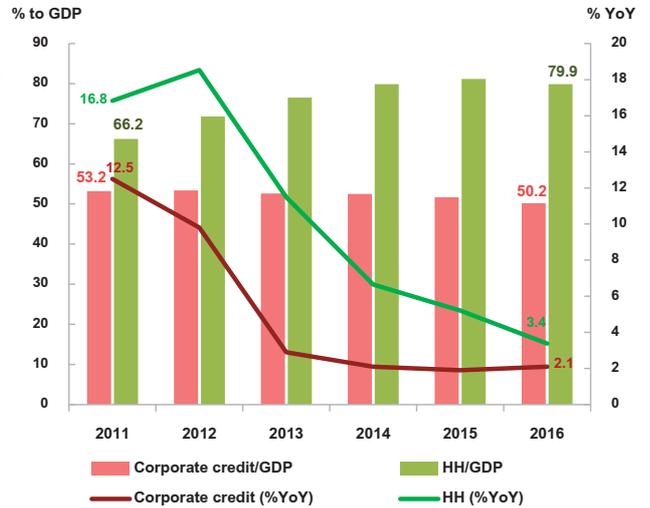


Current Financial Stability Issues in Thailand

1) Growing role of non-banks: more interconnectedness between bank and non-bank



2) Debt overhang from household leverage



Note: Bank-based includes credits granted by deposit-taking FIs and other FIs; market-based includes stock market (market cap) and bond market (outstanding).

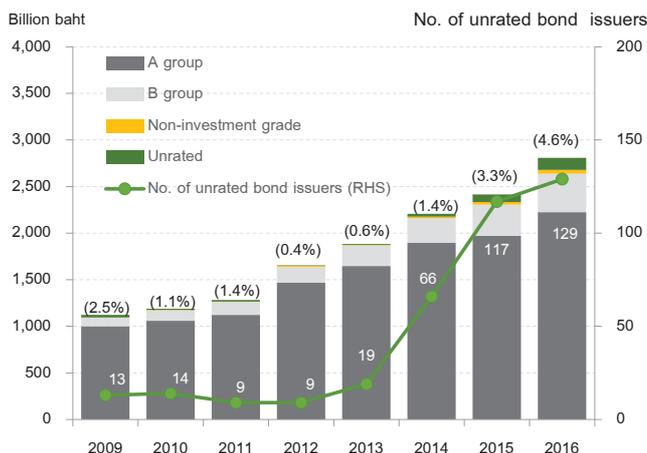


1) Growing Role of Non-Bank: Unrated Bonds

❖ **Market-Based Non-Bank: Growing portion of unrated corporate bond issuances**, driven by search for yield behavior under the low interest rate environment, has been detected as a new small pocket of risk build-up.

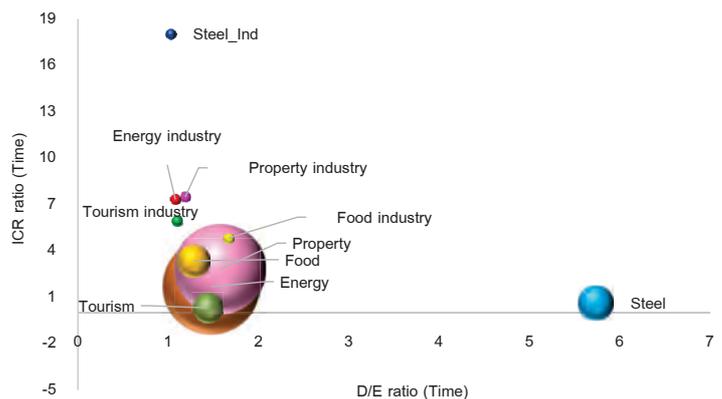
- Risk still contained, due to 1) small size of unrated bonds 2) investment restricted to specific group of investors.
- Several incidents of corporate defaults helped raise awareness:
 - *market mechanism*: correct itself towards longer-term issuance of new bonds with better pricing
 - *surveillance*: BoT and SEC keep close monitoring, communicating and warning investors to understand risks.
 - *regulations*: enhance information disclosure & reporting, due diligence, and impose investment limit in some asset types.

Corporate bonds outstanding classified by credit rating



Note: Unrated bonds refer to bonds with neither issue nor issuer ratings.

Financial ratios of unrated bond issuers relative to industry's averages



Note: 1) Ratios are annualized.
2) Size of circles represents outstanding value of bonds.
3) Dot represents the industry's averages of financial ratios.

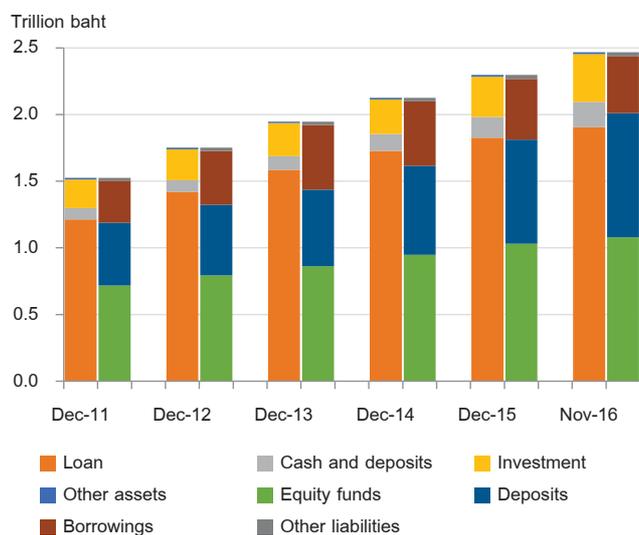


1) Growing Role of Non-Bank: Savings Cooperatives

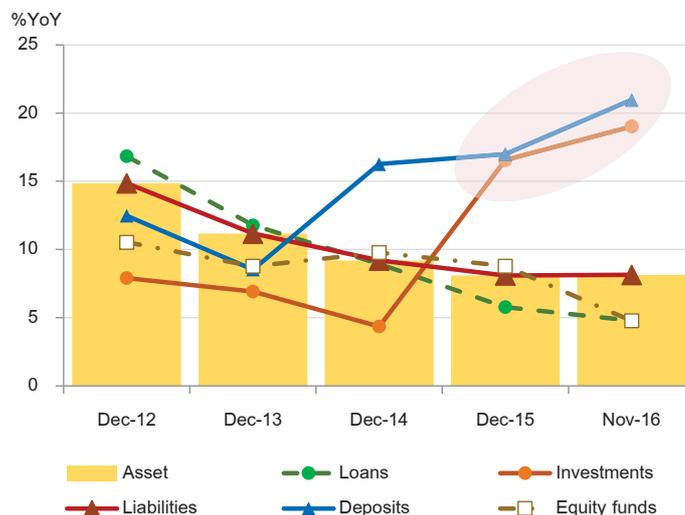
- ❖ **Bank-like Non-Bank: Rapid expansion of savings cooperatives raised concerns on “too many involved to fail” and their interconnectedness with core banks**

○ *Policy response:* BoT worked closely with relevant regulators to strengthen regulatory and supervisory framework.

Sources and uses of funds of savings cooperatives



Savings cooperatives' total assets and liabilities



Source: Bank of Thailand (2016), Financial Stability Report

9



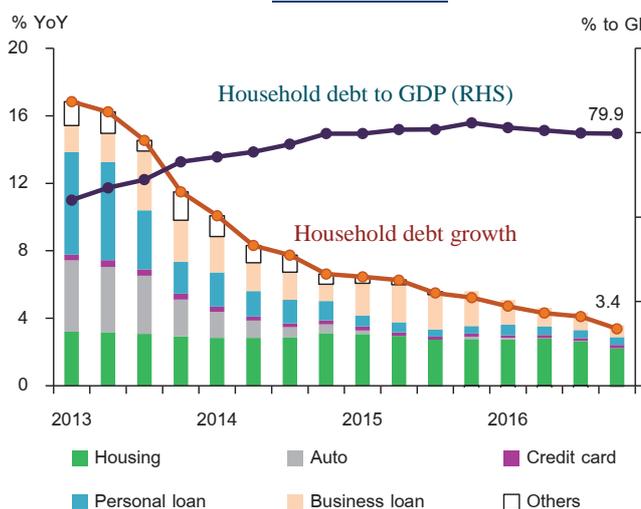
2) Debt Overhang from Household Leverage

- ❖ **Debt overhang in household sector, despite some sign of deleveraging, has partly contributed to lower credit demand, against the backdrop of gradual economic recovery and other potential headwinds.**

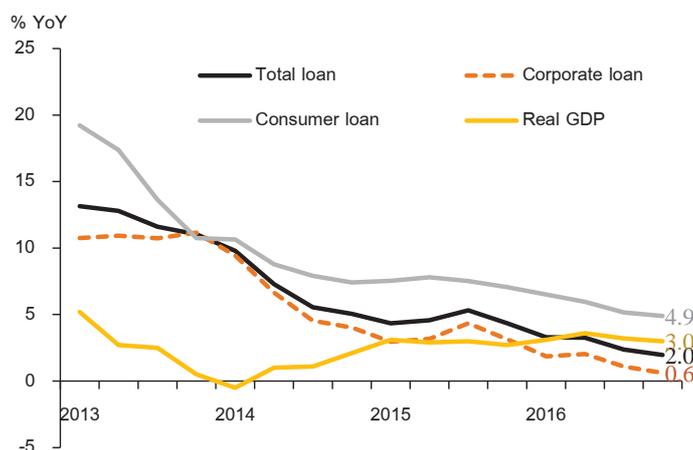
○ *Policy mix:* further ease of monetary condition? and/or macroprudential policy?

○ MPC minutes (29 March 2017): *“the Committee decided to keep the policy rate unchanged at 1.50 percent in order to maintain accommodative financial conditions ...some committee members viewed that imbalances in the financial system could continue to accumulate under the prolonged low interest rate environment ...seen in the recent increase in lending and borrowing through channels other than commercial banks and SFIs due partly to different regulatory standards”*

Household debt



Commercial bank loan and GDP growth



Source: Bank of Thailand

10

Macroprudential Policy – Lessons from International Experience

1



Erlend Nier

MCM - Monetary and Macroprudential Policies
International Monetary Fund



Summary of key takeaways

2

- Conduct of macroprudential policy is challenging (everywhere), and requires strong institutional foundations.
- Macroprudential policy is subject to domestic 'leakage', potentially opening up blind spots and regulatory gaps.
- Key mechanisms:
 - Mechanisms to collect and share information.
 - Expanding the scope of intervention across all entities
 - Capturing risks inherent in products and services.

Summary of key takeaways

3

- Further capital account liberalization is useful.
 - Can also reduce domestic leakage, since savings are no longer bottled up within the country.
- But can increase potential for cross-border leakage.
 - Potentially calling for regional coordination (e.g., reciprocity arrangements) for macroprudential tools.
- Can also lead to new risks from:
 - increases in wholesale funding (including in FX)
 - increases in borrowing in FX
- Toolkit may need to expand to contain such risks in future.

Challenges

4

- **First challenge:** Macroprudential policy is subject to biases that favor inaction or insufficiently forceful and timely action (**Inaction Bias**) (IMF 2011, Nier 2011)
- Flows from the nature of the policy problem: macroprudential policy manages a tail risk
 - The benefits of action accrue in the future and are difficult to measure
 - The costs of actions are more visible and felt immediately, by financial firms and borrowers.
- Biases are compounded when macroprudential policy is subject to
 - lobbying and capture by the financial industry
 - political pressures and competing objectives

Challenges

5

- **Second challenge:** The financial system evolves dynamically;
 - the level, source, and distribution of systemic risk are subject to change.
- The financial system will evolve to seek profitable opportunities. Can evolve in response to
 - financial innovations (technological innovations)
 - regulatory constraints (leakage problem)
 - distortions caused by other policies (e.g., fiscal distortions that favor debt)
- Dynamic evolution can open up “**policy gaps**” and requires the **coordination** across policy fields.
 - Need for coordination can reinforce inaction bias.

Institutional foundations

6

- **Strong institutional arrangements are essential for macroprudential policy to be effective.** These arrangements should assure (IMF 2011, 2013):
 - Willingness to act:
 - clear assignment of the mandate to *someone* (a body or committee),
 - strong role for the central bank
 - objectives and accountability mechanisms established in law
 - Ability to act:
 - Powers and tools with range and reach sufficient to contain risks
 - information collection, calibration and designation
 - Mechanisms to ensure cooperation in risk assessment and mitigation
 - e.g., financial stability objectives for microprudential agencies and securities regulators (as in Australia and U.K.)

Assessing and addressing leakages

7

- Whenever prudential tools are binding, financial activity tends to migrate (“**leak**”) out of the regulated sector (“boundary problem”).
- Can be addressed by expanding the scope of macroprudential intervention.
 - Mechanisms to collect and share **information**.
 - Back-up powers to collect information directly from firms (U.S. OFR)
 - Establishment of (credit) registers and common data platforms (China)
 - Expanding the **perimeter of regulation** beyond banks to substantial non-bank intermediaries.
 - UK FPC can make recommendations to the Treasury to expand the perimeter of regulation
 - Adopting a **functional approach** to regulation, to capture risks inherent in products and services.
 - LTV and DSTI restrictions can be enforced on all providers of credit (e.g., Netherlands, Hungary, Korea)

Liberalization and macroprudential policy

8

- Further capital account liberalization is **useful**.
 - Can also reduce domestic leakage
 - when savings are no longer bottled up within the country this may reduce domestic search for yield
- But can increase potential for **cross-border leakage**.
 - When macroprudential policy tools (such as a CCyB) are tightened, this can increase provision of credit from across the border
- This can call for cross-border (perhaps regional) **coordination** of macroprudential action.
 - ‘**Reciprocity agreements**’ call on home authorities to impose the same constraints on exposures into the host country.
 - Already agreed among BCBS members for the Basel III **Countercyclical Capital Buffer (CCyB)**.
 - Can also be agreed regionally, e.g., voluntary reciprocity among members of the **European Union** beyond the CCyB

Liberalization and macroprudential policy

9

- Liberalization can also lead to **new risks** from larger and more volatile capital flows, which can be managed using new macroprudential tools (IMF 2017).
- Increases in **wholesale funding** from across the border, including in FX can lead to vulnerable funding structures.
- **Incentives** for households and corporates **to borrow in FX** can increase default risks.
 - Especially when domestic interest rates are higher than those of major carry currencies (dollar, yen, swiss francs)
- Can be addressed by **targeted macroprudential tools**:
 - **liquidity requirements** (e.g., LCR, NSFR) potentially differentiated by currency (e.g., Sweden, Iceland, Korea).
 - higher **capital requirements** or tighter **loan restrictions** on FX exposures (e.g., Russia, Poland, Hungary)

References

10

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- IMF, 2014, "[Staff Guidance Note on Macroprudential Policy](#)"
- IMF-FSB-BIS, 2016, "[Elements of Effective Macroprudential Policies](#) - Lessons from International Experience
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Fifth PBC-IMF Joint Conference
 第五届人民银行-国际货币基金组织联合会议

Rapidly Changing Economic and Financial Structure and Public Administration

快速演变的经济和金融结构以及公共管理

Alfred Schipke



April 28, 2017

1

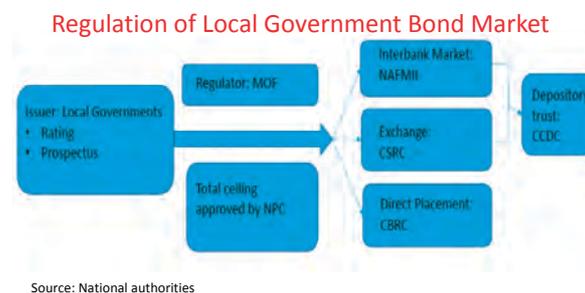
Public administration challenges

- **Previous:** transactional government deeply involved in the economy's operation
- **Modernizing China:** the state as a facilitator
 - Frameworks, rules, and regulation
 - Decisive role of markets in the allocation of resources
 - Investment in “Soft Infrastructure”
- Big government, but small center
- Flat salary structure
- Rapidly changing financial sector
- Government reform push
- Increasing global footprint (spillovers/spillbacks)

2

Illustrative Example: Public Finance (Ministry of Finance / State Administration of Taxation)

- Challenges: rapidly changing economic structure
 - New dynamic growth sectors and growing demand for public services
 - Greater cross-border activity by households and corporates
- Ambitious reform agenda, e.g.:
 - Tax reforms
 - Central/local government relationship (e.g., local government bond market)
 - Social security reform
 - Budgetary framework
 - SOE reform
- Rapidly growing local government bond market (from RMB 0.8 to 10.6 trillion during 2013-16)



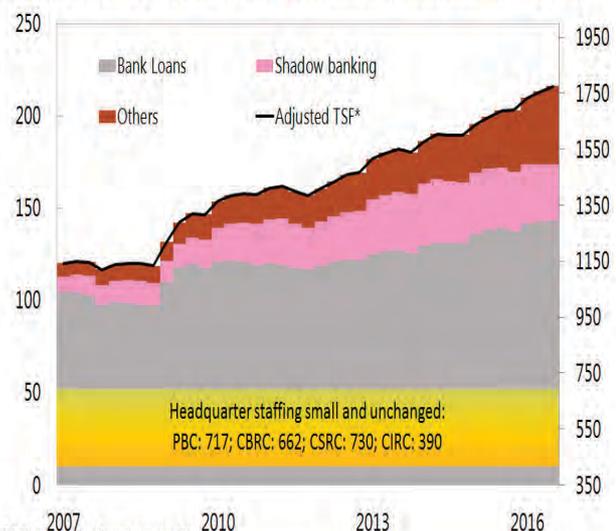
3

Illustrative Example: Financial System

- Rapid financial sector development
 - High and rising credit
 - Sharp increase in non-bank activity
 - More complex financial products (non-standard credit assets)
 - New markets (e.g. hedging instruments)
- Speed of financial innovations
 - Alibaba Yuebao (85 million within one year)
 - Number of P2P platforms
- Representation in global fora
- Greater need for communication
- But headquarter staffing unchanged

Rising Pressures for Headquarter Staffing

(Total social financing in percent of GDP (LHS); number of headquarter staffing (RHS))



4

Public administration reform to facilitate financial stability

Public administration: international comparison

Table: International comparison of headquarter/total staffing

	Headquarter ¹	Headquarter/total (in percent)	System-wide
China			
People's Bank of China (PBC) ²	717	0.7	105,980
Ministry of Finance (MOF) ³	1,023	0.2	488,192
State Administration of Taxation (SAT)	750	0.1	750,000
China Banking Regulatory Commission (CBRC)	662	2.8	23,683
China Securities Regulatory Commission (CSRC)	730	23.6	3,097
China Insurance Regulatory Commission (CIRC)	390	13.9	2,802
United States			
Treasury	2,120	2.52	84,050
Federal Reserve (Fed)	2,700	12.45	21,686
Australia			
Treasury	2,144	28.23	7,596
Reserve Bank of Australia (RBA) ⁴	1,232	91.46	1,347
United Kingdom			
Treasury	n.a.	n.a.	1,238
Bank of England (BOE)	n.a.	n.a.	3,680
Germany			
Federal Ministry of Finance	1,864	n.a.	n.a.
Bundesbank	4,623	47.98	9,636

Source: Annual reports of respective agencies, Overseas development institute report

1. Headquarter staffing or staffing at the federal level.

2. Excluding printing and minting companies and other PBC-owned companies and public institutions.

3. Excluding MOF-owned companies and public institutions.

4. Excluding printing and minting companies.