



OCTOBER 2018

Credit and Credibility

Risks to China's Economic Resilience

AUTHORS
Logan Wright
Daniel Rosen

CSIS | CENTER FOR STRATEGIC &
INTERNATIONAL STUDIES

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Executive Summary

In the past decade, China has seen the largest credit expansion by any country in over a century, yet the Chinese economy has not suffered a financial crisis or a sudden slowdown in growth. This study aims to explain why China's economy has been so resilient and examine whether that pattern of stability could change.

The record-breaking expansion of China's financial system has been an underappreciated contributor to the country's economic outperformance over the past four decades. The foundations of China's economic performance are the subject of Chapter 1 of this study. The banking system has added \$29 trillion in new assets since 2008, equivalent to around one third of total global GDP. China's financial system used to be inefficient but stable—it was funded conservatively, by deposits, and largely made loans to state-owned enterprises. But keeping the financial system growing at the fast pace seen in recent years has required extremely loose monetary and regulatory conditions, which altered those pillars of stability and created a fundamentally different outlook due to mounting systemic risks.

These are not just hypotheticals. In 2012, the fundamental stabilizers of China's financial system started to weaken. A larger proportion of new funding came from non-deposit sources, including instruments offering higher interest rates, such as wealth management products (WMPs). In turn, new credit increasingly fueled the informal or “shadow” banking system, and regulators struggled to keep up with financial innovation. China started to face capital outflows as the exchange rate depreciated, creating new funding pressures. Both the assets and the liabilities of the financial system have become more vulnerable, and a deleveraging campaign that Beijing began in late 2016 is now exposing these risks. These attributes of China's new system, and the process by which it developed in just the past few years, are the focus of Chapter 2.

Most countries that permit rapid credit expansions face financial crises or a sharp slowdown in the economy as risks in the financial system emerge. Many explanations have been put forward as to why this has not happened in China so far, primarily emphasizing economic factors: a high national savings rate and a low level of external debt.

We examine these leading explanations for China's resilience in the middle chapters of the study. In Chapter 3 we look at the role of China's high savings rate in facilitating the growth of credit and debt in China's financial system and supporting fast growth of the economy in general. The exceptional volume of savings, and willingness of Chinese to save a high share of income each year, is perceived to permit authorities to manage financial stress by providing a pool of financial resources that can be reallocated within the system to prevent shortfalls where they occur. However, we conclude that Chinese savings are concentrated in areas that are increasingly difficult for authorities to reallocate, and that new policy reforms to increase Beijing's power to redirect savings through the financial system—like tax reform—are years away from effective implementation. These are not near-term crisis management tools.

The other dominant hypothesis for why China has been able to grow so fast on debt for so long without precipitating a crisis is that it “only owes itself”—that is, that debt is held at home, and that external financing constraints play a relatively limited role. We unpack this argument in Chapter 4. While China has a low level of external debt, the credit volumes extended domestically carry major default risks, likely

higher than would have been permitted by politically-unconnected offshore creditors. Analysts understate the frequency with which domestic financial disruptions have occurred in the past elsewhere in the world. Liquidity pressures among Chinese financial institutions at home will be no less challenging than external pressures. China's central bank has a powerful arsenal of policy tools to provide funding to those in need, but this is no panacea, as there are serious transmission problems within China's money markets. Besides, eliminating domestic risk is not the point. Financial reform requires the central bank to permit some risk to emerge to improve market-based pricing of capital. Permitting risks to emerge in a system in which defaults and bankruptcies have been rare is a new challenge China has not fully experienced in the modern era.

In addition to these economic factors, political explanations are sometimes advanced to explain why the risks engendered by China's record-breaking economic expansion would be different from those in other countries. Our signature argument is that Beijing's credibility in assuring markets of its ability to stabilize any systemic disruption, hard-fought and built-up in prior periods, is the key explanation for past resilience. The development of this track record is the focus of Chapter 5. The degree of administrative control Chinese officials exercise over key actors in the system is often cited as an intrinsic source of strength that can prevent asset selloffs from gaining momentum and creating systemic risk. But today, while Beijing can order administrative interventions in markets, authorities cannot always compel desired outcomes. The failed attempt to prop up the equity market in 2015, for example, begs questions about how Beijing would handle a broader slowdown in the property market.

These traditional explanations of China's financial stability underestimate the vital importance of Beijing's credibility in providing a sufficient government response to any financial stress. Credibility has been a powerful political asset reinforcing financial stability, but it is not intrinsic to China's system. Credibility is a byproduct of a track record of successful and meaningful interventions defending investors' interests, and this same credibility will be tested as China reforms its financial system and steps back from widespread implicit and explicit guarantees on assets, companies, and banks.

Threats to China's financial stability are emerging now because the political bargain between Beijing and China's households and investors is changing within an already large, risky, and complex financial system. Sustaining business as usual expectations about rising household incomes and standards of living would require government support for increasingly peripheral and risky financial asset markets; economic authorities are strongly reluctant to do this, but have continued to do so thus far out of necessity since current growth rates are treated as a categorical imperative. Credibility has helped Beijing to manage the typical consequences of rapid credit expansions, but this credibility is transient and will be taxed in the near future as financial reform proceeds. The changing benefits and costs of the China model—persistent growth today on the upside and the likely damage in the future from marked-down asset values and faltering potential GDP growth rates—are the subject of Chapter 6 of this study.

In the concluding Chapter 7, we consider the implications of the analysis for China and the United States. For China, our assessment means that a specific set of domestic problems—bank funding shortfalls, a series of bond defaults, or interbank money market crises, for instance—are the plausible triggers for a disruption of China's pattern of stability, more so than any external factors. For the United States, that diagnosis of China's problems has implications. Washington could not encourage maximum Chinese growth, even if it wanted to, without amplifying those mounting risks. U.S. officials should not expect its external policies to be the primary sources of pressure on Chinese policymaking, but rather that domestic

Chinese risks are changing the outlook. Credit growth and hence GDP growth in China will be lower in the years ahead, one way or another. It is important to plan U.S. policy around that assumption and not a belief that China has discovered an alternative to due diligence. It has not.

Chapter 1 | China's Economy and the Importance of the Financial System

“For many observers, the Chinese banking problem is one of the most serious in the world and perhaps the most serious. The situation of the Chinese currency is seen by many observers as precarious, with devaluation almost inevitable. These views may be entirely unfounded, exaggerated or wrong but they surely affect the stability and economic prospects of the Chinese economy. It would be a mistake to dismiss them with the argument that capital controls shelter the economy. The urgent need to deal with the banking problem is difficult to exaggerate, a view obviously shared by the Chinese authorities.”

– Rudi Dornbusch and Francesco Giavazzi, 1999

China's rapid growth over the past four decades has been accompanied by dire warnings about its sustainability nearly every step of the way. These concerns have come not only from external observers of China, including international financial institutions such as the International Monetary Fund, but from China's own leadership. Premier Wen Jiabao famously warned in 2007 that China's growth was “unstable, unbalanced, uncoordinated, and unsustainable.”¹ Since that statement, China's economy has weathered the global financial crisis and tripled in size, adding almost \$9 trillion in annual GDP. China's economy has been responsible for around half of global growth during the past decade.

Public concerns about China's rapid growth are often accompanied by warnings of imminent financial crisis, and while it is possible that significant risks to growth could emerge from the real economy, most analyses focus on China's financial system as the primary source of risk. The quote above from economists Rudi Dornbusch and Francesco Giavazzi is from a volume published by the Bank for International Settlements in 1999, under the chapter title “Heading off China's financial crisis.”² Much of the commentary surrounding China's growth since that time has been a persistent drumbeat of concern that China's economic momentum could quickly seize up because of risks building within the financial system.

Since a financial crisis has not occurred, new analyses have refocused on the characteristics of China's economy and political system that have allowed the country to avoid upheaval. China's high savings rate, the internal nature of China's debt, the level of state control of the economy, and the influence of government over key financial actors are frequently cited explanations for why China is “different” from other emerging or developed market financial systems.

Lost in this shift in the dominant narrative—from predicting crisis to explaining its absence—has been adequate discussion of the vitally important changes that have taken place within China's economy and financial system over the past five years. Ironically, China was less vulnerable to financial system stress during the 2000s, when mainstream commentary emphasized China's exposure to shocks and the risks of rapid state-directed lending, than it is today. Changes in the fundamentals of China's financial system have made previous analyses and lines of argument effectively obsolete. China's financial system is now

¹ Wen made the remarks at a news conference during the annual National People's Congress in 2007.

² Rudi Dornbusch and Francesco Giavazzi, “Heading off China's Financial Crisis,” in *Strengthening the Banking System in China: Issues and Experience*, Bank for International Settlements Policy Papers, no. 7 (1999), <https://www.bis.org/publ/plcy07b.pdf>.

funded differently than it was just a few years ago and channels credit to different recipients. Old arguments about the operation of China’s financial system should not be dusted off but thrown out entirely.

The singular focus on “crisis” itself is also misplaced. The fundamental question—for China, the United States, and the rest of the global economy—is whether China will experience a significant shortfall in output growth in the coming years. This step down in real growth may or may not cause a financial crisis per se. Economic recessions do not always lead to that outcome, but the pain associated with a sharp reduction in growth is every bit as wrenching. In recognition that economic disruption can occur without a financial collapse, the International Monetary Fund is adapting its analysis of financial conditions to focus on predicting ranges of outcomes for growth rather than the probability of crisis.³

The least understood aspect of China’s economic performance since the 1990s has been the evolution of the financial system that made it possible. This study aims to clarify how China’s financial system operates today, the consequences of its rapid growth, and the nature of its risks and sources of resilience compared to other financial systems.

We will first highlight rapid changes in the operation of China’s financial system, particularly since 2014, that raise new and different concerns about China’s economic stability and growth trajectory. Changes in the funding structure of China’s banks warrant particular attention, to a far greater extent than old concerns about local government borrowing (although these still exist). Secondly, we systematically evaluate the sources of China’s financial system resilience to explain why it remains functioning where others would have already suffered a crisis or widespread bankruptcies and defaults.

One of the key arguments of this study is that political factors—in particular, China’s policy credibility—more effectively explain China’s financial system resilience to date than do economic fundamentals or administrative policy tools. This credibility is a powerful, but fragile asset, which is at severe risk now that China’s credit growth is slowing and implied guarantees must be rolled back. Today and in the years just ahead, the probability of financial crisis will be driven more by changes in government policy—especially by attempts to reform the system to make it more sustainable—than by external or market-originated shocks. Efforts to control volatility in some areas of the system must create it, intentionally or inadvertently, in others.

The political bargain underpinning Chinese leaders’ legitimacy in delivering rising standards of living and economic stability has shifted along with the fundamentals of the financial system. As that system delivered economic expansion beyond the limits of potential growth, the risk implicitly borne by China’s households and firms in funding that system’s excessive growth has mushroomed, jeopardizing much of the gains.

Maintaining financial stability has required political authorities to support increasingly risky assets and investment products at the same time that China’s financial authorities bend over backwards asserting they will not automatically respond to relieve all conceivable forms of financial distress. Financial sustainability and reform requires the presence of risk along with reward and the market-enforced prospect of defaults and bankruptcies. This contradiction of motives is straining China’s credibility, both in

³ *Global Financial Stability Report: Is Growth at Risk?* (Washington: International Monetary Fund, 2017), 91-116, <https://www.imf.org/en/Publications/GFSR/Issues/2017/09/27/global-financial-stability-report-october-2017>.

terms of ability to manage a rapidly growing debt burden and the leadership's commitments to financial reform itself. This nexus between China's fluctuating credibility and the pace of growth in financial system risks is the singular relationship to watch in order to gauge the prospects of financial crisis or an output growth slowdown in China in the years to come.

The Missing Link: China's Financial System

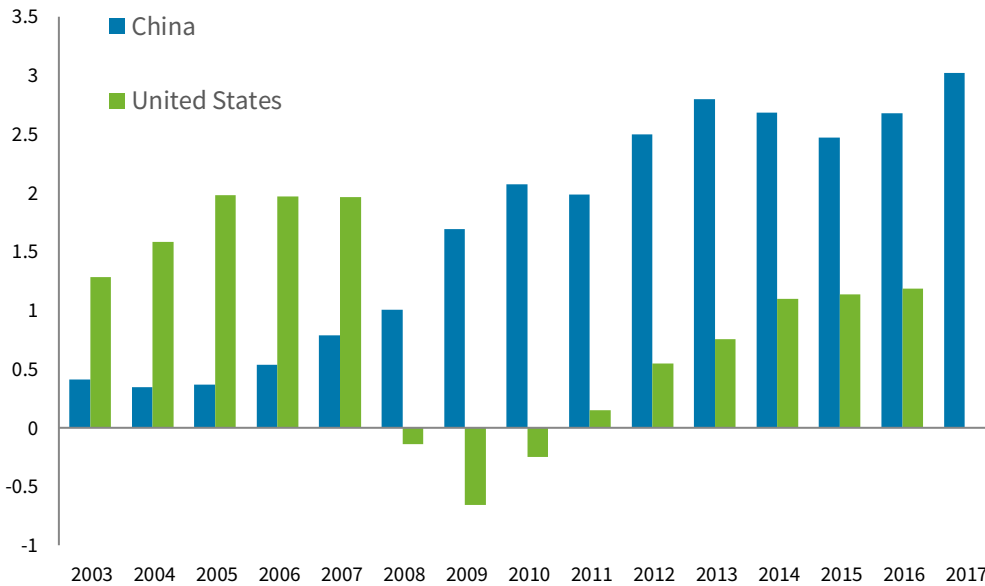
Most books about China's economy start with the stellar headline growth numbers: average annual expansion of 9.5 percent for the past 35 years, resulting in a tenfold expansion of GDP since 2000, from \$1.2 trillion to \$12.8 trillion. What is generally overlooked is that China's financial system has grown twice as fast: from around \$1.7 trillion in assets as of the end of 2000, China's banking system ballooned 22-fold to \$38.4 trillion in assets by the end of 2017.

In principle, this is not surprising. China's financial system started in 1978 as virtually non-existent, and then was repressed and controlled for years. Reform and liberalization naturally saw financing channels expand to meet the needs of a rapidly growing economy, often referred to as financial "deepening." The same can be said of China's economy in general: rapid growth rates were possible because the economy started the "reform and opening" period at such an artificially low level after years of misguided economic campaigns and other state interventions. Had China started 1978 at a per capita GDP level closer to that of another developing country, for example, Nicaragua (\$2,221), the economy would have needed to grow at only a 3.5 percent compound rate to reach today's levels.⁴

The growth of China's financial system has also been unprecedented in global and historical terms. The value of Chinese banking system assets is today around 50 percent of total global annual output, even though China's economy represents little more than 15 percent of world output. Most of this financial system growth—around \$29 trillion in new assets—has occurred just since the global financial crisis in 2008. There is simply no historical analogy for a single country's banking system expanding this rapidly compared to its own economy or to the global economy, particularly during a period of relatively weak global growth. While the U.S. financial system is more diverse and is not as bank-dominated as China's, the overall pace of Chinese credit growth through banks alone has exceeded total U.S. credit growth through all channels by a wide margin since the global financial crisis. By most measures, the expansion of China's credit and the growth of its financial system over the past decade appear larger in raw asset terms than the pre-2008 credit expansion seen in the United States as well.

⁴ Rhodium Group calculations, with data from World Bank national accounts data.

Figure 1-1: Total Annual Credit Growth to Non-Financial Sector, United States and China, 2002-2017
Trillion USD

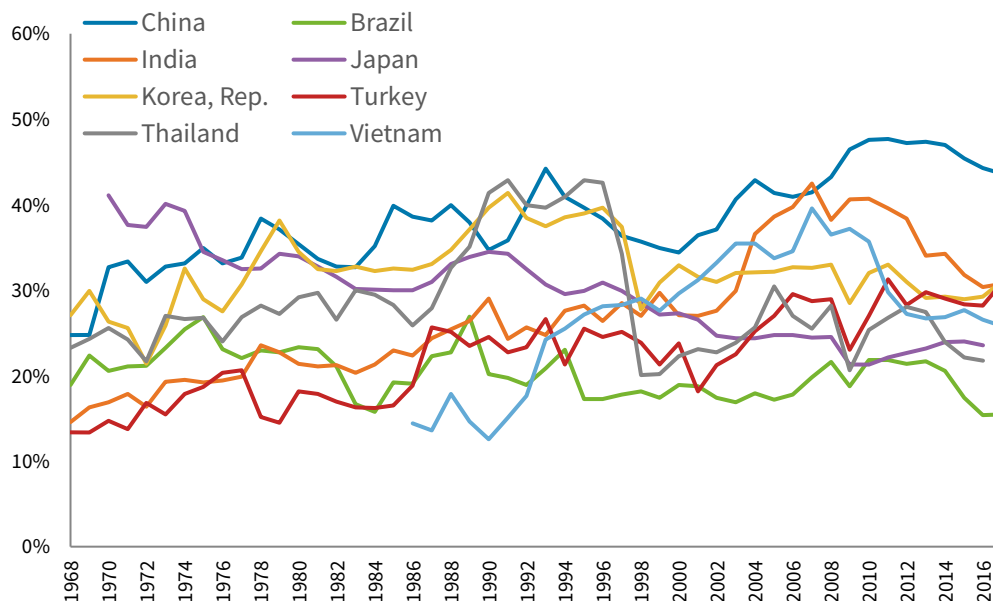


Source: Federal Reserve Bank of St. Louis, Total Credit to Private Non-Financial Sector, People's Bank of China, Total Societal Financing (TSF).

THE LEGACY OF INVESTMENT-LED GROWTH

In large part, the credit expansion over the past decade has been an unanticipated byproduct of China's continued reliance upon investment-driven growth. China's economy remains heavily reliant on investment, particularly at the local government level, which requires access to credit for firms carrying out state-directed projects. As a result, credit growth remains one of the most important determinants of the growth rate of China's economy, and China's leaders set informal credit growth targets every year alongside targeted GDP growth rates. As Figure 1-2 shows, the share of investment in China's economy has exceeded even the peak levels reached by other emerging economies over the past 50 years. Many of those economies, particularly South Korea and Thailand, saw investment levels fall when slammed by the Asian financial crisis in the late 1990s. Rebalancing an economy away from investment is necessary to make it sustainable beyond the high-return phase of catch-up financial deepening, as then-Premier Wen Jiabao himself emphasized in 2007. But it requires a readjustment of both the growth rates and the distribution of credit, as well as a change in the political balance sheet linked with a nation's financial system.

Figure 1-2: Gross Capital Formation as Percent of GDP, Developing Economies, 1968-2016
Percent



Source: World Bank.

With so much of China’s financial system growth—and thus, systemic risk growth—an unintended side effect of addiction to investment-led growth, Beijing’s preparedness to reverse course and control credit growth cannot be taken for granted. Over the past decade, the availability of credit as an easier means than reform to perpetuate growth has brought about evident delay in reforms to China’s growth model. As long as investment-driven growth was “working” to maintain growth rates at targeted levels, there were incentives for local government officials to continue the same operating procedures and for central authorities to accommodate localities’ demand for credit. Shifting away from investment-driven growth was difficult, as there were always projects underway whose completion demanded additional credit. Shuttering those projects meant recognizing immediate fiscal losses and writing off sunk investment. Decisions made in Beijing to slow credit growth over time were largely circumvented by local officials, who figured out new funding channels to keep credit flowing to the same investment projects.

HISTORICAL AND COMPARATIVE ANALYSIS

Comparisons between China’s financial system and those of other developing countries can help to gauge the risks of China’s credit expansion relative to other historical boom-bust cycles in emerging economies. Most such studies have focused on the “credit-to-GDP gap”—the growth of the credit-to-GDP ratio relative to its long-term trend—as a key indicator of the potential for crisis. Intuitively, this is logical as it suggests that an overly rapid expansion of credit compared to the size of the economy is an indication of speculative excess, with borrowing exceeding the eventual trend of aggregate demand. Usually these episodes end with banks dramatically curtailing credit after being forced to face up to large loan losses, resulting in weaker economic activity and sometimes crisis if losses are rapidly exposed across the financial system. China’s credit-to-GDP ratio has increased by roughly 91 percentage points since the financial crisis, from around 140 percent of GDP at the end of 2008 to around 231 percent at the end of

2017. For comparison, there are few other developing economies that have ever seen total credit exceed 200 percent of GDP.⁵

However, given the size of China's financial system, there are very few relevant historical comparisons. China probably shouldn't be compared to other developing countries because other developing countries have never seen their banking systems grow this large relative to the global economy. Comparing China to developed country banking systems isn't particularly useful either, since developed markets rely upon a wide variety of financial channels and are typically not bank-dominant. The growth of China's financial system does not fit neatly into any "model" from either emerging or more developed economies because it combines both a rapid rate of expansion within an extremely large system. This fact alone has implications for China's leadership in managing financial system conditions. Chinese authorities are in uncharted territory, not only for China but also for the rest of the world.

The growth of China's financial system in itself also helps to explain China's relative stability and insulation from crises and recessions over the past two decades. Easy credit conditions cover up many investment mistakes, for both Chinese corporates and households. When credit is readily available, asset prices, particularly property prices, tend to rise. In case of bankruptcies or defaults, refinancing options that avoid significant economic pain are often available. This is true of all credit expansions, leaving aside the political sensitivity of bankruptcies and defaults within China.

Controlling the flow of credit has been virtually the *raison d'être* of China's political system for almost half a century. There is an extensive literature within development economics about the role of the state in aggregating capital within strong banking systems (Gerschenkron) or playing a key developmental role within key industries (Evans).⁶ Within China specifically, Zhang, Wang, and Wang (2012), and Walter and Howie have demonstrated the significance of the financial system and continued credit growth to China's overall economic trajectory.⁷ The operation of China's financial system is not much different from that of other developing countries, as the state is typically involved in aggregating capital and resources to some degree. It is not surprising that Beijing wanted to see China's financial system expand as China's economy grew.

In general, China's financial system could be expected to expand rapidly as the economy grew at a quick rate; it is natural that a bank-dominant system should see other financing channels—bond markets, equity markets, and consumer financing tools such as credit cards—grow quickly in the process of financial reform. One measure shows that as a proportion of China's economy, financial services activity has doubled since 2005 and now represents 8.2 percent of GDP.⁸ It is critical in analyzing this growth to distinguish what is healthy—financial deepening, or the development of additional productive financing channels—from what is unhealthy—a rise in risky lending and speculative finance. The key question is how fast is too fast compared to the underlying size of the economy and what types of lending activity the expansion of the financial system facilitates.

⁵ Measured using the adjusted stock of PBOC total societal financing (TSF) from the People's Bank of China.

⁶ Alexander Gerschenkron, *Economic Backwardness in Historical Perspective* (Cambridge, MA: Harvard University Press, 1962); Peter Evans, *Embedded Autonomy: States and Industrial Transformation* (Princeton, NJ: Princeton University Press, 1995).

⁷ Jin Zhang, Lanfan Wang, and Susheng Wang, "Financial Development and Economic Growth: Recent Evidence from China," *Journal of Comparative Economics* vol. 40, no. 3 (2012), 393-412. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1983654; Carl Walter and Fraser Howie, *Red Capitalism: The Fragile Financial Foundation of China's Extraordinary Rise* (Wiley, 2010).

⁸ Data from National Bureau of Statistics, calculation based on proportion of financial services subcomponent of tertiary GDP to total nominal GDP based on four quarters from Q3 2016 to Q2 2017.

This is a difficult distinction to make because it requires a judgment of the potential economic payoffs from different forms of lending. For example, lending for a highway that would dramatically improve the productivity of the surrounding communities might have long-term benefits for the economy even at short-term cost. But lending to build three such highways and a rail line is unlikely to achieve the same benefits relative to the costs. Is China's financial deepening expanding access to finance for different types of borrowers, or is it simply expanding channels for the same types of borrowers and the same types of investments?

At some point, this rapid expansion of China's financial system must stop. There is a logical limit to how fast a financial system can expand relative to the underlying economy it is financing. Ultimately, the two are tethered to each other and the limits of financial deepening will be reached. Speculative bubbles in financial assets can occur but will inevitably burst. If China's financial system is not already at this limit, it is logical to ask how far away this peak will be.

Honing In on the Problem: An Unreformed Financial System

While China's economy changed rapidly over the past three decades, the financial system evolved much more slowly. In the 1980s, China's commercial banks still functioned largely as state-directed lenders, dispensing credit in line with government objectives in construction (China Construction Bank), industrial and commercial enterprises (Industrial and Commercial Bank of China), and agriculture (Agricultural Bank of China). The Bank of China, the smallest of the "Big Four" state-owned banks, concentrated on foreign currency-related activities. Other financing channels, such as equity and bond markets, consisted primarily of pilot projects for state firms, with most funding activity remaining within these large banks. In 1987, the Bank of Communications was created as the first "joint-stock" commercial bank, still directed by the state but designed to act more commercially than other lenders. City and rural commercial banks and credit cooperatives emerged in the 1990s to fulfill specific functions within those localities but largely ended up functioning as secondary fiscal institutions, lending on behalf of local government priorities rather than as stand-alone financial institutions.

The 1990s was a dramatic period for the development of China's banking system. After the Tiananmen Square debacle in 1989, opposition to economic reform and liberalization dominated the political climate in Beijing, and the economy slowed sharply. Deng Xiaoping's Southern Tour in 1992 changed that, kickstarting a wave of economic activity in China's special economic zones. Banks started to respond to these signals by lending aggressively, particularly for land development, a sector which quickly overheated. The rapid expansion of credit, along with a sharp rise in grain prices, triggered inflation of over 20 percent in 1994, requiring an aggressive monetary tightening to bring it under control.

The corresponding slowdown in the economy nearly broke China's banking system, with the Asian financial crisis in 1997 adding to the pain. Estimates of non-performing loans throughout the banking system resulting from policy-driven lending in the late 1990s typically exceeded 30 percent and some reached as high as 40 to 50 percent, but the true level was unknown.⁹ A solution started to take hold in 1998 and 1999 but required almost a decade to be fully implemented: China's banks would be recapitalized, bad assets would be stripped out of balance sheets and given to newly created asset management companies (AMCs), and shares in the newly recapitalized banks would be offered to foreign

⁹ John Bartel and Yiping Huang, "Dealing with the Bad Loans of the Chinese Banks," Asia-Pacific Economic Cooperation Discussion Paper, no. 13 (APEC Study Center, Columbia University, 2000), <https://www8.gsb.columbia.edu/apec/sites/apec/files/files/discussion/boninhuang.pdf>.

investors through listings on overseas exchanges to provide a clear signal of the banks' legitimacy. The banks' profitability would be essentially guaranteed through a government-enforced net interest margin, with a cap on deposit rates and a floor on lending rates.

The plan was successful in minimizing the problems resulting from policy-driven lending during the 1990s, but only because China essentially grew out of the problem, adding new assets at a much faster pace and so reducing the proportional impact of the older, defaulted loans. Growth, rather than improvements in efficiency, has been the primary characteristic of the change in China's banking system. Many of the system's key characteristics in the 1990s have remained essentially unchanged, including:

A bank-dominant financial system. Banks held \$38.4 trillion in assets at the end of 2017, or around 81 percent of all assets held by financial institutions in China.¹⁰ Beyond this level of dominance, banks are the primary channel through which savings is aggregated for Chinese households and corporates and lent to the rest of the economy. Banks are the key intermediary through which most Chinese citizens conduct almost all their financial activity. Even for non-traditional financial products, banks and their customers are still the primary sales channel that provides credit to borrowers who cannot gain access to the formal banking system.

Widespread moral hazard. State firms continue to have weak budget constraints, effectively preventing the proper pricing of risk in China's financial markets. The presence of implicit and explicit state guarantees for these firms effectively pushes up borrowing costs for private firms, since banks see lending to state firms as almost risk-free. The absence of a history of defaults by both state and private firms, on both loans and bonds, has allowed banks to expand lending rapidly based on the belief that regardless of their debt burdens, state firms are too politically important to be allowed to fail.

Favoritism for state borrowers, discrimination against private borrowers. China's state-owned enterprises (SOEs) continue to receive the lion's share of credit from the banking system, even though they represent a declining share of aggregate economic output. For many smaller city commercial banks, the majority of their clients are local state-owned enterprises and local government financing vehicles. Even among commercially-minded lenders, state-owned firms tend to enjoy advantages because they bear implicit or explicit government guarantees and are more likely to have fixed assets to serve as collateral. While private firms are increasingly able to access credit, they often must pay higher rates than do state-owned competitors. This reality has been very slow to change over the past 30 years.

Slow development of the bond market, especially for corporate bonds. Chinese firms have historically been forced to access financing via banks rather than directly from the equity or bond markets. The total value of outstanding issues in China's bond market stood at 50.96 trillion yuan as of the end of 2017, equivalent to around 63 percent of GDP.¹¹ The vast majority of these are government or policy bank bonds, in excess of 80 percent of total issuance. Until recently, corporate bond issues have been dominated by state-owned firms, with private firms again forced to pay higher rates. There is a limited history of defaults within China's corporate bond market, making it very difficult for investors to price risks accurately. The result tends to be outsized demand for bonds issued by state-owned firms that offer higher yields.

¹⁰ Calculation of proportion of bank assets to financial assets based on end-2016 data from People's Bank of China Financial Stability Report.

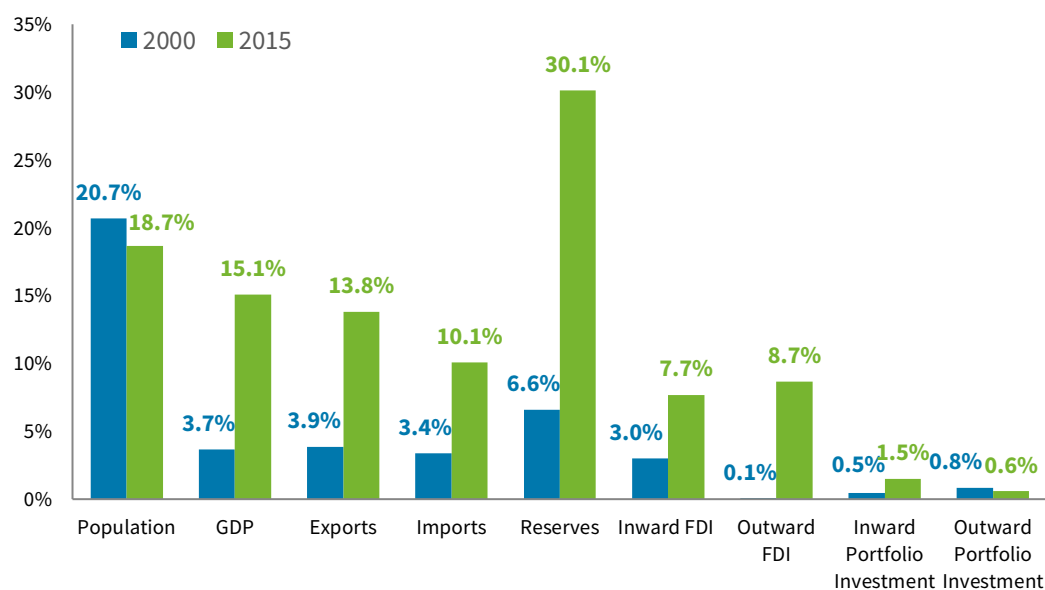
¹¹ Data from Chinabond.com.cn, "Monthly Bulletin of Statistics," Table 1-02, December 2017.

A highly speculative equity market unreliable for corporate financing. China’s equity markets have often been labeled as “casinos,” but the root of speculative activity in China’s stock markets, which produced the epic boom-bust cycles of 2007 and 2015, is the absence of long-term institutional investors in the market.¹² This is a byproduct of the lack of meaningful information disclosure and the absence of corporate governance standards that prevent investors from taking positions based on the fundamental conditions of China’s companies or from making comparisons of the relative value between investments. Without reliable corporate information, the market has tended to respond to policy announcements or changes in liquidity conditions, encouraging speculative investors trading primarily upon momentum rather than fundamentals. In turn, these market characteristics have discouraged productive firms from using the equity markets as a financing channel.

Absence of meaningful foreign participation in China’s financial system. China’s financial system is still dominated by China’s state-owned financial institutions—banks, insurance companies, fund management companies, and brokerages. This is not surprising in any country, but in China this home-country dominance has been largely the result of domestic protectionism, despite pledges for more openness following China’s entry into the World Trade Organization. Foreign investors own only minority stakes in China’s banks and have been restricted in their investments in China’s equity and bond markets via quotas, although these constraints are now easing. Still, in one of the world’s largest bond markets, foreign investors own less than 2 percent of the value of domestic issues. China’s financial assets remain heavily under-owned by the rest of the world compared to what would be expected given China’s economic importance in trade and investment.

Figure 1-3: China’s Global Economic Weight, 2000 v. 2015

Percent



Source: World Bank, IMF World Economic Outlook (WEO) database, United Nations Conference on Trade and Development (UNCTAD) stat, RHG estimates.

¹² “China’s Stock Market: A Crazy Casino,” *The Economist*, May 26, 2015, <https://www.economist.com/free-exchange/2015/05/26/a-crazy-casino>; Asian Securities Industry & Financial Markets Association, *China’s Capital Markets: Navigating the Road Ahead* (2017), 20-21, <http://www.asifma.org/uploadedfiles/china%20capital%20markets%20final%20english%20version.pdf>.

Despite the persistence of these constraints, China's financial system has grown rapidly, particularly over the past decade. If the growth of China's financial system has been an important condition for the growth rate of China's economy, one of the most important questions about the outlook for the economy is whether the financial system can continue to grow at a sustainable rate so that China can achieve its potential growth.

Potential Growth, Productivity, and the Importance of Finance

Most of this study is concerned with short-term questions, but some long-term views concerning the sustainability of China's economy are necessary as well. The future success of China's economic model, policies, and policymaking, whether viewed through our credibility-centered framework or some other lens, must be understood in light of expected potential growth rates. What does winning look like for China? Some boosters in Beijing like Peking University Professor Lin Yifu continue to insist that China can grow at 6 percent or better for years to come.¹³ Others, notably economists at the Conference Board, maintain the view that true growth is already only 4 percent, and potential growth is much lower because it is constrained by limits in productivity improvements.¹⁴ We take a growth accounting approach to illuminate future growth potential and evaluate the likely success of any rebalancing of China's economic model. We conclude that China can enjoy lower but still substantial growth, but that a different allocation of credit within the financial system will be needed to deliver that.

The growth accounting approach tallies changes in the value of all inputs into economic production, plus the residual productivity growth (referred to as total factor productivity, or TFP) evident. The "factors" going into the economy are boiled down to two: labor, which includes the full workforce of the nation, the contributions of which increase as the education level goes up; and additions to the capital stock, the trove of all productive tangible and intangible assets in a nation, including land.

If the working age population of a nation is rising then—all things being equal—its potential growth rate should be rising because there are more people available to be productive. Labor force growth accounted for more than a quarter of China's GDP gains from 1978 to 1993 and continued to be positive until around 2010.¹⁵ Unemployment was very low in 1978 because virtually everyone had to farm just to feed themselves. Whereas 71 percent of workers were farming in 1978, that number had fallen to 51 percent by 1995: 125 million workers had been freed-up to participate in higher-value work. By 2012, the share was down to 34 percent, freeing an additional 158 million Chinese to do more productive work. And as important, the population grew by 250 million people during these years. With an addition of hundreds of millions of people to the urban, modern workforce, China's potential growth was naturally extraordinarily high.

¹³ Lin previously predicted around 8 percent growth for 20 years from 2008 in this 2015 paper. Earlier in 2018 at the Boao Forum he revised those expectations to 6 percent growth for 10 years. Justin Yifu Lin and Fan Zhang, "Sustaining Growth of the People's Republic of China," *Asian Development Review* 32, no. 1 (2015), 31-48, https://www.mitpressjournals.org/doi/pdf/10.1162/ADEV_a_00045; People's Daily Online, "Justin Yifu Lin: China able to maintain 6 percent GDP growth annually in next decade," April 9, 2018, <http://en.people.cn/n3/2018/0409/c90000-9447146.html>.

¹⁴ "Global Economic Outlook," The Conference Board, May 2018, <https://www.conference-board.org/data/globaloutlook/>; David Hoffman and Andrew Polk, "The Long Soft Fall in Chinese Growth: Business Realities, Risks, and Opportunities," The Conference Board, 2014, <https://www.conference-board.org/publications/publicationdetail.cfm?publicationid=2846>.

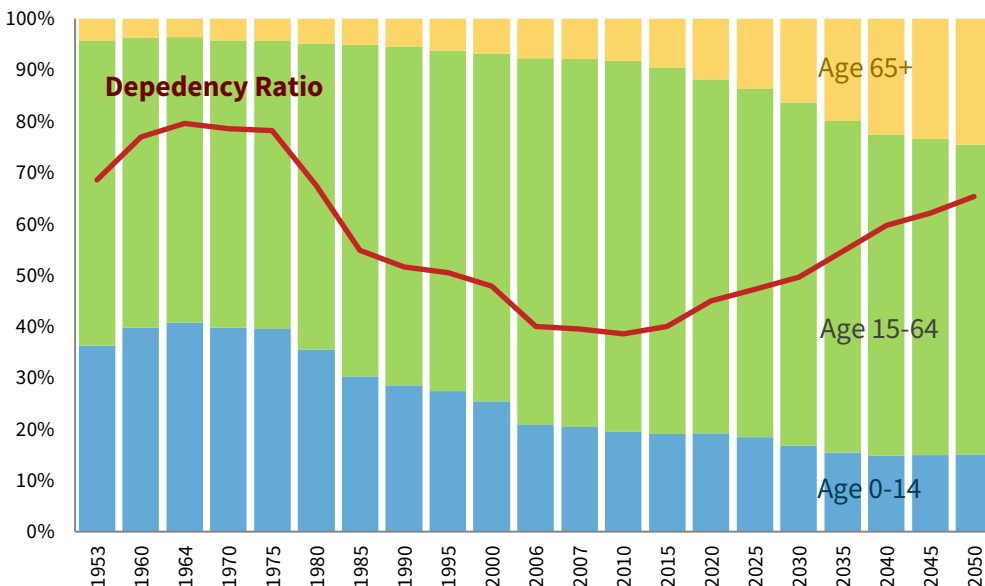
¹⁵ International Monetary Fund, "People's Republic of China, Staff Report for the 2018 Article IV Consultation," July 2018, <https://www.imf.org/en/Publications/CR/Issues/2018/07/25/Peoples-Republic-of-China-2018-Article-IV-Consultation-Press-Release-Staff-Report-Staff-46121>; Dwight D. Perkins and Thomas G. Rawski, "Forecasting China's Economic Growth to 2025," Chapter 20 in *China's Great Economic Transformation*, Cambridge University Press, 2008.

Many nations have large and growing populations yet did not come close to achieving potential growth the way China has. The reason for China's outperformance (aside from its unnaturally impoverished starting point) was deepening of the capital stock. Productive deployment of capital was essential to lifting the contributions of all those workers. Policy promoted savings over consumption, and directed investment into high-return infrastructure and industries suited to a labor-rich nation in which policies previously had expressly suppressed productive specialization around comparative advantage.

Finally, total factor productivity (TFP)—the elusive, extra quantum of GDP growth above and beyond what can be attributed to more people and more capital stock—was also a star performer in the Chinese story over the past four decades. For the most part that was because pre-reform China was so extraordinarily, unnaturally unproductive. Mao and the Communist Party had consigned people to hopelessly unproductive economic fates in pursuit of political and ideological goals that failed to pan out. Once the people were permitted a modicum of economic liberty, productivity boomed. Beijing deserves credit for this as well, as it was not easy for bureaucrats and authorities to move aside to make way for commercial forces, and the subtlety with which several generations of leaders starting with Deng Xiaoping accomplished that objective within Communist ideological constraints was impressive. GDP growth of 4 to 6 percent based simply on factor input growth turned to near 10 percent performance thanks to total factor productivity generated by the gradual but broad-spectrum dilution of state planning, reduction of border investment barriers and tariffs, internal fees, and taxes, shift of expenditures to public goods, rationalization of exchange rates, and intermediation of savings.

Today, however, all three of these channels have peaked and fallen, and should not be expected to return. Instead of enjoying a demographic dividend adding to GDP, China confronts a rising demographic burden, as a shrinking working age fraction of the population takes care of legions of retired citizens (Figure 1-3). And whereas almost any investment in earlier years had a solid chance of paying off, the diminishing marginal return on capital investment in China today is manifest to all. This can partly be remedied by better intermediation of capital through financial markets: the same amount of investment put into an overcapacity industry and a medical robotics facility in a growth sector will create very different streams of industrial value-added in the future. But, as noted, the political implications of liberating markets to play that role without ideological interference are an impediment.

Figure 1-4: Estimated Proportions of China's Population by Age Group, Dependency Ratio*, 1953-2050
Percent



Source: National Bureau of Statistics (1953-1985); U.S. Census, International Database (1990-2050). *Dependency ratio is derived by dividing the combined population of people aged over 65 and under 15 and dividing by the number of people between the ages of 15 and 64.

Anything changing the value of output achievable with a given value of inputs which is not attributable to labor or capital stock can be credited to TFP. In China today, the winds of reform that discipline lending behavior in the financial sector are enormously powerful determinants of how much output value will be wrung from a set of inputs. But if no one is ever fired for lending to SOEs, then bankers will tend to lend to SOEs, regardless of performance and productivity. As Zhu Rongji said to Alan Greenspan in October 1994¹⁶:

You have increased [interest] rates by 0.25 percent each time and this was extremely effective, but in China the effect wouldn't be very great. In China perhaps even a 10 percent increase might not have a great effect because some enterprises have no intention of repaying the money and don't care what the interest rate is, but this situation is gradually changing.

As vice premier and then premier, Zhu did gradually change the fiduciary responsibility with which the nation's savings was lent. That led to a better capital-output ratio in the years following his effort, enhancing both the recovery of principal investment that could be relent, profit, and—in the macro-economic framework—the TFP performance associated with growth.

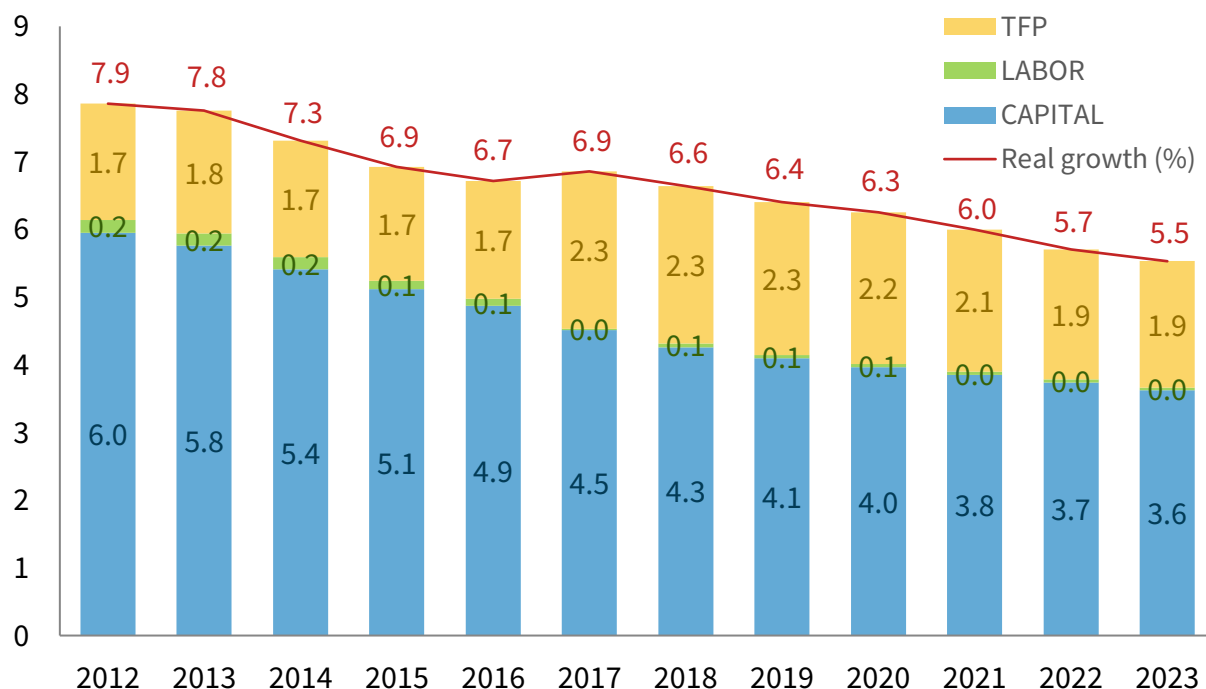
As we consider China's trend potential growth for the period ahead, we observe that labor growth will be close to zero, and we surmise that capital stock deepening will be positive but less than current levels. Figure 1-4 projects a growth accounting picture of China's long-term GDP growth based on 2018 IMF working assumptions. Where capital deepening offered 5-6 percentage points of GDP growth just a few years ago, at best it can offer 3-4 points in the years ahead, and quite likely somewhat less. While the IMF credits TFP with generating 2.3 percentage points of contribution to growth last year, this may overstate

¹⁶ Zhu Rongji, *On the Record: The Road to Reform, 1991-1997* (Washington, D.C.: Brookings Institution Press, 2013), 263.

productivity and understate the continuing role of overinvestment. Even 1 percentage point of an annual TFP contribution to growth will require a more credible stance on reform by policymakers in Beijing.

Figure 1-5: Growth Accounting Assumptions for China's GDP Growth, 2012-2023

Percentage points



Source: International Monetary Fund.

Why is improving productivity within the financial system so hard, especially in light of the looming growth headwinds? Stepping away from abstract formulations like growth accounting models, “disciplining financial intermediation” is a euphemism for a wrenching, destabilizing, politically radical process. The “gradual” changes Premier Zhu alluded to in 1994 required laying off upwards of 30 million SOE employees from 1997-2000, recognizing and marking to market the reality that 20-30 percent of all state bank loans were non-performing and would have to be written down, and even that the Party and government should withdraw from much of the marketplace and “corporatize” (a euphemism for “sell off”) many holdings.

Unleashing productivity growth means relinquishing administrative control over the marketplace in favor of macroeconomic management of just a few aggregates. That means restraining the state’s hand from picking winners and losers in competitive markets. And in addition to barring politicians from “rent seeking” from business (putting on, as the expression goes, golden handcuffs), this withdrawal would constrain the state from pursuing planning ambitions, and—ultimately—from keeping the business community subservient to Party diktat. While elements of this societal rebalancing of power were achieved since the 1990s, many components were not, and still other trends—such as the withdrawal of Party Committee involvement in corporate governance—arguably have reversed in recent years.

With Party and government more entrenched and empowered today than 20 years ago and fear of the disruption inherent in reform running high, making the changes needed to reach potential growth is now

more challenging than ever and must involve a more significant change in the way that China's financial system allocates credit within the economy, a process discussed in detail in Chapter 3. The centrality of China's financial system to the rate of China's past economic growth creates difficulties in redirecting China's financing channels while also slowing overall credit growth at the center of the debate over China's future growth trajectory. Simply put, no one has a clear outlook for the path of China's economic growth under conditions where financial system growth slows sharply because it has never happened, at least not since Deng Xiaoping's Southern Tour in 1992.

Plan of the Book – Including Implications for the United States

This study aims to provide an assessment of the probability that China encounters either a financial crisis or a significant shift in its growth trajectory in the near future. This is essentially an examination of a single case, and while we draw from a variety of different academic literatures, this study is not intended as a broader analysis of the causes and consequences of financial crises in emerging or developed economies. We explicitly rely upon certain assumptions of the importance of China's financial system in driving economic growth, based on the significant expansion of that system in the recent past, and we are not engaging the broader debate within the field of economics on the importance of monetary and credit growth in economic cycles, or the linkage between credit growth and the probability of crisis. This is not intended as a work of pure economics or finance. Our approach is explicitly interdisciplinary and attempts to grapple with the interaction between political variables specific to China and the interaction of those political forces with the growth of the financial system.

Methodologically, the study starts with a discussion of the critical forces that explain the continued growth of the Chinese financial system over the past decade and its increasing complexity. China's financial system has grown at a faster rate and to a larger size than any other over the past century, and yet sustaining that rapid growth has required a shift in the fundamentals of the financial system over the past five years. In particular, Chapter 2 focuses on the evolution of the Chinese financial system from a relatively stable, if inefficient, bank-led system, in which deposits from households are channeled into loans to state-owned enterprises, into a system funded at the margin by riskier non-deposit liabilities, with marginal asset growth in unregulated shadow banking sectors, raising the possibility of financial crisis. The rise of moral hazard and the central bank's early attempts to regulate the growth of informal financing channels play a key role in the continued expansion of bank assets and credit in defiance of regulatory guidance. The chapter then explains the difficulties China faces in reforming this financial system or reducing leverage in aggregate, as well as the impossibility of growing out of the debt problems that have accumulated within the financial system.

After explaining the growth of the financial system and the rise in internal complexity, the study examines the economic factors that offer the most powerful explanations for the resilience of China's economy over the past decade. Chapter 3 examines China's high national savings rate, as well as where those savings are concentrated in China, and reviews the literature concerning why both household and corporate savings rates have remained high. The chapter then discusses the need to reallocate new credit within the Chinese financial system and its capacity to improve the efficiency of credit, as well as prospects to reduce the national savings rate over time. Chapter 4 discusses the internal nature of China's debt, which is frequently mentioned as a critical factor shielding the Chinese economy from a crisis imposed by external creditors. The chapter discusses the arsenal of tools available to the People's Bank of China in injecting liquidity to manage financial stress within China's money markets, as well as the limits to such an approach.

Next, the study discusses the key political factors that are often used to explain why China's economy is "different" or insulated from the effects of a financial crisis. First, Chapter 5 discusses the track record of China's administrative controls over key actors within the financial system and Beijing's ability to mandate actions by key institutions that can mitigate the probability of crisis. The chapter reviews the recent history of China's interventions into the interbank money market during the liquidity crunch of June 2013, the equity market crisis of 2015, and the stress in the informal financial system caused by the Sealand Securities entrusted bond scandal, while discussing the limits of those administrative interventions.

Chapter 6 introduces the most meaningful political asset China has in combating financial stress: credibility. The study explains the importance of China's credibility in establishing expectations of a meaningful and sufficient government response to financial market stress. However, the political bargain that has kept China's financial system relatively stable up to this point is changing, with Beijing's credibility and the assumption that the central government will maintain financial stability now extended to increasingly risky and peripheral asset markets and financial institutions. Financial reform also threatens China's credibility as the reform process involves the government withdrawing from implicit and explicit guarantees of assets, and by design, leaving Chinese investors exposed to greater levels of financial risk.

The concluding chapter integrates the discussion of both economic and political variables that explain China's resilience so far, and discusses paths to financial crisis when China's credibility in financial markets changes. Among the scenarios discussed are funding difficulties among banks and in the interbank market, defaults in corporate bonds and among local governments, and a sustained downturn in China's property sector. External pressures, particularly from tightening U.S. monetary policy, also reduce China's freedom of action through a rising U.S. dollar and the risk of capital outflows from China.

This study analyzes the nature of China's economic growth, not international relations. However, given the enormous implications of this question for the international economy, we conclude with a discussion of what it means for the United States. We describe the long-embedded U.S. assumption that—as Ronald Reagan's national security advisers put it—Washington should, "help China modernize, on the grounds that a strong, secure and stable China can be an increasing force for peace, both in Asia and world. . . ."¹⁷ That view was built on evidence that China's economic fiber and its evolution were convergent with U.S. interests. By contrast, Washington now asserts (in the current National Security Strategy) that China has ". . . undermined key economic institutions without undertaking significant reform of their economies or politics."¹⁸

The chapters to follow provide ample evidence that China certainly undertook significant reform of its economy, and even adjusted policy as well, but that these efforts have not been successfully carried through and have often been subordinated to conflicting aims. Beijing's paramount asset—its policy credibility—was the hard won result of arduous reforms implemented at great cost. This credibility is presently being spent down at an unsustainable rate, validating the U.S. prognosis of divergent future interests even if the diagnosis of past history is selective and imperfect.

¹⁷ Reagan Administration, National Security Decision Directive 140,

"President's Visit to People's Republic of China," April 21, 1984, <https://fas.org/irp/offdocs/nsdd/nsdd-140.pdf>.

¹⁸ National Security Strategy of the United States of America, December 2017, 17, <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf>.

Chapter 2 | Rapid Credit Growth and the Risk of Crisis

The Legacy of the Post-Crisis Response

The risks currently developing within China's financial system are rooted in the policy choices made after the global financial crisis. Chinese leaders made several fateful decisions to react decisively to the post-crisis global recession, and these decisions have shaped China's policy options significantly after conditions stabilized.

All major economies around the world responded to the financial crisis with some form of counter-cyclical policy support, using a combination of fiscal stimulus and monetary easing. China was the standout in terms of magnitude. In late November 2008, China cut benchmark lending rates by 108 basis points, the largest reduction since the 1990s. In addition, Chinese authorities outlined an aggressive fiscal stimulus plan for the economy, labeled as being worth 4 trillion yuan, or \$588 billion—around 13 percent of GDP at the time.

The plan was quickly hailed around the world as an example of decisive policy action, raising hopes that China would lead the world out of recession and help to anchor economic stability. Key elements of the plan included an aggressive infrastructure buildout, including expansion of the high-speed rail network and an increase of the stock of public housing. While other major economies foresaw negative growth in the immediate post-crisis period, China set a 2009 GDP growth target at a robust 8 percent, which served as an anchor of confidence in the global recovery.

Most significant for China's future growth prospects, however, was the government's intention that most of the fiscal stimulus plan not be financed by direct spending from Beijing. Instead, China's banks and local governments assumed the primary role in the financing push. This decision was surprising in the context of global practices but consistent with previous patterns of Chinese economic policymaking. Chinese leaders had long relied on competitive incentives for local officials to guide the economy. Leaders in Beijing would set targets, knowing that local officials would try to exceed them to improve their chances of promotion. Local officials exercised a significant degree of autonomy and could compel local banks to lend on behalf of their own priorities. The central government would step in and limit lending growth administratively if local officials went too far and stoked inflation, but this was only a remote possibility during the depths of the crisis. Beijing gave local governments and banks the green light to lend and invest aggressively.

And did they ever. Total new lending in 2009 and 2010 reached 19 trillion yuan combined, or \$2.8 trillion at the time, equivalent to 56 percent of the size of China's economy in 2009.¹⁹ The majority of this lending went to state-owned firms at the city, county, and provincial levels, including a proliferation of state firms structured as local government financing vehicles (LGFVs). These LGFVs are typically newly created entities, capitalized by land equity granted by the locality that provided them the collateral to borrow

¹⁹ Credit, lending, and GDP data in this section all from the websites of the People's Bank of China and the National Bureau of Statistics. People's Bank of China, "Summary of Sources and Uses of Funds of Financial Institutions," 2009 and 2010, <http://www.pbc.gov.cn/eportal/fileDir/defaultCurSite/resource/cms/2015/07/2009s01.htm>, and <http://www.pbc.gov.cn/eportal/fileDir/defaultCurSite/resource/cms/2015/07/2010s01.htm>.

aggressively from banks to complete the development of the land. Alternatively, many LGFVs were granted local government contracts to complete infrastructure projects and would borrow funds from local banks on the basis of those contracts, in a “build-transfer” model of financing.

The critical aspect of the post-crisis stimulus plan, however, was that its scope and financing were not limited by the central government. Beijing was willing to tolerate some local government excesses in borrowing and investment because those were preferable to the possibility that the recession might become entrenched. Erring on the side of caution meant that too much stimulus was preferred to too little. Essentially, this required the central government to pull back from control of local authorities’ borrowing and investment activities and their use of local banks as quasi-fiscal funding sources.

Once unleashed, however, it was difficult for Beijing to bring local governments and banks to heel, even after the post-crisis recovery was underway. The ability of local governments to begin construction on infrastructure projects left Beijing in a difficult position: shut them down and pay an immediate fiscal cost while wasting already sunk investment or continue construction despite the likelihood of waste and a further buildup of debt. Generally, Beijing was unable or unwilling to shut down local government investments, which was at that point the foundation of the post-crisis recovery.

Eventually, in late 2010 and 2011, the specter of a resurgence of inflation forced Chinese authorities to tighten monetary policy, raising benchmark interest rates and banks’ required deposit reserve ratios to limit the volume of lending. This worked but had perverse side effects. As credit became scarcer in China, local and central government-owned firms were largely able to protect their own access to credit and were less concerned about paying high interest rates because of their weak budget constraints. On the other hand, most private-sector firms, even though they are usually more efficient in deploying capital than state firms, were squeezed as monetary conditions tightened, unable to get new loans and having to pay much higher interest rates from informal funding sources. In late 2011, as a result of this monetary tightening, China’s economy started to decelerate sharply. Global commodity prices followed, led by the decline in demand from China’s property market.

From 2009 to 2011, China’s banking system assets expanded by 49.6 trillion yuan (\$7.6 trillion at the time), a gain of 77 percent compared to the 2008 level. Most of this was in the form of new lending, as banks extended 27 trillion yuan (\$4.2 trillion) in loans over the three-year period. This was a massive response to a crisis that had only reduced China’s annual GDP growth rate to a low of 6.1 percent in early 2009, far in excess of the response seen anywhere else in the world. China’s money supply almost doubled over the same period, rising from 47.5 trillion yuan to 85.2 trillion yuan, with the money stock as a proportion of the economy rising from 153 percent to 180 percent, a historically sharp increase.²⁰

Most significantly for China’s future, the growth in banking system assets did not stop in 2011 after the worst effects of the financial crisis were in the rearview mirror. The rationale for the credit expansion ended with the recovery in 2009-2010 and the return of inflationary pressure in 2011, but the banking system kept on growing. In the next six years, from 2012 to 2017, China’s banks added another 134.3 trillion yuan, or \$20.7 trillion, in assets. The money supply doubled once again to 167.7 trillion yuan (\$25.8 trillion), or more than twice the size of the money supply in the larger U.S. economy. By the end of 2017, China had become the single largest banking system in the world and had seen its banking assets

²⁰ People’s Bank of China, “Money Supply, 2011,” <http://www.pbc.gov.cn/eportal/fileDir/defaultCurSite/resource/cms/2015/07/2011s07.htm>.

quadruple in size since the global financial crisis. Furthermore, there was a proliferation of new and riskier types of financing instruments, which were harder for authorities to monitor, let alone regulate.

This chapter attempts to explain why the growth of the financial system continued even after China's recovery from the global financial crisis, and explores the risks that are now bubbling to the surface. The legacy of the post-crisis stimulus effort was that the problems associated with policy-driven lending were now firmly entrenched within China's commercial banks, and the fiscal costs were concentrated at the local government level rather than being recognized explicitly by Beijing. Because China's central government did not directly finance the post-crisis stimulus, it could plausibly deny that it would eventually need to cover any losses from excessive investment at the local government level. A central government fiscal bailout of local government debts would end the illusion. However, with quasi-fiscal funding essentially occurring through lending by banks that were supposed to be operating on a commercial basis, the government was allowing the banks to become the key channel for government support of the economy. This meant the banks had to bear the burden of managing any losses from decisions made by local and national political leaders.

Furthermore, the investment-led nature of the post-crisis stimulus created an economic growth path reliant on continued investment growth. An abrupt shift in the growth model, or a rebalancing of the economy toward consumption, would essentially require a halt to existing investments and a sharp slowdown in the economic growth rate. This made it far more difficult for Chinese authorities to control the borrowing activity of localities without a shock to the whole economy. Half-measure solutions always appeared more palatable than an abrupt monetary tightening. Disabused by the effects of the monetary steps taken in 2011, authorities allowed unfettered financial innovation and regulatory arbitrage to thrive within China's banking system.

This was not just a byproduct of weak regulatory oversight but also the result of deliberate political choices. China's financial system kept growing because authorities chose to allow financial risks to accumulate rather than risk the political fallout from slower growth and financial losses.

The Constraints on China's Regulators

China's financial regulators were clearly aware of the risks from this kind of credit expansion as it was occurring. The People's Bank of China (PBOC) and the China Banking Regulatory Commission (CBRC) issued warnings about the scale of lending starting as early as April 2009.²¹ By 2010, the CBRC was already looking carefully at the types of debt incurred by localities, starting a nationwide audit of local government borrowing through multiple channels. Despite the increased focus from regulatory agencies, the heavy borrowing continued. Understanding why this occurred is critical to understanding the evolution of China's financial system and the risks that have developed.

Credit has grown rapidly in China not only because of a limited political will at the center to control it, but also because of the institutional structure of the regulators. During the period of rapid credit expansion, China's financial regulatory bodies included the PBOC, the nation's central bank, as well as the CBRC, which regulated banks, the China Securities Regulatory Commission (CSRC), which supervised brokerage firms, and the China Insurance Regulatory Commission (CIRC), which regulated insurers and their asset

²¹ Wen Xiu, Fang Huilei, and Wu Ying, "China's Loan Binge: Stimulus or Insanity?" *Caijing*, May 6, 2009.

management arms.²² However, banks that were extending credit at the local level were typically managed by local officials or appointees of local officials within that jurisdiction, with a provincial or city Communist Party secretary significantly outranking a ministry-level official within a Chinese regulatory institution.

This shows the limits of the capacity of China's financial regulators to control excess borrowing by local governments and their related companies. They had limited tools to enforce strong budget constraints on local state-owned firms, and they also had no institutional authority over the local officials who were responsible for most of the lending decisions made at local banks. This meant that even the CBRC's top leadership could not visit a small bank in a remote province and be sure its officials would follow its direction to rein in their lending practices. In most cases, the regulators would simply be ignored by the bank's management and local officials.

Nor could regulators and technocrats rely upon straightforward measures such as monetary tightening steps. China's central bank is not independent and must appeal to the State Council for any adjustments to its benchmark interest rates and banks' reserve requirements. Politically, this is a difficult ask. Most of the institutions represented within the State Council, particularly the National Development and Reform Commission (NDRC), are strongly aligned with state planning objectives and efforts to promote investment, which requires low interest rates to support borrowing. Similarly, local governments wanted to keep interest rates low and credit flowing. The leadership in Beijing typically emphasized the importance of hitting annual GDP growth targets, which relied upon maintaining growth in investment and required a light touch on monetary tightening steps in the absence of inflation. Since 2011, there has been no significant acceleration of inflationary pressure in China, hence there has been limited political appetite for monetary tightening.

As a result, China's financial technocrats and regulators were forced to use other measures within their purview to attempt to limit borrowing activity by local governments and their affiliated companies. It was easier to gain internal support for adjustments to banks' required reserve ratios (RRR) than to adjust interest rates, but the bluntest of these quantitative measures were outright quotas on new lending. The quotas often had other unintended effects, such as channeling credit primarily to state-owned firms. The use of quantitative measures also created arbitrage channels that financial institutions used to circumvent the quotas, typically by reclassifying some loans as other types of assets that could be held off the bank's formal balance sheet. One of the most common forms involved the use of "wealth management products," which offered bank customers higher returns than normal bank deposit accounts. These products (often abbreviated as WMPs) would then be packaged with the interest income from loans, or the loans themselves. The banking business was essentially the same, but now the loan was no longer on a bank's balance sheet for the regulators to count: it was off-balance sheet, contained within a WMP.

After seeing these types of arbitrage opportunities develop, regulators started to control individual forms of borrowing by localities. In 2010, for example, the CBRC restricted cooperation between banks and trust companies, limiting the volume of loans to trusts that banks could effectively keep off their balance sheets. In 2014, new regulations limited the types of assets that could be used as collateral in interbank repurchase agreements, which banks had been using to shift non-performing loans off their balance

²² In early 2018, the China Banking Regulatory Commission and the China Insurance Regulatory Commission merged into a new joint regulator, the China Banking and Insurance Regulatory Commission (CBIRC), because of the number of problems uncovered in insurance regulation.

sheets. Regulators also responded by increasing required provisions or capital requirements for certain types of assets. However, banks quickly introduced new innovative instruments that circumvented the new rules, classifying assets in different forms than those specifically prohibited.

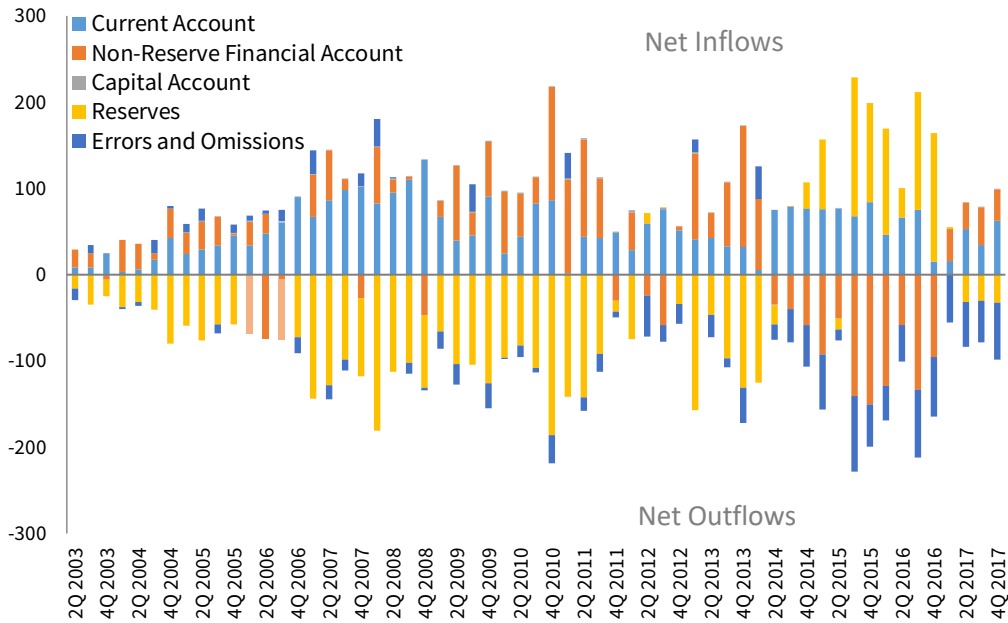
The fundamental problem for China's regulators was that local governments still had a strong political interest in ensuring that the flow of credit continued so that they could maintain economic activity within their jurisdictions. As a result, regulatory measures targeting particular financing forms had only fleeting success and generally served to make the financial system even more opaque and consequently more difficult to monitor and control.

Diversification of the Financial System

Starting in 2012, the relatively light regulatory touch also coincided with key macroeconomic developments that allowed off-balance sheet “shadow” banking activities to take off. The strong growth of informal financing channels and off-balance sheet assets encouraged regulatory arbitrage—borrowers and lenders shopping around for the most permissive and risk-tolerant new product categories with lenient rules and lighter capital requirements—and ended up changing the foundations of China's financial system as well as jeopardizing China's traditional macroeconomic policy tools. Before 2012, China's banking system may have been inefficient, making extensive loans to state-owned enterprises and local government companies, but it was relatively stable. That stability came from its funding base, which relied primarily on traditional bank deposits, overwhelmingly from household savers. Even if China's banks were making bad loans, household depositors were unlikely to pull their money from the banks, primarily because they had no other viable domestic investment options and because controls on capital outflows were reasonably effective.

China's banks continued to see significant inflows of deposits every year from both domestic and foreign sources. Starting in 2003, China began running large trade surpluses, which brought more foreign currency (primarily U.S. dollars) into China where it was exchanged for yuan (and in earlier years involuntarily surrendered). China also ran significant surpluses in net foreign direct investment as foreign companies piled into China, bringing in more foreign currency that was converted into yuan. The central bank ended up acquiring most of these U.S. dollars by intervening in the foreign exchange market, creating the yuan necessary to facilitate export and investment transactions while limiting the appreciation of the currency that would have occurred had the foreign exchange market been allowed to clear. Naturally this increased the money supply in China, so the central bank limited the risk of inflation by freezing some of those funds at the central bank via hikes in the required reserve ratio, raising interest rates, and imposing credit quotas.

Figure 2-1: Components of China's Balance of Payments, 2003-2017
Billion USD



Source: State Administration of Foreign Exchange.

Fundamentally, the process produced still more deposits in China's banking system. Exporters and investors were confident that the PBOC would buy any and all foreign currency that they brought onshore in exchange for yuan. From 2003 to 2011, these net foreign inflows, producing new deposits in China's banking system, averaged around \$30 billion per month, despite the intervening global financial crisis. As a result, the key policy challenge facing China's financial technocrats was how to manage the consequences of excess deposit inflows and the concern that these deposits would allow banks to create too many new loans, despite a restriction limiting a bank's loans to 75 percent of its deposits. Deposit growth had typically outpaced loan growth until 2011.

Figure 2-2: Growth of Deposits and Loans in China’s Banking System, 2001-2017
Percent YoY



Source: People’s Bank of China, Bloomberg.

In late 2011, however, this situation changed suddenly, sparked by developments that had little to do with China. Given rising market concerns about the sustainability of European sovereign debt growth, European banks began to reduce risk on their own balance sheets by pulling back on lending in Asia, including to banks that had lent to Chinese firms in foreign currency. The net result was that China suddenly faced a capital and financial account deficit that was larger than its current account surplus. The result was a balance of payments deficit, which caused China’s currency to begin depreciating in late 2011, requiring more foreign currency to be purchased by Chinese banks and companies onshore to repay offshore foreign-currency obligations.

More significantly for China’s banks, they suddenly found themselves missing a previously abundant funding source—deposits from external sources. In a more market-oriented banking system, a sudden shortfall in funding would have produced a slowdown in lending growth, but local governments still had strong incentives to keep credit flowing. This created a problem for banks, particularly smaller banks tied to localities, which were already struggling with local governments that could not repay existing loans and needed new funds to maintain the level of investment activity. However, simply extending new loans would often place the banks below the capital requirements imposed by the CBRC.

The sudden change in China’s external funding conditions that began in late 2011 and early 2012 created two new challenges for banks: they needed to compete for funding, which was suddenly scarce, and they needed to keep extending new loans even though they did not have enough space on their balance sheets or enough capital to do so. These challenges then altered the fundamentals of China’s banking system in two ways. First, banks began to rely far more heavily on non-deposit forms of funding, including WMPs and borrowing directly from other banks and the central bank, rather than traditional deposits. Second, banks began to restructure their assets in ways that looked less like loans and more like investments. These assets bore many different labels, including “trust beneficiary rights” (TBRs), “directional asset

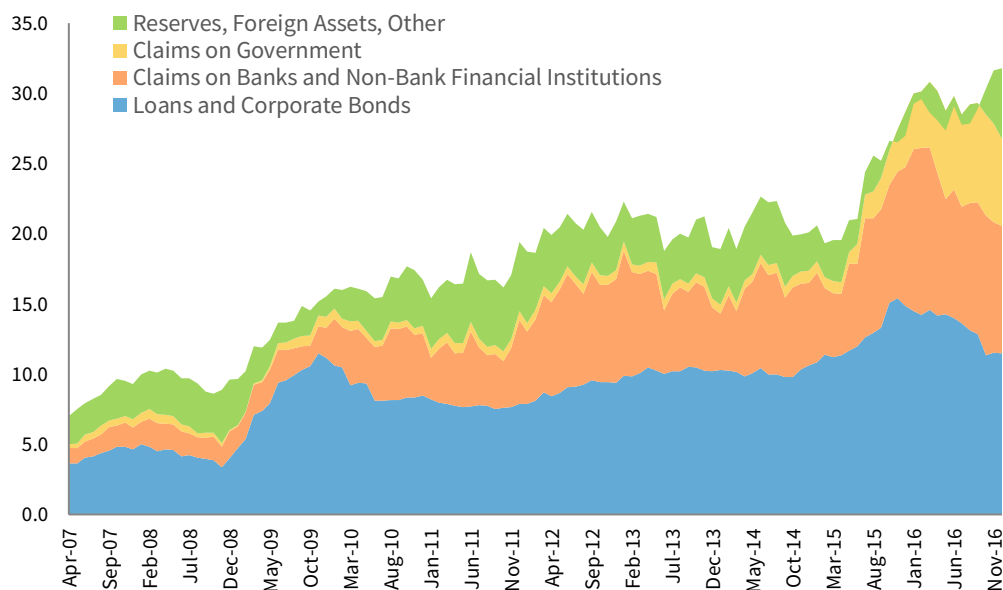
management plans” (DAMPs), “investment receivables,” and “interbank entrusted payments,” but what they had in common was that they bore lower capital requirements than traditional loans and required lower loan-loss provisions. Regulatory arbitrage quickly gained momentum on both the liability and asset sides of banks’ balance sheets.

Restructuring Bank Assets: Seeing No Evil

The regulatory arbitrage also allowed banks to hide their non-performing loans. If a loan was officially recognized as non-performing, the bank carrying that loan on its balance sheet needed to also carry a 150 percent or higher provision against possible losses from that loan. This not only reduced bank profits, but more importantly, reduced the scope for future lending. The restructuring of some de facto non-performing loans into different forms reduced the banks’ need to allocate these provisions or raise more capital. In one particularly ingenious form, banks would conduct short-term repurchase agreements with each other, usually less than three months in duration, using a non-performing loan as collateral. The use of the repurchase agreement effectively removed the non-performing loan from the borrowing bank’s balance sheet, but the bank making the loan never counted it on its books either because it was planning to return the loan at a future date. These transactions carried no capital requirements because they were conducted with other banks over a short duration. To the regulators, the non-performing loans essentially disappeared. These transactions were effectively limited in 2014, but proliferated widely before that time and were later transformed into different types of non-loan assets to continue to avoid provisions and capital requirements.

Figure 2-3: Growth in Bank Assets by Type, 2007-2016

Trillion yuan, 12m rolling sum



Source: People’s Bank of China.

As a result, starting in 2012, non-loan assets began growing sharply as a proportion of China’s total bank assets. Credit kept expanding at a relatively fast pace, even though deposit growth was weaker. This development was not only a growing source of financial system risk, but also an incentive for yet further financial innovation to expand assets by avoiding regulatory requirements. Trust companies had been the

first to agree to take assets off of banks' balance sheets, but trusts, like banks, are regulated by the CBRC, limiting the opportunity for regulatory arbitrage. Soon, securities companies, supervised by a different regulator, the CSRC, also got into the act. Securities companies started to warehouse banks' off-balance sheet assets for minimal fees, allowing the securities companies an easy source of revenue and the appearance of rapid growth in asset terms. Later, insurers would jump in as well, offering "unit-linked" and "universal life" insurance products that appeared to be little more than WMPs by other names.

The competitive elements within the Chinese regulatory bureaucracy combined to produce a patchwork of regulations that produced loopholes effectively facilitating the growth of shadow banking. Where one regulatory agency would crack down on a specific informal financing channel, another would allow banks to cooperate with a different type of financial institution to open a new channel. No single regulatory agency could see the whole picture, and as a result, the shadow banking system continued to grow rapidly. From 2012 to 2016, non-bank financial institutions added trillions of yuan to their asset holdings, largely originally sourced from banks.

A critical element that allowed this rapid growth was the widespread existence of implicit and explicit guarantees on the assets themselves. Under more market-oriented circumstances, banks would have conducted in-depth evaluations of the underlying collateral within reverse repurchase agreements, or non-banks would have evaluated the risk of loans they were willing to take off banks' balance sheets.²³ But there was no history of defaults among state-owned firms in China, and, in particular, there was not a single case of a bank itself defaulting on one of its own obligations. The prospect of a bank failure meant that depositors, primarily Chinese households, would lose their savings, a politically toxic proposition in a financial system where those savers had few choices of where to deposit their money. State-owned firms and local governments had similar political considerations, as defaults would adversely impact the operation of a firm or local entity that carried some degree of political importance.

Ironically, the existence of widespread guarantees helped the system to expand much faster. Moral hazard was not a problem in China, it was part of the strategy. As long as someone could eventually repay, presumably the central or local government, a far wider range of assets could be used as collateral and a far wider range of borrowers became creditworthy. The net result was that as of 2016, China's banks had managed to accumulate 56.5 trillion yuan, or \$8.4 trillion, in claims on other banks or non-bank financial institutions (NBFIs). NBFIs themselves held 88.5 trillion yuan in easily identified assets, and probably more.²⁴ The value of these assets was far larger than the size of China's economy as a whole. And no regulator in Beijing knew what types of credit were contained in these assets or what they were really worth.

The June 2013 Interbank Market Crisis

Banks started to expand assets aggressively in 2012 and needed some funding mechanism to do so. The absence of readily available deposit funding saw banks, particularly small banks, turn to WMPs with increasing frequency. WMPs were attractive because they allowed banks to raise funds for lending and could be structured to count as deposits for regulatory purposes. For example, a bank WMP of three-month duration might expire on the last day of the month, with the customer holding the WMP being repaid that

²³ The light scrutiny of the underlying assets within WMPs is described in detail in Wang Yao, "Shadow Banking with Chinese Characteristics," Chapter 4 in Andrew Sheng and Ng Chow Soon, *Shadow Banking in China: An Opportunity for Financial Reform* (Hoboken: Wiley, 2016), 111-114.

²⁴ Rhodium Group, China Markets Research, "NBFI, Inc.," April 26, 2017.

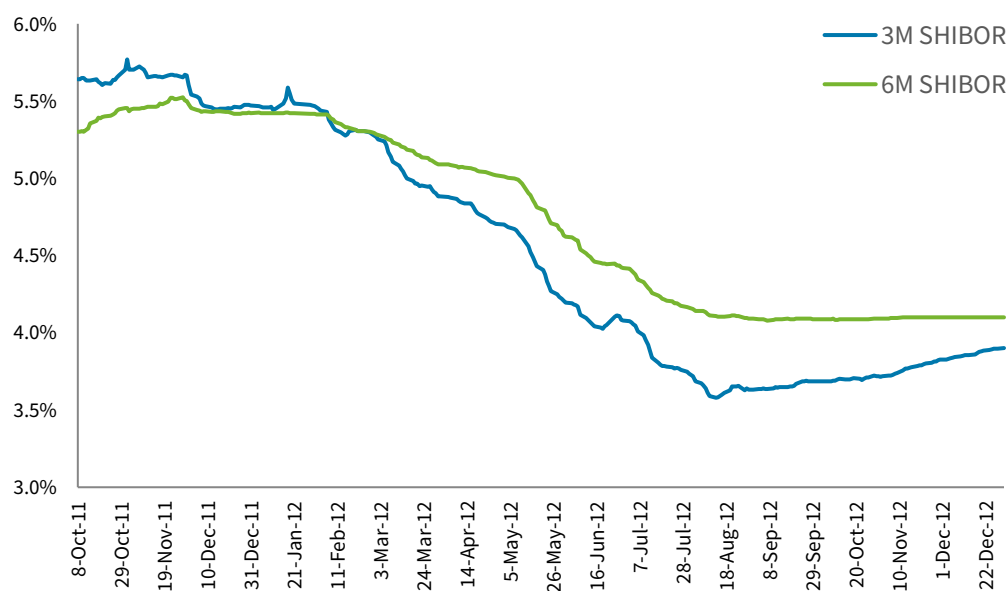
day. The customer might choose to roll over the WMP investment into another three-month product, but the bank could make the new product's effective date the next day, the first day of the new month. When the regulator looked at the bank's balance sheet at the end of the month, the WMP did not exist, having expired that day. All that was left was the investor's deposit. For banks that needed to maintain a 75 percent loan-to-deposit ratio (the limit effective in China before 2015), this was a critical consideration. The bank could keep a toxic loan off its balance sheet while keeping a deposit on its balance sheet. The attractiveness of these structures was obvious.

The downside to the banks, of course, was higher costs. They had to offer WMP investors higher and higher rates to keep these investments captive within their bank. Large banks were not as concerned, as they had relatively large, stable household deposit bases, and could simply offer marginally higher rates than benchmark deposit rates. Smaller banks, however, needed to compete for funding and had to offer higher rates than larger banks without necessarily locking up customers' funding for long periods of time. The consequence of this was that smaller banks' margins were squeezed as they had to meet the rising cost of funding via WMPs with higher returns from real assets, often longer-term loans or bonds.

This margin squeeze introduced a significant maturity mismatch for smaller banks. All banks borrow short-term and lend long-term to some extent, but small banks' increasing reliance upon WMP funding, with most of these WMPs of one- to six-month duration, made it difficult to find assets within China's financial system that would provide the required rates of return, particularly assets that were also short-term. For a while, many banks would simply raise money from investors via WMPs and then relend funds in the money market at the corresponding SHIBOR (Shanghai Inter-Bank Offering Rate) rates, so there was no effective maturity mismatch. However, as more banks did this, SHIBOR rates naturally fell, reducing the attractiveness of the strategy.

Figure 2-4: SHIBOR Money Market Rates, Oct 2011-Dec 2012

Percent



Source: Bloomberg.

Starting in late 2012, banks needing returns were either forced to add credit risk within their WMP portfolios or add longer-term assets. Credit risk had not really been priced into most of China's financial markets, but the addition of longer-term assets created a new problem for banks. Previously, rolling over WMPs was not a matter of necessity: it was simply helpful in growing balance sheets and enhancing profitability. Now, however, returns from some longer-term assets would not be available until they matured, perhaps for several years. WMPs needed to generate returns so they could be repaid every few months. Unless a WMP investor maintained their investment within the bank, the bank would need to take an immediate loss on that WMP or borrow money aggressively in the interbank money market to repay the customer.

This maturity mismatch was the key ingredient in the most acute crisis China's financial system has faced this century, an abrupt liquidity squeeze in June 2013 that froze China's money markets. The PBOC and China's financial regulators were aware of the maturity mismatches developing within China's financial system and the risks that could result. However, their regulatory approach did not work, with WMPs slipping through the bureaucratic cracks. No regulator had authorized their creation, so no regulatory institution was responsible for supervising them.

The inadequacy of the regulatory tool kit led China's central bank to try blunter measures. With approval from central authorities, the central bank took advantage of a seasonally tight liquidity period to try to shock the market out of its complacency and force banks to better account for the risks building on their balance sheets. On June 6, 2013, tight liquidity conditions and the increasing complexity of some off-balance sheet forms of financing caused a technical default on an interbank payment of 6 billion yuan between Industrial Bank and Everbright Bank.²⁵ The market quickly reacted, with overnight interbank lending rates jumping to 8.0 percent on June 6 from 4.7 percent on June 5. This was not an unprecedented development and in the past the PBOC had stepped in to provide assistance. But the next day, instead of calming the markets, the PBOC refused to provide additional funding. Money market rates skyrocketed as a three-day holiday started, with overnight rates reaching 8.7 percent and overnight SHIBOR reaching 9.6 percent.²⁶ After the holiday, the PBOC broke its silence at a meeting with banks reportedly held on Monday, June 17, delivering the message that banks needed to take better account of their speculative funding and asset positions and that no central bank assistance would be forthcoming.

All hell broke loose. Banks themselves did not know how to interpret the PBOC's change in behavior, and many consequently pulled back from regular interbank lending activity. By June 20, there were no lenders left in the market and smaller banks desperate to repay WMP investors were scrambling for funds. Overnight interbank money rates jumped to between 20 and 30 percent, effectively signaling there was no liquidity available in the market. The PBOC was forced to capitulate by the end of the day, providing short-term funding that reduced rates to more manageable levels. But they did so quietly, so markets were not assuaged. The scramble for liquidity continued and rapidly resulted in sales of virtually any liquid asset in China's financial markets. Equity markets plummeted over 10 percent in just two days. Finally, the PBOC issued a statement on June 25 promising to provide sufficient liquidity to the market when necessary.²⁷

²⁵ David Keohane, "Swimming Naked in China," *Financial Times Alphaville* June 10, 2013, <https://ftalphaville.ft.com/2013/06/10/1529962/swimming-naked-in-china/>.

²⁶ Data from Bloomberg Database, Ticker symbol RP01, accessed July 31, 2018.

²⁷ Bob Davis and Lingling Wei, "China's Central Bank Acts on Cash Crunch," *Wall Street Journal*, June 26, 2013, <https://www.wsj.com/articles/SB10001424127887323683504578566842205728724>.

The PBOC's liquidity experiment had almost caused a systemic financial crisis, and the central bank itself was shocked by the market response it created. Clearly, bringing the financial system to a screeching halt was not part of the central bank's plan. The mechanism through which the liquidity crisis developed, however, was rooted in the banks' increasing use of WMPs as a critical funding mechanism. Some banks had been buying WMPs from each other in a bid to boost returns. At the time, many WMPs were being offered at interest rates in the range of 4.5 to 6.0 percent. When short-term interbank rates rose above that level, the logic of holding onto WMPs suddenly disappeared; one could make more money lending in the interbank market. This caused a surge of WMP redemptions, forcing banks that did not have the short-term assets to provide the necessary payments to scramble for funding and borrow in the market, pushing interbank rates higher. Had the squeeze only lasted for a day or two with expectations of improvement in a week or so, perhaps the market meltdown could have avoided. But the uncertainty created by the PBOC's unclear policy signals raised doubts that more funding would be made available. Banks believed that they had to borrow now, or potentially never. By June 20, there were no more lenders left.

The PBOC's failure to predict the outcome was not surprising, precisely because most of the financing instruments that drove the market's movement were designed to avoid regulatory scrutiny. The volume of WMPs had grown larger than the central bank understood precisely because the scope of banks' reliance on these instruments was largely invisible to regulators. As a result, the demand for money required to redeem maturing WMPs was far greater than the PBOC anticipated when it decided to shock the system and drive banks to reduce their risky activities.

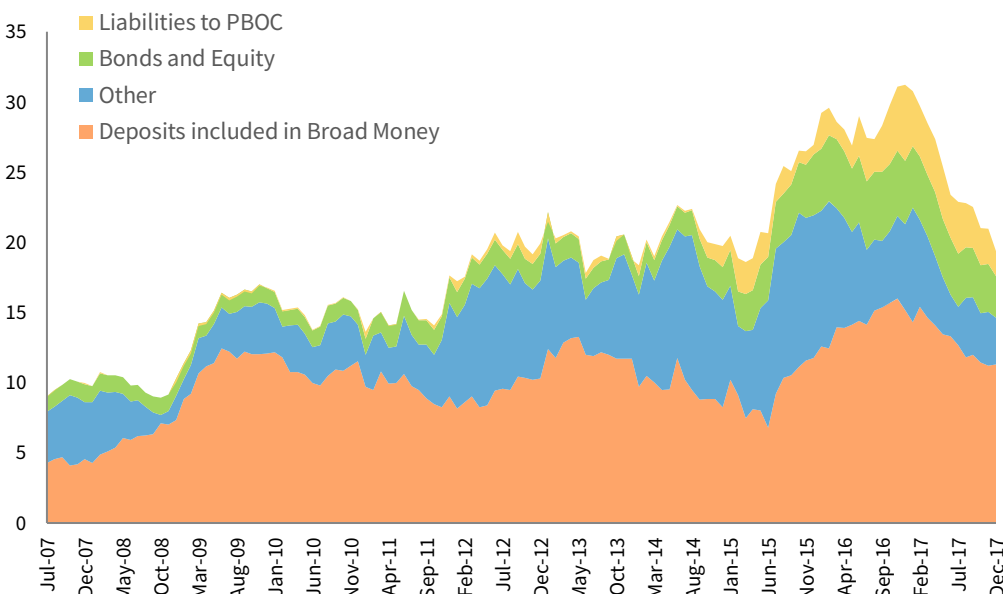
Ironically, the interbank crisis of June 2013 had the opposite effect to the one the PBOC intended. Banks now saw very clearly that the PBOC and other regulators had no policy tools that could regulate their shadow banking activities. They knew that in the event of significant financial stress the PBOC would have to back down and provide the market with emergency funding. They knew that defaults, particularly among banks, would be far too difficult politically to be allowed. As a result, they knew the shadow banking party could continue unabated. Moral hazard was entrenched, rather than broken, during the June 2013 crisis.

Changing the Funding Structure of China's Banks

The other immediate consequence of the June 2013 interbank market crisis was that banks' funding channels shifted far more decisively toward non-deposit forms, including WMPs and borrowing from other banks. The central bank now had a much bigger problem on its hands because the bank knew that spikes in short-term interbank rates would tend to get out of control very quickly due to WMP redemptions. The PBOC couldn't be sure when these redemptions would accelerate funding pressures in the money markets. Therefore, it needed to reduce the probability of sharp spikes in money market rates.

Figure 2-5: Growth in Bank Funding Sources by Type, 2007-2017

Trillion yuan, 12m rolling sum



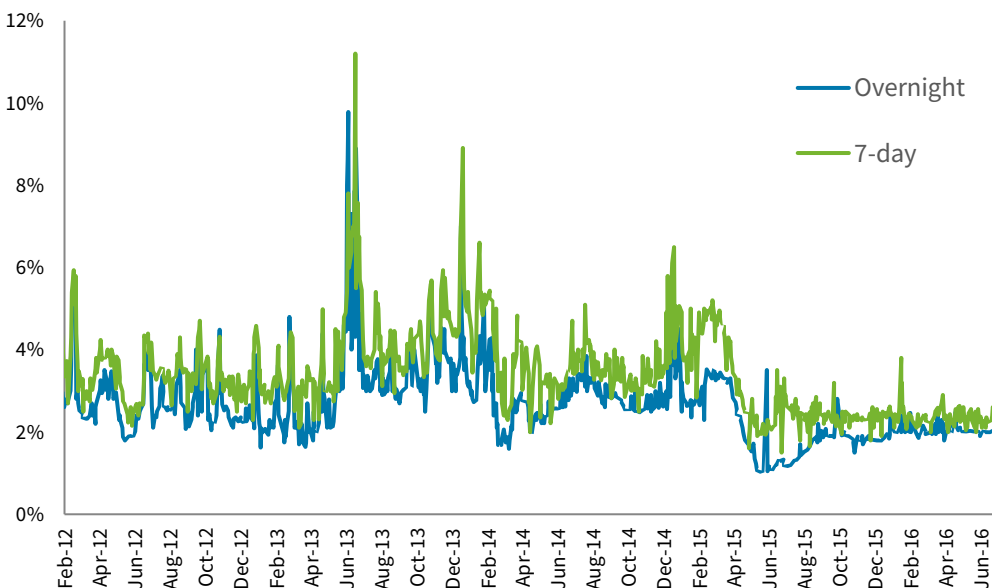
Source: People's Bank of China.

The result was a significant deviation from past PBOC behavior. Before 2013, the central bank always tolerated considerable volatility in money market rates, in part because deposit and lending rates were strictly controlled. As a result, the movement of interbank market rates allowed the PBOC to assess the real market-driven state of credit demand within China's financial system. Watching movements in key money rates, such as the seven-day repurchase agreement rate, allowed the PBOC to assess when it needed to inject or withdraw liquidity via open market operations, particularly in advance of major holiday periods when banks would be closed and cash demand was stronger.

After the June 2013 debacle, the PBOC needed to manage the volatility of interbank market rates to avoid a repeat of the crisis. Interbank rates became far more stable starting in 2014 and especially in 2015, when the central bank was also trying to create favorable funding conditions for local banks to issue bonds to refinance their existing bank debt. However, maintaining stability in interbank rates accelerated the growth of leveraged borrowing within WMPs and the use of the interbank market as a key funding source for other banks.

Banks and NBFIs were already struggling to generate returns because the growth of WMPs had outpaced the economy's demand for credit. There simply were not enough loans to package in WMPs, particularly because WMPs needed to be rolled over within a few months. As a result, banks and NBFIs moved into riskier credit instruments, including corporate bonds. One strategy to increase returns within a portfolio of securities is to apply leverage, to borrow against your assets to purchase additional assets, in other words. This is risky behavior if asset prices fall but also if borrowing rates increase sharply. In the past, very few participants in China's money markets would take leveraged positions in bonds, loans, commodities, or equities because there was so much volatility in short-term funding rates. If your funding rate would shift from 2 percent to 4 percent in the course of a day, it was extremely difficult to forecast returns and avoid losses.

Figure 2-6: Overnight and 7-day Money Market Rates, Feb 2012-Jun 2016
Percent



Source: Bloomberg.

But that financial logic changed after the PBOC began limiting the volatility of money market rates, keeping them within a narrow range around 2.0-2.2 percent for most of 2015 and 2016, as indicated in Figure 2.6. Leveraged positions in speculative asset markets became far less risky, at least on the funding side. The search for yield and competition for returns led NBFIs to move into riskier asset markets, including equities and commodities. Leveraged positions played a key role in China’s epic equity market boom and bust in 2015, with stocks pledged to obtain margin loans for additional purchases. The lenders in this case were often NBFIs trying to generate returns to repay investors in WMPs issued by banks.

Following the equity market bust, the search for yield simply shifted into other assets. WMP issuance skyrocketed in late 2015 and early 2016, with many banks increasing their aggregate assets by 50 percent or more. As funds raised from WMPs could no longer find returns in equities, banks started shifting into even riskier ventures, including commodity futures speculation. In late April 2016, turnover in individual commodities within China’s futures markets more than quadrupled daily turnover in the most liquid S&P 500 equities contract.²⁸

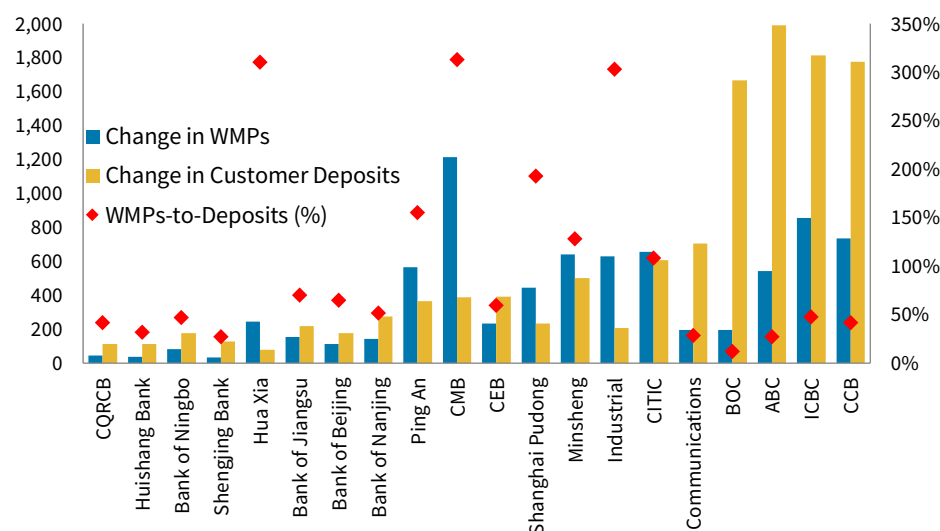
Complexity increased as well. As corporate bond yields declined because more and more funds were buying them, WMP issuers found that one of the few ways to generate adequate returns was to buy other banks’ or financial companies’ WMPs. At the end of 2016, at least 5.99 trillion yuan (\$862 billion at the end of 2016) of bank investments in other banks’ WMPs could be identified.²⁹ Banks were willing to place funds wherever yield was available. They had become confident that there was no significant risk of the

²⁸ Reuters, “China Commodity Exchanges Crack Down on Speculation as Rebar Volumes Soar,” April 22, 2016, <https://www.reuters.com/article/us-china-commodities-futures/china-commodity-exchanges-crack-down-on-speculation-as-rebar-volumes-soar-idUSKCN0XJ0TP>.

²⁹ “China Banking and Wealth Management Market Annual Report,” Banking Wealth Management Trustee Center, 2016, <https://www.chinawealth.com.cn/resource/830/846/863/51198/52005/961636/1495184467803885769503.pdf>.

PBOC disciplining the market because short-term rates had remained stable for so long. And even if they faced risks from declining asset prices, they were confident that they could borrow additional funds in the interbank market to make investors whole and avoid redemptions or liquidations.

Figure 2-7: WMPs and Deposit Growth at Selected Banks, End-2014 to H1 2016
Billion yuan, Percent (RHS)



Source: Banks' financial statements.

By the summer of 2016, Chinese authorities had had enough. A staged interview in the People's Daily by an "authoritative personage" hinted at the concerns raised by continually growing leverage and cautioned local officials against expecting additional policy support for the economy from the central government. In late August, the PBOC started guiding short-term money market rates higher, and increasing their volatility, to reduce the ability of leveraged positions to generate returns. The effort was successful in reducing leverage within WMPs, but did not fundamentally change the implicit guarantees within China's financial system. At the same time, Beijing authorities started to target the regulatory loopholes that had facilitated shadow banking growth over the previous years, consolidating regulatory oversight of the financial system in a new body organized under the State Council called the Financial Stability and Development Committee, and reorganizing the banking and insurance regulators into a single body. How successful these efforts will be in reducing systemic risk remains to be seen, but they do reflect a sharp change in the central government's response to the rapid growth of informal financing channels.

The System Has Changed

As it currently operates, China's financial system is significantly different from the system that existed before 2012. Previously, China's banking system was almost entirely funded by a relatively stable deposit base, mostly from households. This is no longer the case. New assets within China's banking system are more likely to be funded via wealth management products or wholesale funding from other banks. A new asset within China's banking system was more likely to be an investment receivable or some other non-loan structure, rather than a formal loan, with regulators far less likely to be able to monitor and control the growth of these assets. These assets were responsible for most of the growth at smaller banks through 2016, and smaller banks led overall asset growth within China's financial system. In addition, China's banking system could no longer rely upon steady inflows of deposits from external sources. Balance of

payments conditions after 2012 were far more volatile and dependent upon China's capital and financial account rather than the current account. Steady trade-related inflows were no longer sufficient to keep the yuan stable or appreciating, as capital flows were far more dependent upon short-term expectations for the currency's movement or changes in interest rates. Throughout most of 2015 and 2016, China faced significant balance of payments deficits and the yuan was under considerable pressure to depreciate. However, asset growth remained stronger than ever, with China's banks adding a combined 58.2 trillion yuan (\$8.6 trillion) in new assets during those two years. Most of the funding growth for these assets came from non-deposit sources, as deposit growth accounted for only 46 percent of total funding growth over the 2015-2016 period. A significant proportion of funding came directly from the central bank's balance sheet, with the PBOC providing the banking system with liquidity to offset the impact of capital outflows. The overall trend was clear: China's banks were no longer as dependent upon deposit growth and were continuing to expand even though deposits were flowing out of the financial system into foreign assets.

It is difficult to overstate the changes that have taken place within China's financial system since they started developing in 2012. The funding base of the banking system has changed and is now less stable. The assets generated by the banking system are harder to monitor, with unclear ultimate borrowers, and growth at faster rates than expected. Notably, the policy tools that regulators used to manage credit growth barely changed during the period from 2012 to 2016. China's current financial system is simply quite different from the one China's financial institutions and government authorities were accustomed to during the first 30 years of reform and opening. It is also much larger than the financial system for which China's policy tools are designed, having more than doubled in size since 2012.

The changes that have taken place, particularly on the liabilities side of Chinese bank balance sheets, are a key reason for concern about a possible financial crisis in the years ahead. As the growth of assets continues relative to the size of the economy, so do potential financial losses that might hold back future growth, even if the risks from bad investment are less acute in the short term.

Historical Parallels in Other Emerging Markets

Several emerging market economies have experienced rapid growth in financing, risk-taking, and complexity similar to what has occurred in China in recent years. However, as mentioned previously, there are no straightforward models based on past experience that can be applied to China's current financial conditions. This is not to denigrate the relevance of comparative analysis in this form but rather to recognize that China's financial system is simply far larger relative to the global economy than any of the previous cases.

The historical record of financial systems that have evolved in ways similar to China's is not a healthy one. As Chen and Kang highlighted in a review of China's credit growth early in 2018, a study of 43 cases of credit-to-GDP expansions of more than 30 percent over a five-year period produced financial crises or a major slowdown in economic growth in all but five cases.³⁰ In addition, Chen and Kang note that for all the cases in which credit-to-GDP ratios started above 100 percent, there was some instance of financial distress. China's credit-to-GDP ratio was somewhere in the range of 179 percent (based on Total Societal Financing data) to 241 percent (based on total bank assets) at the end of 2011, and expanded to a range of 228 percent to 293 percent using the same metrics as of the end of 2016. These are very large numbers relative to other emerging markets. According to Bank for International Settlements (BIS) historical data,

³⁰ Sally Chen and Joong Shik Kang, "Credit Booms—Is China Different?" International Monetary Fund Working Paper, no. 18/2 (2018), <https://www.imf.org/en/Publications/WP/Issues/2018/01/05/Credit-Booms-Is-China-Different-45537>.

there were no emerging economies (or any non-European economies) outside of China or Hong Kong that had seen credit-to-GDP ratios expand to more than 200 percent.³¹

At the same time, there remains little academic consensus on what level of credit relative to GDP should be considered dangerous for an emerging economy, only general agreement that higher credit growth within larger systems tends to be a reasonably reliable predictor of crisis or a major slowdown in growth.³² As Dell'Arricia et al. noted in 2012, "Bad booms tend to be larger and last longer," adding that roughly half of credit booms that lasted more than six years resulted in crises.³³ Schularick and Taylor use a much longer historical dataset within developed economies to find a strong correlation between lagged credit growth and the probability of financial crisis, with larger financial systems adding to risks.³⁴ There is no magic threshold at which credit expansion automatically produces a financial crisis, but eventually cracks tend to form when the economy can no longer reliably support the rapid growth in borrowing, and defaults and financial stress tend to emerge.

Work from BIS economists Hahm, Shin, and Shin in 2012 has also highlighted the vulnerabilities created within financial systems where so called "non-core" liabilities, or non-retail deposit liabilities, become an increasingly significant source of funding.³⁵ The basic logic of the argument is that when banks stop relying upon retail deposits as their key source of funding, it usually indicates that credit is expanding faster than the underlying economy, which tends to be correlated with the risk of financial crisis.³⁶ While most of the cases discussed in the paper address external sources of funding and emerging markets that run current account deficits, the same principles seem to apply to China's case, given banks' increasing reliance upon non-deposit forms of funding. Hahm, Shin, and Shin's work finds a statistically significant correlation between growth of non-core liabilities and crisis, and that non-core liabilities growth provides even more explanatory power than a straightforward credit-to-GDP ratio.³⁷ The authors conclude that monitoring of non-core liabilities growth should also be considered along with the credit-to-GDP ratio in identifying credit booms.

There are no obvious contrarian cases in which a country engaged in such a sharp expansion of credit saw no interruptions in growth and no obvious signs of financial distress: currently China is the only occupant of that set. A reasonable review of most of the academic literature concerning emerging market financial crises suggests that credit expansions are strongly correlated with slowdowns in growth and the potential for financial crises. Every case is different, and it can be difficult to disaggregate external factors such as the Asian financial crisis, the rise in the U.S. dollar, or other country-specific factors that might increase the risk of crisis. But the reasons for concern given the huge expansion of China's financial system are straightforward given the historical record of other countries facing similar (but much smaller) credit booms. Chen and Kang also note one other key characteristic of China's credit expansion: it is among the longest in history, without a relevant precedent.³⁸

³¹ Bank for International Settlements data.

³² Dell'Arricia et al., "Policies for Macroeconomic Stability: How to Deal with Credit Booms," IMF Staff Discussion Note, no. 12/6 (2012), <https://www.imf.org/external/pubs/ft/sdn/2012/sdn1206.pdf>.

³³ Dell'Arricia et al., 4.

³⁴ Moritz Schularick and Alan M. Taylor, "Credit Booms Gone Bust: Monetary Policies, Leverage Cycles, and Financial Crises, 1870-2008," National Bureau of Economic Research Working Paper, no. 15512 (2009), <http://www.nber.org/papers/w15512.pdf>.

³⁵ Joon-Ho Hahm, Hyun Song Shin, and Kwanho Shin, "Non-Core Bank Liabilities and Financial Vulnerability," National Bureau of Economic Research Working Paper, no. 18248 (2012), <http://www.nber.org/papers/w18428>.

³⁶ Hahm, Shin, and Shin, 2-3.

³⁷ Ibid, 30-32.

³⁸ Chen and Kang, "Credit Booms—Is China Different?" 8-9.

The Chinese Discussion of a Possible Financial Crisis

Comparative analysis of emerging markets and other banking systems growing at rates similar to that of China's system clearly raises the possibility of financial distress or a sharp slowdown in Chinese growth in the near future. This discussion of a possible financial crisis in China is not confined to Western observers or international financial institutions. Chinese economists and analysts have also expressed concern about the growth of debt within the country's banking system and interest in what might distinguish China's growth outlook from the experience of other countries that have faced similar difficulties.

The literature in China concerning the possibility of financial crisis and the need to enhance regulatory defenses against financial instability occurs among government policymakers, government-linked think tanks, and academics. Obviously, the discussion at the policymaking level is largely obscured from public view, but officials do occasionally comment in public on the risk of financial instability. In 2016, Liu He, long an influential senior official and now a Politburo member and key economic adviser to President Xi Jinping, commented in a volume on the importance of financial supervision on the characteristics common to financial crises and measures needed to avoid them.³⁹ Liu discussed commonalities among crisis countries, including rising asset prices, large debt burdens, volatility in economic growth rates, and current account deficits, arguing for a more "preemptive" approach to resolving risks.⁴⁰ Liu also emphasized the importance of longer-term reforms to resolve structural problems in China, with more acute or "surgical" measures to target short-term risks.

Academic analyses at China's government think tanks have historically been more robust in discussions of the nation's vulnerability to crisis. In 2014, Zhang Ming of the Chinese Academy of Social Sciences wrote a paper discussing potential risks of a financial crisis, the reasons that a crisis had not happened yet in China, and policy measures that central authorities should pursue.⁴¹ Zhang argued that risks were growing across four dimensions, including the private sector (a property bubble and rising debt), the public sector (rising government debt), the banking sector (rising interbank business), and in the external sector (the possibility of rapid capital outflows).⁴² Zhang argued that China has certain "cushions" against these risks, including a managed capital account, a high domestic savings rate, and a large pile of foreign exchange reserves. However, he warned these "cushions" would become less effective during periods of market reform, and worried that there could be external triggers for a domestic financial crisis, possibly in the form of higher Federal Reserve interest rates sparking capital outflows. As a result, Zhang argued for more aggressive domestic financial reform before pursuing capital account liberalization.⁴³

Other think tank analyses have discussed the linkage between the property market and the possibility of crisis. Yi Xianrong of the Chinese Academy of Social Sciences wrote in 2017 that the property market remained the most significant risk to China's economy, and that while public ownership allowed China to effectively transfer debt between different institutions, use of this power would merely be a time-buying exercise. China would still be heavily exposed to falling property prices.⁴⁴ Hu Jihua, a professor at the

³⁹ Liu He, "Preface," in *Financial Supervision in the 21st Century*, ed. Jakob de Haan (CITIC Publishing Group Ltd., 2016).

⁴⁰ Ibid.

⁴¹ Zhang Ming, "Analysis of Risks in China's Financial System," *For the Love of Ideas* (爱思想), September 9, 2014, <http://www.aisixiang.com/data/77701.html>.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Yi Xianrong, "Will China Face a Financial Crisis?" (中國會爆發金融危機嗎) *China Times*, February 26, 2017, <http://opinion.chinatimes.com/20170226003056-262105>.

China University of Political Science and Law, similarly argued in *Caixin* magazine in September 2015 that the impact of a decline in property prices on the health of the banking sector was the key risk that could produce a crisis.⁴⁵

There are few popular books written by Chinese that discuss the possibility of financial crisis outright, but one that veers closest is Zhu Ning's *China's Guaranteed Bubble*, published in 2016.⁴⁶ Zhu focuses on the issue of guarantees within China's financial system as a contributing factor to systemic risk, while stopping short of making a prediction on the probability of a crisis. At one point in the book, Zhu argues: "However, no matter how strong investors' trust in the capacity and ability of the government to adjust the economy and no matter how healthy the central government's fiscal strength, we must realize that the economy follows its own rules and principles. Long-term distortions of asset allocation or the relationship between risk and return in the economic and financial system won't prevent the economy from slowing but worse, could trigger bubbles, crises and long-term recession and stagflation."⁴⁷ Zhu concludes with an argument for breaking implicit guarantees as the only way to set China's economy on a healthier long-term path, despite the pain in the short term.

While the range of views here is far from comprehensive, Chinese academic discussion of the risks building within China's system is generally in line with the concerns raised by foreign analysts, with perhaps slightly more emphasis on the property market and the risks from the sharp rise in property prices seen over the past decade. In general, the arguments made about China's special characteristics that help to protect the country's economy from crisis, or the "cushions" in Zhang Ming's terminology, focus on similar factors to Western analysts: the relatively clean central government balance sheet with additional fiscal space, as well as the high savings rate and foreign exchange reserves to insulate against capital outflows. Later chapters will incorporate Chinese academic views on critical economic questions such as the factors behind China's high savings rate. Often the Chinese domestic discussion of the problems within China's financial system stop short of predicting or even discussing the possibility of a crisis or a sharp slowdown in growth, which are politically sensitive topics in Chinese publications. This is not surprising given the political boundaries on certain types of discussions in China's media, but does generally distinguish the literature within China from other comparative studies analyzing the causes and characteristics of previous emerging market financial crises. Within formal academic work published in China, there appears to be no comprehensive assessment of the financial vulnerabilities building within China's banking system and the danger of those vulnerabilities implicating the stability of the financial system as a whole.

Financial Reform and China's Growth Trajectory

Reform of China's financial system, and changing the characteristics of the banking system that have contributed to the development of credit excesses, have long been critical agenda items for China's leaders. After years of false starts and incomplete liberalization of China's interest rate and exchange rate regimes, China's leaders laid out an aggressive program of comprehensive structural reforms for China's economy following the Third Plenum of the 18th Party Congress in October 2013, detailing 60 "decisions" of the Party to reform various aspects of China's governance. Financial system reform was a central component of

⁴⁵ Hu Jihua, "Will the Next Financial Crisis be in China," (下一场金融危机在中国吗) *Caixin*, September 7, 2015, <http://opinion.caixin.com/2015-09-07/100846892.html>.

⁴⁶ Zhu Ning, *China's Guaranteed Bubble: How Implicit Government Support Has Propelled China's Economy While Creating Systemic Risk* (New Taipei City: Hizashi, 2016).

⁴⁷ *Ibid*, 418. Translation by Feng Xiaodong.

the Third Plenum agenda, as fundamental to the transition toward value-based pricing of risks in a market economy.⁴⁸

Following the Third Plenum, financial reforms actually accelerated much faster than those in other sectors, as more tangible action plans from key financial officials were already evident in late 2014, based on our comprehensive assessment (Rosen 2014) of the progress of the Third Plenum Decisions at that time.⁴⁹ Capital account liberalization proceeded with the opening of more channels to allow the use of Chinese currency raised offshore in onshore markets. A program was launched to permit cross-border purchases of Chinese stocks and bonds, opening these markets to greater foreign influence. At the same time, a full program of liberalization of China's previously regulated deposit and lending rates was implemented, with authorities first raising the ceilings on China's deposit rates and then abolishing them entirely. Lending rate decisions were also liberalized, with the program essentially completed in 2015. In addition, corporate bond defaults were finally allowed to occur, introducing credit risks into some asset markets. The defaults were limited but did represent an attempt to introduce market pricing of new risks. A deposit insurance system was also rolled out in 2015, offering the possibility that larger depositors could distinguish between the creditworthiness of various banks.

While making extraordinary progress on these fronts, financial reformers remained unable to crack the difficult puzzle of what to do about regulating SOEs and local governments, which continued to enjoy not only implicit guarantees against failure but also explicit government support. Within such a half-reformed system, changes in the pricing of credit can have counterproductive effects when authorities are trying to control the growth of borrowing by these price-insensitive entities (as noted by Zhu Rongji in the quote in the previous chapter). Allowing liberalized interest rates may have the effect of boosting the cost of borrowing for everyone because state-guaranteed borrowers prioritize access to credit over its cost. The result may be more borrowing and investments in unproductive areas but financed at higher overall interest rates. This behavior was definitely evident in the bond market for China's LGFVs. Bond buyers preferred LGFV bonds because they offered higher yields than corporate debt, but were considered government guaranteed, even though they funded projects that typically had no capacity to repay the debt.⁵⁰

Introducing new credit risks or the possibility of default is similarly a difficult process within a financial system in which guarantees are the dominant assumption. While Zhu Ning's argument on the necessity of removing these guarantees is compelling, breaking the cycle of guarantees is potentially dangerous because the change in government support is essentially a change in policy and raises questions about where new default risks will emerge. Corporate bonds might default today, but what about local government bonds? The uncertainty of these guarantees, once they start to be removed, can lead to rapid periods of de-risking and falling prices for the underlying assets. In December 2016, for example, China's money markets nearly froze once again after a scandal at Sealand Securities, a relatively small securities firm. The firm refused to support a few billion yuan in contracts for entrusted bond placements—agreements to hold bonds for another institution—after the price of the underlying bonds had fallen. The uncertainty Sealand created caused market participants to question all entrusted bond contracts in the market, resulting in a sharp rise in short-term funding rates and a significant pullback in interbank lending. Introducing default risks into new asset classes, or new institutions, such as SOEs or LGFVs, could

⁴⁸ Daniel Rosen, "Avoiding the Blind Alley: China's Economic Overhaul and Its Global Implications," Asia Society Policy Institute and Rhodium Group, October 2014, 59-72, https://asiasociety.org/files/pdf/AvoidingtheBlindAlley_FullReport.pdf.

⁴⁹ Ibid, 63.

⁵⁰ Rhodium Group, China Markets Research, "Losing Religion on LGFV Bonds," July 6, 2017.

trigger even larger panics, which partially explains authorities' reluctance to push aggressively for such steps even while implementing other portions of the financial reform agenda.

Capital account liberalization is similarly difficult, as it exposes a half-reformed financial system to the discipline of international capital flows. China's money supply is extremely large by global standards, the largest single-country money supply in U.S. dollar terms at \$25.8 trillion as of the end of 2017. Moreover, China's money supply continues to grow at a rapid rate of around \$2.0-2.5 trillion per year. This creates powerful incentives for diversification of China's savings into foreign assets, unless there are higher-yielding investments available in China. Chinese corporates similarly have strong incentives to invest outside of China given the need to acquire strategic technology, avoid protectionism by manufacturing in foreign countries, and becoming closer to key consumer markets. Concern about strong capital outflows resulting from the diversification of domestic savings and outbound investment has caused Chinese authorities to be more cautious about full capital account liberalization, and the experience of other emerging markets during the Asian financial crisis remains a cautionary example. Capital account liberalization before reform of the domestic financial system may exacerbate some of the risks already developing within China's financial system. In addition, if capital outflows impact deposit growth, China's banking system and overall economy may not be able to grow as quickly and so fail to meet targeted GDP growth rates.

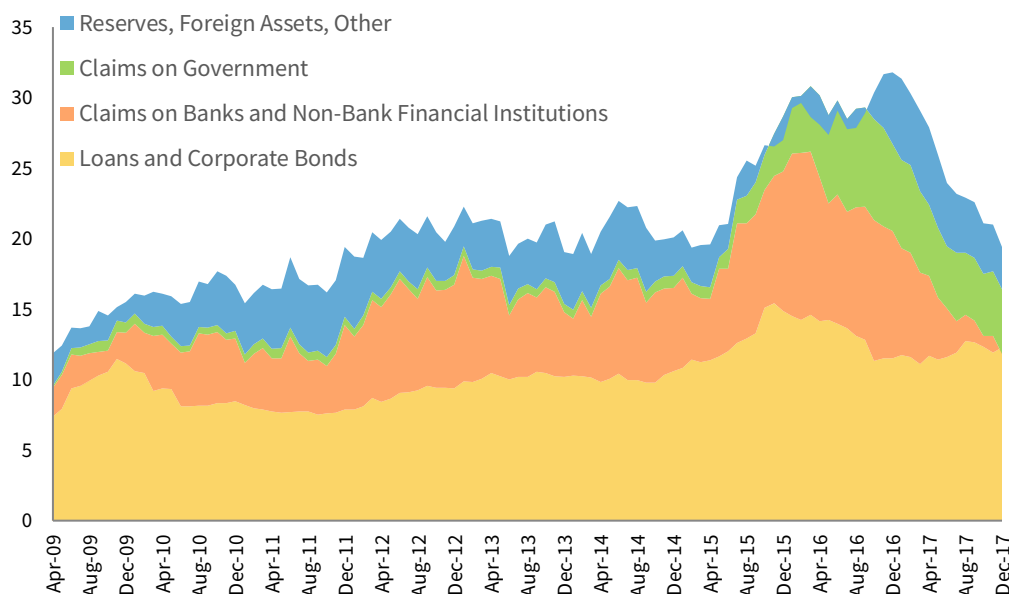
None of these arguments are excuses or reasons that China should not push forward with more significant market-driven reforms within its financial system. They do, however, offer some of the context behind Chinese authorities' reluctance to move forward with a "big bang" package of reforms, along with the tendency toward gradual solutions common within China's political establishment. In addition, the problems listed above highlight the constraints limiting China's options in reforming its financial system. The need to distinguish credit risks across different financial instruments calls for higher interest rates on riskier assets. In an environment of slow economic growth, this could exacerbate financial stress by driving even productive firms into default. Managing China's debt burden over time probably requires far lower interest rates on most forms of debt within China's financial system to reduce debt servicing costs as a constraint on growth. Otherwise, most new credit will simply be used to pay interest on existing debt. Controlling shadow banking activities requires bringing loans back onto banks' balance sheets, but recognizing these assets as loans constrains banks' ability to extend new loans and maintain investment growth. These are not easy tradeoffs to manage.

But Beijing is pushing ahead in doing so, despite the risks. Starting in late 2016, Chinese authorities began to highlight the specter of financial risk as a much greater threat to stability than the potential for a slowdown in the economy. The PBOC took action by starting to guide short-term money market rates marginally higher, while also making them more volatile. As a result, the perceived returns from taking leveraged positions in speculative asset markets appeared far riskier, reducing borrowing by NBFIs. As money markets rates rose, so did the costs of issuing Negotiable Certificates of Deposit (NCDs), a form of interbank borrowing widely used by smaller banks, which were typically priced relative to SHIBOR. As NCD costs kept rising, many banks chose not to roll them over because it was impossible to get the same rates of return. Without short-term funding, banks were forced to pull back funding from NBFIs, and interbank assets or inter-financial system claims barely increased at all in 2017 (Figure 2-8). Older loans migrated back to banks' balance sheets, forcing banks to account for them with capital provisions and loan loss reserves. Additional regulations targeting informal financing activities and the contents of WMPs and other asset management products were announced in late 2017, and were formally implemented in April

2018. Furthermore, to resolve jurisdictional issues in regulating the financial system, the State Council announced the creation of a Financial Stability and Development Committee to oversee all financial supervision.

Figure 2-8: Bank Asset Growth by Type, 2009-2017

Trillion yuan, 12m rolling sum



Source: People's Bank of China.

The success of this effort in reducing risk in China's financial system remains to be seen. It has obviously slowed the pace of credit growth in the aggregate, with total bank asset growth only 8.4 percent in 2017. Most of the squeeze has been felt by joint-stock banks, which relied heavily on interbank funding instruments such as NCDs. Joint-stock banks' asset growth was only 3.4 percent in 2017.⁵¹ Corporates have also seen a significant decline in borrowing; within formal loans, there has been a sharp shift toward household borrowing linked to the property market, where credit demand has been stronger. Nonetheless, key obstacles remain, primarily linked to the persistence of SOEs' and local governments' implicit guarantees. Chinese financial markets still carry a widespread belief that just as in 2013 during the credit crunch and in 2015 during the equity market meltdown, any significant financial stress will prompt aggressive government intervention to support the market. As a result, risky behavior continues, even while the regulatory noose has tightened and overall credit growth has slowed.

A Problem Too Large to Outgrow

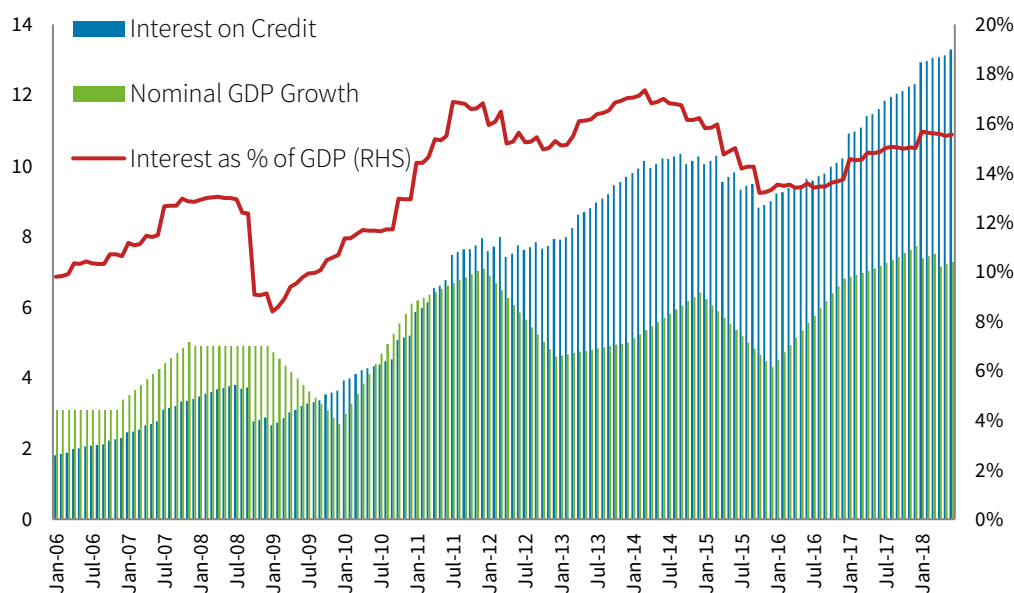
During China's last period of financial system distress, around the Asian financial crisis in the late 1990s, Chinese banks were recapitalized and listed on overseas stock exchanges (primarily in Hong Kong), with rapid economic growth allowing China to reduce the impact of the older "problem" lending over time. The issue China faces this time is that the banking system is not nearly as simple to restructure as it was in the

⁵¹ Data from China Banking Regulatory Commission, Bloomberg.
<http://www.cbrc.gov.cn/chinese/home/docView/44E986F2C2344E508456A3D07BC885B6.html>.

late 1990s, and China cannot effectively grow its way out of the problem. The deleveraging effort that Beijing is currently attempting is therefore logical because the scale of China’s borrowing is such that it must be controlled at the source rather than diluted over time.

The legacy debt within China’s financial system represents a key constraint on the future growth of the economy. A rough calculation of China’s total interest burden, using a quarterly data point provided by the PBOC for the average interest rate on all forms of lending in China, suggests that interest costs alone were around 12.3 trillion yuan in 2017, or around 15 percent of GDP. This is much larger than the expected nominal growth of the economy, even during a year when stronger-than-expected inflation boosted nominal growth. The interest burden has been larger on an annual basis than the level of nominal GDP growth since 2012, when China’s financial system started changing fundamentally. Freeing up resources within the financial system requires shrinking it or removing some of the assets. Without changing the distribution of credit substantially, the net result will be more credit used to pay interest on existing debts rather than funding for new investments.

Figure 2-9: Nominal GDP Growth and Estimated Interest on Total Debt, 2006-2018
Trillion yuan, percent of GDP (RHS)



Source: People’s Bank of China, National Bureau of Statistics, RHG Calculations.

China has two key levers to reduce the impact of the debt burden over time: reduce interest rates through government subsidies to the banks—in effect, using fiscal policy to support debt; or accelerate nominal growth to reduce the impact of the debt over time. The latter solution involves considerable uncertainty because it would require significant inflation, which is not only politically dangerous in China, given high household savings rates, but also difficult to implement without a sharp expansion in the money supply, which would probably put significant pressure on China’s currency. Otherwise, future growth needs to occur without a further buildup in debt, which will require significant changes in the efficiency of China’s financial system. Even that solution is fraught with difficulties, as the next chapter will discuss.

With China's potential growth rate set to slow in the future due to the end of labor force growth and moderating capital stock growth, the efficiency of the financial system becomes of paramount importance as a variable determining China's future growth rate. However, because of the rapid expansion of China's financial system that has already occurred, reforming that system requires reducing the growth of financial assets over time, as well as the financial system's importance within China's economy. This will, at least at first, almost certainly mean a reduction in the GDP growth rate as new lending growth is significantly curtailed.

Even if Beijing wanted to maintain the growth of China's financial system at current rates, this is no easy task. Even under conditions where China's credit demand remains strong and borrowers still want to borrow aggressively despite rising risks, keeping a \$38 trillion banking system growing at around \$4 trillion in assets per year (the average pace of annual banking system growth from 2014 to 2016) requires finding a corresponding \$4 trillion in funding for banks, or having the central bank create such funding.⁵² In addition to simple funding requirements, capital requirements and other regulatory restrictions prevent banks from expanding assets quickly. Bank loans create new deposits but also require additional provisions. Much of the asset growth of smaller banks, in particular, has been structured in non-loan forms precisely to avoid provisioning and capital requirements. Nonetheless, the Chinese system as a whole is still chronically short of capital, primarily because it has grown so fast. The average stated capital adequacy ratio for listed Chinese banks is 10.16 percent.⁵³ This means that if the banking system is going to continue expanding at around \$4.0-4.5 trillion in assets per year, banks must raise an additional \$400 billion in new capital annually to meet regulatory requirements. This is also no easy task.

Often, profitable banks can find new sources of capital from retained earnings, but Chinese banks are not very profitable in the aggregate and therefore not profitable enough to sustain a rapid rate of growth. The average return on all assets in China's banking system is less than 1 percent, and significant proportions of these profits are turned back to shareholders, including the Ministry of Finance, in the form of dividends.⁵⁴ This means banks face a choice of continuing to issue equity and debt in capital markets, or, if they are unable to do so, attempting to engage in regulatory arbitrage to reduce their capital requirements. Given the size of China's banking system, continued expansion at the current pace represents a distinct and rather difficult challenge.

There are no easy solutions that would allow China to shrink its financial system while maintaining current rates of economic growth. But the present deleveraging effort is a step in the right direction because China cannot realistically grow its way out of its debt problem, nor can the country continue on the business as usual path of financial system growth. This is the dilemma China faces after years of rapid domestic credit growth. This dilemma is entirely of China's making, not a result of external factors. The questions for this study are whether there are China-specific factors that will permit avoidance of either a financial crisis or a sharp slowdown in growth, and how resilient those factors will be.

⁵² Data from the People's Bank of China, <http://www.pbc.gov.cn/diaochatongjisi/116219/116319/3245697/3245856/index.html>.

⁵³ KPMG, "2017 Q2 China's Banking Sector: Performance of Listed Banks and Hot Topics," October 10, 2017, <https://assets.kpmg.com/content/dam/kpmg/cn/pdf/en/2017/10/china-banking-sector-performance-of-listed-banks-and-hot-topics-2017-q2.pdf>.

⁵⁴ CBRC data shows 1.65 trillion yuan in total profits from commercial banks in 2016, reflecting 0.71 percent of total assets of 230.4 trillion yuan in the banking system. The proportion of returns varies over time but has generally trended below 1 percent.

Chapter 3 | Savings and China's Credit Distribution

China has a high national savings rate by any meaningful standard. According to the World Bank and China's own statistical bureau, China saves 46 percent of national income, by far the largest proportion of any of the 20 largest economies in the world. A high savings rate is often cited as a key factor why China is insulated from financial crisis; countries with high savings rates should have few difficulties meeting any shortfall in domestic liabilities. The essence of the argument is that because investment has been funded in large part by domestic savings, which is inherently more stable, China has avoided exposure to financial risks from movements in the exchange rate and in interest rates on foreign borrowing and wholesale funding.⁵⁵ In addition, this argument usually implies that Chinese authorities can deploy savings in a targeted fashion to meet any domestic funding shortages in the event of a financial crisis. A corollary is that the higher savings rate has facilitated higher investment and credit-to-GDP ratios, so that these metrics are not necessarily as concerning in China as they would be in other economies with lower savings rates.

However, by looking at where savings are concentrated among Chinese households and corporates, China's high savings rate does not appear to be a useful "buffer" against financial crisis or a sharp slowdown in growth. While in the aggregate China's high savings seems capable of keeping the system solvent in a crisis, the reality is that these assets are placed at different institutions and sectors of the economy than those where solvency or liquidity emergencies are likely to arise. China's savings appears to be concentrated among wealthier households, which is not surprising given the increase in inequality in recent years. Savings rates are also highest among two types of corporates: private firms that have limited interactions with the financial system, as well as larger, national state-owned corporates that hold effective monopolies in some sectors. These areas where savings are concentrated do not correspond to where China's debts are accumulating. Most of China's debt is building up at lower income levels within the household sector and with local government-linked corporates and property developers.

While policy reforms could devise mechanisms permitting regulators to draw upon assets from one part of the system to meet temporary shortfalls in other parts—such as by drawing upon SOEs' dividend flows or imposing taxation solutions to close gaps—such reforms take years to implement, are not imminent, and cannot be considered a solution to short-term liquidity difficulties in the financial system at this point.

High savings rates are not necessarily useful when confronting financial pressures such as sudden withdrawals of financing from banks or non-bank financial institutions. Most of the more vulnerable banks in China's financial system are smaller institutions tied to local governments, national banks heavily dependent upon wholesale funding, rural financial institutions, and informal or under-regulated private lenders. Pressure on these banks' financing channels will probably occur via scenarios such as a withdrawal of deposits because of a sudden disclosure of large defaults among local government-linked institutions, or a differentiation of counterparty credit risk within China's money markets.

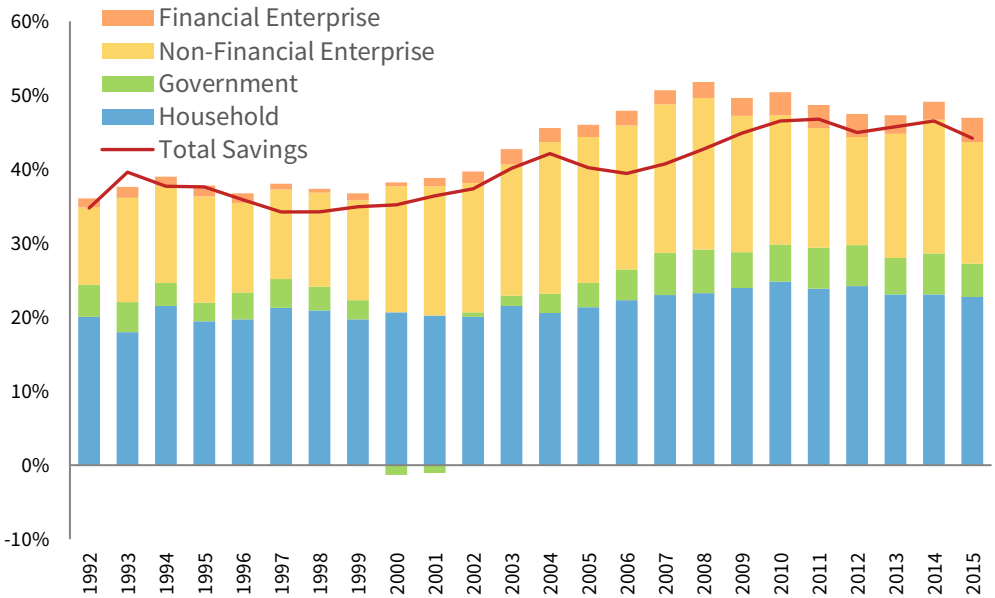
⁵⁵ See, for example, Chen Zhao, "Stop Worrying about Chinese Debt, A Crisis Is Not Brewing," *Financial Times*, December 4, 2017, <https://www.ft.com/content/0ca50290-d82c-11e7-9504-59efdb70e12f>. Also, see Sheng and Soon, 134, where Wang Yao and Jodie Hu argue in Chapter 5 that the low level of household debt permits households to absorb shocks to income resulting from costs to the financial system from shadow banking-related losses.

Moreover, China’s high savings rate is a key challenge to China’s medium-term sustainable development. Ultimately, savings is delayed or foregone consumption. Early in China’s rapid development during the reform and opening era, a high savings rate was beneficial to China, as the country was short of capital and a higher rate of investment enhanced productivity and a faster pace of economic development for China as a whole, even if this was less helpful for households because they were consuming a smaller share of national income. Over time, however, the persistence of China’s high savings rate has been more problematic for China’s development, as the marginal benefits of additional investment of capital for the same purposes as in the past are much smaller in the present, and the likely costs of accumulating additional debt are larger.

There is a robust debate concerning why China’s savings rate remains so high, with contributions from both Chinese and non-Chinese economists. Demographic factors created by the legacy of the one-child policy, which started in 1980, have played a role in boosting China’s savings rate, with the aging of the population expected to bring down savings rates over time. Chinese households may have saved so much because of the country’s weak social safety net, requiring precautionary savings as a bulwark against financial uncertainty. Income inequality is also playing a role: as in most countries, China’s household savings is concentrated at the upper end of the income spectrum, with wealthier households spending a smaller proportion of their income. China’s companies are also saving more over the past decade, as low interest rates have effectively subsidized profits for China’s state-owned enterprises.

Figure 3-1: China’s Domestic Savings Rates by Sector

Percent of GDP



Source: Flow of Funds Table, National Bureau of Statistics.

For over a decade, Chinese leaders have been trying to reduce the savings rate and promote domestic consumption to rebalance the economy. As far back as the 2004 Central Economic Work Conference, Chinese authorities emphasized the importance of shifting the growth model away from investment and

exports toward domestic consumption, which would involve reducing the national savings rate.⁵⁶ Former PBOC Governor Zhou Xiaochuan commented in 2011 that the high rate of investment resulting from a high savings rate “may cause overheating and overcapacity in some respects . . . and may also irritate certain bubbles easily.”⁵⁷ Efforts to improve China’s social services at the local level over the past decade are generally aimed at reducing precautionary savings and incentivizing consumption over the medium term.⁵⁸ Reducing China’s savings rate over time is a key macroeconomic challenge for China’s leadership, and will be necessary to rebalance China’s economy toward more sustainable drivers of growth.

The misallocation of capital to fund excessive investment is also a key challenge to China achieving its medium-term potential growth, as discussed in Chapter 1. China must not only slow credit growth but reallocate credit in the financial system toward different uses to improve efficiency and total factor productivity. But there is no easy way to break away from the “business as usual” path of credit allocation without incurring some short-term pain and the fiscal costs of corporate or banking system bailouts. Successful reallocation of credit at a macroeconomic level would probably take place within the corporate lending portfolio, cutting off “zombie” state-owned enterprises and other unproductive local government investments. Without changing the allocation of credit, however, China’s high savings rate will be a fundamental contributor to growing risks in the financial system and the economy as a whole. Rebalancing China’s growth model and reducing the savings rate are longer-term challenges. In the short term, the savings rate is unlikely to be helpful in meeting more pressing threats to China’s financial stability.

Savings and Debt Growth: What’s Wrong with More Investment?

The relationship between savings and debt is complex. Savings ratios are flow variables, reflecting proportions of national income saved and consumed. Debt is a stock variable but can also influence the savings rate. If debt burdens are sufficiently high, they may require reducing consumption or investment because of the cost of servicing the debt. A high savings rate at the national level can also correspond to rising debt levels; in fact, they are closely related because savings tends to fund investment. When a country saves a significant proportion of national income, this deferred consumption is typically invested via the financial system, so high investment rates and the growth of debt are usually consequences of a high savings rate. New credit and debt growth is necessary to fund the investment resulting from the intermediation of savings through the financial system. If domestic consumption is not sufficient to absorb the production resulting from stronger capital investment, surplus production is usually exported.

How productive investments turn out to be is the key to the relationship between high savings and the growth of debt: are the investments successful and do they support future consumption? Most investment creates demand, and hence jobs and consumable income today; but if capital undertakings are not successful, they will not lead to the income and profit necessary to retire debt, justify risk-taking, and sustain consumption growth in the future. This is true whether investments arise from company

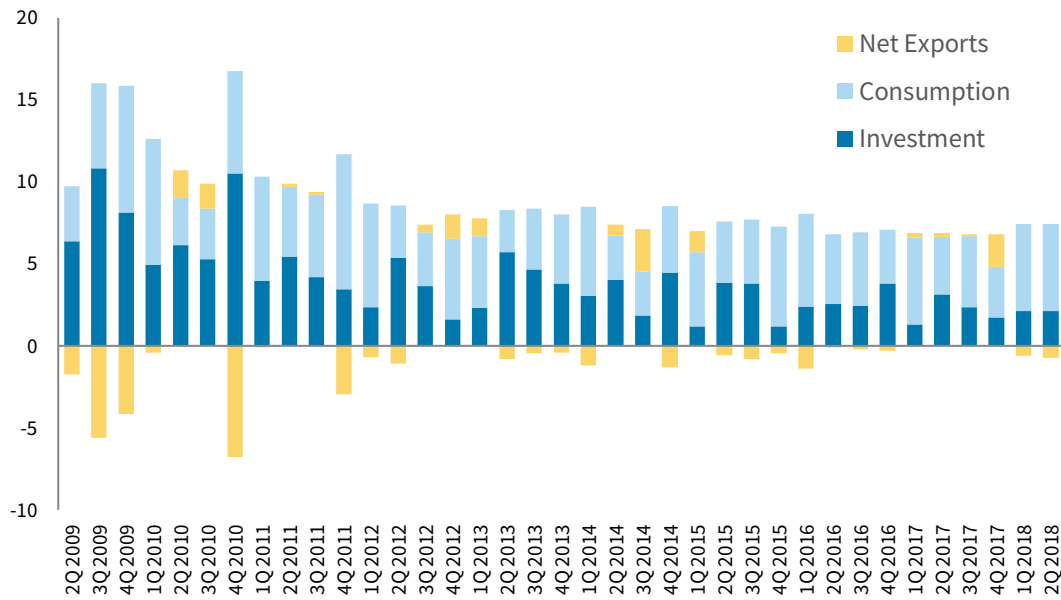
⁵⁶ Central Economic Work Conference of December 2004 discussed within Nicholas Lardy, “China: Rebalancing Economic Growth,” Chapter 1 in *The China Balance Sheet in 2007 and Beyond* (Washington: Center for Strategic and International Studies and Peterson Institute for International Economics, May 2007), 1-2, 5-8, <https://piie.com/sites/default/files/publications/papers/lardy0507.pdf>.

⁵⁷ Zhou commented on Chinese authorities’ efforts to reduce the savings rate over time at a central bank conference in Malaysia in February 2009. “Zhou Xiaochuan: on savings ratio,” Remarks at high-level conference hosted by Central Bank of Malaysia, Kuala Lumpur, February 10, 2009, <https://www.bis.org/review/r090327b.pdf>; Zhou Xiaochuan remarks at Lujiazui Financial Forum, May 20, 2011, referenced within People’s Daily, “China’s high saving rate may trigger overheating: central bank governor,” May 20, 2011.

⁵⁸ Chinese authorities expressed this view directly in consultation with IMF officials in regular annual Article IV consultations in 2017. International Monetary Fund, “Staff Report for the 2017 Article IV Consultation,” July 2017, 15, <https://www.imf.org/en/Publications/CR/Issues/2017/08/15/People-s-Republic-of-China-2017-Article-IV-Consultation-Press-Release-Staff-Report-and-45170>.

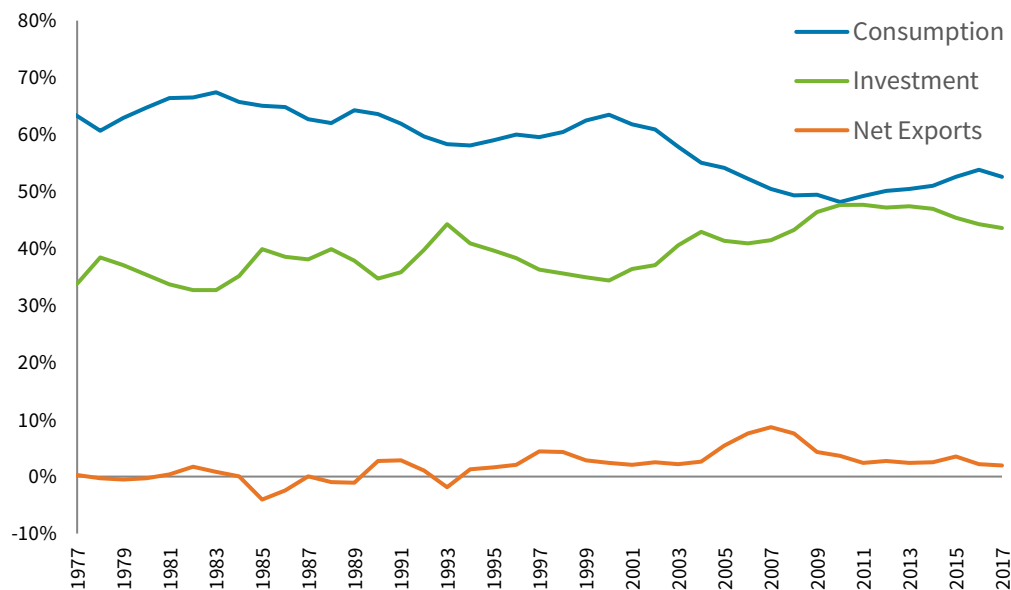
borrowing or from government revenues (in cases of public works, for example). If investments are used to create production capacity in excess of domestic demand, then success depends on the rest of the world importing from China. Otherwise investment is simply wasted, generating non-performing debts at banks and little useful economic activity.

Figure 3-2: Contributions to China's Quarterly GDP Growth
Percentage points



Source: National Bureau of Statistics.

Figure 3-3: Components of China's GDP by Expenditure, 1977-2017
Percent



Source: National Bureau of Statistics.

Naturally, every economy has questionable investments in some proportion. When financing decisions for new investments are made, the potential payoffs are unclear and are based on the performance of similar investments in the recent past. As a result, overinvestment in capacity or wasteful investments are common and a natural part of the business cycle. It is when these unproductive investments are particularly large, or investment as a whole is a significant proportion of the economy, that risks to financial stability can emerge.

Unproductive investments in China can occur in several forms but are particularly likely to be associated with the significant expansion of credit taking place at the direction of state-owned enterprises and local governments. The traditional incentives for China's state-owned enterprises have been maximizing investment and output, not maximizing profit or return on investment. Often local government investment patterns can produce infrastructure construction in excess of the potential utility in expanded productivity or rapid investment growth in the property sector in China's less developed provinces.

In fact, significant proportions of local government investment since the global financial crisis have been channeled into China's property sector. Real estate-related lending was 27 percent of total outstanding loans in China as of the end of 2017, according to data from the People's Bank of China.⁵⁹ When new credit funds rising asset prices in the form of mortgages or housing purchases made without mortgages, this is very different from new credit funding investment in fixed assets.⁶⁰ The original construction of a house or apartment may add to the national economy, but the repurchase of that house or borrowing against it at a higher value does not. And while rising housing prices can encourage additional consumption by making people feel wealthier and therefore more secure, they can also constrain consumption if mortgage payments are high enough to limit spending in the rest of the economy.

The net result of a persistently high savings rate funding excess investment in the property sector is a huge stock of investment that does not generate significant improvements in total factor productivity.⁶¹ Investment in the property sector can produce a rapid reduction in economic value depending upon movements of underlying asset prices. This is a critical issue for the stability of the Chinese economy overall, but it is still unclear to what extent the financial system depends upon collateral from the property sector and lending to the property sector or how the system would respond to a sudden repricing of that collateral. What is clearer is that reliance upon the property sector is a problem for China's fastest-growing banks, particularly those tied to smaller local governments; they probably hold proportions of property loans higher than the national average of 27 percent. The property sector was also a critical part of China's post-crisis recovery starting in 2009, when credit growth rates were at their fastest. As Figure 3-4 shows, real estate investment has comprised a significant proportion of total fixed asset investment, particularly since 2012.

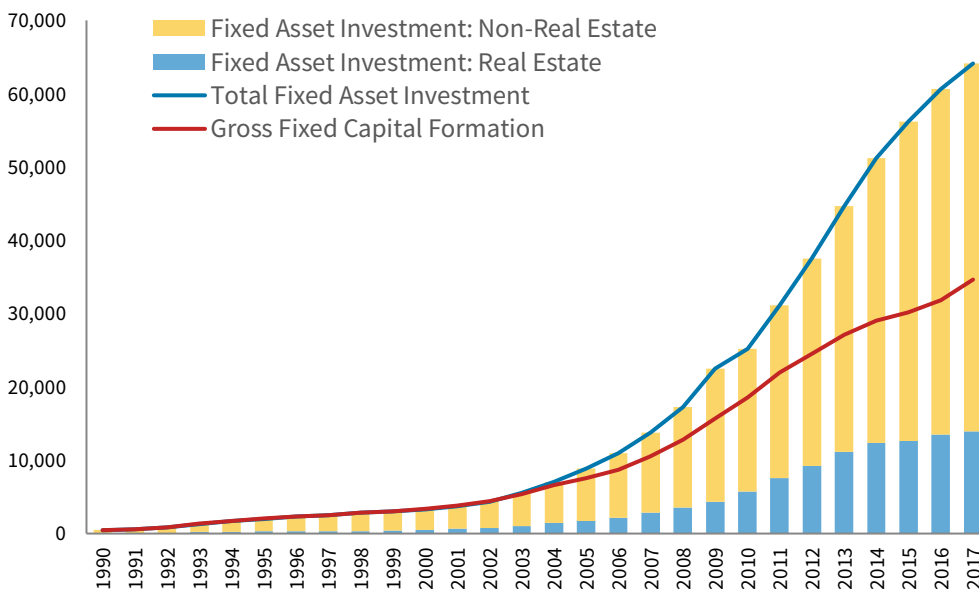
⁵⁹ People's Bank of China data place end-2017 real estate-related lending, including mortgages, and loans to developers at 32.2 trillion yuan.

⁶⁰ This idea is developed far more fully in Adair Turner, "What do banks do? Why do credit booms and busts occur and what can public policy do about it?" *The Future of Finance: The LSE Report*, London School of Economics and Political Science (2010), 25-26.

⁶¹ An interesting corollary argument in which real estate investment actually redirects investment flows away from more productive private-sector firms is developed in an unpublished paper by Yu Shi, "Real Estate Booms and Endogenous Productivity Growth," Massachusetts Institute of Technology, July 9, 2017, <https://economics.mit.edu/files/12312>.

Figure 3-4: Measures of Investment in China

Billion yuan



Source: National Bureau of Statistics.

In addition, investment patterns concentrated in the property sector limit the buffer that a high national savings rate might provide in the event of a crisis. Typically, weakness in the property sector occurs first in the form of weaker transaction volumes and declining liquidity for property purchases and sales. Banks may suddenly face assets on their balance sheet whose market values are far below their previous levels, with no apparent buyers for those assets at current market prices. Banks would have to provision for the sharp fall in the value of those assets, which would result in a decline in new credit extension. Whereas unproductive investments in the corporate sector may only appear over time and can be remedied with policies designed to insulate them from the economy, declines in property asset prices can happen quickly, leaving the financial system in need of more immediate funding assistance, which will be the focus of Chapter 4.

Understanding China's High Savings Rate

To accurately address the implications of China's domestic savings for financial risk management, it is essential to know which actors are saving and how much they are saving, as well as exploring some of the reasons why, although a full examination of the latter question is beyond the scope of this study. This section reviews a selection of the literature explaining high savings rates among both Chinese households and corporates. Prior to the reform and opening period began in 1978, China's high savings rate was engineered by distorted relative prices that favored industry, which concentrated profits in the form of operating surpluses at state-owned enterprises.⁶² Price reform and competition after reform eroded public saving, while rising household incomes contributed to higher household savings.⁶³ Chinese savings trends have seen three broad phases since 1978: an increase from around 35 percent of GDP to 45 percent between 1982 and 1994, followed by a decline to around 37 percent in 2000, and then a remarkable climb afterwards, surpassing 50 percent of GDP earlier this decade. The contributions to national savings can be

⁶² Aart Kraay, "Household Saving in China," *World Bank Economic Review*, vol. 14, no. 3 (September 2000): 545-569.

⁶³ *Ibid.*

subdivided between household, corporate, and government sectors—China ranks near the top globally in all three.⁶⁴

China today has a national savings rate that is incredibly high compared to most other countries. In 2016, the national savings rate was about 46 percent of GDP, compared to a world average of 26 percent.⁶⁵ Over the past 15 years, there have been many studies investigating the causes of the high savings rate in China. Kraay (2000) found that high economic growth and favorable demographics partially explain China's savings, but even given those characteristics, China's rate was 10 percentage points higher than expected.⁶⁶ Maintaining a high rate of investment in tandem with a high savings rate has required rapid growth of the financial system, and temporary controls on credit growth (to limit inflation) have correspondingly forced China's trade surplus to rise at many times.

There are several examples of economies with high national savings rates that still experienced crises or a sharp slowdown in growth; a high savings rate is no panacea for avoiding financial distress. In the 1990s prior to the Asian financial crisis, Singapore's economy had several characteristics in common with China's: a growing current account surplus, a high savings rate, and high levels of foreign exchange reserves. It was hit particularly hard during the Asian crisis and during the global financial crisis due to its openness to trade and the large role of manufacturing in its economy. The measures it deployed to cope with the 2008 crisis resulted in a stimulus package equivalent to 8 percent of its GDP and government guarantee of all bank deposits until the end of 2010.⁶⁷ These measures were mainly financed by Singapore's reserves, the first time the government had to draw on reserves to mitigate an economic recession.⁶⁸ South Korea and Thailand both experienced sustained economic growth in the decades prior to the Asian financial crisis due to export-oriented policies, productivity gains, and investment growth financed by high levels of private savings and external borrowing.⁶⁹ As a result of the Asian financial crisis, both endured significant declines in output, consumption, and investment. After currency depreciation was insufficient to boost output, and after limiting exposure to external financing due to capital outflow risks, policymakers sought to stimulate domestic demand by increasing public credit and by encouraging commercial banks to increase lending to private firms and consumers.⁷⁰ This decision caused a sharp increase in household debt, particularly via credit cards in Korea. Banks had limited ability to extend credit due to the high levels of non-performing loans on their balance sheets after the crisis. The Thai government effectively bailed out a state-owned commercial bank, allowing the transfer of bad assets to a government asset management company and increasing the bank's ability to lend. Domestic credit expansion did boost economic growth in both countries by the early 2000s, led by private consumption, but at the cost of higher household debt levels.

⁶⁴ Guonan Ma and Wang Yi, "China's High Saving Rate: Myth and Reality," Bank for International Settlements, June 2010, p. 6, <https://www.bis.org/publ/work312.pdf>.

⁶⁵ "China's High Saving Rate: Analytics and Prospects," Federal Reserve Bank of Atlanta, May 18, 2017, <https://www.frbatlanta.org/-/media/documents/news/conferences/2017/0518-second-research-workshop-chinas-economy/presentations/zhang.pdf>; "People's Republic of China: Selected Issues," International Monetary Fund, IMF Country Report, no. 17/248, August 2017, p. 4.

⁶⁶ Aart Kraay, "Household Saving in China," *World Bank Economic Review*, vol. 14, no. 3 (September 2000): 545-569.

⁶⁷ Jordan, Rolf, "Singapore in Its Worst Recession for Years. The Effects of the Current Economic Crisis on the City-State's Economy," *Journal of Current Southeast Asian Affairs*, vol. 28, no. 4, (2009): 104-106.

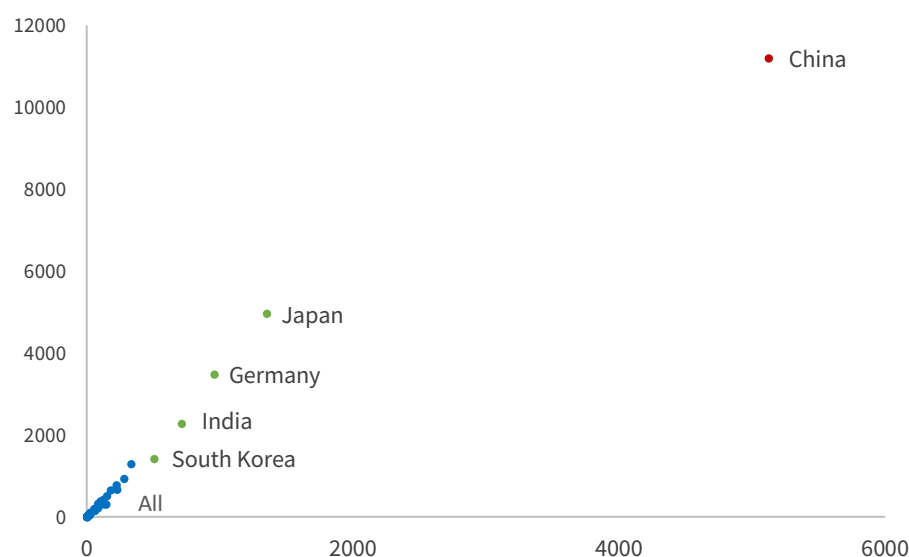
⁶⁸ Ibid.

⁶⁹ Diego Valderrama, "After the Asian Financial Crisis: Can Rapid Credit Expansion Sustain Growth?" Federal Reserve Bank of San Francisco *Economic Letter* 38, (2004), <https://www.frbsf.org/economic-research/publications/economic-letter/2004/december/after-the-asian-financial-crisis-can-rapid-credit-expansion-sustain-nbsp-growth/>.

⁷⁰ Ibid.

Figure 3-5: Domestic Savings versus GDP in Countries with 50 Highest National Saving Rates, 2016

Billion USD



Source: World Bank. Gross savings are calculated as gross national income less total consumption, plus net transfers.

The sectoral composition of China’s savings has also diverged from worldwide trends. In the 1980s, global household savings financed most investment, but as of 2016, corporate savings supplied about two-thirds of investment.⁷¹ Chinese corporates saved even more than global corporates during this period. During the 2000s corporate savings in China ranged from 6 to 12 percentage points higher than the rest of the world (ROW) average.⁷² In other countries, increased corporate savings were partially offset by increased household consumption, but in China, households also began to save significantly more following the turn of the century. The result was a large savings gap between households in China and those in the rest of the world. Chinese households saved 23 percent of GDP in 2017, about 15 percentage points more than the global average, according to the IMF.⁷³ The government savings gap is also large, ranging from 6 to 8 percentage points higher in China than global averages from 2009 through 2013.⁷⁴

Throughout the 2000s, China’s enormous and sustained current account surplus was a key source of international imbalances⁷⁵ and has even been cited as a contributor to the 2008 global financial crisis. These trends naturally drove research on the causes of China’s propensity to save more than any similarly sized economy, with China’s current account surplus reaching a high of 10 percent of GDP in 2007. China’s rising current account surplus starting in 2003 was self-perpetuating and self-reinforcing. Rising external surpluses resulted in additional investment by profitable export enterprises into new capacity, contributing to additional export volumes. Intervention by the People’s Bank of China to limit the corresponding appreciation of the currency similarly facilitated not only cheaper exports for Chinese firms,

⁷¹ Peter Chen et al., “The Global Rise of Corporate Saving,” Federal Reserve Bank of Minneapolis, Working Paper 736, March 2017, <https://www.minneapolisfed.org/research/wp/wp736.pdf>.

⁷² Ibid.

⁷³ “People’s Republic of China: Selected Issues,” International Monetary Fund, IMF Country Report No. 17/248, August 2017, 5.

⁷⁴ Ibid, 6.

⁷⁵ Ben Bernanke, “The Global Savings Glut and the US Current Account Deficit” (speech, Richmond, VA, March 10, 2005), Federal Reserve Board, <https://www.federalreserve.gov/boarddocs/speeches/2005/200503102/>; Rajan, Raghuram, *Fault Lines: How Hidden Fractures Still Threaten the World Economy* (Princeton University Press, 2011).

making them more attractive for foreign customers, but lower long-term interest rates in developed economies that facilitated additional borrowing by overseas consumers. The result was a savings rate far in excess of China's investment growth rate throughout most of the early 2000s. The emergence of inflationary pressure in China also drove controls on credit, which probably curtailed new investment and expanded the external surplus further.

Since the 2000s, China's savings rate has stabilized and even started to slightly decline. This has primarily been the byproduct of falling household savings, which has coincided with an increase in household debt. In this case, a rise in household borrowing appears to have allowed an expansion of household consumption and a reduction in the savings rate, consistent with trends in household credit in more developed financial markets.⁷⁶ A recent nationwide China Family Panel Studies survey of household wealth dynamics from 2010 to 2012 found rural households are more indebted than urban households.⁷⁷ China's current account surplus has similarly declined as a proportion of the economy, primarily because credit growth has been rapid and investment has accelerated since 2009. The growth of credit in this fashion, as discussed in Chapter 2, is an unsustainable phenomenon, and China has already taken measures to correct it, primarily by controlling borrowing within informal and less regulated financial sectors.

Household Savings: Demographics and Income Inequality

Theoretical literature on drivers of household savings in China tends to focus on the interaction between household consumption trends and overall savings. China's high household savings rate has been attributed to demographic factors, the one-child policy, precautionary savings amidst a weak social safety net, weak financial services availability, and rising income inequality. In a cross-country empirical analysis of developed and developing countries, Loayza, Schmidt-Hebbel, and Serven (2000) find private and national savings are affected by the level of per capita income, economic growth, fiscal policy, pension reform, financial liberalization, and demographics.⁷⁸ The life-cycle hypothesis developed by Modigliani and Brumberg in the 1950s emphasizes factors such as a country's economic growth, growth prospects, and demographic structure, in particular of the proportion of the workforce in the population, rather than the level of income in making saving decisions.⁷⁹ The main implication of the hypothesis is that the national saving rate is unrelated to per capita income but instead depends on the long-term rate of income growth. Rodrik (2000) similarly argues high saving rates tend to be the outcome of high rates of growth but not a determinant of faster growth.⁸⁰ The permanent income hypothesis, formulated by Milton Friedman, posits that consumption is insensitive to transitory fluctuations in income that do not affect permanent income in the longer run.⁸¹ This argument would imply consumer spending, and therefore savings levels, need not move together with current income levels.

⁷⁶ Reuven Glick and Kevin Lansing, "Consumers and the Economy, Part 1: Household Credit and Personal Saving" Federal Reserve Bank of San Francisco *Economic Letter* 01, January 10, 2011, <https://www.frbsf.org/economic-research/publications/economic-letter/2011/january/consumers-economy-household-credit-personal-saving/>.

⁷⁷ Xie Yu and Jin Yongai, "Household Wealth in China," *China Sociological Review*, vol. 47, no. 3, (2015), 203-299, <https://doi.org/10.1080/21620555.2015.1032158>.

⁷⁸ Norman Loayza et al., "What Drives Private Saving around the World?" *Policy Research Working Paper*, no. 2309, World Bank, March 2000, p. 18, https://openknowledge.worldbank.org/bitstream/handle/10986/18854/multi_page.pdf.

⁷⁹ Franco Modigliani and Richard Brumberg, "Utility analysis and the consumption function: an interpretation of the cross-section data," in Kenneth Kurihara, ed. *Post-Keynesian Economics* (New Brunswick, NJ: Rutgers University Press, 1954), 388-436.

⁸⁰ Dani Rodrik, "Saving Transitions," *World Bank Economic Review*, vol. 14, no. 3, (1998), 483, http://faculty.ucr.edu/~jorgea/econ181/rodrik_wber2000.pdf.

⁸¹ Friedman, Milton, *A Theory of the Consumption Function*, National Bureau of Economic Research (1957).

Demographic factors are significant in understanding China's high household saving rate and tend to focus on the impact of the one-child policy. According to the IMF, the rapid decline in the fertility rate and the relative decline in the youth population increased Chinese household savings in two ways.⁸² First, the working age population engaged in higher precautionary savings to prepare for retirement, as there are fewer children to become the primary caretakers of retirees in China. Secondly, fewer children required less total spending. In a 2013 study, Choukhmane, Coeurdacier, and Jin quantify the impact, finding that the one-child policy accounts for 30 to 60 percent of the rise in aggregate household savings since its implementation.⁸³ Extending the life-cycle hypothesis to the case of China, Modigliani and Cao (2004) estimate two factors contributed equally and significantly to the rise in China's saving rate in the post-reform period: income growth ignited by the market-based reforms of the 1970s; and demographic changes which both reduced the number of youth within the working population and undermined the role of children in providing old-age support, prompting more savings.⁸⁴ Inflation largely accounted for the remainder of growth in the household saving rate from the 1970s to 1994.⁸⁵ Likewise, Curtis et al. (2012) find the change in population composition alone generates over half of the observed increase in household saving from 1955 to 2009.⁸⁶ This echoed the findings of Wang Wei of the Shanghai University of Finance and Economics in 2009, who argued that starting in the 1970s, family planning profoundly impacted savings rates because they significantly reduced birth rates and cut family expenditures because there were fewer mouths to feed.⁸⁷ Another demographic factor contributing to higher savings includes a rise in the labor force participation rate to 63 percent in 2006 from 42 percent in 1979, which structurally increased the amount of income that could be saved.

China's household savings rate has also risen in part because of inadequacies in the social safety net, which leads to precautionary savings. Within the last decade, household savings has become far more concentrated at the top of the income spectrum, with income inequality a key factor contributing to China's household savings, as wealthier households tend to consume a smaller proportion of their income.⁸⁸ Fan Jianjun, a researcher with the Development and Research Center of the State Council, emphasized inadequacies in China's social security scheme that overcovered some people while providing inadequate coverage for others, therefore keeping savings rates high and making it difficult to narrow the income gap.⁸⁹ Hu Cui of the Central University of Finance and Economics and Xu Zhaoyuan of the Development Research Center of the State Council also argue the different social security schemes in urban and rural China led to differential impacts of population aging on the savings rate.⁹⁰ They argue that urban Chinese were better covered by insurance so they did not need to save as much to prepare for future spending (although this finding is contrary to the growing concentration of savings at the top of the

⁸² "People's Republic of China: Selected Issues," International Monetary Fund, IMF Country Report, no. 17/248, August 2017, p. 7.

⁸³ Taha Choukhmane, Nicolas Coeurdacier, and Keyu Jin, "The One-Child Policy and Household Savings," Working Paper, August 24, 2013.

⁸⁴ Franco Modigliani and Shi Larry Cao, "The Chinese Saving Puzzle and the Life-Cycle Hypothesis," *Journal of Economic Literature*, vol. XLII, (March 2004), 166-167, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.186.42&rep=rep1&type=pdf>.

⁸⁵ Ibid.

⁸⁶ Chadwick Curtis et al., "Demographic Patterns and Household Saving in China," Working Paper, no. 006, University of Notre Dame, June 2012, 20, ftp://ftp.repec.org/opt/RePEc/nod/wpaper/006_saving.pdf.

⁸⁷ Wang Wei, "Economic Growth, Demographic Transition and China's High Savings," *China Economic Quarterly*, vol. 9, no. 1, (October 2009).

⁸⁸ See, for example, Chu Tianshu and Wen Qiang, "Can Income Inequality Explain China's Saving Puzzle?" *International Review of Economics and Finance*, vol. 52, (November 2017), 222-235; Thomas Piketty, Li Yang, and Gabriel Zucman, "Capital Accumulation, Private Property and Rising Inequality in China, 1978-2015," HKUST IEMS Working Paper, no. 2018-54, (March 2018), <http://iems.ust.hk/assets/publications/working-papers-2018/iemswp2018-54.pdf>.

⁸⁹ Fan Jianjun, "Analyzing the Reason for China's Relatively High Savings Ratio," Development Research, no. 10, (October 2014).

⁹⁰ Sun, Hanlin, "Empirical Analysis on the Relation Between Population Aging and Resident Consumption in China: Based on the Data From 1981 to 2011," *Management Science and Engineering*, vol. 8, no. 2, (2014), 79-88.

income spectrum). Therefore, the savings rate did not fall along with an aging population as traditional theory would have suggested. However, in rural areas, where social security systems have not been fully developed, aging does tend to bring down the savings rate. The authors concluded that the ongoing pace of urbanization meant that China's overall savings rate would not decline because of an aging population.⁹¹

Literature over the past decade has placed more emphasis on the impact of income inequality on China's household savings rate, alongside the relatively weak levels of government spending on transfer payments. Savings rates measured by different income deciles within China highlight these trends. According to data from the Chinese Household Income Project (CHIP), a joint survey of households conducted by international and Chinese economists, the poorest decile of China's population saved just under 20 percent of their annual income—significantly higher than a survey of nine other countries, where savings rates are negative in the poorest decile.⁹² Urban household savings rates have shifted higher over the past three income surveys, with a profound shift from 2007 to 2013. The savings ratio according to income decile shows that the lowest 10 percent of households saved 20 percent of their take-home pay while the richest 10 percent saved close to 50 percent, which is less surprising given the rapid growth in wealth in China relative to the slower rise in overall consumption. In comparing China's situation with other countries—in France, Taiwan, and Australia—all but the top four deciles have negative savings rates. China's substantial positive savings rates across the entire income spectrum signal underdeveloped fiscal institutions such as taxation (specifically an adequate and progressive income tax), social safety nets, and other transfer payments.⁹³ A survey of household finances conducted by the Southwestern University of Finance and Economics reinforces the role of income inequality in promoting high savings in China. This survey finds that the average savings rate of the top 10 percent of households is about 66.6 percent, comprising an astounding 75 percent of total national savings.⁹⁴ The same survey also found that the top 5 percent of households by income had average savings rates as high as 69 percent and represented a total of 62 percent of total household savings.⁹⁵ This echoed earlier work from Zhang Ming of the Chinese Academy of Social Sciences, who noted in a 2005 paper that the top income quintile held over 60 percent of China's household savings.⁹⁶ Jin Ye, Li Hongbin, and Wu Binzhen, a team of researchers and professors from Tsinghua University, put forth a more novel argument on the impact of wealth inequality. Using the urban household survey data, they found income inequality has a negative impact on consumption and, therefore, predictably boosted the savings ratio.⁹⁷ However, they also argued individuals saved to improve their social status, and more inequality meant more required savings to attain social mobility, which strengthened the incentives to save.

However, the literature on China's savings rates still leaves several questions unanswered, particularly the impact of many years of income growth on China's household savings rates. According to traditional savings models, prolonged double-digit income growth in China would result in individuals saving less and consuming more under reliable expectations of income growth. In 2000, for example, Carroll, Overland,

⁹¹ Hu Cui and Xu Zhaoyuan, "Empirical Analysis of the Population Ageing and Saving Rate: The Data From Chinese Families," *China Economic Quarterly* (经济学季刊), vol. 13, no. 4 (July 2014), 1345-1364.

⁹² "People's Republic of China: Selected Issues," International Monetary Fund, IMF Country Report, no. 17/248, August 2017, p. 9.

⁹³ Ibid.

⁹⁴ Gan Li, "Findings from China Household Finance Survey," Texas A&M University and Southwestern University of Finance and Economics, January 2013, <http://people.tamu.edu/~ganli/Report-English-Dec-2013.pdf>

⁹⁵ Ibid.

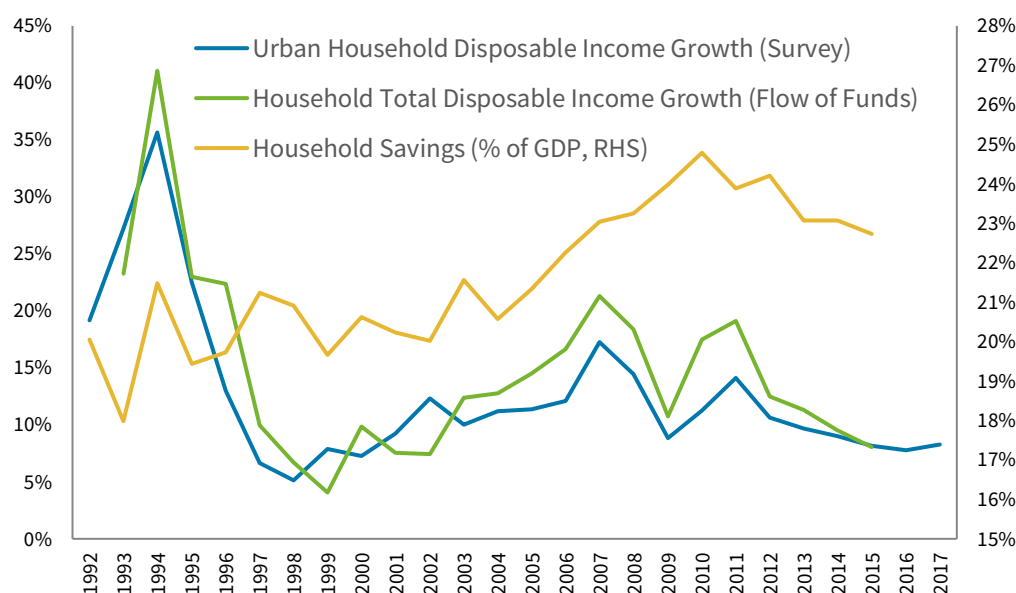
⁹⁶ Zhang Ming, "A Perspective on the High-Saving Phenomenon in China: Efficiency Loss and Factor Analysis," *Shanghai Economic Review*, no. 8, (August 2005).

⁹⁷ Jin Ye, Li Hongbin, and Wu Binzhen, "Income Inequality, Status Seeking and Consumption," *China Economic Quarterly*, vol. 10, no. 3, (April 2011).

and Weil introduced the idea of a “habit stock” of consumption, in which savers use past, rather than future, consumption as a frame of reference to determine savings rates.⁹⁸ Contrary to this model, household savings rates in China have risen the most among households with relatively younger and relatively older heads, whereas typically savings rates would increase until peaking prior to the household head’s retirement. Chamon, Liu, and Prasad (2010) argue the main cause is a form of “self-insurance” against rising income uncertainty. They use a buffer-stock savings model which estimates that, after the breaking of the “iron rice bowl” of publicly-provided education, health, and housing services, rising income uncertainty and declining pension replacement rates contributed to about half the increase of the urban household savings rate since the middle of the 1990s.⁹⁹ However, Choi, Lugauer, and Mark cast doubt on this theory by constructing a model using principles similar to Carroll, Overland, and Weil’s in a 2017 study. The authors posit that households have a target wealth-to-income ratio, implying that higher income growth drives higher precautionary savings to maintain this ratio.¹⁰⁰ In comparing precautionary savings between U.S. and Chinese households, the study finds that the difference in savings rates are almost entirely determined by varying growth rates, and that if GDP growth in China slowed to 2 to 3 percent, aggregate savings would also drop by around 10 percentage points.¹⁰¹

Figure 3-6: Household Income Growth and Savings, 1992-2017

Year-on-year change (LHS); Percent of GDP (RHS)



Source: National Bureau of Statistics.

Overall, the fact that many years of rapid income growth have not reduced China’s household savings rates remains inconsistent with most of the conventional literature on savings rates. Demographic factors and precautionary savings certainly play a role but have probably not significantly changed over the past

⁹⁸ Christopher Carroll, Jody Overland, and David Weil, “Saving and Growth with Habit Formation,” *American Economic Review*, vol. 90, no. 3, (June 2000), 341-355.

⁹⁹ Marcos Chamon, Kai Liu, and Esawar Prasad, “Income Uncertainty and Household Savings in China,” International Monetary Fund, December 2010, <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Income-Uncertainty-and-Household-Savings-in-China-24497>.

¹⁰⁰ Horace Choi, Steven Lugauer, and Nelson Mark, “Precautionary Savings of Chinese and U.S. Households,” *Journal of Money, Credit, and Banking*, vol. 49, no. 4, (June 2017).

¹⁰¹ *Ibid.*

decade, while household savings rates have remained high. However, the recent literature discussing the impact of China's income inequality probably best explains the recent rise in savings rates, as well as the concentration of household savings at the very bottom and the very top of the income spectrum, with most household savings concentrated at the top (and possibly invested in the property market as well). This suggests that any attempt to change household savings behavior in aggregate would probably involve changing the incentives of the wealthiest Chinese households to save in some form.

Corporate Savings: The Private Sector and State-Owned Enterprises

China's corporate savings rates have also risen over the past decade. As corporate savings rates are generally dependent upon retained earnings, the key questions germane to this study concern where these retained earnings are concentrated within China's economy. Whereas China's high household savings rate is rooted in demographic shifts, social welfare inadequacies, and income inequality, the available literature indicates that China's corporate savings rate has risen almost entirely for policy-driven reasons. Corporate savings appear to be concentrated in two areas at present: state-owned enterprises, who may be benefiting from protected markets or subsidized factor inputs in some form; and smaller private enterprises with less access to China's formal financial system, forcing them to save and reinvest profits rather than rely upon official financing channels. In addition, exchange rate dynamics have had a significant impact on saving behavior of both state-owned and private firms in China.

Starting in the late 1990s, China's corporate savings rate rose from 12-13 percent of GDP, peaked at around 24 percent in 2004, and hovered around 20 percent for the remainder of the decade, while the global average stayed flat at around 10 percent.¹⁰² The literature points to several policy-related causes of high corporate savings in China. The first is that firms benefited from government-created distortions that were structured to subsidize the manufacturing and the industrial sectors. Several studies show monopoly firms and SOEs in general were able to enjoy high profits due to a lack of competition, greater access to financing, and low dividend payouts, while input factors such as land, electricity, the value of the yuan, and interest rates were kept artificially low for many sectors.¹⁰³ The other set of examined factors isolate more structural trends in corporate profitability after reforms in the late 1990s. More rural and previously underemployed workers entering the workforce throughout China suppressed labor costs, while corporate restructuring led to better competition, higher productivity, and faster growth, and thus greater profits and savings.¹⁰⁴

One of the most convincing studies of the causes of corporate savings growth was published by Xie and Mo (2015), who found that smaller firms with weaker long-term solvency prospects tend to save more. They also found that monopoly firms save significantly more, but that SOEs without monopoly positions do not save noticeably more than private companies. Finally, a lower level of financial development in the region in which the firm is operating significantly raises savings rates if that firm is less profitable or having trouble with short-term solvency.¹⁰⁵ Huang (2011) compares private enterprises to SOEs and finds that the

¹⁰² "People's Republic of China: Selected Issues," International Monetary Fund, IMF Country Report, no. 17/248, August 2017, p. 6.

¹⁰³ Aart Kraay, "Household Saving in China," World Bank Economic Review, vol. 14, no. 3, (September 2000): 545-569; Rob Tyers and Feng Lu, "Competition Policy, Corporate Saving and China's Current Account Surplus," *Australian National University*, March 2009, <https://www.cbe.anu.edu.au/researchpapers/econ/wp496.pdf>; Shikha Jha, Eswar Prasad, and Akiko Terada-Hgiwara, "Saving in Asia and Issues for Rebalancing Growth," Asian Development Bank Economics Working Paper Series, no. 162, May 2009, <https://www.adb.org/sites/default/files/publication/28252/economics-wp162.pdf>.

¹⁰⁴ Guonan Ma and Wang Yi, "China's High Saving Rate: Myth and Reality," Bank for International Settlements, June 2010, <https://www.bis.org/publ/work312.pdf>.

¹⁰⁵ Xie Shiqing and Mo Taiping, "Differences in Corporate Saving Rates in China: Ownership, Monopoly, and Financial Development," *China Economic Review* 33, (2015), 34.

need for precautionary savings motivates private enterprises to save more, which is primarily due to their severe financing constraints and better investment opportunities.¹⁰⁶

Some of the Chinese literature on the subject links the causes of rising Chinese corporate and household savings. PBOC Governor Zhou Xiaochuan noted in a 2009 speech also published in the *Journal of Financial Research* that the rapid increase in the corporate savings rate since 2002 resulted from distortions in corporate costs and profit incentives.¹⁰⁷ Zhou noted that savings rates were high under the planned economy because production was inadequate, resulting in underserved consumers. After enterprises stopped providing pensions and housing, households had to provision for longer-term expenditures, while corporates saw a reduction in labor-related costs. These profits were not immediately reinvested in the social safety net, which boosted household and corporate savings.¹⁰⁸ A group of PBOC researchers led by current head of the PBOC research department, Xu Zhong, elaborated on this point, arguing that the improvement in SOEs' profitability was not a result of improved corporate governance but simply because factor costs were too low.¹⁰⁹ In turn these low costs encouraged local governments to increase investment and allocate more resources to SOEs as they can provide more tax income and increase the value of state-owned assets, resulting in high savings rates for both local governments and SOEs. On the other hand, as local governments invested more money in SOEs, this necessarily reduced public spending on education, healthcare, and other social security items, which forced private sector, households, and non-SOEs to boost precautionary saving.

Overall, the corporate savings rate rose sharply in the 2000s and has remained relatively stable in recent years, with several policy-related distortions playing a role in keeping corporate savings elevated. The reallocation of corporate savings, however, would require two key tasks: a reduction of some of the advantages enjoyed by state-owned firms within the Chinese system, as well as better inclusion of smaller private firms into the formal financial system. Neither is easily accomplished, even if they are essential to bring the corporate savings rate down over time.

More significant for this study, however, is the fact that the concentration of corporate savings within the system is not necessarily aligned with the firms most likely to generate the largest debt burdens, particularly those that are involved with investments in the property sector (although some central government SOEs do have property-related subsidiaries). Allocating resources from China's savers, both in the household and corporate sectors, to indebted sectors or banks would probably involve difficult political choices and more slow-moving reforms to the state sector or the imposition of new taxes on wealthier Chinese households. However, none of these solutions are already in process, nor would they be effective in reallocating savings within China's financial system in the short term to counter stress.

Contingency Plans for Credit Reallocation, Impact on Savings Rates

One irony of the conventional argument that China's savings rate serves as a buffer against domestic financial distress is that successful reforms of China's financial system and efforts to reduce financial risk will probably end up reducing that buffer, by rebalancing China's economic growth toward consumption

¹⁰⁶ Huang Yi, "Can the Precautionary Motive Explain the Chinese Corporate Savings Puzzle? Evidence from the Liquid Assets Perspective," International Monetary Fund, November 2011.

¹⁰⁷ Zhou Xiaochuan, "Some Observations and Analyses on Savings Ratio," speech, Kuala Lumpur, Malaysia, (February 10, 2009).

¹⁰⁸ Ibid.

¹⁰⁹ Xu Zhong, Zhang Xuechun Ding Zhiejie, and Tang Tian, "Public Finance and the High Savings Rate in China," *Social Sciences in China*, no. 6, (November 10, 2011).

and away from credit-fueled investment. To maintain a high savings rate, China would have to continue to rely upon an investment-driven pattern of growth, but this is contrary to Beijing’s current objectives. China cannot continue expanding credit at the current pace, and Beijing has already begun to slow credit growth in recent years to reduce financial risks. While it is easy to argue that China’s credit growth is too fast and being extended to increasingly unproductive parts of the economy, it is difficult to outline a path to reallocation of that credit within the economy. This section attempts to model the theoretical tradeoffs of China’s policy choices to improve the allocation of credit for the benefit of China’s economy in the medium term.

These choices have clear implications for the direction of China’s savings rate over time, as well as implications for China’s external position and domestic growth trajectories. The deductive framework employed in this section takes as given the macroeconomic necessity of reducing China’s reliance upon investment-led growth and continued credit expansion. China’s current predicament involves not only a high level of existing debt but a declining efficiency of new credit in driving economic activity, as Chapter 2 detailed. More and more new credit is being used to repay existing debt without a significant change in how credit is being deployed within the Chinese financial system. Therefore, maintaining the current pattern of credit allocation is not a sustainable solution; changes must be made. The following scenarios evaluate several shifts in credit allocation thematically in terms of their respective potential to alter credit efficiency, growth, and China’s external surpluses, and results are summarized briefly in Table 3-1.

Table 3-1: Scenarios for Reducing China's Credit-to-GDP Ratio

	Reallocation of Credit from Corporates to Households	Reallocation of Credit from Unproductive to Productive Firms	Slowdown in Credit Growth with Little Reallocation	Government-led Recapitalization or Bailouts
Credit Efficiency	Rise	Rise	Fall	Variable
Household Saving	Fall	-	-	-
Corporate Saving	Rise	Fall	-	Rise
Government Saving	-	Fall	-	Fall
Investment	Fall	Rise	Fall	Fall
Trade Surplus	Variable	Fall	Rise	-
Economic Growth	Fall	Rise	Fall	-

REALLOCATION OF CREDIT FROM CORPORATES TO HOUSEHOLDS

Shifting credit allocation within China’s financial system involves removing credit support from some borrowers and providing financing to others. One of the frequently recommended changes for China’s financial system is also one that is already underway: a shift from lending primarily to China’s state-owned

corporates to channeling credit to China's historically underserved consumers. The logic of such a shift is not just to cut losses from ongoing lending to state-owned enterprises, where credit efficiency is declining. Consumers have a relatively lower debt burden and so can probably sustain an expansion in credit more safely, while additional borrowing can produce a corresponding expansion in consumption activity that can help to rebalance the economy. There are already signs that this shift is underway. In 2016 and 2017 combined, China's banks extended more loans to China's households (13.5 trillion yuan) than to corporates (12.8 trillion yuan). Because most assets within China's financial system are less than one year in duration, these types of shifts can quickly change the aggregate allocation of credit within China's financial system.

The result of this shift in credit allocation will probably be an acceleration of household consumption growth and a decline in corporate investment growth. Correspondingly, there may be a reduction in the aggregate household savings rate and an increase in the corporate savings rate. If the drop in aggregate savings is larger than the decline in investment, then China's trade surplus will decline, which is generally a beneficial outcome for the rest of the global economy. However, if the savings rate increases in aggregate, with the rise in corporate savings outpacing the decline in household savings, then China's trade surplus will probably increase.

The net impact will depend upon the extent of such a shift toward lending to households and its overall impact on economic growth. The slowdown in investment growth will probably weaken the economy, but if credit is channeled away from enterprises that were primarily servicing existing debt and so are less productive, then the impact on overall growth will be less severe, since these enterprises were not contributing much to the economy anyway. If households use increased access to credit to accelerate consumption, it will naturally improve economic growth, but will also create conditions for future growth that will be less dependent upon rising credit-to-GDP ratios, because they will depend less on financing of fixed asset investment.

However, such a shift is clearly not cost-free, with the primary costs being borne by the state-owned firms that are dependent upon credit to survive. The shift in credit allocation would presumably be accompanied by bankruptcies and bad debts for the banks that had been keeping these firms afloat, along with localized social consequences such as unemployment. Fiscal resources will be needed to rescue these institutions and the people affected by defaults, as well as to offset the risk for contagion and withdrawals from deposits or WMPs among similarly at-risk banks.

A shift toward lending to households for consumption will also generate costs. Credit has been growing at extremely rapid rates relative to GDP, so simply shifting that same pace of rapid credit growth toward households only ensures that households will quickly see their own borrowing expand much faster than household income, which would signal rising financial risk. Unlike financing for investment, credit funding consumption must be repaid via household income growth, rather than the returns from underlying investments. Moreover, because household savings rates are already high, it remains to be seen why credit demand from households would expand at rapid rates in China even if policy was to encourage such a shift. If credit did expand quickly, this would probably be indicative of speculation in asset markets such as the property sector, which is where most of the credit extended to households has been channeled over the past five years. This suggests more limited economic benefits in the longer term, as credit channeled to property purchases not only increases the economy's vulnerability to a downturn in property prices, but also reduces the extent of any acceleration of household consumption.

SHIFT FROM UNPRODUCTIVE STATE-OWNED CORPORATES TO MORE PRODUCTIVE PRIVATE FIRMS

Another option is to shift credit allocation within the corporate lending portfolio specifically, away from “zombie” or unproductive state-owned firms and toward more productive private-sector firms that are currently underserved by the financial system, as discussed in Chapter 1. This would theoretically reduce the corporate savings rate overall by reducing the need for precautionary savings by private-sector firms. In addition, it would hypothetically increase investment and GDP growth for the economy as a whole, by placing financial resources at the command of firms with cleaner balance sheets and more productive opportunities. This would also reduce the credit-to-GDP ratio over time by expanding the denominator to a greater extent than shrinking the numerator. As a result, such a shift could narrow the savings and investment imbalance and reduce China’s trade surplus, boosting China’s support to global demand.

The cost of such a shift would include the disposition of the debts incurred by firms that would no longer be receiving financing—the economic costs of shutting these firms down—along with a weaker pace of investment growth from such firms. The cost, therefore, would be directly related to the legacy issues of China’s previous growth model and credit expansion in the post-crisis period. If the bad debts that have accumulated within the banking system are large relative to the size of the economy, then such a shift will require an aggressive recapitalization of the banking system to facilitate the shift in credit to more productive private-sector firms. If the cost is small, then the bad debts can presumably be absorbed out of loan loss reserves, retained earnings, and additional investments from capital markets.

While this appears to be the ideal solution to China’s reallocation of credit, given that it could actually accelerate economic activity while reducing the savings rate, it would be extremely difficult to actually implement because China’s banks are heavily localized, and typically exist as secondary fiscal institutions for some city and provincial governments. Most of these banks do not have relationships with private-sector clients, as they exist primarily to lend money to local government-linked firms. As a result, the proportion of bad loans within local banks may be much larger than for the economy as a whole.

Deciding to shift credit away from unproductive firms is thus an intensely political decision because it involves choosing winners and losers within China’s city and provincial governments, in addition to removing elements of control from local authorities. Obviously, to improve China’s credit efficiency, the overall pace of corporate credit growth needs to slow, and new money cannot continue to be used simply to refinance old debts. But the pool of potential losers under such a shift probably exercises far more political influence within China’s system than do the potential winners, who would be primarily private-sector firms. An additional political impediment to such a restructuring would be the likely migration of bad debts to the government’s balance sheet, though this would reduce the government’s savings rate.

SLOWDOWN IN OVERALL CREDIT GROWTH, LITTLE SHIFT IN ALLOCATION

Another way to slow the growth of China’s credit-to-GDP ratio is simply to control the aggregate pace of credit growth without a significant change in allocation between households and corporates or within the corporate sector. The net result would be weaker allocation of credit to households, productive private-sector firms, and unproductive state-owned corporates. To a certain extent, this is already underway, with bank asset growth slowing to only 8.4 percent in 2017 from 15.7 percent in 2016. However, the current slowdown in credit growth is falling disproportionately on the corporate sector.

The net result of such a shift in policy would almost certainly be a sharp reduction in investment growth and overall GDP growth because of the squeeze on corporate funding conditions. This probably would not

have a significant impact on China's savings rate and may actually increase precautionary savings among both households and some corporates, given that they could no longer rely upon the financial system to the same extent. As a result, China's trade surplus would probably expand under such conditions, perhaps sharply, while the economy would slow. The net impact on China's credit-to-GDP ratio may be perverse, as the denominator of GDP growth might actually slow faster than the numerator of credit growth. Simply slowing aggregate credit growth within the economy to improve the efficiency of the financial system is far too simplistic a solution. Controlling credit growth by itself does little to reduce China's savings rate over time, and improving the efficiency of credit is necessary to improve China's credit-to-GDP ratio over time. Nonetheless, a slowdown in aggregate credit growth needs to be part of a solution, simply because the current pace of credit growth is unsustainably fast within an already large financial system.

GOVERNMENT-LED BANK RECAPITALIZATION OR BAILOUTS

The other possible solution to China's current pace of credit growth and imbalanced credit allocation is a government-led recapitalization of the banking system, or a bailout involving some other method of removing bad assets from banks' balance sheets. China has used this method after the Asian financial crisis when non-performing loans rose to as high as 30-40 percent of total banking system assets. In the late 1990s, a series of reforms first injected capital from the Ministry of Finance into the banks and then swapped banks' bad assets for bonds from newly-created asset management companies (AMCs). Any bailout discussed today would have to be far larger in scope than what was implemented in the 1990s, but government support will likely play a role in any solution to clean up the problems created by China's rapid credit growth. Slowing credit growth to wasteful state-owned corporates will probably involve generating de facto bad assets and defaults and the need for some direct government assistance, given the scale of troubled assets in China's financial system.

Any impact of a government bailout on China's savings rate would depend not only on the size of the bailout, but also the impact of such a restructuring on future asset allocation. In the first instance, any direct government support for the banking system would probably involve a reduction of government savings in the form of direct fiscal outlays or the incurrence of contingent liabilities by the central government. The challenge for Chinese authorities will be deciding on the overall size of a bailout or restructuring for a \$38 trillion banking system and which banks would receive government assistance first.

A government bailout and recapitalization of certain banks would probably be a slow and limited solution, reducing credit and investment growth, while probably boosting the corporate savings rate over time. Markets would take time to evaluate the health of banks' balance sheets under any proposed government assistance, and the size of China's banks reduces the pool of available investors that could participate in such a bailout. Alternatively, if the recapitalization was focused on a separation of banks into "good" and "bad" institutions, the solution would be more decisive and might not slow credit growth to the same extent. The impact on credit creation and the economy would depend upon the declared size of the aggregate "bad bank." If the carveout of bad assets is too small, the recapitalization would have only a limited impact on credit efficiency. In addition, if banks write off the bad assets but borrowers are still required to repay the debt to the bad bank that holds the loan, investment growth may slow as well.

As a result, a government bailout of the financial system might not necessarily have any impact on underlying corporate or household savings rates. The impact depends upon what happens to credit creation after such a bailout. The same analysis applies to China's credit-to-GDP ratio, which depends upon the scale of the fiscalization or carveout of bad debt. The result of any amount of government

support for the banking system, however, will be a reduction in government savings and therefore China's national savings rate. This is logical, as the Chinese government's balance sheet had been shielded from the impact of bad debt from the banking system so far, but government resources will eventually be needed to ensure the continued solvency of the financial system.

Savings in Managing Crisis

As the analysis in this chapter highlights, there is no risk-free method for China to break from its current pattern of credit allocation and rapid credit growth. China's credit-to-GDP ratio must fall over time. But for that to happen, the efficiency of credit must improve rather than credit growth simply slowing, as occurred in 2017 and 2018 under Beijing's deleveraging campaign. The easiest way to improve credit efficiency and reduce the savings rate and credit-to-GDP ratio over time is to reallocate credit within China's corporate sector, rather than shifting the same level of credit toward the household sector. Yet even this mild shift still requires a slowdown in the pace of credit growth and the accrual of significant fiscal and quasi-fiscal costs among local government-linked banks and state-owned firms. One of the most important unknown variables in discussing the costs of shifting China's financial system is the legacy of de facto non-performing debt already accrued in China's post-2008 credit binge.

What is perhaps most surprising is that even though China has a high savings rate, which has been one of the key causes of high levels of investment within China's financial system, those savings are difficult for Chinese authorities to reallocate within the existing financial system. China's corporate savings are concentrated not only among larger state-owned firms but smaller private-sector firms without access to the financial system. The most effective methods for reallocating corporate savings are likely to be changes in tax policy, or forcing state-owned firms and local government-linked firms to privatize or sell off certain resources, while more progressive income taxes and improvements in China's social safety net would help to reduce household savings.¹¹⁰ Opposition from local authorities to any restructuring of existing patterns of credit allocation are likely to be significant. As a result, policy measures to reduce the savings rate or improve the efficiency of credit allocation are likely to be implemented only in the medium term, whereas any assistance in the event of a crisis or sudden withdrawal of funding may require a faster response.

Success in reforming China's financial system will necessarily involve the savings rate declining, which would also ironically reduce the limited buffer it provides in meeting any shortfall in domestic liabilities in the event of a crisis. In the end, policy measures to reduce the savings rate are likely to work slowly, and pressure on banks' liabilities will probably require more immediate policy assistance from Chinese authorities. There are numerous tools available to meet any short-term liquidity problems in China's financial system, but they generally are in the hands of the central bank and so cannot help with the changes in fiscal policy or administrative efforts needed to restructure China's current pattern of credit creation to ensure more sustainable growth.

¹¹⁰ Brad Setser, "Return of the East Asian Savings Glut," Council on Foreign Relations, October 2016, <https://www.cfr.org/report/return-east-asian-savings-glut>.

Chapter 4 | We Only Owe Ourselves

One of the most common arguments heard in discussing China's financial system and the rapid buildup of debt is that Chinese officials have the necessary tools and administrative capacity to manage any financial instability, regardless of the size of the obligations incurred. The implicit assumption of these arguments is that because China's debt is largely internal—denominated in local currency and held mainly by Chinese residents—government decisionmaking can effectively reallocate costs and financial risk across different actors within the system, from the government's "left pocket" to its "right pocket." One IMF official once commented to the authors that anyone hired to monitor China typically feels upon assuming the job that a financial crisis is imminent, but leaves the assignment convinced that Chinese authorities can "do anything" to prevent financial risk from spreading.

Also implicit in these arguments is the idea that Chinese authorities can simply "print money," that is, provide as much liquidity as necessary to impaired borrowers and institutions within the financial system. This has been a necessary and frequently deployed method to mitigate financial crises in many countries over time, in different forms and with different tradeoffs.

This chapter evaluates the effectiveness of the monetary policy tools that China's leaders and financial technocrats have at their disposal to prevent financial crises or acute shocks to the economy from occurring. In addition, the chapter discusses the characteristics of defaults or crises caused by internally held debts rather than external borrowing, since most of China's debt is held internally and in many cases by explicitly state-owned institutions.

The tools China's authorities have at their disposal to manage financial risk are powerful, but they are not fundamentally different in character from those in other developed market financial systems. Most of these liquidity tools are more effective in preventing acute funding shortages than in changing the longer-term patterns of asset allocation and asset growth. As a result, many of these measures can prevent a crisis from occurring on a particular day or in a particular week, but do not fundamentally change the problems that are producing the potential for crisis.

The Interbank Money Market and Financial Instability

For policy analysts concerned with China's economic sustainability, the primary task is to probe for plausible scenarios of macroeconomic stress with a likely chance of eventuating and then to evaluate whether they could be managed given Chinese realities. The risks that are most likely to threaten the stability of China's financial system are more likely to emerge in the domestic interbank money markets than in any other financial market because it is there that the pressures on banks' liabilities and access to funding are evident. The interbank market is the place where the solvency problems created by non-performing assets from bad investments intersect with the liquidity environment for banks to borrow from each other (and from the central bank), determining how much it will cost to manage those financial stresses. In June 2013, in part due to the PBOC's own actions to withhold liquidity, China's financial system was on the brink of crisis, as short-term money market rates shot above 20 percent. Had the stress continued, banks and non-bank financial institutions would have had to sell assets aggressively to meet their funding needs and Chinese retail depositors and corporates might have started to withdraw money from banks.

The potential for a shock to the funding channels for Chinese banks has increased over the past three years, given banks' increasing reliance upon non-deposit liabilities, including WMPs, as well as wholesale funding and borrowing from the PBOC. Deposits are generally considered the most stable form of funding, for which banks compete with each other via interest rates. In developed financial markets, funding difficulties for an individual institution can emerge when markets become aware of more fundamental problems with the operation of the institutions or risks to its solvency, and consequently market participants either withhold funding in wholesale markets or charge the afflicted institutions a higher interest rate. This can accumulate pressure on an individual institution and can accelerate a default or an insolvency, even if the fundamental problem that started the process was relatively minor.

In China's financial system, however, there is virtually no history of default or insolvency among financial institutions because authorities prevent this normal aspect of the cycle. As a result, actors in China's financial markets respond differently to evidence of financial stress affecting an individual firm. Rather than being concerned about the bankruptcy or insolvency of a bank or non-bank institution, market participants will be more acutely attuned to whether or not the institution will be able to access sufficient liquidity from the central bank, the PBOC. Counterparty risk between institutions more commonly manifests itself as counterparty liquidity risk rather than counterparty solvency risk. Lenders may be less concerned that a troubled institution will disappear next week or next month and more concerned whether the PBOC will provide enough funding to that institution in a timely fashion, particularly if the institution's distress is the result of the discovery of some trading scandal, a case of fraud, or violation of banking regulations. For example, when traders at one state-owned bank had misappropriated billions of yuan in discounted bills and the fraud was discovered in early 2016, markets withheld funding from the bank temporarily, not because they were concerned about the bank's survival, but because they were uncertain how the PBOC would react to the fraud.¹¹¹ Rather than the efficiency with which markets punish an errant player, the policy stance of the PBOC and its willingness to provide liquidity in the event of stress is persistently the more important factor influencing financial stability in China.

One of the key roles of any central bank is to serve as the lender of last resort in the event of financial system stress. However, no central bank will start by providing unlimited liquidity at low cost because this would only encourage further risky lending. Most central banks will only open the liquidity taps in the event of an ongoing or imminent crisis. The key conundrum for most central banks is how to monitor changes in financial conditions and so provide appropriate liquidity assistance to prevent the emergence of crisis or contagion, while also keeping short-term funding rates high enough and liquidity conditions tight enough to prevent banks and financial institutions from expanding credit and risky lending activities too rapidly.

The expectation that no financial institution will default on a security and no bank will declare bankruptcy is one of the key differentiating factors between China and developed financial markets. The result of this continuance of moral hazard is that policy signals from the central bank about short-term liquidity provision carry far more weight in the market than threats to the solvency of financial institutions. An unfriendly PBOC is a far more significant threat to financial stability in China than a hawkish or unfriendly Federal Reserve would be in the United States. China came close to the brink in June 2013 largely because the PBOC decided to introduce some stress into the financial system, and the banking system came back

¹¹¹ Reuters, "China Tightens Oversight of Bank Bill Business after Fraud," May 6, 2016, <https://www.reuters.com/article/us-china-banking-regulations-idUSKCN0XX0S0>.

from the brink only when the PBOC decided to provide emergency funding and offered to provide more liquidity if it was necessary.

The Arsenal of the Central Bank

The PBOC's tools to inject liquidity therefore represent the front line of defense in the event of significant pressure on bank liabilities that threaten a financial crisis. The key distinguishing features across these tools at the PBOC's disposal are:

- Counterparties involved (commercial banks, policy banks, or non-bank financial institutions)
- Types of collateral required to conduct transactions with the PBOC
- Duration of the funding provided by the central bank
- Price of the funding provided by the central bank
- Availability of funding (automatic or only on request)

The liquidity facilities that the PBOC provides are primarily available to commercial banks, but in many cases only to the largest commercial banks that are tier-one market makers with the PBOC—those that are authorized to conduct transactions directly with the central bank. The central bank's regular open market operations, for example, are extended only to 46 commercial banks and 2 brokerages. The central bank's tools detailed in the list below, therefore, require these larger banks to lend to smaller banks and non-bank financial institutions on their own. This on-lending process is not guaranteed even if the PBOC provides considerable liquidity to the money markets, or provides “window guidance” to the banks to lend on to smaller financial institutions. The following tools are the currently established mechanisms for the central bank to provide liquidity to financial institutions.

Required Reserve Ratios (RRR): The PBOC requires banks to place a certain proportion of their deposits on reserve at the central bank, consistent with the practices of other major banking systems. However, China's required reserve ratio (RRR) is generally quite high relative to other countries, in part due to a legacy issue of needing to reduce the impact of capital inflows into the banking system. When China's money supply expanded rapidly from 2003 to 2011, the PBOC frequently used adjustments in the reserve requirement to lock up excess liquidity on the central bank's balance sheet, effectively using the RRR as a sterilization tool to prevent excess credit growth and inflationary pressure in the economy.

The PBOC claims that it can apply reserve requirements differently across portions of the banking sector, adjusting them for specific banks to comply with other policy goals, such as enforcing credit quotas as well as restricting or increasing lending to certain segments of the economy or in line with the regulatory criteria under its quarterly macro-prudential assessment (MPA). The central bank can always provide liquidity to a bank facing funding distress, up to a point, by simply cutting that bank's RRR. This can also be done for the entire system in the event of liquidity pressure, as was done during the global financial crisis and during the equity market meltdown and currency depreciation of August 2015.

The required deposit reserves frozen at the central bank also effectively serves as a pool of funding that could be deployed to the banking system in the event of systemic distress or to aid a broader banking system recapitalization. Former Governor Zhou Xiaochuan often referenced the liquidity locked up by

RRRs as such a “pool.”¹¹² As of July 2018, the total amount of reserves held at the central bank stood at 23.9 trillion yuan, and while the RRR will certainly not be cut to zero, the current ratio could be cut in half so that the funds released, around 10 to 15 trillion yuan, could serve as instantly available ammunition in the event of a crisis. However, this amount still only represents a small fraction of banks’ overall liabilities, around 4 to 6 percent, and once deployed the weapon is effectively exhausted.

Large cuts to banks’ reserve requirements have been used as supplements to bank recapitalization programs in the past, as in 1998, when banks’ RRRs were cut across the board from 13 percent to 9 percent, with the freed-up liquidity used to purchase government bonds and the bond proceeds then injected back into the banking system as equity. This would also be considerably more complex at present given the rising numbers of financial institutions and the difficulties of identifying distressed assets within China’s informal financing channels. Liquidity would not automatically flow to institutions in distress in the event of a large cut to banks’ RRRs. Nonetheless, the liquidity locked up on the central bank’s balance sheet remains one of the most important weapons in the PBOC’s arsenal to combat financial distress or crisis.

Open Market Operations (OMO): The PBOC’s most frequently used method to manage liquidity conditions in China’s interbank market is the use of regular open market operations—when the central bank injects liquidity into or drains liquidity from the 48 tier-one market makers, including larger banks and a few brokerages. Terms of the funding can range from 7 days to as long as 63 days, but the most frequently conducted operations involve transactions for 7 or 28 days. The central bank now usually conducts open market operations every trading day, after previously conducting OMO only on Tuesdays and Thursdays. The volumes of liquidity provided or withdrawn are at the PBOC’s discretion but are often decided based upon surveys of market participants.

Rates on open market operations are generally below prevailing money market rates and are interpreted by the market as signals of the central bank’s intent to guide market interest rates. Gradually, the PBOC has moved away from using benchmark interest rate adjustments as the key tool of its monetary policy and toward adjustments in the rates on its open market operations, particularly the rate offered on 7-day reverse repurchase agreements. These rates are not comparable to the Fed funds rate or other key policy rates at developed market central banks, as only limited amounts of liquidity are available via the PBOC’s regular operations. During times of seasonally tight liquidity conditions, such as the end of June and the period before the Chinese New Year holiday, the PBOC regularly increases the size of liquidity injections via open market operations to smooth the operations of the banking system and prevent short-term rates from rising too fast.

Pledged Supplementary Lending (PSL): The PBOC introduced PSL in April 2014, as a targeted liquidity injection tool meant to provide funding to the government’s three policy banks: China Development Bank, China Agricultural Development Bank, and China Export-Import Bank. The first use of PSL injected 1 trillion yuan in new liquidity, and the PBOC has released data at the end of every month on the outstanding balance. The facility has an unspecified maturity but is generally believed to be one year or longer in duration. The facility does require policy banks to post collateral, either in the form of highly rated bonds or high-quality lending assets. It is also somewhat limited in its influence on longer-term rates

¹¹² Zhou originally made these remarks in November 2010. Referenced within Lu Jianxin and Jason Subler, “Turning Point Emerges for Chinese Central Bank’s Market Operations,” Reuters, May 9, 2012, <https://www.reuters.com/article/uk-china-liquidity/turning-point-emerges-for-chinese-central-banks-market-operations-idUKBRE8480D220120509>.

in the broader market given that only policy banks are involved. PSL funding is also reportedly administered by the State Council rather than the policy banks or the PBOC directly, as it is meant to be used to fulfill state-directed lending priorities.

Medium-term Lending Facility (MLF): Introduced by the PBOC in September 2014, the MLF is meant to provide liquidity to larger banks and policy banks (tier-one market makers). When first introduced, MLF funding was offered at maturities from 3 months to 12 months, meant to fill a gap between regular short-term open market operations and longer-term liquidity provision via the PSL. However, the PBOC gradually dropped other maturities of MLF operations and as of now only maintains 1-year lending. Borrowing from the PBOC via the MLF also requires high-quality collateral, including highly-rated bonds, government bonds, PBOC paper (although most of this has now matured), financial bonds, and highly-rated corporate bonds. The cost of the MLF is significantly higher than for other instruments, consistent with the steepness of China's money market curve. As a result, banks essentially pay a carry cost in comparison to the rate of return they earn on required reserves held at the central bank. Increasingly, the PBOC appears to be reducing MLF balances by freeing up liquidity to repay these loans via cuts to the reserve requirement.

Standing Lending Facility (SLF): The PBOC introduced the SLF in early 2013. The tool is used to provide short-term liquidity to small banks in need of funding and offers maturities from overnight to one month in duration. Use of the facility requires high-quality bonds and high-quality lending assets as collateral. SLF rates are supposed to serve as the ceiling for overnight and 7-day repo rates between banks, and therefore, the effective ceiling of an interest rate corridor for short-term rates. However, the facility is seldom used, even in the event of liquidity tension in the money markets, as the PBOC requires banks to apply specifically for funding with an explanation of why their liquidity has been so poorly managed that the bank requires assistance. Because the provision of liquidity is not automatic and remains at the PBOC's discretion, there remains a stigma associated with using the SLF, and short-term rates can consequently rise through the ceiling rates established by the SLF, in contrast to a conventional interest rate corridor.

Short-term Liquidity Operations (SLO): The PBOC introduced these operations in January 2014. The tool is primarily used to inject liquidity exclusively into larger banks, with a maturity of less than seven days. The tool was originally used to inject liquidity between the Tuesday and Thursday OMO sessions under the old schedule but has probably (this cannot be confirmed) wound down since 2016 after the PBOC moved to daily open market operations. The last declared SLO transactions occurred in January 2016.

Treasury deposit auctions: This is a tool used by both the PBOC and the Ministry of Finance (MOF), although the PBOC typically takes the lead in scheduling the auctions and deciding volumes. In a treasury deposit auction, banks who offer higher interest rates will be entrusted with MOF deposits, which provides the banks with stable liabilities. Maturities of these auctions typically range between three to nine months. These deposit auctions do require banks to pledge MOF bonds or local government bonds as collateral, though, in larger volumes than the deposit placements. Effectively, the PBOC can auction MOF deposits to banks when the system is experiencing slower liabilities growth.

Relending: Relending is one of the oldest tools that the central bank can use to inject liquidity into the banking system and was employed heavily following the Asian financial crisis. In the early years, no collateral was required for relending, which meant that the central bank essentially created money to lend to financial institutions for some specified term. The tool is now used primarily to guide the overall

structure of lending, as well as to channel funds to rural enterprises and small businesses. In 2015, the PBOC allowed banks to use lending assets as collateral to apply for relending.

Rediscount window: This is another tool from the central bank's past, primarily used to provide funding to smaller financial institutions. The central bank can discount a banker's acceptance, essentially a promissory note from another bank, which is already being discounted when presented by a counterparty bank. This allows the bank in need of funding to access cash right away, rather than waiting for the note to mature. The underlying note serves as the collateral for the transaction. Maturities for these transactions typically range up to six months.

Automatic pledge financing business: This is the central bank's last resort for defense of the financial system. Automatic pledge financing is only used when depository institutions lack funding to settle all interbank transactions at the end of a trading day. The PBOC provides funding against collateral (CGBs, PBOC paper, policy bank bonds, and local government bonds) purely on an overnight basis, with no extensions. The interest rate is the same as the SLF overnight rate and financial institutions are expected to repay the PBOC within the day, and if that is impossible, overnight before the next trading day. The PBOC updated its regulations governing this channel of short-term financing in December 2017, allowing a larger quota for banks to borrow from the PBOC and specifying responses from the central bank in the event of financial institution defaults on these pledge financing loans.¹¹³

Policy banks: Another tool that the PBOC can deploy, usually indirectly, is to lend via one of its liquidity facilities to policy banks and then deploy funds from policy banks directly to non-bank financial institutions that may be facing funding distress. The central bank would do this if it did not want to establish a precedent for financing NBFIs directly. While the use of this method has not been directly confirmed by the central bank, media reports point to policy banks playing a stabilizing role in the money markets after both the interbank market crisis in June 2013 as well as other periods of liquidity stress in late 2016 and early 2017 during the deleveraging campaign.

One of the key issues facing the central bank at present is the fact that a significant proportion of the borrowers within the money markets are non-bank financial institutions, and these institutions generally hold riskier assets than commercial banks. The effectiveness of PBOC liquidity injections, therefore, depends upon money markets continuing to function normally, with larger banks lending to NBFIs, even when concerns about the solvency of NBFIs emerge. This remains a source of risk within China's financial system, as will be discussed in Chapter 7, but the PBOC does have multiple channels to manage these risks, including indirect lending from policy banks.

In total, the central bank has a powerful arsenal, and in the event of a crisis additional methods could likely be deployed. It is commonly argued that should the political will exist, central banks can generally deploy liquidity into the financial system even if some institutions lack the appropriate collateral, because ultimately the central bank can accept virtually anything as collateral if it is necessary to do so. Therefore, this list should not be viewed as complete, even though it does reflect what is known about the PBOC's toolkit at present.

The key problem that the PBOC faces in the event of a financial crisis is not one of political will or the administrative structure to respond but rather the ability to identify the institutions at the heart of the

¹¹³ People's Bank of China, "Administrative Measures of the People's Bank of China for Automatic Pledged Financing Business," December 2017, <http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/3440811/index.html>.

financial distress before contagion spreads to others within the system and to calibrate an appropriate response. Distinguishing unhealthy contagion from the healthier development of the market pricing of risk will be a key challenge for the PBOC in managing financial stability as credit risk builds.

Domestic and External Debt

China's is not the first banking system to grow rapidly without a significant reliance upon external financing—the Japanese banking system did so as well in the 1980s. China's is, however, by far the largest. External liabilities always pose a more immediate threat to financial stability, as foreign creditors can threaten to withdraw capital and force the depreciation of the domestic currency. These pressures were particularly acute during the Asian financial crisis, when many of the countries affected also had large current account deficits.¹¹⁴ China, however, runs a persistent current account surplus, and a slowdown, or a perceived slowdown, in China's economy would probably see that surplus expand as commodity imports dropped. This effectively provides an automatic stabilizer that would reduce China's reliance upon external financing in times of financial stress.

However, debt to internal creditors poses a different set of challenges, some of them political in nature, as well as the ongoing risk of financial crisis. If the internal debt burden is large, the risk of default still must fall on some set of creditors, which can include domestic households, corporates, or the government. Inflation, as mentioned previously, is effectively a tax on domestic savers, while a significant exchange rate depreciation would be a default on importers and holders of domestic assets. Financial repression can also play a role in government attempts to reduce debt burdens over time at a cost to depositors and investors. Even if external debt levels are low, external creditors are often the first to face default risks when domestic debt levels rise, since it is easier in many cases to default on foreign obligations.¹¹⁵ Managing a large domestic debt burden is not a cost-free exercise, even if the risks are less acute than those from external debt, and transfers of private and corporate debt to the central government's balance sheet are usually involved in limiting the potential for a debt-driven crisis.

By far the most comprehensive look at domestic debt dynamics comes from Carmen Reinhart and Kenneth Rogoff's historical study of financial crises, attempting to refute the notion that “this time is different” when it comes to financial distress. Reinhart and Rogoff argue that no country is immune to financial crises, regardless of region, economic or political structure, or development phase.¹¹⁶ They created a database covering two centuries of public information on domestic and external debt spanning 66 countries. They found sovereign default on external debt is the norm throughout every region in the world.¹¹⁷

Domestic debt was a significant proportion of total debt (including domestic and external liabilities) in the vast majority of credit events identified in Reinhart and Rogoff's sample.¹¹⁸ In the run-up to external default, there is a sharp increase in both domestic and external debt. This is often a product of pro-cyclical

¹¹⁴ For example, see Corsetti, Pesenti, and Roubini, “What caused the Asian currency and financial crisis?” Federal Reserve Bank of New York, April 1999, <https://www.newyorkfed.org/medialibrary/media/research/economists/pesenti/whatjapwor.pdf>.

¹¹⁵ China already has a history of defaulting on foreign creditors first, in the event of the Guangdong International Trust and Investment Company default in 1999. See Craig Smith, “GITIC's Liquidation Process is Alien to Many of Its Overseas Creditors,” *Wall Street Journal*, January 22, 1999, <https://www.wsj.com/articles/SB916945008964422000>.

¹¹⁶ Carmen M. Reinhart and Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton University Press, 2009), 15.

¹¹⁷ *Ibid.*, 73.

¹¹⁸ *Ibid.*, 119.

behavior, whereby markets and governments treat favorable shocks (e.g., a rise in commodity prices benefitting terms of trade) as permanent, fueling a spree in government spending and borrowing.¹¹⁹ Domestic public debt tends to continue to rise after losing access to international capital markets post-crisis.

Several findings from this sample contradict conventional wisdom. For one, domestic debt accounts for a larger share of total public debt than might be expected, ranging from 40 percent to 80 percent in the 64-country sample and is significant yet commonly ignored in calculations of external debt sustainability.¹²⁰ Many assume that outright defaults on domestic public debt are extremely rare compared with external defaults, which include clearer government incentives to default. Most models assume domestic public debt is always honored.¹²¹

In fact, though less common, domestic defaults are not rare; the sample identifies more than 70 cases of overt domestic default since 1800, versus 250 external default cases.¹²² Domestic defaults can be difficult to detect as they often coincide with external debt defaults (known as “twin defaults”) and are historically poorly documented (defaults on international debt are obviously easier to detect). For this reason, and because the sample does not include instances of central bank default, the 70 cases in the sample are a lower bound.

Importantly, Reinhart and Rogoff’s sample only includes overt, de jure defaults, which can materialize when the borrower violates its contractual obligations, including forcible conversion of foreign currency deposits into local currency, lower coupon rates, unilateral reduction of principal, or suspensions of payments.¹²³ The sample does not include forms of de facto defaults, including inflation exceeding 20 percent, sometimes coupled with interest rate ceilings or other combinations that can be considered financial repression.

Reinhart and Rogoff’s work also describes the characteristics that generally produce debt defaults and compares those conditions in cases of domestic and external debt defaults. Across the entire sample, defaults tend to occur under broad macroeconomic downturns, with collapsing output and an escalation of inflation, and overt domestic defaults tend to occur only in times of severe macroeconomic distress.¹²⁴ In the run-up to domestic defaults, Reinhart and Rogoff find that:¹²⁵

- The average cumulative decline in output during the three years prior to a domestic default crisis is 8 percent; in the year of crisis alone, it is 4 percent (vs external debt events at 1.2 percent).
- Many domestic episodes are twin default crises, involving both domestic and external debt, as output suffers from limited access to external credit.
- Inflation in the year of a domestic debt crisis averages 170 percent, versus only 33 percent for external defaults.

¹¹⁹ Ibid, 123.

¹²⁰ Ibid, 103-110.

¹²¹ Carmen M. Reinhart and Kenneth S. Rogoff, “The Forgotten History of Domestic Debt,” National Bureau of Economic Research, Working Paper, no. 13946, (2008), p. 9, <http://www.nber.org/papers/w13946>.

¹²² Reinhart and Rogoff, *This Time Is Different: Eight Centuries of Financial Folly*, 110-111.

¹²³ Ibid, 111.

¹²⁴ Ibid, 132.

¹²⁵ Ibid, 129.

China does not appear at risk of exhibiting any of these characteristics, as headline output is still expanding at a healthy pace, although secondary measures of industrial output have started to slow sharply in 2018.¹²⁶ In addition, inflationary pressures appear remote, as China has been grappling primarily with deflationary forces over the past five years. This is a byproduct of a significant proportion of China's marginal credit growth being channeled to heavy industrial producers and manufacturers, which has generally produced more output relative to demand. What Reinhart and Rogoff's work points out, however, is the pro-cyclicality of domestic debt defaults with declines in credit availability and output growth. China appears far less vulnerable to sharp declines in output at present, but as credit availability changes, those macroeconomic conditions can change as well, which could accelerate the recognition of asset quality problems within the banking system. However, the more significant source of financial pressure in China is likely to be on the funding side of the banking system rather than the potential for a default on government or policy bank bonds.

China is similarly unlikely to use one of the more common options deployed by governments in managing domestic debt crises: deliberately inflating the debt burden away. The emergence of inflation in a country with a high domestic savings rate has historically been associated with political crises, and the government would likely choose to maintain the appearance of political stability, even if headline debt levels remained large. In addition, inflation causes significant distortions to the banking system and financial sector. If the debt is relatively short-term, and around half of the assets in China's banking system are less than one year in duration, the costs of inflation may be higher than those of repudiation, as the government must inflate much more aggressively to reduce real debt servicing costs.¹²⁷

Financial Repression and Managing Domestic Debt

Another option to manage domestic debt is to engage in "financial repression," a term originated by Ronald McKinnon (1973) and Edward Shaw (1973) to describe strict regulation of interest rates and mandatory allocation of financial resources.¹²⁸ Financial repression has been a critical component of China's strategy to manage domestic debt growth since the Asian financial crisis, but repressive forces are now weakening within China's increasingly diverse financial system. In their study of the liquidation of government debt using this method, Reinhart and Sbrancia (2015) identify the main features of financial repression as: caps on interest rates, particularly on government debt; captive domestic savings that serves as direct credit to the government through measures including capital account restrictions or high reserve requirements; and other measures through which the government directly owns banks or other financial institutions.¹²⁹ In effect, financial repression may represent a de facto default on domestic debt and equates to a tax on savers via negative or below-market real interest rates. When coupled with inflation, financial repression can be used to liquidate debt, and China's banking system has several characteristics in common with financial repression.

In China's case, according to McKinnon and Schnabl, the government controls capital inflows and outflows and caps domestic deposit rates, while banks direct cheap credit to safe borrowers like state-owned

¹²⁶ The Rhodium China Activity Tracker (R-CAT), a measure of industrial output, is showing -4.8 percent y/y growth in Q2 2018.

¹²⁷ Reinhart and Rogoff, *This Time Is Different: Eight Centuries of Financial Folly*, 111.

¹²⁸ Ronald I. McKinnon, *Money and Capital in Economic Development* (Washington, D.C.: Brookings Institution, 1973); Edward Shaw, *Financial Deepening in Economic Development* (New York: Oxford University Press, 1973).

¹²⁹ Carmen Reinhart and M. Belen Sbrancia, "The Liquidation of Government Debt," International Monetary Fund Working Paper, no. 15/7 (2015), p. 9, <https://www.imf.org/external/pubs/ft/wp/2015/wp1507.pdf>.

enterprises.¹³⁰ This strategy was employed to recapitalize China’s banking system in the late 1990s, keeping lending rates low and deposit interest rates lower and offering domestic savers few alternatives. These characteristics have been present in China for most of its recent history, until the increase in banks’ funding costs that began in 2012 caused real interest rates to rise, as banks competed more aggressively for funding.

Financial repression in China—government extraction of cheap loans primarily from the banking system—was a key factor that led to the emergence of the shadow banking system, as private-sector firms needed alternative access to finance. With controls on deposit and lending rates, banks prefer to lend to safer state-owned enterprises than riskier small- and medium-sized businesses. Unable to compete for deposits, banks offered much higher rates of return on deposits by placing funds off-balance sheet with non-bank financial institutions such as trust companies, which in turn generated returns to banks by lending to riskier SMEs at higher interest rates.¹³¹

Reinhart and Sbrancia (2015) detail how financial repression can be used to reduce the stock of debt, as repression was prevalent worldwide from 1945 to the early 1980s in reducing the post-war debt stocks of advanced economies.¹³² All else equal, keeping nominal interest rates below levels which would otherwise prevail reduces the government’s debt servicing costs. Combined with inflation to produce negative real interest rates, below-market nominal interest rates erode the real value of government debt—referred to as the “liquidation effect.”¹³³ Even if real interest rates are positive, if ceilings or other policies keep them lower than otherwise would prevail, which is generally the case in China despite formal liberalization of interest rates, there is a saving in interest expense to the government—referred to as the “financial repression tax.”¹³⁴ In other words, financial repression alone reduces the government’s interest expenses for a given stock of debt; when combined with inflation to produce negative real interest rates, this reduces or liquidates existing debts, as a transfer from creditors to borrowers.¹³⁵

One form of this seen in China is the tendency for local government banks to emerge as marginal bidders for bonds from their own jurisdiction, effectively reducing borrowing costs for the local or provincial government issuing the bonds. For example, in initial auctions of local government bonds in 2014, yields on bonds sold by Shandong province were actually priced around 20 basis points below those of bonds sold by the Ministry of Finance, an outcome that could only result from non-market influence on the buyers.¹³⁶ China is likely to continue to exhibit some signs of financial repression regardless of the future path of the economy and financial system, as banks and government already have very close relationships.

¹³⁰ Ronald McKinnon and Gunther Schnabl, “China’s Exchange Rate and Financial Repression: The Conflicted Emergence of the Renminbi as an International Currency,” Stanford Center for International Development Working Paper, no. 493, (2014), p. -20-21, <https://siepr.stanford.edu/sites/default/files/publications/493wp.pdf>.

¹³¹ *Ibid.*, 21.

¹³² Reinhart and Sbrancia, “The Liquidation of Government Debt,” 32.

¹³³ *Ibid.*, 5.

¹³⁴ *Ibid.*, 5.

¹³⁵ *Ibid.*, 15.

¹³⁶ The Shandong provincial government sold 5-year, 7-year and 10-year bonds at yields of 3.75%, 3.88% and 3.93% respectively on July 11, 2014, and all were lower than the corresponding China Government Bond (CGB) yields of 3.9578%, 4.0811% and 4.1198% at the time. Auction results available on [Chinabond.com.cn](http://www.chinabond.com.cn), <http://www.chinabond.com.cn/jsp/include/EJB/queryResultSingle.jsp?qdm=1458001>, <http://www.chinabond.com.cn/jsp/include/EJB/queryResultSingle.jsp?qdm=1458002>, and <http://www.chinabond.com.cn/jsp/include/EJB/queryResultSingle.jsp?qdm=1458003>.

A financially repressed system also is one less vulnerable to crisis because prices that might otherwise change in response to market forces are still under some degree of government influence. Reinhart and Rogoff (2013) argue that, because financial repression generally discourages financial excess, it is often associated with reduced frequency of crises.¹³⁷ During the global “financial repression” period of 1945-1980, there were markedly fewer crises—including banking, currency, sovereign default and inflation crises, or stock market crashes—than either before or subsequently.¹³⁸ Notably, China does not appear to fall within the pattern of avoiding financial excess, as Chapter 2 details, or currency or stock market crashes, as the experiences of 2015 would suggest, so the reassurance of the experiences cited in Reinhart and Rogoff’s work is relatively limited.

Financial repression in China has started to break down under the growth of wealth management products, wholesale funding, and other interest-rate sensitive liabilities within the Chinese banking system. Nonetheless, the relationship between banks and various levels of government remains much stronger than in other financial systems and is likely to remain so. But China appears to be an outlier relative to Reinhart and Rogoff’s study, in that the financial system has grown rapidly and risks have increased despite pervasive financial repression since the post-Asian financial crisis banking system cleanup.

Fiscalizing Private Debt

Debt default or restructuring and financial repression are only two strategies governments pursue in reducing debt. Historically, others include generating rapid economic growth or enacting fiscal austerity, but China will face difficulties growing out of its domestic debt problem, as detailed in Chapter 2. One of the problems of using financial repression to prevent crises is that it is generally ineffective when there are high levels of private and sovereign debt, which is the case in China. Corporate debt was 165 percent of China’s GDP in 2016, according to the IMF.¹³⁹ Reinhart and Sbrancia (2015) note that financial repression is a more gradual approach to debt reduction than restructuring and haircuts and probably not sufficient to lower debt levels, particularly if both public and private debt levels are high.¹⁴⁰

Fiscalization of some of the resulting private debt burden—that is, directly or indirectly taking debt onto government balance sheets—is also an option. China is already fiscalizing some private debt and likely to expand the usage of the government’s balance sheet in the future. In Reinhart and Rogoff’s sample, there are many episodes where private debt surges before the crisis and public debt surges after the crisis, spanning all regions and development levels.¹⁴¹ In a crisis, hidden government debt burdens emerge, often after a sudden acceleration of short-term government debt or the hidden transfer of private debt to government balance sheets. Governments routinely guarantee the debt of quasi-government agencies that may take on significant risk, such as Fannie Mae and Freddie Mac in the United States.¹⁴² Public debts may or may not surge ahead of a banking crisis, depending upon the extent of financial repression and the

¹³⁷ Carmen M. Reinhart and Kenneth S. Rogoff, “Financial and Sovereign Debt Crises: Some Lessons Learned and Those Forgotten,” International Monetary Fund Working Paper, no. 13/266 (2013), 6, <https://www.imf.org/external/pubs/ft/wp/2013/wp13266.pdf>.

¹³⁸ *Ibid.*, 5.

¹³⁹ “People’s Republic of China Financial System Stability Assessment,” International Monetary Fund, December 2017, 7, <https://www.imf.org/en/Publications/CR/Issues/2017/12/07/people-republic-of-china-financial-system-stability-assessment-45445>.

¹⁴⁰ Reinhart and Sbrancia, “The Liquidation of Government Debt,” 41.

¹⁴¹ Carmen M. Reinhart, “This Time Is Different Chartbook: Country Histories on Debt, Default, and Financial Crises,” National Bureau of Economic Research Working Paper, no. 15815, (2010), http://www.reinhartandrogoff.com/user_uploads/TTID_Chartbook_w15815.pdf.

¹⁴² Carmen M. Reinhart and Kenneth S. Rogoff, “From Financial Crash to Debt Crisis,” *American Economic Review* 101, no. 5, (2011): 1696, https://scholar.harvard.edu/files/rogoff/files/from_financial_crash.pdf.

ability of governments to transfer debts to banks.¹⁴³ While high levels of public debt are rarely triggers for a financial crisis by themselves, they can prolong the adjustment period from a crisis by reducing the government's ability to use countercyclical fiscal policy to stimulate the economy after a period of recession.¹⁴⁴

China has started on a process of fiscalizing some of the private debt accumulated within the banking system, by allowing local governments to issue 16.8 trillion yuan (so far) in bonds that are meant to be swapped for higher-interest debt incurred by local government-linked companies.¹⁴⁵ While this technically shifts some of the debt to local government balance sheets and reduces the interest rates involved, local governments were already one of the backstops for the companies that had incurred the debt, so the process does not really change the nature of the debt. The primary benefit here is not to shift the debt burden from private to government hands, but to reduce the interest rate. Additional fiscalization programs may follow, but they are likely to have only a limited effect on China's overall debt burden. Whether or not local or central governments must repay loans or bonds does have an impact on banking system efficiency and the interest rates paid but does not fundamentally change the size of the debt problem.

In addition, China has started a program of debt-for-equity swaps, in which indebted companies offer equity to the banks holding their overdue loans to reduce the debt burden of individual corporates and to incentivize banks to restructure debt consistent with the recovery and growth of the firm. While these are logical structures in theory, China is unlikely to be able to use them extensively to manage the domestic debt burden. Banks are unlikely to be eager to accept equity in firms that are unable to repay debt, and the net effect of the transaction is simply to transfer equity from a state-owned company to a state-owned bank, while also reducing the probability the bank will be repaid for the original loan. Fundamentally, this makes little difference in managing a debt problem the magnitude of China's.

Quantitative and Qualitative Crises

Different types of financial crises can result from the buildup of domestic debt, even in countries with few external liabilities. The literature on classification of financial crises typically distinguishes between quantitative crises, which feature measurable variables, and qualitative events, which are not so easily measured.¹⁴⁶ Quantitative crises include a currency crisis, where, in the event of devaluation or sudden depreciation, authorities are forced to defend the currency by expending foreign exchange reserves, raising interest rates, or imposing capital controls.¹⁴⁷ Reinhart and Rogoff quantify a currency crash as an annual depreciation of 15 percent or more against the dollar.¹⁴⁸ The risk of a currency crisis can become more acute when balance sheet mismatches are exposed to fluctuations in asset prices, including exchange rates. Recent cases during the Asian financial crisis saw fiscal and external positions that appeared manageable, but domestic imbalances and vulnerabilities of the domestic financial system were larger,

¹⁴³ Reinhart, "This Time Is Different Chartbook: Country Histories on Debt, Default, and Financial Crises."

¹⁴⁴ Óscar Jordà, Moritz Schularick, and Alan M. Taylor, "Private Credit and Public Debt in Financial Crises," Federal Reserve Bank of San Francisco, Economic Letter, (2014), <https://www.frbsf.org/economic-research/files/el2014-07.pdf>.

¹⁴⁵ Bond totals current as of August 2018 but may expand in the future.

¹⁴⁶ Stijn Claessens and M. Ayhan Kose, "Financial Crises: Explanations, Types, and Implications," International Monetary Fund Working Paper, no. 13/28, (2013), p. 12, <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Financial-Crises-Explanations-Types-and-Implications-40283>.

¹⁴⁷ Ibid.

¹⁴⁸ Reinhart and Rogoff, *This Time Is Different: Eight Centuries of Financial Folly*, 7.

especially if banks had substantial foreign currency-denominated debts.¹⁴⁹ Hence, countries were forced to choose between defending the currency in the event of speculative attack at the cost of domestic adjustment or to devalue and reduce the impact on the domestic financial system. Most countries affected by the Asian crisis chose the latter. Other models consider self-fulfilling dynamics in which investors attack the currency because they have doubts about a government's commitment to maintain its exchange rate or they expect other investors to attack the currency.¹⁵⁰ Reinhart and Rogoff (2009) found, across their sample, inflation crises and exchange rate crises tend to coincide in the vast majority of default episodes across time and countries, especially for countries subject to chronic inflation.¹⁵¹ China may be vulnerable to a currency crisis at some point should capital outflows intensify sharply, as was a key risk in late 2015 and 2016, but this is not the most likely form of financial distress to emerge.

A second form of financial crises that can be measured quantitatively is a balance of payments or “sudden stop” crisis, when a country suddenly finds external financing channels cut off, usually following a rise in the country's credit spreads or changes in domestic interest rates. China's financial system as a whole is less vulnerable to this type of crisis because of its low stock of external debt, but some individual borrowers in China may face risks of a sudden stop in external financing.

Qualitative crises include both debt and banking crises, which are often preceded by the bursting of an asset price bubble, such as in equity or real estate markets.¹⁵² Debt crises generally produce defaults as a government does not honor either its foreign or domestically issued obligations. If default is not chosen explicitly, then inflation, currency debasement, or financial repression are other options, as discussed earlier. These may be effective at reducing the debt burden but will result in long-term costs to public credibility and confidence in government-issued financial instruments and guarantees.

Banking crises are typically associated with bank runs—pressure on banks' liabilities. Essentially these runs can occur because of a perception of risk within one or several domestic financial institutions that may suffer from systemic vulnerabilities. In their categorization of financial crises, Claessens and Kose (2013) explain that bank runs become destabilizing when banks cannot liquidate assets fast enough to cover short-term liabilities.¹⁵³ Crises can intensify when government interventions occur on an ad hoc basis or when governments cannot provide clear signals on the status of support for institutions that may be affected. Those institutions can then be vulnerable to additional runs.

Of the four types of crises described here, China is obviously far more vulnerable to a domestic debt and banking crisis than a currency crisis or a sudden stop in external financing. A change in external financing conditions can affect financial conditions in China, of course, but such changes are unlikely to be decisive in generating a crisis independent of some other trigger of stress within the domestic financial system. More likely they would drive a monetary policy response from the PBOC to offset some of the pressure from capital outflows. While the PBOC's willingness and ability to defend China's currency are also declining over time, it seems unlikely that any single period of financial stress could force China to devalue the yuan. Rather, depreciation or a move toward flexibility would likely be considered, among other policy options.

¹⁴⁹ Roberto Change and Andreas Velasco, “Liquidity Crises in Emerging Markets: Theory and Policy,” National Bureau of Economic Research Macroeconomics Annual 1999, no. 14, (January 2000), 11-78. <https://www.nber.org/chapters/c11045.pdf>.

¹⁵⁰ Claessens and Kose, “Financial Crises: Explanations, Types, and Implications,” 13.

¹⁵¹ Reinhart and Rogoff, *This Time Is Different: Eight Centuries of Financial Folly*, 189.

¹⁵² *Ibid.*, 7.

¹⁵³ Claessens and Kose, “Financial Crises: Explanations, Types, and Implications,” 16-17.

Therefore, China is more likely at risk of “qualitative” crises resulting from changes in bank asset prices and solvency problems within the banking system produced by price adjustments. Yet, because of the widespread implicit guarantees throughout China’s financial system, those price adjustments in bank assets are only likely to occur when China seeks to pare back those guarantees as part of financial system reform, which would likely impact China’s credibility. Continuing to grow bank assets bearing these implicit guarantees will produce a crisis at some point in the future when they become wildly overvalued, but stopping the process also creates the potential for a rapid adjustment in asset values that would shock the banking system. China’s vulnerability to a banking crisis generated by domestic debt is ironically higher in the intermediate steps along a path to a more market-driven banking system, a process that will be discussed in much more detail in Chapters 6 and 7.

A Tree Cannot Grow to the Sky

This discussion naturally raises a hypothetical question: Can a state-managed banking system continue to grow credit forever and keep the economy growing forever, as long as the debt is held internally, no one within that system thinks there is any risk of default, and the central bank is always ready to provide enough liquidity to prevent any crisis?

Historically, there have been two key limits to rapid expansion of the financial system and the economy in China’s case: inflation and the exchange rate. The need to control price growth within a sustainable range over time requires controls on credit growth, which creates the risk of insolvency among banking institutions that lend to unproductive industries. Under such conditions, even if the central bank wants to provide liquidity to ease financial stress among those institutions, the goal of controlling prices would take precedence, and short-term funding might be withheld. The results would be a more typical cyclical pattern of growth as credit availability declined and the economy slowed until inflationary pressure eased.

Similarly, a continued expansion of credit, combined with the central bank’s perceived willingness to continue to expand its balance sheet to provide low-cost credit to the financial system, would also have the effect of expanding the domestic money supply aggressively. In an open economy, this tends to weaken the exchange rate via capital outflows, as foreign assets appear more attractive than domestic assets because they carry higher interest rates. This process might weaken the growth of domestic liabilities and effectively counteract the central bank’s provision of liquidity, while a weaker exchange rate would also increase the competitiveness of exports and reduce import levels to balance this capital outflow.

These are really no constraints on China growing its banking system because China does not have a significant inflation problem at present. However, its money supply, at \$28 trillion, is the largest of any country in the world, and even with over \$3 trillion in foreign exchange reserves, the ability of the central bank to defend the currency is diminishing over time as the money supply continues to grow. Therefore, if Chinese interest rates trend lower than global interest rates over time, which is probable, it is likely that Chinese investors will seek opportunities to diversify their savings into foreign assets, reducing China’s reserves and potentially weakening the exchange rate. Continuing to provide liquidity and credit growth indefinitely would weaken China’s importance within the global economy via a weaker exchange rate, while also generating trade tensions as China’s trade surplus would expand.

Moreover, the primary purpose of Beijing’s deleveraging effort is to change the implicit presumption against defaults, particularly among unregulated and informal financial institutions. The basic structure of

China's financial system has evolved, as discussed in Chapter 2, with a majority of borrowers within the money markets now consisting of non-bank financial institutions (NBFIs) rather than banks. Many of these institutions are engaged in regulatory arbitrage or are the beneficiaries of local government efforts to circumvent Beijing's directives on where and how much banks should be lending. Therefore, Beijing is unlikely to provide immediate central bank assistance in the event of financial stress among these NBFIs; this may spark a policy disagreement between Beijing and local governments that depend upon these institutions. NBFIs may be allowed to default now, and there are already examples of the riskier informal institutions within China's financial system having already defaulted. Over time, controlling financial risk may require the possibility that banks default as well.

As a result, China's central bank faces a perilous balancing act. By introducing the potential for defaults among key borrowers within the money markets, the PBOC is changing the basic rules that have governed the money markets and driven the financial system's growth over the past two decades. Markets up to this point have understood the power and importance of the PBOC's own policy stance to defend against crisis, but the central bank is now changing its behavior. In effect, the PBOC is trying to start a process that will weaken its influence over the market, moving its scope of influence closer to that of other global central banks. Yet, at the same time, breaking the norm against default may force lenders in the money markets to pull back funding from risky institutions. This could spark contagion across the financial system as banks and other lenders become more cautious, forcing the PBOC to step back in and provide liquidity to institutions in distress.

We are now watching the consequences of this balancing act play out. Beijing's deleveraging program has caused the recognition of credit risk among many different classes of assets. Credit growth has fallen sharply in late 2017 and 2018, and many companies have lost access to financing for the first time in China's recent history. Consequently, the number of corporate bond defaults is rising and local governments are seen scrambling for financing. While most market participants expect Beijing to provide enough policy support to prevent widespread defaults and financial contagion, that assumption will be tested, as the PBOC may not deliver such support in a timely fashion or across all distressed asset classes.

In short, the conditions necessary for an internal debt or banking crisis are currently forming in China, but it remains unclear whether these risks will materialize or how Beijing might respond. In addition to providing liquidity from the central bank, Beijing has also used administrative measures and controls beyond the typical powers exerted by most governments in market-driven systems to limit asset price adjustments.

Chapter 5 | Politics in Command of the Financial System

To many observers, China's economy is "different" not only because of country's high savings rate or the domestic ownership of most of its debt, but also because of a political system that allows authorities to exert a significant degree of control over economic outcomes and market prices. China has more direct administrative and political control over key financial institutions than most governments in developed economies and far fewer constraints on government action than found in economies and financial markets with strong legal systems. Linked to this argument is the point that Chinese authorities also have substantial experience in using these administrative tools successfully to avoid growing stresses in the financial system.

Theoretically, such administrative power can be a meaningful weapon against financial crises. When the value of the assets of a particular institution fall sharply or debt issued by a key borrower is suddenly distressed, China's authorities can freeze trading or convene meetings of stakeholders to administratively assign the cost of the losses and prevent further panic. When a particular bank faces liquidity pressure and other lenders are unwilling to lend to it, Beijing authorities can call major institutions on their infamous "red phones" and order state-owned lenders to provide sufficient funding to the troubled bank to stop a run before it gets started.¹⁵⁴ When an investment product defaults and investors protest in the streets for the return of their money, Beijing can compel payouts to the affected parties even if it was clear to the investors that the original investments entailed risk.¹⁵⁵ Even though these are not market-driven outcomes, they can serve as a powerful bulwark against market contagion and can prevent financial institutions from being forced to sell assets rapidly in a crisis.

In addition, administrative control over key financial institutions can serve more conventional countercyclical economic policy goals in China. Instead of attempting to regulate the pace of credit growth through changes in interest rates or other price-based signals to markets, Chinese authorities have regularly relied upon simple quotas for new loans. Similarly, when facing a weakening global economy and more risk aversion among China's banks during the global financial crisis, Beijing was able to command banks to increase lending to kickstart an investment cycle in late 2008 and early 2009. There have been obvious unintended consequences from these measures, and they were clearly inconsistent with the stated goal of increasing market influence over the distribution of credit in China's financial system. Nonetheless, China has used these and other administrative controls to facilitate its broader policy objectives and has demonstrated at times a higher degree of effectiveness at changing the direction of economic cycles than have policymakers in developed economies.

The critical question for this study, however, is how effective these tools would be in the event of a financial crisis or a sustained slowdown in economic growth in China. Here the record of past interventions by China's authorities warrants careful examination. Generally, financial systems facing

¹⁵⁴ See, for example, Richard McGregor, "China's Private Party," *Wall Street Journal*, May 5, 2010, <https://www.wsj.com/articles/SB10001424052748704250104575238590027868792>.

¹⁵⁵ This was one of the consequences of one of the first WMP defaults in late 2012, on a product sold by Hua Xia Bank, where the bank initially refused to accept responsibility to repay investors. Gabriel Wildau and Samuel Shen, "Chinese Investors Recover Losses from Shadow Banking Default," Reuters, January 22, 2013, <https://uk.reuters.com/article/uk-china-banks-shadow/chinese-investors-recover-losses-from-shadow-banking-default-idUKBRE90LOF620130122>.

catastrophic levels of stress will relax the usual rules governing market activities, resulting in state institutions taking a more aggressive role to stabilize market conditions. The United States followed this pattern during the 2008 global financial crisis, given the Treasury's significant role in leading the recapitalization of major financial institutions as well as facilitating the acquisitions of some troubled banks and insurers.¹⁵⁶ In the event of widespread financial stress, Beijing's administrative intervention in markets would likely arrive very quickly. The effectiveness of such measures, however, would depend heavily upon the severity of the crisis as well as the assets and markets that were effected. An intervention via blunt administrative means tends to be more successful when it can be directed at a smaller number of more influential market actors.

Sustained administrative interventions into financial markets also carry additional costs: reducing the attractiveness of the affected markets for investors over time; curbing the ability of market prices to efficiently allocate resources; and limiting Chinese authorities' own insights that can be derived from market pricing signals. The attempted bailout of China's equity market in 2015 is perhaps the most obvious example of this tradeoff between stability in the short term and more severe consequences in the medium term. Three years later, equity prices are still 20-25 percent below the levels which China's authorities decided to support, and investors' confidence in the utility of these markets in allocating resources continues to flag. While the benefits of the intervention relative to its significant fiscal costs remain unclear, Chinese authorities still took credit afterwards for stabilizing the equity market while defending against larger perceived risks.¹⁵⁷ What Chinese officials have not acknowledged publicly is the long-term damage to potential growth that results from the deferral or backtracking on implementation of market mechanisms for allocation of resources.

The previous chapter addressed Beijing's ability to intervene on the liabilities side of banks' balance sheets by providing liquidity to distressed institutions when necessary. Intervention on the asset side, by attempting to dictate asset prices or prevent them from falling, is a far more difficult proposition, in part because of the sheer number of participants in China's assets markets. For most of China's banks, this is the key challenge because assets have expanded rapidly in recent years, underwritten by implicit or explicit guarantees. These guarantees, as well as the value of the underlying assets, have yet to be tested under conditions of significant financial stress. This is particularly true for China's property market, perhaps China's most important financial asset market, which has benefited from years of credit expansion and has seen no major correction lasting longer than six to nine months since the sector was liberalized in 1998.

¹⁵⁶ See, for example, Mark Landler and Eric Dash, "Drama Behind a \$250 Billion Banking Deal," *New York Times*, October 14, 2008, <https://www.nytimes.com/2008/10/15/business/economy/15bailout.html>.

¹⁵⁷ See Zhou Xiaochuan and Lou Jiwei comments at G20 meeting in September 2015, contained in Reuters staff, "China Emphasizes Stability at G20, Fiscal Spending Quickens," Reuters, September 6, 2015, <https://www.reuters.com/article/us-g20-china-economy/china-emphasizes-stability-at-g20-fiscal-spending-quickens-idUSKCNOR604T20150906>; See also Xi Jinping's remarks in Seattle, 22 September 2015. Xi commented on the stock market's recent turbulence: "Recent abnormal ups and downs in China's stock market has caused wide concern. Stock prices fluctuate in accordance with their inherent laws. And it is the duty of the government to ensure an open, fair and just market order and prevent massive panic from happening. This time, the Chinese government took steps to stabilize the market and contain panic in the stock market and thus avoided a systemic risk. Mature markets of various countries have tried similar approaches. Now, China's stock market has reached the phase of self-recovery and self-adjustment." "Full Text: President Xi's Speech on China-US Ties," *China Daily*, September 24, 2015, http://www.chinadaily.com.cn/world/2015xivisit/2015-09/24/content_21964069_2.htm.

China's Intervention in Distressed Financial Markets: The Past Decade

China's interventions into the domestic financial markets are numerous, and regularly occur within a heavily regulated financial system, where major players in banking, insurance, and brokerage services are all state-owned. However, there are few studies of direct intervention by Beijing in cases of severely distressed domestic financial market conditions. In general, these interventions have tended to prioritize short-term stability at the cost of longer-term development of the financial system. Collectively, the expectation of state intervention has enhanced the perception of moral hazard that contributed to rapid credit growth within China's financial system, as detailed in Chapter 2. But the fact that these examples of financial distress are rare and relatively short-lived only highlights the untested waters in which Beijing authorities are now swimming if they are called upon to intervene in a case of more widespread financial market tension.

THE MINISTRY OF RAILWAYS AFTER THE WENZHOU TRAIN CRASH

The financial pressure faced by the Ministry of Railways (MOR) in the summer of 2011, after a fatal train crash in Wenzhou and a botched public explanation of the crash and recovery effort, may seem like an unusual place to start, but the episode highlights the importance of changing political perceptions over market outcomes in China. The Ministry of Railways, before its reorganization into state-owned companies, was a stand-alone entity effectively operating in parallel to the Chinese state, with its own budget, its own police force, its own courts, and its own network of connected companies. The ministry also issued its own debt, carried a stand-alone credit rating (equivalent to that of the Ministry of Finance), and was one of the largest issuers of bonds in the Chinese market, with over 580 billion yuan (\$89.6 billion) in outstanding bonds as of July 2011, when the crash occurred.¹⁵⁸

However, after the train accident, where the Ministry of Railways was widely blamed for a shoddy recovery effort and an alleged cover-up, the political climate around the MOR changed and those political pressures were quickly reflected in the bond market. Rumors started to circulate of corruption investigations at the ministry and the potential for a reorganization (both eventually did occur, with Minister Liu Zhijun removed in a corruption scandal).¹⁵⁹ Even though no formal change to the MOR's strong government guarantees or credit ratings had taken place at the time, the ministry suddenly found itself unable to sell bonds at rates anywhere close to those offered by the Ministry of Finance. For a heavily indebted institution, with over 2 trillion yuan in total debt at the time, the abrupt halt in financing was effectively a death sentence. The MOR was only able to sell limited volumes of three-month paper at interest rates of 5.55 percent and 5.25 percent, almost double the rates on previous issues, which would have significantly increased the cost of managing its debt burden over time.¹⁶⁰

The episode highlights the significance of political variables in driving market outcomes in China's financial markets. There were no clear changes in the drivers of prices that would be relevant in other financial markets—market interest rates, credit ratings, or government guarantees—but suddenly the market for the MOR's bonds had collapsed. What had changed was the market's perception of the

¹⁵⁸ All exchange rate calculations use the relevant historical exchange rates, in this case in July 2011. Nicholas Borst, "The Ministry of Railways' Debt Burden," *Peterson Institute for International Economics*, August 22, 2011, <https://piie.com/blogs/china-economic-watch/ministry-railways-debt-burden>.

¹⁵⁹ Keith Zhai, "Ex-railways Chief Liu Zhijun Charged with Corruption," *South China Morning Post*, April 10, 2013, <https://www.scmp.com/news/china/article/1211431/ex-railways-chief-liu-zhijun-charged-corruption>.

¹⁶⁰ Bloomberg, "Bullet Train Crash Means Highest Yields Since 2007: China Credit," August 8, 2011; Bloomberg, "China Railway Ministry Sells Bonds at 5.25%, Xinhua Says," August 18, 2011.

credibility of the central government's guarantee for the Ministry of Railways, as well as the potential political cost to investors of supporting an institution facing intense political scrutiny at the time.

The limited crisis within the market for MOR bonds was ultimately resolved through a coordinated policy response from Beijing, including direct instructions to policy banks to purchase bonds issued by the ministry at subsidized rates later in the year. In addition, the National Development and Reform Commission issued a statement in October 2011 underscoring that Ministry of Railways bonds enjoyed "government support."¹⁶¹ The Ministry of Finance provided additional incentives by cutting the tax levied on interest income from those bonds in half.¹⁶² Eventually, the Ministry of Railways regained access to the market and a more comprehensive reform package restructuring the entity into state-owned enterprises, rather than a separate ministry, removed its special status and reorganized its debt under a state-owned corporate roof.

The crisis confronting the Ministry of Railways demonstrates both the importance of political perceptions to overall creditworthiness in China's financial markets, as well as the importance of implicit government guarantees for overall market access. When both of these perceptions changed, market conditions deteriorated rapidly, and this is the risk that confronts China's financial markets as government guarantees are rolled back in the future. In this case, administrative intervention to resolve the problem was simple, in terms of reiterating government guarantees for the MOR's bonds, but also very effective, as the clarification of the guarantees and news about the ministry's reorganization into state-owned enterprises resolved the market's uncertainty. Authorities did not need to suspend market rules but did provide some official instructions to individual actors and used administrative edicts to reset market expectations on behalf of the Ministry of Railways.

THE INTERBANK MARKET CRISIS OF JUNE 2013

As discussed in Chapter 2, the interbank market crisis in June 2013 provides perhaps the most direct parallel to a U.S.-style financial crisis, in which short-term money market rates rose sharply and liquidity was suddenly scarce, with the banking system needing immediate emergency assistance to continue operating normally. The critical difference, of course, was that China's interbank market crisis was initially a response to the PBOC's own policy signals. The central bank had attempted to reduce the banking system's reliance upon WMPs as a key source of liabilities and to curb the growth of unregulated channels of credit within the shadow banking system.

As interbank conditions tightened in mid-June 2013, the PBOC consulted with banks early in the week of June 17, telling them it was unwilling to provide liquidity assistance despite the sudden spike in short-term rates. Liquidity in the Chinese money market is always tight in June for seasonal reasons, and, as a result, the PBOC's signal exacerbated already fragile conditions. Short-term interest rates skyrocketed to the 20-30 percent range on June 20, as lenders refused to provide the funds that borrowers needed to meet redemption demand from WMP investors. The interbank market quickly found itself without an obvious lender of last resort.

The PBOC was surprised by the outcome of its experiment in guiding banks to reduce their reliance on shadow financing instruments but issued no immediate public statement on June 20th. It did quietly provide some emergency funding at the end of the trading session to calm markets, contradicting the

¹⁶¹ Bloomberg, "China Says Railway Ministry Bonds Have 'Government Support,'" October 19, 2011.

¹⁶² Bloomberg, "China May Have to Provide 200 Billion Yuan to Railways Ministry: 21st," October 19, 2011.

previous austerity messages it had delivered to commercial banks at meetings earlier that week.¹⁶³ However, the lack of a public signal meant that money market rates remained elevated, which continued to encourage institutional investors to redeem their WMPs, because they could either lend out the money from the redemptions in the interbank market or buy new WMPs at even higher interest rates. Over the next two trading days, June 21 and July 24, China's equity market declined by 10 percent as many institutional investors sold stocks so that they could lend out the money more profitably in the interbank market or in the stock exchange repo market, as banks borrowed heavily at high rates to meet demand from investors' WMP redemptions.

During the lunch break in trading on June 25, the Chinese leadership had had enough with the PBOC's experiment to control financial system leverage and sent reassuring signals to the market that liquidity would be made available, effectively reversing the PBOC's stance. Stock markets rallied instantly, reversing most of the day's losses in the afternoon session. This was followed later in the day by an official PBOC statement reiterating the central bank's commitment to maintain an adequate level of liquidity so that markets could function normally.¹⁶⁴ Policy banks were specifically instructed to lend in the interbank market and several banks publicly announced that they had lent out over 1 trillion yuan to stabilize the market.¹⁶⁵ The panic was effectively broken, and short-term money market rates began to return to much lower levels.

However, it was not easy to completely unwind the PBOC's experiment because the central bank had shocked the market by changing its policy stance with no warning. Money market rates remained elevated compared to their previous levels and continued to spike at the end of the following months and quarters when WMP redemptions tended to accelerate under tighter liquidity conditions caused by tax payment deadlines and other seasonal factors. Markets suddenly had to factor in a new source of financial risk: PBOC policy changes. As a result, banks tended to be far less willing to lend to each other longer-term because they could not be certain that the PBOC would not change its approach to managing liquidity once again. In the autumn of 2013, these factors contributed to a significant selloff in China's bond market, as banks now had an incentive to sell their liquid assets and hold onto available cash to guard against another liquidity squeeze. In the end, the June crisis nearly repeated itself in December 2013, when short-term money market rates rose close to 10 percent, and the PBOC was once again required to inject hundreds of billions of yuan in emergency liquidity.¹⁶⁶

¹⁶³ Mamta Babkar, "China's Cash Squeeze Eases: Money Rates Fall after Central Bank Is Said to Step In," *Business Insider*, June 20, 2013, <https://www.sfgate.com/technology/businessinsider/article/China-s-Cash-Squeeze-Eases-Money-Rates-Fall-4613783.php>.

¹⁶⁴ People's Bank of China, "Reasonable Provision of Liquidity and Maintaining a Stable Money Market," *People's Daily*, June 25, 2013, <http://finance.sina.com.cn/china/20130625/182315912423.shtml>.

¹⁶⁵ Zhang Yuzhe and Huo Kan, "When Cracks Appeared in the China Interbank Market," *Caixin Online*, July 10, 2013, <https://www.marketwatch.com/story/when-cracks-appeared-in-the-china-interbank-market-2013-07-10>; Zhang Pinchun (张品秋), "Yanghang Yi Dui Shichang 'Shuxue' Zhengce Yinhang Chongdang Wendingqi?" (央行已对市场'输血' 政策银行充当稳定器?) [The Central Bank Already Rescued the Market; Did Policy Banks Serve as Stabilizers?], *People's Daily*, June 26, 2013, <http://finance.people.com.cn/n/2013/0626/c70846-21981536.html>.

¹⁶⁶ Heather Stewart, "China Central Bank Acts to Avert Short-Term Credit Crunch," *The Guardian*, December 19, 2013, <https://www.theguardian.com/business/2013/dec/19/china-central-bank-liquidity-credit-crunch>.

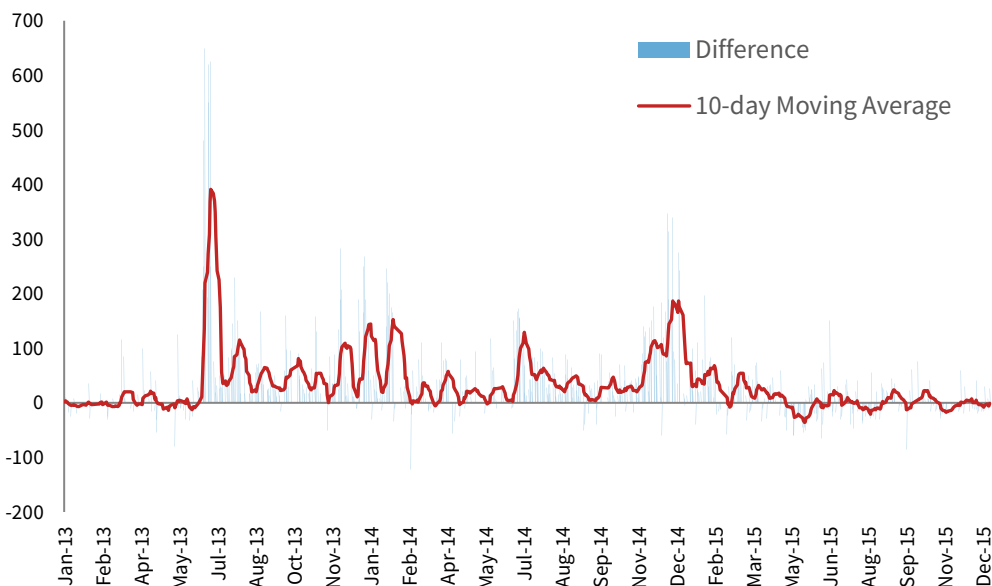
Figure 5-1: 5-Year and 10-Year Government Bond Yields, January 2013-December 2013
Percent



Source: Bloomberg.

In addition, a divergence suddenly appeared between the interest rates charged on uncollateralized borrowing between banks (via interbank deposits) and those on collateralized borrowing via the repo market. Essentially the market was trying to price in the counterparty liquidity risk that could result from another squeeze in interbank market conditions by demanding higher rates on unsecured borrowing by banks than on borrowing secured by collateral. That difference between interbank deposit rates and uncollateralized repo rates persists to this day, particularly when interbank rates are rising.

Figure 5-2: Difference between Interbank Deposit Rates and Pledged Repo Rates, Jan 2013-Dec 2015
Basis points



Source: Bloomberg.

In the end, the PBOC’s short-term success in stabilizing the interbank market in June 2013 also created longer-term costs. As explained in Chapter 2, the cost of the PBOC’s reversal in its policy stance was confirmation in the minds of market players that any liquidity squeeze would be temporary by reinforcing the government’s implicit guarantee that it would intervene in the event of significant liquidity stress. As a result, banks could be more confident in lending to each other at reasonably low rates over time, but those lower rates also encouraged the growth of speculative activities in the informal financing sector.

The rapid growth of shadow banking activities following the 2013 interbank market crisis eventually required the PBOC to reverse course once again in late 2016, when Beijing initiated the current deleveraging campaign. The short-term end to the 2013 crisis was purchased at the cost of the PBOC’s policy credibility over time, as markets grew to expect government intervention in the case of any significant liquidity pressures in money markets. Administrative controls helped to stabilize the markets in the short term but raised expectations that they would be used again in the future.

THE EQUITY MARKET BAILOUT OF 2015

One of the consequences of the rapid growth of China’s shadow financing sector was the emergence of several lightly regulated informal financial institutions chasing returns wherever they could be found in a “search for yield” so that they could provide higher returns for their own investors, who were generally channeling their investments through banks’ WMPs. In the spring and summer of 2015, a perfect storm of conditions triggered a huge bubble in China’s equity market, requiring one of Beijing’s most aggressive administrative efforts this century to stabilize financial market conditions. The equity market bailout in 2015 is an interesting test case for the utility of administrative controls and Beijing’s ability to stabilize financial conditions. Many in Beijing political circles seem to consider the effort a success, based on their rhetoric after the bailout, but most market participants both inside and outside China have been far less

impressed, precisely because Beijing had to break so many of the rules by which the equity markets operate to prop up prices, raising concerns that those rules could again be changed in the future.

China's equity markets have long been a disappointment for investors seeking to share in some of the returns from China's rapid economic growth. The equity markets function in ways that are superficially similar to those in developed economies, but the fundamentals are quite different. Most of the companies listed on China's exchanges are state-owned, with the state as a majority shareholder, so owning shares provides little to no influence over the actual governance of a company. In addition, information disclosure and governance requirements are generally poor and are typically exploited by state-owned firms; it is difficult for investors to trust information received from companies listed on China's stock market. Insider trading has been a persistent problem in China's equity market and pump-and-dump schemes are common.¹⁶⁷ As a result, despite China's rapid economic growth over the last decade, equity prices in the aggregate have barely changed from their levels during that period. The net result is that China's equity market tends to be difficult terrain for institutional investors and those trying to invest based on the fundamentals of the companies involved. Instead, what often drives the equity market are the activities of short-term retail investors driven by policy-related signals and significant changes in liquidity within the market.

In late 2014, the Chinese government began indirectly encouraging investment in equity markets, in part because few other asset markets in China looked very promising at that time. With capital outflows starting to rise, there were strong reasons to try to keep domestic savings at home. Spurred on by some of these policy signals, the looming launch of the Hong Kong-Shanghai Stock Connect program, and, in particular, an interest rate cut in late November 2014, a speculative fervor started to build late in the year, with the Shanghai Composite Index jumping from 2,293 points on October 27 to over 3,000 points on December 9, closing the year at 3,235, a gain of more than 40 percent in a little over two months. Margin loans fueled the run-up, as informal financial institutions were willing to lend funds at high interest rates so that investors could chase returns in the stock market, taking shares purchased as collateral for more equity investment lending. Over \$1 trillion in margin borrowing was likely extended by informal lenders in the first half of 2015.¹⁶⁸

After some limited attempts to talk down the market in the first quarter of 2015, which would produce significant selloffs on the day the comments were made, the bubble became too large for policymakers to effectively address. The perception was widespread that China's leadership was supporting the bull market, with a People's Daily commentary in mid-April arguing that "4,000 points was just the beginning."¹⁶⁹ As a result, the market did not view as credible any prudential regulatory measures designed to rein in margin lending or limit speculative activities, with the expectations that any announcement of tightening would be quickly reversed, because the Chinese leadership wanted the bull market to continue.

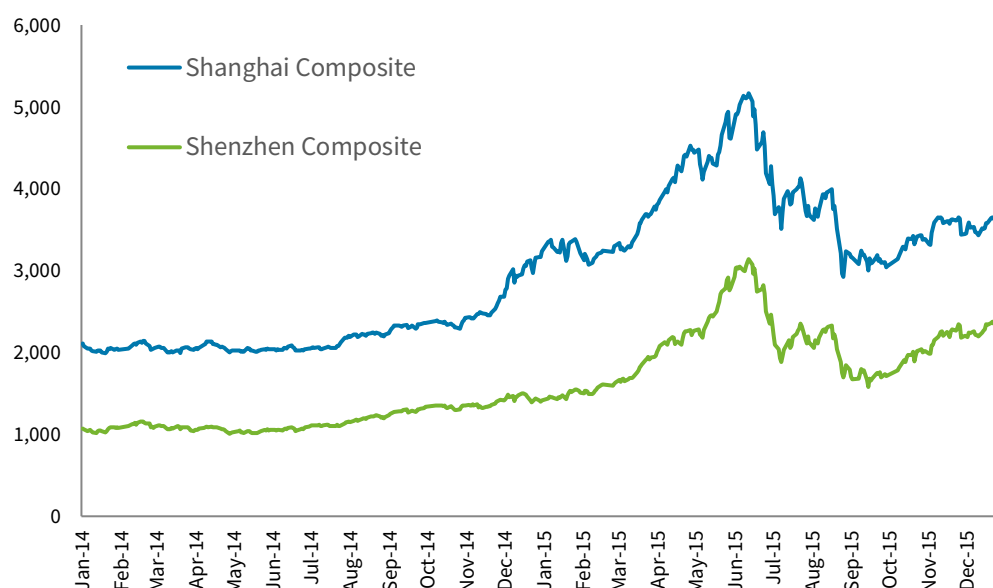
¹⁶⁷ Fraser Howie, "One Conviction Won't End China's Market Misbehavior," *Nikkei Asian Review*, February 13, 2017, <https://asia.nikkei.com/Business/Banking-Finance/One-conviction-won-t-end-China-market-misbehavior>.

¹⁶⁸ Estimate based on rise in "Claims on Other Financial Institutions" line in "Balance Sheet of Other Depository Corporations," People's Bank of China, 2015, <http://www.pbc.gov.cn/diaochatongjisi/resource/cms/2016/01/2016012917411060529.htm>, as well as data from the China Trustee Association, "Main Business Data of Trust Companies (2nd Quarter 2015)," <http://www.xtxh.net/xtxh/statisticsEN/34546.htm>.

¹⁶⁹ Wang Ruoyu (王若宇), "4000 Dian Cai Shi A Gu Niushi de Kaiduan" (4000点才是A股牛市的开端) [4000 Points is Only the Beginning for the A-Share Bull Market], *People's Daily*, April 21, 2015, <http://finance.people.com.cn/stock/n/2015/0421/c67815-26880528.html>; Eva Dou and Chuin-Wei Yap, "People's Daily Bull Run Prophecy Leaves Egg on its Face," *Wall Street Journal*, July 8, 2015, <https://blogs.wsj.com/chinarealtime/2015/07/08/peoples-daily-bull-run-prophecy-leaves-egg-on-its-face/>.

The bubble kept growing until June 12, with the Shanghai Composite Index peaking at 5,166 points, a rise of 152 percent from a year earlier. As the inevitable decline occurred, the reversal of margin lending caused a rapid acceleration, with lenders forced to liquidate shares pledged as collateral for margin loans. By June 29 the index had fallen over 20 percent to 4,053 points, officially entering a bear market. As the market crashed, the PBOC cut interest rates and banks' reserve requirements on June 27 in a move widely perceived as attempted support for the equity market.¹⁷⁰ The following weekend, Chinese officials crafted a plan to respond to the equity market's continued selloff. They lined up commitments from brokerages to collectively purchase 120 billion yuan in shares to stabilize the market, froze new share offerings, and obtained pledges from these brokerages not to sell the newly purchased shares while the Shanghai Composite Index remained below 4,500 points.¹⁷¹

Figure 5-3: Major Chinese Equity indices, Jan 2014-Dec 2015
Index, 1991=100



Source: Bloomberg.

The choice to try to defend the market at these levels, after the index had already more than doubled in the previous year, was perhaps one of the most peculiar aspects of Beijing's intervention. There was nothing particularly special about the 4,000 or 4,500-point levels. Ironically, the commitment by brokerages to hold stocks until the index reached 4,500 points created incentives that ensured the rebound would never actually rise that high. After all, if an investor knows that there will be significant selling pressure as the market reaches 4,500 points, they would have a strong incentive to sell well below that level.

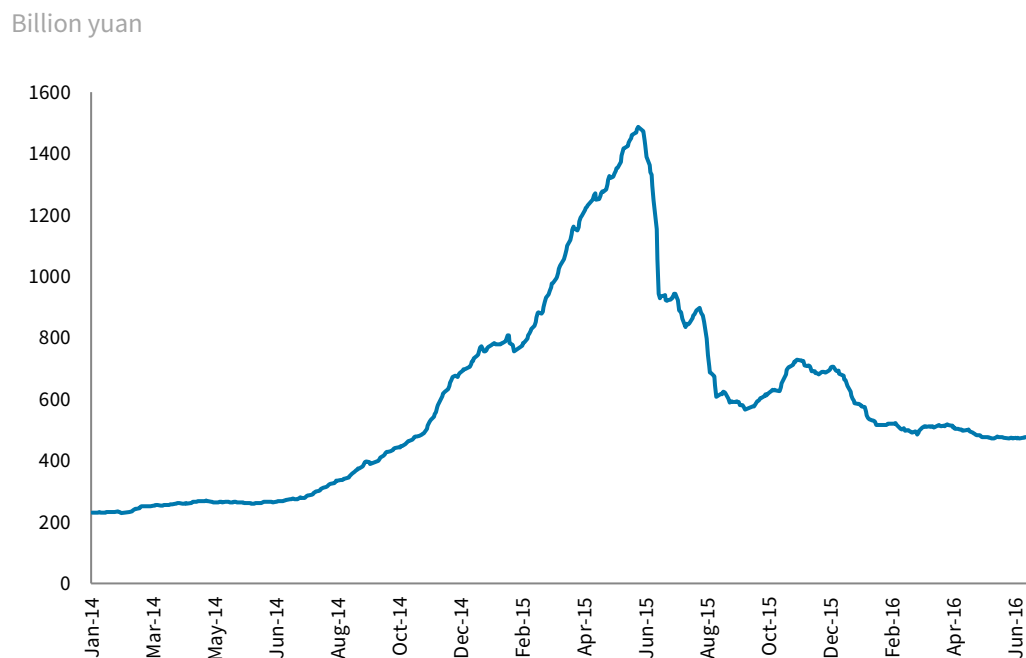
The support package outlined over the weekend of July 4-5 was ineffective and the selloff in the equity market continued through July 8, when the Shanghai Composite Index closed at 3,507, down a whopping 32 percent from the peak less than a month before. One of the factors contributing to the decline was the

¹⁷⁰ Reuters, "China central bank eases policy again to support economy," June 27, 2015.

¹⁷¹ Keith Bradsher and Chris Buckley, "China Moves to Stabilize Stock Markets; Initial Offerings Halted," *New York Times*, July 4, 2015, <https://www.nytimes.com/2015/07/05/business/fund-in-china-aims-to-stabilize-stock-markets.html>.

suspension of trading of a significant number of shares amidst the downturn. As a result, covering margin loans became more difficult because shares pledged as collateral could not be liquidated. The consequence was that investors and margin lenders were forced to sell everything else, even higher-quality equities, to meet the demand for cash to repay margin loans.

Figure 5-4: Outstanding Margin Transactions in the Shanghai Stock Exchange, January 2014-June 2016



Source: Shanghai Stock Exchange.

At this point, Beijing decided to dramatically increase its administrative controls over the equity market. Reports began to circulate indicating that Beijing considered the performance of the stock market a national security issue, that hostile foreign forces were involved in the selloff, and that negative news about the market’s performance was to be censored.¹⁷² In a few cases, financial reporters were arrested for “spreading rumors” related to the market, even though they were primarily reporting the events that had actually occurred.¹⁷³ The clear intent was to try to discourage any negative news coverage. Instructions were handed down to brokerages not to process large sell orders, or, in some cases, any sell orders at all.¹⁷⁴ The central bank was asked to lend as much as 2 trillion yuan (the actual amount remains unconfirmed) to an institution called the China Securities Finance Corporation, which was then tasked with buying stocks to stabilize the market.¹⁷⁵

¹⁷² Simon Denyer and Xu Jing, “In China, Hostile Foreign Forces Blamed for Bursting Stock Market Bubble,” *Washington Post*, July 2, 2015, <https://www.washingtonpost.com/news/worldviews/wp/2015/07/02/in-china-hostile-foreign-forces-blamed-for-bursting-stock-market-bubble/>.

¹⁷³ Emily Rauhala, “China Pins Market Plunge on Financial Journalist, Airs ‘Confession’” *Washington Post*, August 31, 2015, https://www.washingtonpost.com/news/worldviews/wp/2015/08/31/china-pins-market-plunge-on-financial-journalist-air-confession/?utm_term=.a35268cba290.

¹⁷⁴ See, for an example of the market discussion at this time, Patrick Chovanec, “China Destroyed Its Stock Market in Order to Save It,” *Foreign Policy*, July 16, 2015, <https://foreignpolicy.com/2015/07/16/china-destroyed-its-stock-market-in-order-to-save-it/>.

¹⁷⁵ Bloomberg News, “China Securities Finance Said to Have Up to \$483 Billion On Tap,” *Bloomberg*, July 17, 2015, <https://www.bloomberg.com/news/articles/2015-07-17/china-securities-finance-said-to-have-up-to-483-billion-on-tap>.

On July 9, the government's heavy administrative intervention in the market delivered a long-awaited stabilization. With only large buy orders being processed, usually to purchase the shares of large state-owned firms, and market rules generally suspended, the market rallied to 3,878, up 10.6 percent in two days. The immediate panic had been stopped, but Beijing had effectively closed the market to create the appearance of a rally. As trading suspensions of shares began to be lifted, investors rushed to liquidate their holdings, essentially exiting the market at the government's expense because the China Securities Finance Corporation continued buying. Rather than relying on fundamental market signals or economic data before deciding whether to enter or exit the market, investors simply watched whether or not government entities were buying.

In the end, the intervention did little to stem the stock market's decline. By August 26, after the PBOC surprised the market with a depreciation of the yuan earlier that month, the Shanghai Composite Index closed at only 2,927 points. It closed just above 3,000 points a month later in September, but the index's current value is still around 20 percent below the level at which Beijing decided to intervene to prop it up in 2015.

The critical question that emerges from the government's experiment in supporting the equity market is why it was necessary at all, and what Beijing's precise objective was in trying to drive the Shanghai Composite Index higher from the 3,500-point level. The case for doing nothing was actually quite strong. First, China had seen stock market booms and busts before, notably in 2007 when the Shanghai Composite hit its all-time high of 6,092 points before falling to a low of 1,706 during the global financial crisis a year later. Second, there was little systemic financial risk involved with the bursting of the equity market bubble in 2015. Certainly, margin lenders and speculators were going to suffer and perhaps go bankrupt, but they had also taken on considerable risk in the first place. Should there have been any contagion in important financial institutions, the PBOC stood ready to provide liquidity as needed (just as the central bank provided it to the China Securities Finance Corporation to purchase stocks). While a sharp drop in the equity market may have been negative for overall sentiment about the Chinese economy and may have triggered additional capital outflows, the intervention did not resolve those problems and may have actually exacerbated them.

Third, there was little macroeconomic significance to either the rise or fall of the equity market in China. Investors in China's equity market are only a small portion of the Chinese population, with perhaps no more than 4-7 percent of households and less than 10 percent of total household wealth involved.¹⁷⁶ At the time the equity market bubble was inflating, China's industrial output was already weakening, reaching a trough around the second quarter of 2015, well before the bailout occurred. While the loss of household wealth accompanying the equity market bust may have had second-order effects on the economy, the impact would have been relatively minor given the limited degree of participation in the market. In addition, allowing speculative excess to unwind may have sent a powerful signal that Beijing was permitting market rules to operate freely, regardless of the consequences; it could have been a meaningful reform-oriented signal that China was committed to allowing the market to play a more decisive role in the economy, as promised in the 2013 Third Plenum Decisions.

¹⁷⁶ See, for example, Arthur Kroeber, and Victor Shih, "How Will China's Stock Market Drop Affect the Rest of Its Economy?" *Foreign Policy ChinaFile*, July 31, 2015, <https://foreignpolicy.com/2015/07/31/china-stock-market-economy-assets-investors/>; Scott Cendrowski, "Here's What You May Not Know About the Chinese Stock Market," *Fortune*, September 2, 2015, <http://fortune.com/2015/09/02/heres-what-you-may-not-know-about-the-chinese-stock-market/>.

Instead, Beijing reacted as if it were vitally important that the equity market receive explicit government support, even at price levels that were difficult to sustain. The logic of this support was clearly more political than economic, but there were meaningful economic consequences of that decision. When the first discussions of explicit government support for the market took place on the weekend of July 4-5, China's financial technocrats, including PBOC officials and Finance Minister Lou Jiwei, were reported to have opposed intervention.¹⁷⁷ It was China's top political authorities and Premier Li Keqiang who favored more direct action. The fact that the run-up in the equity market was credited in no small part to government encouragement, in the form of the People's Daily editorial and other signals, may have tied Beijing's hands to a certain extent. While this is unknowable, Li could have felt his own personal credibility was on the line, and he may have been blamed within elite Chinese political circles for encouraging a boom-bust cycle in the equity market. There may have also been a more indirect political motivation for China's leaders to maintain the perception that the leadership could still control key outcomes. The heavy media coverage of the stock market's rise, both within China and internationally, may have provided the leadership with an additional incentive to demonstrate the extent of its control or at least to have some concrete policy response to an issue receiving such extensive coverage. The ultimate logic that compelled Beijing's response may never be known, but it was more likely dictated by political factors than economic concerns.

The consequences of Beijing's intervention were readily apparent. The bailout allowed speculators in China's equity market to exit their positions at the government's expense, at a cost of around 1-2 trillion yuan in indirect subsidies to Chinese households (most of whom were wealthier) and institutional investors. This created a powerful signal to the market that the government would step in if there was any significant market instability, thereby reinforcing risk appetite throughout the financial system. Uncoincidentally, a rebound in China's property market began at the same time as the bailout of the equity market, with investors replacing one form of speculation with another. In addition, the equity market bailout cost the Chinese leadership considerable credibility in international financial circles, given the blunt administrative measures that it employed at great cost for only minimal benefit. Nobel laureate Paul Krugman commented in an op-ed in late July 2015 that the Chinese leadership was "in the process of demonstrating . . . that the nation's rulers have no idea what they are doing."¹⁷⁸ The moves dramatically set back the willingness of foreign investors, particularly institutional investors, to deploy capital in China's equity markets because of the widespread and justified perception that China could change the rules of the game at any time.

Administrative tools were helpful in accomplishing Beijing's objective, if one assumes that the objective was simply to limit the decline of the equity market for a month at significant fiscal and reputational costs. More generally, the equity market bailout highlights the limits of administrative interventions in markets where there are large numbers of participants that Beijing cannot necessarily control. The attempt to exert control required the use of extremely blunt instruments that ended up significantly reducing the ability of the stock market to allocate capital overall and reduced the attractiveness of investing in the equity market for both foreign and domestic investors. The conditions that required the bailout of the equity market are similar to another, more important asset market in China that Beijing has struggled to control: residential housing.

¹⁷⁷ An account of disagreements at the July 4 meeting is contained within Lingling Wei, "China's Response to Stock Rout Exposes Regulatory Disarray," *Wall Street Journal*, August 4, 2015, <https://www.wsj.com/articles/chinas-response-to-stock-rout-exposes-regulatory-disarray-1438670061>.

¹⁷⁸ Paul Krugman, "China's Naked Emperors," *New York Times*, July 31, 2015, <https://www.nytimes.com/2015/07/31/opinion/paul-krugman-chinas-naked-emperors.html>.

THE SEALAND SECURITIES ENTRUSTED BOND SCANDAL OF DECEMBER 2016

After the equity market's boom and bust, China's economy recovered in the summer of 2016, helped by a strengthening global economy and a weaker U.S. dollar, which eased some of the pressure on China's currency. In early 2016, the persistence of low short-term money market rates (see Chapter 2) had encouraged the rapid growth of informal financing channels. Rather than chasing returns in the now stagnant equity market, NBFIs started to speculate in a number of different sectors, including higher-risk loans to property developers and other financial institutions, as well as in bond and commodities markets.

After the government's deleveraging campaign began in earnest in August 2016, with the PBOC starting to guide short-term repo rates higher to discourage leveraged positions in speculative asset markets, some NBFIs saw the value of their leveraged bond holdings drop sharply. One increasingly common form of these transactions was a so-called entrusted bond contract, in which a securities firm would add to leverage in a bond transaction by asking a third party to buy the bonds on the firm's behalf, with the securities firm repurchasing the bonds at a later date. The problem with such transactions arises when bond prices fall, as they did after Beijing started guiding short-term money market rates higher in late 2016.

As the market began to recognize the risk inherent in these contracts, a smaller securities firm, Sealand Securities, abruptly defaulted on one of its entrusted bond contracts with Bank of Langfang, a small city-level commercial bank in Hebei province. Sealand claimed that its contract with Bank of Langfang to buy back some entrusted bonds that had fallen in price was forged, and so they refused to honor the contract and repurchase the bonds at a loss.¹⁷⁹ Sealand's action touched off a general panic in the bond market. Once again, counterparty risk emerged, and the market struggled to price this risk, as anyone engaged in leveraged positions in the bond market started to question whether their entrusted bond contracts would be honored.

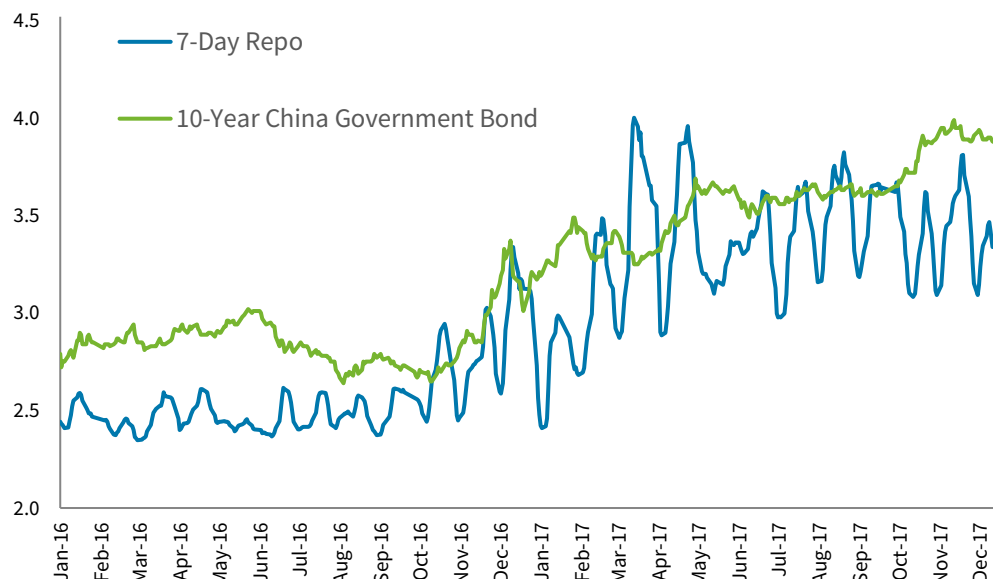
The pace at which these risk concerns spread through the market was astonishing given the small and insignificant nature of the players involved. Within days China's bond market essentially stopped functioning, with the bond futures market forced to suspend trading on December 15, 2016.¹⁸⁰ Because many NBFIs were heavily exposed to the risks of declining bond prices, only a small increase in risk aversion was necessary to trigger a significant adjustment in bond prices and short-term interest rates. Over the week of the scandal, China's 10-year government bond yield rose 30 basis points a significant move, while the 7-day repo rate rose around 70-80 basis points.

¹⁷⁹ Reuters staff, "China's Securities Regulator Probes Sealand Sec amid Bond Scandal," Reuters, December 20, 2016, <https://www.reuters.com/article/china-sealand-bond/update-1-chinas-securities-regulator-probes-sealand-sec-amid-bond-scandal-idUSL4N1EF1R8>.

¹⁸⁰ Yifan Xie, John Lyons and Min Zeng, "China Halts Trading in Key Bond Futures as Panicky Investors Sell Securities," *Wall Street Journal*, December 15, 2016, <https://www.wsj.com/articles/china-halts-trading-in-key-bond-as-panicky-investors-sell-securities-1481803121>.

Figure 5-5: Interbank Bond Yields, January 2016-December 2017

Percent



Source: Bloomberg.

To calm the market, China’s financial technocrats, led by the China Securities Regulatory Commission (CSRC), focused on Sealand Securities, assembling all of the counterparties of the troubled firm. The contracts in question comprised a considerable portion of Sealand Securities’ assets, so the solvency of the firm itself was in question. A meeting was convened in late December and Sealand agreed to take responsibility for the entrusted bond contracts. Its losses were spread among several counterparties, with the CSRC administering the process.¹⁸¹ The PBOC eased market tensions by increasing short-term liquidity injections. The actions were relatively successful in the short term as money market rates and key bond yields fell by the end of the year.

The implications of the scandal, however, were significant. Beijing had seen that even limited non-bank exposure to risky assets in unregulated financing channels could create immediate risks for the stability of the entire Chinese financial system, requiring intervention to stabilize the system. Yet Beijing’s actions reinforced market expectations that there would be some form of policy support from the government that would bail out even speculative positions taken by unregulated financial institutions. Administratively imposed negotiations among counterparties of troubled institutions were effective because the players involved were relatively small. But the government toolkit used in the Sealand case would not have been as effective, and might not have worked at all, if the financial institution facing liquidity difficulties had hundreds of counterparties, which would happen if even a smaller bank ran into similar difficulties.

Lessons from Beijing’s Administrative Interventions

This historical record provides a reasonable indication of the types of administrative tools that Chinese authorities have at their disposal in the event of a financial crisis, as well as their likely effects. Beijing can

¹⁸¹ Reuters staff, “China’s Sealand Signs Deal to Resolve ‘Forged’ Bond Dispute,” Reuters, December 27, 2016, <https://www.reuters.com/article/china-sealand-bonds-idUSL4N1EM0EE>.

direct the central bank to lend money to a financial institution with liquidity problems, without collateral if necessary. Authorities can instruct policy banks to lend to money market participants to bring short-term rates down. Beijing can direct brokerages to buy stocks and refuse large sell orders to prop up the market. And regulators can arrange negotiations among counterparties of troubled financial institutions and arrange resolutions of distressed firms, if necessary. This list is not exhaustive, as Beijing has many more hypothetical administrative tools at its disposal in the event of future episodes of financial distress.

None of the tools used by Beijing in managing financial stress over the past decade, however, are unique to China. While there are legal obstacles that may prevent governments in developed markets from using such blunt administrative interventions in financial markets, political authorities in emerging and developing economies have used similar tactics in the past. Even in developed markets, a crisis can lead to temporary suspensions of market rules and unorthodox interventions to stabilize market expectations. The negotiations between the U.S. Treasury, the Federal Reserve, and several distressed banks about emergency capital injections and acquisitions during the global financial crisis in 2008 are a notable example.

What Beijing's experience with market interventions does highlight, however, is that the nature of the crisis has a significant impact on the utility of administrative controls. Market panics that involve thousands or millions of individual investors cannot be as easily corrected through administrative means without broader consequences for the operations of the markets involved. The resolution of these types of panics involve resetting expectations in markets more broadly. Signaling to the market through policy changes and messages in the media, rather than by direct intervention, is likely to be more effective and less costly. Beijing's intervention into the equity market essentially changed the nature of the market itself, at least temporarily. In contrast, crises involving just a few financial institutions and their counterparties are more amenable to administrative interventions, particularly if the problem is a short-term liquidity-related issue that can be ameliorated by funding from the central bank.

Dangers in China's Property Market

The limits of political intervention to stabilize the financial system are particularly relevant for China's most important asset market: the property market. China's property sector has generated considerable media attention over the past decade, given the rapid acceleration of construction activity and the rise in prices since the market was first liberalized in 1998. There have been few meaningful corrections in China's property market that have lasted longer than six to nine months, which has made it a powerful draw for household and corporate investors. China's interest rates have been relatively low for years, and expectations that property prices will continue to rise have remained strong, increasing the incentive to invest. Real estate reflects a significant proportion of households' net worth, between 40-80 percent in most surveys.¹⁸² Fears of an expanding bubble in both property supply and prices have accompanied China's credit expansion over the past decade.

The equity market bailout has significant implications for any future distress in China's property market. As with equities, there has been an implicit assumption of government support for China's property sector for years, primarily because local governments depend so heavily upon land sales and land prices for financial stability. Investors have long assumed that the sector's importance for local governments

¹⁸² Gan Li, "Findings from China Household Finance Survey," Texas A&M University and Southwestern University of Finance and Economics, January 2013, <http://people.tamu.edu/~ganli/Report-English-Dec-2013.pdf>; Xie Yu and Jin Yongai, "Household Wealth in China," *China Sociological Review*, vol. 27, no. 3, (2015), 203-299, <https://doi.org/10.1080/21620555.2015.1032158>.

provides a basic level of security for housing prices, especially relative to other markets such as equities. As in the case of the equity market, the assumption that Beijing will intervene to support the property sector, if necessary, has been a key contributing factor to rising property prices.

At the same time, the property market is similar to the equity market in that there are far too many market participants for Beijing to regulate using blunt administrative measures. Instead, Beijing has attempted to regulate market bubbles by imposing outright restrictions on purchases, such as tightening down payment requirements and mortgage loan availability. However, even when applied strictly, these administrative controls have done little to slow the rise in housing prices in China's major cities over the longer term. As with the equity market, these restrictions have effectively curtailed normal market activity in an attempt to shape market outcomes, but the effects have only been temporary.

Central government and local government goals for the property market are also divergent: the central government in Beijing clearly wants to avoid a broader housing market crash but would like to see property prices remain under control, without rapid increases that jeopardize housing affordability. Xi Jinping's recent economic speeches have included the phrase, "Houses are for living, not for speculation."¹⁸³ Local governments, instead, are more likely to directly support property prices should they fall, as they continue to need to sell land to developers at rising prices to raise revenue and manage their significant local government debt burdens, even if speculation and investment-driven demand are necessary to support the market. Because of some of these diverging political incentives, Beijing's sustained attempts to control housing prices and speculation are not viewed as credible.

As a result, the real estate market has been difficult for Beijing to control as prices have risen, and will also be very difficult to control if property prices start to fall. In the event that property prices decline for an extended period, Beijing is unlikely to be able to orchestrate a bailout using a special fund to purchase properties assets en masse, as it did with the equity market. Every individual property investor will only be concerned with the prices of their units specifically. If prices are expected to fall, demand for properties will slow, and it will be extremely difficult for Beijing to recreate this demand, even though owner-occupiers may step in at lower price levels. The property sector will be resistant to clear management via administrative controls, just as China's equity market was in 2015.

Beijing has a large number of administrative controls at its disposal to manage the consequences of a financial crisis, although some asset markets are more easily influenced than others. None of those tools are unique to China or China's form of bureaucratic administration, even if Beijing may be more willing to use them liberally relative to other governments. What does appear more specific to China is one of the most powerful factors that can help avert a crisis: the widespread belief among market players that selling in a panic is unnecessary because the government will always be there providing some form of support.

¹⁸³ Bloomberg News, "Housing Should Be for Living In, Not for Speculation, Xi Says," Bloomberg, October 18, 2017, <https://www.bloomberg.com/news/articles/2017-10-18/xi-renews-call-housing-should-be-for-living-in-not-speculation>.

Chapter 6 | The Benefits of Credibility

On August 6, 2018, Beijing's financial district saw a rare scene in modern China: protesters, perhaps as many as 10,000, who arrived at the offices of regulatory agencies to petition against their investments losses in a number of peer-to-peer lending platforms that had recently collapsed, leaving investors with few options. Before any demonstration began, however, the would-be protesters were met by thousands of security personnel, who promptly loaded them onto buses and escorted them away from the district. Other demonstrators were reportedly detained before arriving in Beijing, based on social media posts.

Peer-to-peer (P2P) networks were among the riskiest and most lightly regulated corners of China's informal financial system. Investment products sold on the failed platforms regularly offered rates of return above 10 percent for even short-term investments, and there were no explicit government guarantees on any of the products or platforms. Yet despite the risks that these investors accepted—knowingly or naively—in making these investments, thousands of petitioners were convinced that, at great personal risk, a demonstration was still likely to be effective in recovering at least some of their losses because the government would have no choice but to stand behind the underlying investment products. That belief may have been reasonable in the context of China's recent history, when even defaulted financial assets received support.¹⁸⁴ Yet that widely shared belief in the political bargain within China's financial system had changed, as Chinese authorities now had neither the capacity nor the intention to support these Ponzi-like P2P instruments. That signal was not sent through market pricing, but through the deployment of security services.

The story of the peer-to-peer lending protests underscores the power of the Chinese government's credibility to stabilize financial markets, as well as the fragile nature of that credibility. Amidst the rapid growth in credit in and the complexity of the financial system in recent years, credibility is the most significant factor that has prevented China from facing a severe crisis. Credibility by itself is a powerful weapon against financial crisis, with credible institutions (both those controlled by governments and by private-sector actors) able to prevent rapid asset sales under financial distress or reassure market participants that reducing risk is unnecessary in the first place because meaningful resolution methods are ready to be deployed, if necessary. Even if financial risks are rising, financial market participants who believe the system will remain relatively stable can continue lending to one another, even though the net result is to increase the overall level of risk within the system.

The credibility of a government's policy response can also drive asset purchases independently, besides simply preventing rapid asset sales. For example, Chinese officials recently announced the creation of a new city south of the capital, to be named Xiong'an New Area, which will host several central government functions relocated from the city of Beijing. Because plans endorsed by the central government are generally expected to be carried out, the announcement led to a rapid increase in property purchases in the new area in anticipation of rapid price gains.¹⁸⁵ If government plans were generally ineffective or changed frequently, such announcements would be far less likely to encourage such purchases. In financial markets, as well, the assumption that the government will do as it says, and intervene when the

¹⁸⁴ There is a similar discussion of the default of investment products in the Fanya Metals Exchange in Dinny McMahon, *China's Great Wall of Debt* (Boston: Houghton Mifflin Harcourt, 2018), 112-115.

¹⁸⁵ BBC News, "Xiongan District Becomes Hot Property in China," April 3, 2017, <https://www.bbc.com/news/world-asia-china-39475839>.

market is under stress, is both necessary for markets to function normally, but also serves as an incentive to encourage risk-taking.

Hyman Minsky pointed out the downside of these assumptions of financial stability leading to additional systemic risks. Minsky argued that because current financial decisions are based on assumptions about risks based on experience from the recent past, they tend to be highly pro-cyclical: periods of weak economic growth lead to weak lending activities, while periods of stronger growth encourage additional lending and investment.¹⁸⁶ Eventually, financial actors generate credit and investment in excess of fundamental demand in an economy, and the realization that this has occurred strikes all actors at once, in a so-called “Minsky moment.” During the Minsky moment, financial actors cut back sharply on risk, leading to a contraction in credit and a sudden slowdown in investment and overall economic activity. China may have faced a few “Minsky moments” in recent years; the interbank market crisis in 2013 or the Sealand Securities scandal in 2016 are examples. Nonetheless, Minsky’s broader point is that financial stability tends to be destabilizing over time because financial decisions about future output are based on risk scenarios seen in the recent past. When few risks are apparent, there is incentive for additional risk-taking. Minsky argues that because this process is inevitable in financial markets, one of the purposes of government action should be to minimize the severity and impact of these cycles through regulation and macroprudential measures.

In China, crisis has been avoided so far largely because of the expectation that the government will step in to resolve any financial instability. As a result, periods of financial stress with the potential for crisis have been relatively short-lived. The net result of those actions, as detailed in Chapter 2, has been a continued growth of credit and bank assets beyond the needs of the real economy. Government credibility has played a critical role in keeping the system stable, but at a long-term cost of exceeding the state’s capacity to respond to significant financial stress. However, the concepts of state capacity and credibility are quite flexible and depend upon the perceptions of investors. Markets do not have ready tests in real-time that can determine whether the level of risk will exceed the capacity of the state to respond, even though the government’s credibility depends upon a realistic expectation of a sufficient response.

China’s government would clearly be seen as credible in responding to a financial crisis involving \$10 billion in assets but may not be seen as credible in responding to one involving \$10 trillion in assets. Yet the tools Beijing would use to respond to those crises would probably be roughly the same, and the exact position on the spectrum between \$10 billion and \$10 trillion at which Beijing would become unable to respond effectively is very difficult for markets to define. As a result, perceptions of credibility matter and governments act carefully to cultivate them. This is particularly true for the Chinese Communist Party, an institution that has worked deliberately to enhance perceptions of both its credibility and control, as the heavy-handed response to the August 6 peer-to-peer lending protests demonstrates.

Defining Credibility in China’s Financial System

As an asset for managing financial crisis risk in China, credibility needs to be defined carefully. This is difficult, but for the purposes of this study, we will define credibility as: the reasonable expectation of a meaningful and sufficient response to financial stress from China’s government or government-led institutions. While a bailout or compensation for investors might not occur in all instances of financial stress, such as a default of a small private company or a tiny rural credit cooperative, market participants

¹⁸⁶ Hyman Minsky, *Stabilizing an Unstable Economy* (New York, McGraw Hill, 2008).

in China generally have a reasonable expectation that there will be some response from Chinese authorities in the event of problems. Based on the historical record, they expect this government response will have a meaningful and significant outcome in stabilizing conditions and restoring regular market functions over time.

Credibility in this context is distinct from any asset guarantees, either explicit or implicit. A guarantee implies that the holder of the asset will be made whole based on the original contracted arrangement in which the asset was purchased. A credible response does not require an explicit or implicit guarantee, it only suggests that government authorities or relevant institutions will take some action to meaningfully improve the operation of the market environment in which assets are valued, or at least restore them to a status quo ante. While credibility is similar to a guarantee, in that some resolution is expected, the term is broader and encompasses an expanded range of actions relative to simply paying distressed contracts in full. In the Sealand Securities case, for example, market participants were quickly reassured once the CSRC entered negotiations with the firm's counterparties, even if they had no explicit guarantee that the original contracts would be honored.

Interestingly, credibility in China does not necessarily mean that government messages to the market, or their communications in general, are always believed. To borrow a phrase from contemporary U.S. politics, financial market participants often take Chinese authorities' messages very seriously, but not literally. One of the most surprising elements in considering the credibility of Chinese government messaging is that one of the most critical communication tools with the market—economic data—is widely disbelieved. In fact, virtually no one active within China's financial markets has significant confidence in the economic data that China produces, even though virtually everyone understands that this data is a critical component of the Chinese authorities' messaging that the economy remains relatively stable. China's overall governance of its financial markets can still be credible to market participants even if other government messages related to public health issues, as one example, are widely disbelieved.

Credibility in the context of China's financial system is driven, ironically, by the widespread public perception of the Chinese government's vulnerability and sensitivity to political instability. Because the one-party rule by the Chinese Communist Party is perceived to be relatively unstable, even by Chinese leaders themselves, market participants can be more confident that Chinese authorities will intervene in the case of financial instability. Chinese leaders' long-standing and widespread public insistence on the importance of maintaining stability at all costs has fed the clear expectation in financial markets that any instability will result in a quick response by government authorities. Even though few in China believe the specific economic data releases that shows the economy at a high and stable rate of growth, virtually everyone believes that the Chinese government will respond to threats by acting to keep financial markets stable. The credibility of China's authorities is based on their own vulnerability to political pressure and concern about political instability.

This dynamic has resulted in some extremely counterintuitive events in China's financial system in recent years. During the interbank market crisis in June 2013, for example, short-term money market rates spiked to 20-30 percent, indicating that banks lacked the liquidity to lend to each other, even overnight. This was a signal of considerable market panic, and a typical reaction to such events in developed markets might be a "flight to quality," or a rapid increase in the attractiveness of "safe" assets, such as government bonds, as occurred during the global financial crisis in 2008. In China, however, the market had the opposite response. Rather than a "flight to quality," Chinese investors embarked on a "flight to risk," eagerly pouring

funds into high-risk wealth management products offered in late June 2013 at rates above 8-10 percent.¹⁸⁷ Ordinarily, market pricing would be communicating that these products were far too risky. However, Chinese investors saw them as extremely attractive, based on an expectation that any risk was simply being mispriced by the market because there was simply no way that Chinese authorities would back away from a defense of the financial system.

In defining credibility as a key asset for Chinese authorities in combating financial stress, it is important to emphasize that it is essentially a binary variable: a potential response from China's authorities is either credible or it is not. There can be some degrees of credibility, but generally the valuations of assets in financial markets depend upon this binary judgment: either a policy reaction is expected and judged appropriate in response to distress in a certain asset market, or it is not.

In addition, the outlook for China's credibility is highly asymmetric across China's financial markets: credibility is more likely to fall than rise in the future. Most assets and financial markets are assumed to enjoy some form of central or local government guarantees, even including the risky peer-to-peer networks that sent demonstrators to Beijing to protest. Yet backing away from those guarantees is essential for the financial reform goal of winding down the widespread moral hazard within China's financial system. Therefore, if there are likely to be significant changes in China's credibility in the coming years, the risks are asymmetrically tilted toward the extension of fewer government guarantees and toward less credible government responses over time. Because of the interbank market crisis of June 2013, the equity market bailout of 2015, and the Sealand Securities scandal of 2016, there is currently a clear expectation that there would be some degree of government intervention in the event of financial market stress.

These two qualities—the binary nature of credibility in any particular financial market and the apparent extension of government credibility to the vast majority of assets in China's financial system—are critical to understanding the importance of credibility in maintaining stability within China's economy to date and the risks to that stability in the future.

Should changes to the Chinese government's credibility occur, which is an inherent goal of China's financial reform plans, they are far more likely to weaken, rather than strengthen, the market's perceptions of the credibility of Chinese authorities, particularly for domestic market participants. One opportunity China has to strengthen credibility is within the audience of foreign investors, who could be encouraged to invest more by clear evidence of an enhanced commitment by Chinese authorities to market-determined forms of adjustment. Yet extensive government interventions in markets over the past decade have pummeled the credibility of market mechanisms to many financial market investors. Because foreign investors are currently only a small proportion of participants in China's financial system, domestic investors' perceptions of credibility are far more important for its overall stability. China is more likely to lose credibility than it is to gain it in the period ahead, simply because credibility is already so strong and has been extended to a significant proportion of China's asset markets.

The Political Bargain in China's Financial System Has Changed

Just as the changes in the fundamentals of China's financial system discussed in Chapter 2 have been underappreciated by both domestic and external observers, there have been significant but

¹⁸⁷ See, for example, Bloomberg News, "Wealth Products Threaten China Banks as Ponzi Risk Swells," Bloomberg, July 16, 2013.

underappreciated political consequences to these changes as well. It is relatively common to hear the argument that the Chinese Communist Party depends upon economic performance for its monopoly on power and so has been aggressive in defending China's record of persistent economic growth. The widespread assumption that GDP growth data are "smoothed" is generally interpreted as a sign of the importance of economic performance to the Party's political legitimacy.

There is an extensive debate on whether or not the sources of political legitimacy for the Chinese Communist Party have changed since Deng Xiaoping's and Jiang Zemin's time, when a record of "delivering the goods" economically, along with a reliance upon popular nationalism, took up the slack for the weaker appeals of ideological Maoism.¹⁸⁸ The key argument relevant to this study is that there is still considerable political significance in the stability of the economy and the financial system overall, and the Chinese leadership has acted consistently in the past to defend that stability, even at the cost of efficiency. Based on their policy choices over the past several years, Chinese leaders clearly acted as if economic performance and financial stability were critical factors for their political survival. However, the political bargain necessary to achieve that stability and the Party's political objectives have also changed considerably over the past few years, and the Party's bargain with Chinese households and corporates has become more fragile.

While GDP growth rates may be useful in newspaper headlines and in official communiques to portray economic progress, political legitimacy for individual Chinese households and corporates depends more upon the state of their own pocketbooks and the outlook for their standards of living. At the very least, losses of household income over time would probably have a significant negative impact on support for the Party's stewardship of the financial system. But there has been a strong record of performance throughout the last decade. Household finance surveys continue to show rising standards of living and disposable income for Chinese citizens, even though inequality is increasing as well.¹⁸⁹ The rising property market has played a critical role in this process, along with the returns from riskier financial products such as WMPs.¹⁹⁰ The basic fact remains that in a rapidly expanding financial system, it has been difficult for Chinese households to lose money investing in virtually anything, outside of trying to ride the rollercoaster of the equity market—and even then there was some government support.

However, most improvements in standards of living have been delivered through asset price growth and returns on financial assets rather than wage growth. Property prices nationwide have risen at around twice the pace of national income growth in real terms over the past decade, as Chen and Wen (2014) have highlighted, based on different methods of calculating national house price appreciation in China from

¹⁸⁸ There is a much larger academic debate on the sources of legitimacy of the Chinese Communist Party and the extent to which economic performance is still important, which we are not attempting to engage in here. Some have argued for the increasing importance of nationalism and that economic performance may be independent of legitimacy. See, for example, Zhu Yuchao, "Performance Legitimacy and China's Political Adaptation Strategy," *Journal of Chinese Political Science*, vol. 16, no. 2, (June 2011), 123-140; Chu Yun-han, "Sources of Regime Legitimacy and Debate Over the Chinese Model," *China Review*, vol. 13, (Spring 2013), 1-42; Heike Holbig and Bruce Gilley, "Reclaiming Legitimacy in China," *Politics and Policy*, vol. 28, no. 3, (June 2010), 395-422; Zeng Jinghan, "The Debate on Regime Legitimacy in China: bridging the wide gulf between Western and Chinese scholarship," *Journal of Contemporary China*, vol. 23, (2014), 612-635.

¹⁸⁹ Gan Li, China Household Finance Survey, January 2013, Wang Xiaolu's work summarized within, "Analysing China's Grey Income," Credit Suisse, August 6, 2010.

¹⁹⁰ Allianz Global Wealth Report, 2017, https://www.allianz.com/v_1506497732000/media/press/document/AGWR_17-Report_EN.pdf. The Allianz report notes that while Chinese financial assets had been growing strongly, at 17.9 percent in 2016, the proportion of bank deposits within household financial assets had declined by almost half, from just below 80 percent in 2006 to around 40 percent in 2016. See also Xie Yu and Jin Yongai, "Household Wealth in China," *China Sociological Review*, vol. 47, no. 3, (2015), 203-299; Gan Li, China Household Finance Survey, January 2013.

Wu, Deng, and Liu (2012).¹⁹¹ Even official data from the National Bureau of Statistics shows financial asset income, which does not include gains from housing prices, rising at an average pace of 10.6 percent from 2014 to 2018, compared to wage growth of 9.1 percent (and wage growth is more likely to be overstated in this series).¹⁹² Gan Li's extensive household finance surveys consistently show high levels of household wealth dependent upon the property sector (around 79.5 percent in 2015), although a rising proportion is also linked to other financial assets.¹⁹³ Similarly, as discussed in Chapter 1, the growth of the traditional drivers of China's economy, investment and exports, have slowed, as the easier gains from integrating more of the labor force and improving productivity of marginal increases in labor and capital have been largely exhausted.

The most significant implication is that the factors contributing to the political legitimacy of the Chinese leadership have also adjusted, from the broader performance of China's macroeconomy to the performance of financial asset markets. China's economic growth has increasingly depended upon the expansion of the financial system itself, as discussed in Chapter 2. But the politically relevant manifestations of that growth apparent to China's citizenry are less related to GDP growth and wage growth and more dependent upon the stability of the financial system and its recent record of performance in powering rising asset prices. The government's response to the equity market crash in 2015 and the Sealand Securities scandal in 2016 indicate an acute political sensitivity to these tensions in financial asset markets, requiring a government response to protect even speculative positions taken by NBFIs and leveraged equity investors.

In addition, the financial system itself has been supported by a different political bargain since the Asian financial crisis. China is commonly associated with "financial repression," in that domestic interest rates were kept artificially low to subsidize the cost of credit to state-owned enterprises. For example, deposit rates were cut after the Asian financial crisis to ensure the stability and recovery of the banking system. Households lost a key source of income growth at the expense of the state companies and state banks, who were able to profit from strong net interest margins.¹⁹⁴ Households had no choice in this matter, as they had few alternatives besides the state banking sector in which to place their savings. In return, however, households generally benefited from a rapidly growing economy and expanding employment opportunities, particularly within export-oriented businesses.

China's households are no longer suffering from financial repression, at least not in the same fashion as before. Chinese households are now offered interest rates that are relatively high compared to banks' lending rates, as banks are now competing for funding sources and offering higher interest rates to entice depositors. Households can choose among products offered in the informal financial system, with greater risk (such as peer-to-peer lending products), or money market funds offering short-term interest rates that can be double those offered by banks. This high-interest funding is then lent out by banks and non-bank financial institutions to sustain the expansion of the banking system. Local governments and their associated companies are relatively insensitive to financing costs and are primarily interested in keeping projects funded and ensuring that their firms do not default. Property developers are typically willing to

¹⁹¹ Kaiji Chen and Yi Wen, "The Great Housing Boom of China," Federal Reserve Bank of St. Louis, Working Paper 2014-022C, August 2014, revised August 2016, <https://files.stlouisfed.org/files/htdocs/wp/2014/2014-022.pdf>; Jing Wu, Yongheng Deng, and Hongyu Liu, "House Price Index Construction in the Nascent Housing Market: The Case of China," National University of Singapore, Institute of Real Estate Studies, IRES Working Paper Series, September 2012, http://bizfaculty.nus.edu/media_rp/publications/xKQcD1398763224.pdf.

¹⁹² Data from National Bureau of Statistics, "Per Capita Disposable Income," from Q1 2013 to Q2 2018.

¹⁹³ Findings within Gan Li, "China's Middle Class Has Already Exceeded 200 Million," Sohu Finance, November 17, 2015, Survey and Research Center for China Household Finance, <https://chfs.swufe.edu.cn/wap/xiangqing.aspx?id=932>.

¹⁹⁴ This argument of an implicit subsidy from households to the state sector was discussed extensively in the work of Michael Pettis.

pay the higher interest rates demanded by informal lenders, especially when cut off from the formal banking system. And many of these institutions are insulated from the pressures of default by implicit or explicit government guarantees. Banks receive implicit subsidies in the form of higher lending rates than they could otherwise sustain in the absence of these implicit and explicit guarantees. As a result, households also receive subsidies in the form of higher deposit rates and interest rates on informal financial products at the ultimate expense of the state. Financial repression has been replaced by subsidized returns for China's households.

The obvious questions then are what is driving this credit demand in the informal banking system that is generating these implicit state subsidies, and why banks are willing to expand credit so aggressively despite the rising costs of securing funding from households and corporates. Here, the political logic of maintaining GDP growth as a source of political support is meaningful. Upon seeing the economy slow below targeted growth rates (until recently around 7 percent per year), China's political authorities have been willing to allow easier monetary policy conditions to maintain credit growth, even if this has required a much riskier set of funding structures for the financial system to both power new investment and manage existing debt. When local governments pushed back against financial regulations to keep credit flowing and investment underway, Beijing's response was cautious, effectively choosing to loosen the effectiveness of regulations rather than allow economic growth to slow too much. The net result has been a political commitment to sustain the riskier sources of funding for the financial system because they were necessary to keep households satisfied and economic growth rates close to targeted levels.

Political concerns have always been dominant in the operations of banking systems, even within developed economies. The work of Charles Calomiris and Stephen Haber highlights the importance of political institutions in shaping the emergence of banking systems, as well as how evolving institutions can change the fundamental bargains creating those systems.¹⁹⁵ Calomiris and Haber attempt to explain why the distribution of banking crises around the world is so non-random. Because banking essentially involves a series of contracts involving both depositors and lenders, political influences on which contracts will be honored in the event of financial stress are determinative in the construction and evolution of banking systems.¹⁹⁶ Politics, rather than efficiency, drives the evolution of banking in a process that Calomiris and Haber label "the game of bank bargains."

China's bank bargain has changed dramatically over the past decade, particularly since the shadow banking system started growing rapidly in 2012. The traditional political logic of maintaining economic performance for political support required investment-led GDP growth and a captive pool of funding, largely from China's households, in exchange for improving employment, incomes, and standards of living. Now, that political bargain depends more fundamentally on maintaining rising asset prices for China's households, as well as the stability of the financial system itself. As the foiled peer-to-peer protests in early August demonstrate, the potential for financial losses can generate political activity by angry investors demanding action by the government.

The perception of the "inevitability" of Chinese economic progress is also increasingly important as an anchor of stability in the financial system. As the financial system continues expanding relative to the size of the government's capacity to respond, government credibility will depend increasingly on the

¹⁹⁵ Charles W. Calomiris and Stephen H. Haber, *Fragile By Design: The Political Origins of Banking Crises and Scarce Credit* (Princeton: Princeton University Press, 2014).

¹⁹⁶ *Ibid.*, 28-38.

perception of strength and capacity rather than the actual fundamentals of China's economy. Credibility remains essentially a binary variable, and even as the system becomes far riskier, Chinese authorities can maintain stability by nurturing the perception that China's continued growth and capacity to respond to financial stress is an inevitable trend, even as higher rates of GDP growth become costlier to achieve.

The political bargain may change more fundamentally once again if China's GDP growth targets are revised down sharply. China is already trying to take steps in this direction, with recent leadership statements emphasizing the quality of economic growth rather than maintaining fast growth for its own sake. But the corresponding need to portray China's long-term economic growth as inevitable, and China's geopolitical ascendance as unstoppable, has also increased the political necessity of intervening to stabilize China's financial system in moments of stress. As economic growth itself has become less sustainable and increasingly dependent upon the expansion of the financial system, the Party's political bargain with Chinese households has also become more fragile, as it depends upon the stable performance of a larger set of financial asset markets. A breakdown in those markets would not only jeopardize Chinese households' support for the financial system but would also puncture the credibility of a government that depends upon the perception of sufficient state capacity and the inevitability of China's ascendance.

The change in China's political bargain underpinning the financial system also has significant implications for the distribution of credit and the recipients of government support in a crisis scenario. Some of these changes are playing out in the current deleveraging campaign, which has had the effect of contracting shadow financing channels and so adding to pressure on property developers and local government-linked companies. Even though GDP targets have not been adjusted formally, Chinese authorities appear to be more willing to see local government investment slow to improve the stability of the financial system overall. At the same time, interest rates on informal financial instruments such as WMPs and returns in money market funds are falling, but only slightly. Politically, levels of support seem to have shifted towards the stability of households and depositors and away from the stability of local governments and their companies. This marks a significant adjustment in the traditional political support structure that the Party has aimed to protect since the Asian financial crisis.

The change in China's political bargain underpinning the financial system would also imply some loss of control for Chinese authorities over the country's economic trajectory. As explained in Chapter 2, maintaining the stability of an increasingly complex and opaque set of asset markets is far more difficult than enforcing capital controls and managing loan growth administratively. The complexity and size of the financial system have expanded rapidly, but the policy tools to manage stresses have not adjusted as quickly.

Credibility depends upon the perception of control, and the Party has worked assiduously to maintain the perception of its control during periods of financial stress. Although Chinese authorities have communicated that growth will be of a different nature going forward, they have not clearly explained to markets where defaults will be tolerated and where they will be corrected. In turn, this has allowed financial market participants to develop their own perceptions of Beijing's willingness to intervene, which may be more expansive than Beijing has intended, as in the case of the protesting peer-to-peer investors. As the deleveraging campaign and financial reform efforts introduce new sources of financial risk in the coming years, Beijing may change priorities in an attempt to re-establish perceptions of control, offering implicit or explicit guarantees to certain asset markets in the event of financial system stress. The political roots of banking systems in general and the conflicted goals of governments regulating them make this

possible because governments have incentives to “behave opportunistically” in deciding which claims within a financial system are honored, in line with political priorities.¹⁹⁷

To preserve its credibility, Beijing will need to maintain the perception that China’s long-term economic growth trend is inevitable and that the government has the capacity to respond to ensure the security of asset markets in China’s financial system. As Calomiris and Haber aptly summarize, “It is hard to stay in power when you tell the electorate that the banks lost their life savings and you’re not going to do anything about it.”¹⁹⁸ Even in an undemocratic political system such as China’s, this logic is powerful. However, the credibility of China’s government in the future will be significantly affected by the necessary process of reforming China’s financial system, which requires removing the pervasive system of guarantees that has helped to power China’s growth up to this point.

The Difficult Necessity of Financial Reform

One of the most significant tests of the government’s credibility in China’s financial system will come from the process of financial reform. As mentioned previously, credibility is a binary variable, and the threshold at which the size of problems within the financial system overwhelm the Chinese state’s capacity to respond is a nebulous one. Yet because China’s financial system has expanded at a rapid rate, both in absolute terms and relative to the size of the Chinese and global economies, that point approaches. While there have been several financial crises in the past, there are no similar experiences with credit and financial system growth on the scale of China’s. This does not necessarily suggest that Chinese authorities will automatically lose the capacity to control key outcomes in the financial system, but the risk that they lose control continues to increase as the financial system expands and becomes more complex.

As a result, financial reform and the control of the growth of the financial system is a necessity, and Beijing appears to have recognized that fact. However, the growth of the Chinese financial system up to this point has been facilitated by implicit and explicit government guarantees on both the asset and liability sides of the balance sheet. Administrative controls are unlikely to be sufficient to reduce the growth rates of assets, so some companies will need to be allowed to default and declare bankruptcy to prevent new good money from being thrown after bad in an attempt to maintain unproductive “zombie” enterprises. In addition, some WMPs and other risky investment products will also need to default, with most new banking system liabilities returning to traditional bank deposits, so that the growth of credit is more closely linked to sustainable investment patterns that can generate commensurate returns rather than to the highly risky “search for yield” in more speculative asset markets. As credit growth slows, default risks will rise as certain firms are suddenly unable to refinance their debt after years of seeing their working capital lines consistently expand. Controlling the growth of the financial system will require Beijing to permit those defaults to occur, both among borrowers and investors in riskier non-deposit products.

To do this requires breaking some guarantees within the financial system. This poses a significant risk to the Chinese government’s credibility because investors’ perceptions of the likelihood of a government response to financial stress will necessarily change. As China has confronted temporary episodes of financial stress over the past 10 years, government responses have generally been both timely and reasonably effective. Official non-performing loan levels remain very low within China’s banking system (1.74 percent in 2017), bankruptcies are relatively scarce, defaults within China’s bond market are a

¹⁹⁷ Ibid, 35.

¹⁹⁸ Ibid.

relatively recent phenomenon, and there have been no bank failures in recent Chinese history.¹⁹⁹ As a result, with the value of assets in China’s banking system having expanded to over \$38 trillion, only a very small proportion of those assets have faced any significant credit risks.

Financial reform, as well as China’s deleveraging campaign, involves the explicit introduction of such credit risk into China’s asset markets so that interest rates can serve as meaningful signals for the risk-adjusted pricing of capital. Without the clear identification and pricing of such risks in China’s financial markets, speculative and risky assets would continue to grow, counteracting any effects of financial reform. Should Beijing continue with a broader reform of its financial system, it will necessarily require authorities to allow defaults in asset markets where guarantees were previously assumed to exist. Financial reform requires financial markets to price new risks on their own under the revised assumption that if any government assistance arrives it will likely be only indirect or in response to severe stress.

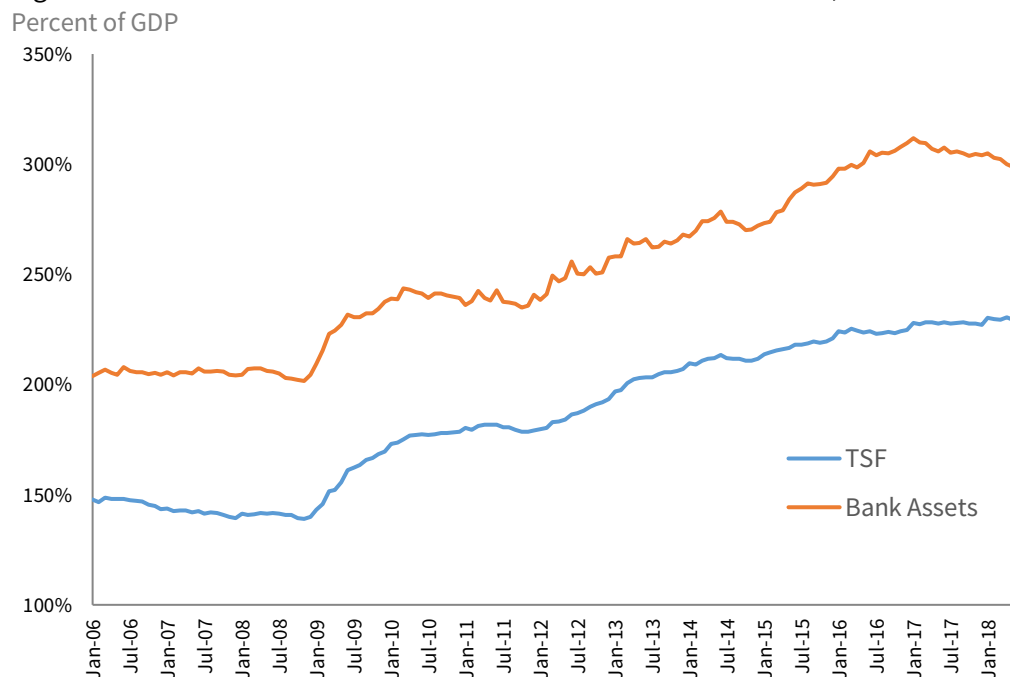
This does not necessarily mean that financial reform permanently weakens the credibility of Chinese authorities. The ultimate objective, of course, is the opposite: to enable market-based institutions and mechanisms to replace the implicit and external guarantees that are currently pervasive throughout the Chinese financial system. Over time, if implemented effectively, a more hands-off approach from China’s authorities and a strong track record of allowing market mechanisms to operate in both directions can enhance the credibility of Chinese authorities. However, the transition—from a state in which most assets bear little credit risk and are assumed to be guaranteed to a system in which market-based pricing prevails—is likely to be tumultuous, in part because of the perceived immaturity of market-based institutions. In allowing implicit and explicit guarantees in China’s financial system to proliferate, Beijing has limited the development of these market-based institutions and left them with little credibility in the eyes of market participants.

The current deleveraging campaign reflects China’s first significant attempt at serious financial reform, and Beijing’s tolerance for short-term pain resulting from these efforts will be tested in the coming months. To reduce the financial system’s reliance on an increasingly unstable liabilities structure, Beijing started to squeeze the informal financial sector by guiding short-term interest rates higher, starting in August 2016. Leveraged positions in commodities markets, bond markets, and informal loans were suddenly far more difficult to finance, and, as banks started to redeem funds placed with NBFIs, non-banks were consequently forced to sell their assets aggressively to meet the demand for redemptions. As a result, the overall pace of bank asset growth has slowed sharply, from 15.7 percent at the end of 2016 to only 8.4 percent at the end of 2017 and 6.9 percent at the end of June 2018.²⁰⁰ The financial system has stopped growing as a proportion of China’s economy, and Beijing itself took the steps necessary to force that outcome.

¹⁹⁹ Data from the China Banking and Insurance Regulatory Commission.

²⁰⁰ Data from People’s Bank of China, “Balance Sheet of Other Depository Corporations.”

Figure 6-1: Estimated Credit-to-GDP and Bank Assets-to-GDP Ratios, 2006-2018



Source: People's Bank of China, RHG Calculations.

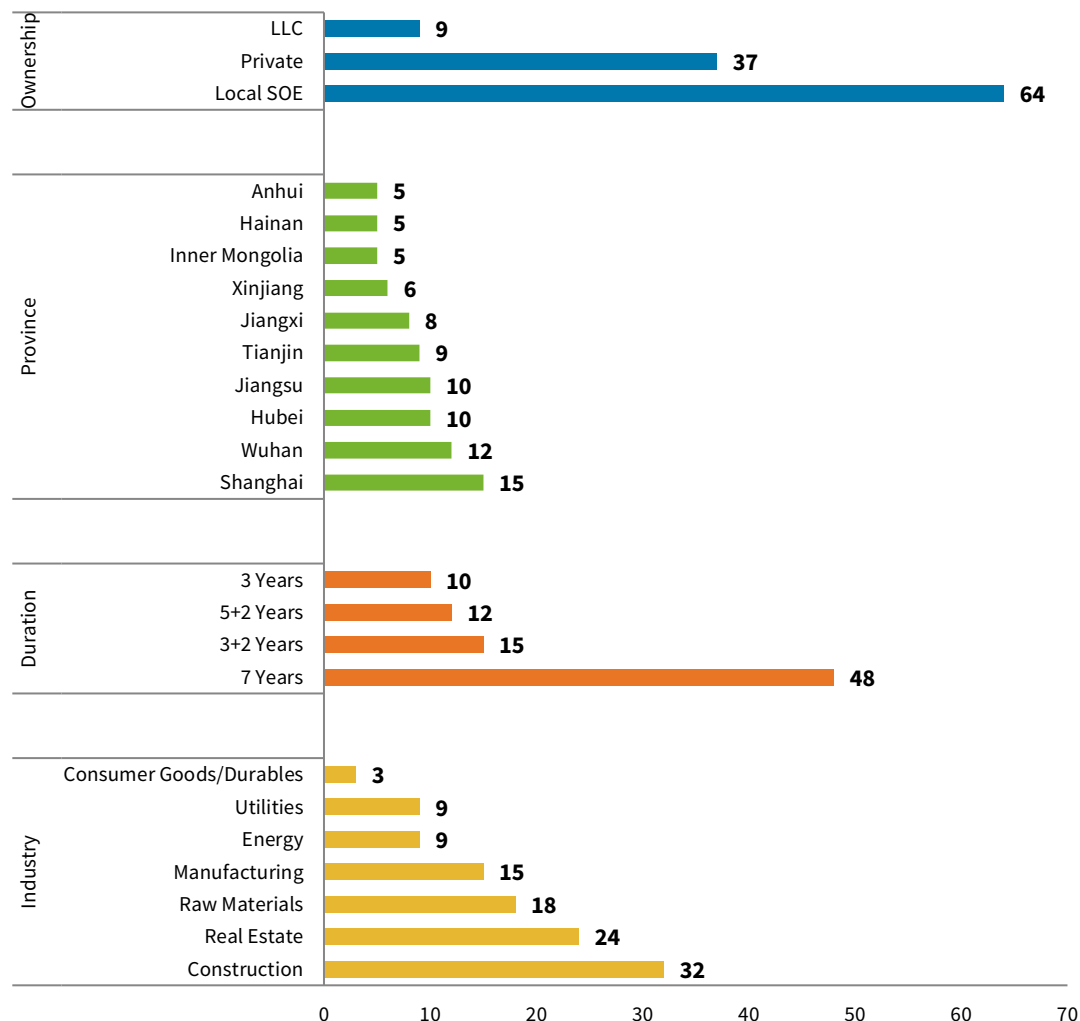
In addition, Beijing has reorganized financial regulators under a new State Council-level administrative body labeled the Financial Stability and Development Commission and has used the reorganized regulatory structure to introduce critical new rules targeting implicit and explicit guarantees within the financial system. Rules on existing asset management products announced in late April 2018 require banks to remove any guarantees on WMPs they are offering to corporate or individual investors, which is effectively forcing banks to move previously off-balance sheet assets back onto their formal loan books.²⁰¹ The fact that banks used to be able to sell WMPs to fund these assets has left the banks scrambling for funding, which has pushed deposit growth to new lows and monetary growth down to only 8 percent as of June 2018.

Because of China's deleveraging campaign, overall credit growth has slowed sharply within China's financial system, corporate credit growth in particular. Consequently, corporates face new hurdles in attempting to refinance their existing debt, resulting in a sharp increase in both corporate bond defaults and credit risk warnings issued by companies. Interestingly, most of the credit risk warnings are issued by local state-owned enterprises, who may still bear implicit guarantees from local governments and appear to be using the warnings to appeal for help from local authorities. Beijing is taking steps necessary to control the growth of China's financial system, both by limiting the growth of shadow banking assets, permitting more defaults in the corporate bond market, and limiting implicit and explicit guarantees on WMPs. These mark significant mileposts on a road toward more aggressive financial reform.

²⁰¹ "China's central bank tightens rules on asset management firms in move to reduce risks," *South China Morning Post*, April 27, 2018.

Figure 6-2: Composition of a Selection of Bond Risk Warnings, Jan-May 2018*

Number of bonds



Source: Chinabond. *Each category is out of 128 individual bonds with warnings published so far this year. Many of the construction firms listed also engage in manufacturing according to categorization by Chinabond.

Given this initial success, the testing phase for Beijing is now becoming more serious, and the risk of financial market stress is consequently increasing. Because of the slowdown in aggregate credit growth, defaults are likely to spread to new segments of the financial system, and Beijing’s response to a bond default of a local government financing vehicle (LGFV) or a more dramatic slowdown in economic growth will be closely watched. The PBOC has taken some monetary easing measures already to offset the threat of financial contagion from the slowdown in credit growth, but the overall trend is still toward introducing more financial risk, allowing slower economic activity, and weakening government guarantees. The key questions now facing participants in China’s financial markets are how long Beijing will allow these conditions to prevail, and at what level of risk Chinese authorities might respond, if at all. Financial reform is vitally necessary for China, but also raises new risks to government credibility.

Changes in Credibility, Market Communications, and the Risk of Crisis

The asymmetric outlook for government credibility within China's financial system, as well as its binary nature, are highly relevant for discussing the possibility of financial crisis in China. The government's credibility has been a powerful bulwark against the spread of financial crisis, as temporary instances of financial stress have quickly warranted a government response. Market participants have assumed that the same pattern will continue in the future. But as China's authorities are now responding to episodes of financial stress with more restraint, markets may see additional periods of strain as they struggle to price in new risks in different asset markets. After all, no one can be sure when a problem becomes larger than the state's realistic capacity to respond, as there is no magic threshold of debt-to-GDP or credit-to-GDP that will influence market perceptions on whether a government response would be credible.

As long as China's overall credibility is strong, there is no clear level of credit growth or rise in financial complexity that would necessarily change market perceptions of the utility of government stabilization measures. However, that credibility would certainly erode over time should both credit growth and the complexity of the system continue expanding. Breaking from the past requires introducing new financial risks and therefore changing market perceptions of the nature of a credible government response.

Periods of financial instability that could lead to crisis are therefore more likely to occur along the path to financial reform, but Beijing has no other medium-term option but to walk that path. Along the way, absolute changes in credit risk are less likely to be a meaningful influence on the probability of crisis than the perception of changes in credit risk, as the withdrawal of implied government support in one asset market may have implications for others. If investors see a local Chinese government as unable or unwilling to support local companies in one province, they might pull back their investments in similarly positioned local banks in other provinces, as well. Market perceptions of government credibility are a critical variable influencing the probability of financial crisis in China.

However, Beijing has clear options to try to influence those market perceptions and can communicate directly with market participants concerning the government's intentions. This communication process will become increasingly important as a tool to manage risks as Beijing's deleveraging campaign continues and financial risks materialize. Beijing's credibility suffered significantly, not only during the equity market bailout of 2015, which was generally ineffective, but also following the surprise August 2015 announcement of a 1.9 percent depreciation in the value of the currency and a change in the regime used by the central bank to calculate the daily fixing rate of the yuan against other major currencies. The adjustment was a surprise to financial markets already reeling from various deflationary signals around the world as well as China's unorthodox policies toward the equity market and bolstered a general perception that China needed to significantly improve market communications.

Market communications from the central bank and China's financial authorities will become far more important in the process of paring back China's interventions in distressed asset markets. A successful communications strategy can help to set realistic market expectations of where real losses might emerge within the financial system, while also reiterating the government's redlines of where intervention should be reasonably expected in case systemic risks materialize. Beijing will attempt to communicate to market participants that while there will be some short-term pain in the course of financial reform, this is part of a longer-term plan that is still consistent with healthy development of the financial markets.

Historically, China's government has been loath to clearly communicate expectations of intervention precisely because of concerns that it would directly encourage risk-taking behavior. For the central bank, flagging that interest rates will be kept at reasonably low rates only incentivizes borrowers to expand overall credit growth. This year, however, the central bank has been far more aggressive in reaching out to market participants through openly published interviews in its own newspaper, the *Financial News*, to guide short-term interest rate expectations in an effort to reduce financial risks and mollify investors' fears about the effects of Beijing's deleveraging campaign.

The credibility of Beijing's overarching message that the government will respond to any perceived systemic risk remains reasonably strong, even as the credibility of the government's response to lower-level episodes of financial stress is weakening as financial risks start to materialize. Beijing has been clear with markets that growth drivers are likely to be different in the future, but they have been far less clear how defaults in risky financial markets will be managed. Peer-to-peer lenders, as one obvious example, are clearly suffering greatly amidst a new round of regulation as part of Beijing's deleveraging campaign, and these online platforms are losing both borrowers and lenders; more than 150 have gone out of business in just a few months. However, Beijing has given no indication that it is likely to support the sector. The actions against the planned protests in early August only demonstrate authorities' indifference to the fate of marginal peer-to-peer platforms.

Corporate bond defaults are similarly on the rise, although it remains unclear how Beijing might respond if a bond issued by a local government financing vehicle (LGFV) formally defaulted. In mid-August 2018, a Xinjiang-based firm holding several local state-owned assets defaulted on a bond, only to receive 500 million yuan in government support the following day to repay investors. While the firm was not technically an LGFV, it was still assumed to be government-supported, and indicates that local governments' financial pressure is starting to emerge within the financial system.

A successful communications strategy can pare back expectations of a government response in all instances of financial stress while reinforcing expectations of a meaningful response in conditions of extremely tight liquidity that might jeopardize regular market operations. This approach would be similar to that of governments in developed economies, which have a high threshold for intervention but are generally expected by most market participants to provide emergency liquidity or act to prevent massive insolvencies that could create systemic risks. Beijing's communications strategy with financial markets is evolving and becoming more aggressive, but it has not yet been tested in an adverse environment of greater financial risks, and Chinese authorities remain silent on the thresholds for their intervention in case of rising defaults and bankruptcies.

One of the most significant elements of Beijing's communications strategy, for both foreign and domestic investors, is the message that China's growth and ascendance onto the world stage are inevitable. The concept of China's inevitability has long played a significant role within China's public diplomacy, both to reinforce the Party's domestic legitimacy as well as to enhance the effectiveness of China's external negotiations. Generally, cultivating a better relationship with a rising power would be more important than with a declining one. The concept of inevitability is also helpful in reinforcing China's credibility to respond to financial crises: if the Chinese economy is going to continue to grow at reasonably strong rates over time, then financial panics are not necessarily cause for alarm but rather are temporary speed bumps that do not have the potential to reverse the structural drivers of growth. The prospect of continued

growth over time can also reassure foreign investors in China's financial system, regardless of the severity of recent policy mistakes. Inevitability is a powerful anchor of China's credibility.

The problem for Chinese authorities is that the inevitability of growth at rates close to the currently targeted 6.5 percent cannot be easily achieved without either significant improvements in productivity or a continued expansion of China's financial system at unsustainable rates. As a result, China's credibility is becoming more fragile even as the economy continues growing.

Markets in China have always struggled to price changes in government policy, from the interbank market crisis of 2013 to the Sealand Securities scandal of 2016. As a result, the process of financial reform, and Beijing's continued deleveraging effort, are more likely to contribute to the risk of financial crisis in China as market perceptions change. The conditions for financial crisis have been present for some time, but the credibility of the expected government response has been a powerful bulwark against credit liquidation cycles and significant liquidity pressures. The more likely proximate causes of financial crisis in China are politically motivated changes driven by an incentive to reform, rather than risks arising from the continued growth of the financial system by itself. China's credibility is a powerful asset to combat financial crisis, but it is increasingly fragile. Once lost, it is difficult to restore. Political credibility can explain how China has avoided financial crisis so far, to a greater extent than economic fundamentals or the use of administrative controls, despite significant vulnerabilities in its financial system.

Chapter 7 | Outlook for China's Unusual Resilience

The stability of China's financial system, despite experiencing the largest single-country credit expansion in over a century, demands a compelling explanation. Yet most arguments explaining how China has avoided financial crisis tend to overemphasize the differences between China and other emerging markets that faced crises in the past. Common explanations for China's resilience focus on economic and political factors that are not unique to China, nor are they much stronger in China than in other emerging economies. High domestic savings rates and low levels of external debt are meaningful indicators of financial strength, but not sufficient explanations relative to the debt levels that China has accumulated, as Chapters 3 and 4 detailed. Similarly, while China has a strong record of deploying administrative tools to compel the behavior of key players in the financial system, such measures have also been tried before in other markets with only mixed success. None of those administrative tools are unique to China.

However, China's credibility does help to explain a significant portion of the puzzle of China's enduring financial stability. Most credit bubbles pop well before reaching the financial asset growth rates China has seen in the past decade. Implicit and explicit government guarantees, reinforced by expectations of a muscular government response to financial shocks, can prevent some of the pressures in financial markets that ordinarily develop as risks are exposed through market mechanisms. Rather than responding by de-risking and selling assets, market participants can simply wait for government assistance, and in waiting, they reduce the intensity of an asset selloff. Seeing examples of investment products such as WMPs being bailed out by third-party guarantors and local governments can instill more confidence in purchasing WMPs in the future, which encourages the banking system to continue expanding. Credit expansion, in turn, tends to forestall stress within the financial system by allowing distressed companies to continue borrowing, sometimes outside of formal lending channels. Credibility helps reinforce the credit expansion, thereby mitigating flashpoints. These mechanisms of stabilization stemming from China's credibility continue to operate, with only a limited relationship to the economic factors typically associated with China's resilience—a high savings rate and low levels of external debt. Credibility is enhanced given China's track record of intervening using administrative measures in key financial markets. However, the economic fundamentals and the nature of China's financial system ultimately influence China's credibility as well. An economy with aggregate debt of 100 percent of GDP is far easier to stabilize than a system with aggregate debt of 300 percent of GDP, even though credibility in these two scenarios does not vary in a linear fashion.

As the financial system continues growing, eventually the size of the potential financial losses can overwhelm the state's capacity to manage the debt problem and maintain the stability of the economy and financial system. Yet it is market perceptions of vulnerability that are more significant than specific thresholds of indebtedness. It is difficult to argue precisely why China's economy is more unstable with debt of 350 percent of GDP versus debt of 300 percent of GDP: they are both very high levels of debt, and well beyond recent historical examples of other economies at risk of crisis. While the fundamentals impact China's credibility, credibility itself is a critical component of explaining China's lengthy period of financial stability.

However, the continued expansion of China's financial system beyond what was necessary to drive sustainable levels of economic growth effectively changed the political bargain between China's government and Chinese depositors and investors. Financial repression has given way to outright

subsidies of financial investments. As a result, defending the stability of the financial system has required Beijing to provide effective guarantees and government support for an increasingly unstable set of investment products. This defense, in turn, becomes less credible in the context of China's own desire to push for more reform of the financial system, which includes cracking down on the informal financial activities funded by these unstable investment products.

China's financial reform, involving market-based pricing of capital and breaking persistent implicit and explicit guarantees in Chinese asset markets, is essential to reducing the risk of financial crisis over the long term. But embarking upon this reform process could end up threatening the credibility that has helped to anchor China's financial stability up to now. A key component of the political legitimacy of China's leadership depends broadly on delivering improving standards of living for Chinese households, which at this point involves defending Chinese households' exposure to China's own informal financial system. The challenge for China's leadership is preserving the essentials of that political bargain, while also moving to reduce the intrinsic risks within the financial system.

The Ideal Path Forward for Beijing

It is useful to outline the elements of what a successful strategy for Beijing would be because China's leadership is already attempting a deleveraging process within the financial system to reduce the banking system's reliance on an unstable liabilities structure. Beijing hopes to reduce aggregate leverage without impacting the pace of growth or causing panic among investors in wealth management products or the banking system in general. This requires a careful strategy of introducing limited financial risks into the system and allowing riskier products to default in larger and larger numbers to slow their growth. It also likely involves accepting a slower pace of GDP growth than the current targeted pace of 6.5 percent per year, although the economy also needs to remain healthy enough to have a credible path toward reducing China's debt burden in the medium term.

Rising risk perceptions will likely generate a period of unease in domestic financial markets, and perhaps overseas, as the government's credibility comes into question. Successful management of this pressure will reduce overall volumes of shadow banking liabilities such as WMPs, while the assets they fund remain relatively stable and wind down only in a controlled fashion. This means the PBOC will need to provide liquidity to banks, as necessary, to prevent a fire sale of loans and other assets previously held off formal balance sheets. Further monetary easing would be necessary to facilitate some of those borrowers being serviced by banks via official loans, rather than via shadow banking assets. An ideal scenario for Beijing would see only the assets that fueled rampant financial system speculation contracting quickly, while overall credit growth slow moderately. Credit growth would slow, and the financial system would look healthier without a severe contraction.

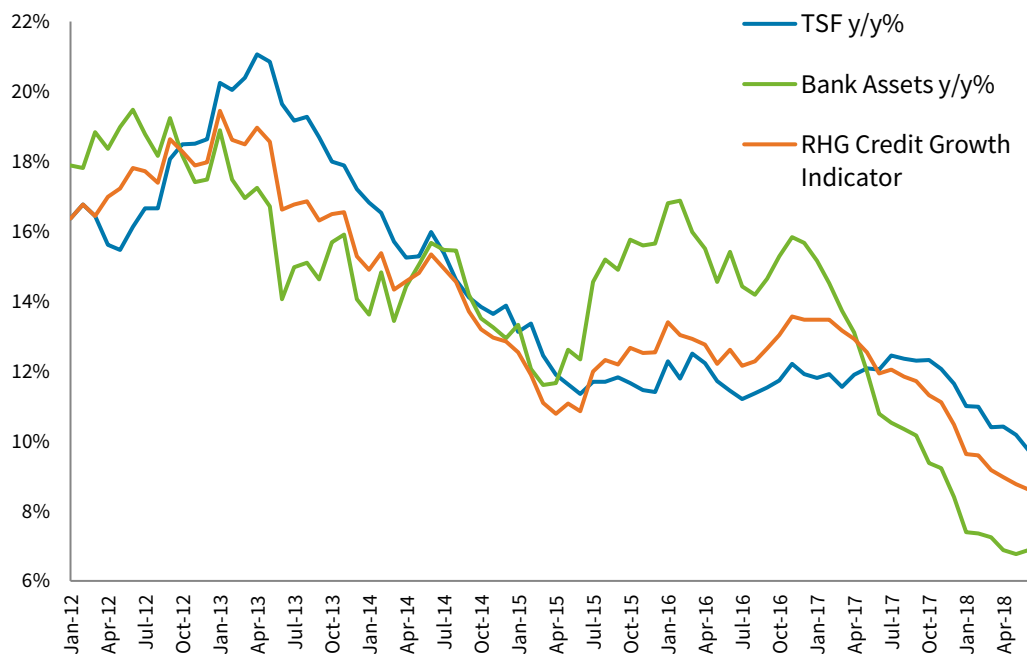
Beijing is already attempting to navigate down this path. The deleveraging effort that started in August 2016 has effectively reduced leveraged positions funded via WMPs and other shadow banking liabilities. Banks' new claims on other banks and NBFIs rose strongly in 2016, by an amount equal to 29 percent of all new assets but shifted dramatically to show a small contraction in 2017.²⁰² On the regulatory side, new asset management rules were introduced to force banks to bring off-balance sheet business previously funded by WMPs back onto their balance sheets. These rules have fairly generous grace periods (until the end of 2020 in some cases) to limit the pace of contraction of shadow banking assets, so that banks do not

²⁰² Data from People's Bank of China, "Balance Sheet of Other Depository Corporations," 2016 and 2017.

have to liquidate bonds and cut off borrowers indiscriminately. Monetary easing has helped to offset this regulatory tightening, and banks have been given expanded loan quotas to facilitate formal lending growth to replace the informal lending that had dominated previously.

However, in practice this has not been just “skimming the froth” of credit growth, as the government desired: bank asset growth has been cut in half, which means that large numbers of borrowers have been cut off from new financing. In particular, corporate borrowers have suffered more than households, as banks have channeled new loans into mortgage lending because it is considered safer and more profitable. The effects of this corporate financing squeeze have been predictable. Most measures of industrial output and investment have dropped precipitously in 2018, particularly in sectors led by local government-linked companies and property construction. These sectors were among the largest borrowers from the informal banking system. Corporate bond defaults have accelerated primarily because borrowers are struggling to refinance.

Figure 7-1: Measures of Credit Growth, Jan 2012-Jun 2018
Percent YoY



Source: People’s Bank of China, RHG Calculations.

What has not yet occurred, however, despite the slowdown in credit and economic growth, is a significant test of China's credibility. That test still lies ahead, and it remains an open question how Beijing will respond given the tightening in credit conditions already underway. Following a State Council meeting in mid-July 2018, a statement announced the reassuring policy signal that local government companies would continue to receive funding for ongoing infrastructure projects. This was generally interpreted positively, indicating that most market participants thought that Beijing's mere announcement of some degree of support for the economy was likely to be effective. The same sentiment remains prevalent throughout China's financial markets today, primarily among domestic participants, as the common assumption remains that Beijing will intervene in the case of significant market stress in any segment of the financial system. While policy toward the extension of credit has changed in the last two years, China's credibility remains intact.

The ideal path forward for Beijing is a scenario in which this set of conditions persists: credibility remains powerful, even while credit growth and the economy slow modestly. Market-based reforms and stronger market-governed institutions could then provide a new wellspring of credibility, while still providing a bulwark against rapid sales of assets, capital outflows, and crisis. Even as the economy slowed, Beijing would have demonstrated that weaker credit conditions did not necessarily cause panic, showing international investors and international financial institutions such as the IMF that China's debt burden could be brought under control, which would help to reassure overseas markets. Even if some skepticism about Chinese economic statistics and growth rates remained, there would still be general consensus that the economy was not collapsing, allowing foreign portfolio investment to continue flowing into China. This is essentially the balance that Beijing is hoping to strike with its deleveraging campaign, and there are some signs of success in this effort.

Scenarios for Crisis as Credibility Pressured

Despite some initial success, achieving Beijing's ideal scenario described above will be extremely difficult, with many pitfalls to China's credibility along the way. Even under the ideal scenario depicted, credit growth will slow substantially, from the average bank asset growth rate of 17.5 percent seen from 2009 to 2016 to something below 10 percent (a reasonable ceiling for future nominal GDP growth in China unless inflation spirals out of control). This slowdown in credit growth requires some institutions that had previously been receiving credit to be cut off, risking defaults, bankruptcies, and losses to be borne by some institutions within the financial system, as discussed in Chapter 3. Economic growth will almost certainly slow as well. The loss of credit is a more tangible short-term threat than the loss of credibility.

The loss of credibility, however, is the most serious threat to overall financial stability in the long run. In many ways, a crisis is synonymous with a sudden loss of credibility. The problem for Beijing is that a successful deleveraging effort requires certain implicit guarantees to be abandoned and discounted, and without a careful communications strategy, investors in risky investment products and shareholders of inefficient companies will expect Beijing to respond to losses, just as investors in peer-to-peer investment products hoped to publicly petition for restitution from China's banking regulators in August. The process of financial reform requires Beijing to stand by as defaults occur, at least initially, rather than responding immediately by stepping in to put out the fires.

Credibility is likely to come under threat in the process of financial reform precisely because Beijing's defense of certain assets in the financial system becomes less plausible. The commitment to financial reform competes directly with the commitment to shore up financial markets in cases of stress. Beijing's

credibility is not intrinsic; it is a legacy of successful interventions in the past. If China's commitment to financial reform is perceived as strengthening, that will mean riskier, rather than more stable, financial markets in the short term.

Credibility also derives from the nature of China's political system, with the demonstrated preference for stability within the financial system reflecting positively upon the political system as a whole, with the one-party rule of the Chinese Communist Party at its center. That preference for stability explains the importance of any change in the political bargain within China's financial system because the current bargain requires China to extend its commitment to intervene to increasingly risky and peripheral assets, to maintain household wealth and confidence in the system and the Party's stewardship of it. Ironically, China's credibility could also be undermined by market expectations of the confidence of China's leadership. Should Chinese households feel that China's leaders are more confident in their hold on political power, this would likely generate some degree of risk aversion within the financial system because the push for financial reform would appear more powerful, despite the short-term pain it could generate. The threats to China's credibility as financial reform proceeds are numerous.

A financial crisis, long predicted in China, is another matter, and even changes in China's credibility will not cause a financial crisis independently of some significant credit event in financial markets. However, the most plausible scenarios for financial crisis in China would emerge when China's credibility is being tested in the process of changing. Predicting which one of the following scenarios is most likely to produce a financial crisis in China is impossible. This is essentially akin to asking which truck might end up causing a failing bridge to finally collapse. What does need to be clarified, however, are the scenarios where China's credibility is most likely to be challenged by rising risks within China's financial system and Beijing's gradual withdrawal from implicit and explicit guarantees.

China's next crisis is unlikely to be similar to those it faced in the past. Instability in China's financial system in the reform and opening era was generally associated with excessive inflation, at rates exceeding 20 percent. In the early 1990s, the seeds of China's late-1990s banking system woes were sown by a significant monetary tightening campaign to break the inflationary spiral. The Asian financial crisis largely spared China's financial system because of extensive capital controls but delivered meaningful shocks to the real economy and set the stage for a necessary bailout of China's banking system over the next decade.

The specter of a currency crisis modeled on the Asian financial crisis has been an animating preoccupation of China's financial policymakers since the late 1990s. It was one factor that led to China's willingness to accumulate foreign exchange reserves, starting in 2003, as a form of self-insurance against the potential for a rapid currency devaluation triggered by speculative capital outflows. With over \$3 trillion in reserves at present, and a demonstrated preference in the last year to avoid intervention in foreign exchange markets, the prospect of a 1997-style currency crisis, driven by a failed Chinese defense of a certain exchange rate level, is unlikely. This does not mean that there are no risks related to rapid exchange rate movements, but that the risks are different in character to those China faced during the Asian financial crisis. Exchange rate depreciation is more likely to occur at this point as a result of China's need to ease monetary policy and guide longer-term interest rates lower to manage the onshore debt burden rather than as the result of a speculative attack.

In addition, any financial crisis in China probably would be dissimilar to the global financial crisis in 2007 and 2008 in which a significant credit expansion driven by housing-related loans led to a proliferation of

derivative assets that lost value quickly. There are few assets in China's banking system that are explicitly marked to market values, and, in the event of financial stress, those rules requiring instant market valuations, if any, would likely be relaxed in short order. China's banks have struggled with de facto non-performing assets for years and have resorted to a number of measures to manage the scale and pace of write-downs or liquidations of those assets. A sudden surge in declared non-performing assets would be a significant long-term problem for the banking system, but it is unlikely to result in a financial crisis by itself, as a crisis would probably require additional pressures on the funding side of banks' balance sheets. The current non-performing asset problem is just an extension and expansion of an issue China has been managing since the late 1990s, which are the result of a banking system that allocates capital according to state priorities rather than financial returns. Even a significant expansion of the solvency problems of China's banking system are unlikely to precipitate a near-term crisis.

However, there are some distinct scenarios in which China's financial reform agenda could conflict with the market's desire for stability, challenging China's credibility and causing financial stress to escalate. While none of these individual scenarios are probable by themselves, these are the places we would look for systemic risks to develop in China: they seem to be the most plausible paths to a financial crisis given the current configuration of financial system risks. Obviously, these scenarios are not exhaustive. Crises can occur in unexpected asset markets and have broader effects than expected within vulnerable financial systems; few observers understood the contagion that defaults on subprime mortgage loans would spark within the U.S. financial system. And while the probability of any individual crisis scenario occurring may be low, the probability of some type of financial stress emerging becomes higher as China's financial system continues growing.

PRESSURE ON BANKS' FORMAL LIABILITIES

One of the most direct paths to financial crisis could be a simple shortage of liabilities within the domestic financial system combined with an inadequate government response to banks' funding shortages. Smaller banks, particularly city and rural commercial banks, have relied heavily upon informal banking channels to expand their assets in recent years. This meant that they raised funds from other banks via interbank deposits or issued WMPs in large volumes, and continued to roll these short-term liabilities over to fund longer-term assets.

However, Beijing's new asset management regulations targeting implicit and explicit guarantees for WMPs and requiring the value of the assets of these WMPs to be marked to market may reduce the attractiveness of these investment products from smaller banks, meaning that the short-term funding instruments could no longer be rolled over. Two possibilities could result: banks would withdraw funding from third-party entities such as brokerage firms and trust companies currently holding their assets in custody, essentially forcing these entities to sell the assets; or banks could bring the assets back onto their own balance sheets, creating a mismatch between assets and liabilities. This would leave banks short of immediate funding and likely force them to scramble to the money market to raise funds, potentially pushing short-term interest rates up sharply.

The central bank would probably respond to this funding pressure from banks by trying to free up additional deposits within the banking system. The easiest way to do so would be to cut the banks' required deposit reserve ratios (RRR), effectively allowing banks to access some of the liquidity already locked up on the central bank's balance sheet. This could be done selectively for individual banks in trouble. In addition, the central bank could provide targeted funding to banks as necessary, providing them

with 3-month or 1-year funds in exchange for some collateral. The probability of some central bank response to this type of financial stress is high.

Nonetheless, it would be difficult for the PBOC to calibrate its response, and the signals from the central bank would probably not be entirely friendly. The credibility of the PBOC could be challenged if the initial response is both limited and balanced in character: the central bank could reiterate its commitment to shrinking the shadow banking system and banks' use of these informal financing channels to grow their assets over time, even while providing some form of relief via an RRR cut or targeted liquidity injections. But, the communications channel between banks and the PBOC is not necessarily transparent; the PBOC is likely to suspect that banks will ask for more funding than is necessary, regardless of their actual needs. As a result, the PBOC's initial response may be very limited, and the asset sales may continue, which could cause funding difficulties to spread to other banks encouraged to sell assets held off balance sheet in a declining market. This could cause a larger number of banks to face significant funding problems than the PBOC initially expected, calling into question the credibility of the bank's response. At worst, news of banks' struggles to obtain funding could start the process of rapid withdrawals from WMPs and other deposits from larger numbers of banks.

The underlying shortage of bank liabilities is a predictable consequence of Beijing's deleveraging effort, which is currently underway. What remains unpredictable is how large the PBOC's response to any tension in funding markets might be, precisely because shrinking the shadow banking system is one of the key objectives of the deleveraging campaign. The pressure on banks' funding is just one of the areas where Beijing's commitment to financial reform and its credibility in stabilizing the financial system are in conflict. It is these potential conflicts where strains within the Chinese system have the greatest chance to develop into crises.

MONEY MARKET TRANSMISSION DIFFICULTIES

Another path to financial crisis runs through the same grounds as China's scariest financial market episode of the last decade: the interbank market crisis of 2013. At that time, it was a sudden change in the PBOC's policy stance toward the provision of liquidity that caused banks to panic and led to a sudden absence of lenders in the money market. However, a more concerning set of conditions at present is the possibility for counterparty risks to spread within China's money markets, and for collateral shortages to prevent the PBOC from responding in a timely or efficient fashion.

The imbalance in liquidity conditions across China's banking system creates the potential for crisis. Larger banks have more stable bases of funding and are typically net lenders to smaller banks in the interbank market. The PBOC's liquidity facilities typically depend upon larger banks borrowing directly from the central bank, pledging collateral in exchange, then lending on to smaller banks and non-bank financial institutions. The PBOC's open market operations only involve 46 banks and 2 brokerages. Smaller banks do have some immediate recourse to liquidity available via the PBOC's Standing Lending Facility (SLF), but only for very short-term funding (less than one month).

The potential for crisis emerges when this transmission between larger banks and smaller banks breaks down, or when non-bank financial institutions run short of funding and start to liquidate their assets. Transmission can break down for a number of different reasons, but one of the key proximate causes is the emergence of concerns about solvency or liquidity risk involving a particular institution or set of institutions within markets, as during the Sealand Securities incident in 2016 or the interbank payment

default by Everbright Bank in June 2013. These types of incidents can cause larger financial institutions to withdraw funding, leaving the affected institution scrambling to find liquidity and willing to push up overall short-term money market funding costs to do so. In turn, markets may start to scrutinize other smaller banks in similar situations, sparking contagion and withdrawal of funding from those institutions.

While the SLF should provide an immediate calming effect on markets, stabilizing liquidity conditions at the SLF ceiling rates issued by the PBOC, many banks will seek funding in the markets themselves before accessing the SLF because of the stigma attached to borrowing from the central bank. The PBOC also makes an “automatic pledged financing” mechanism available, but this requires smaller banks to pledge collateral, including local government bonds, which for many smaller institutions may be unavailable.²⁰³ Should the PBOC’s response or banks’ willingness to seek liquidity from the central bank prove inadequate, this can cause a further rise in interbank market rates and start the process of WMP redemptions, forcing banks to borrow even more to meet the resulting liquidity demand.

The path to another 2013-style interbank market crisis would emerge from the continued expansion of credit and the gradual increase in the fragility of the financial system, but the proximate cause is more likely to be uncertainty about the PBOC’s commitment to stabilize the market, resulting in a sudden loss in the central bank’s credibility. After all, the reversal of the PBOC’s attempt to control the shadow banking system after the squeeze in money market rates in 2013 triggered a significant expansion of the informal financial system because the central bank appeared committed to keeping short-term repo rates stable and low. The deleveraging campaign currently underway has seen Beijing experiment once again with guiding rates higher to discourage shadow banking growth. Market participants just can’t be sure how much assistance the PBOC will provide in the case of liquidity difficulties among smaller institutions or NBFIs.

Within such a climate of uncertainty, short-term rates could rise sharply, and bank liabilities and assets could contract, leading to a significant reduction in aggregate credit availability and a slowdown in economic growth. In addition, while the PBOC can instruct policy banks to lend to NBFIs in distress, or larger banks to lend to smaller banks facing liquidity difficulties, these instructions typically only result after regular market conditions have broken down (meaning a crisis is already underway). As China’s financial system continues expanding, liabilities growth within the banking system increasingly depends upon low and stable money market rates, so the system also becomes more vulnerable to sudden changes in those funding conditions, including the potential for the PBOC to alter its own reaction function in acting as a lender of last resort. While most market participants rightly assume that the PBOC (and most central banks) can inject money into the system if they need to do so, even if the appropriate collateral is unavailable, these actions are still only likely to occur after significant financial market stress has materialized.

Everyone within Chinese markets, including most Chinese authorities, would agree that the PBOC should open the floodgates and stabilize the system once a financial crisis erupts. But can anyone confidently say at what point rising counterparty risks and growing money market transmission problems will cross the line into crisis, requiring a more aggressive PBOC response? Under these conditions, the PBOC’s credibility will come into question, given its conflicting objectives—carrying out deleveraging while simultaneously

²⁰³ The details of a new liquidity facility to provide short-term lending to financial institutions in distress were outlined by the PBOC in December 2017. Repayments to PBOC later than one day via this facility are considered overdue, and after three days are considered in default. <http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/3440811/index.html>.

countering systemic risks. A significant credit crunch and growing financial risks could develop and spread in this situation, while uncertainty reigns within the market over the PBOC's eventual policy response.

CORPORATE BOND DEFAULTS

Another path to financial crisis lies in the corporate bond market. Corporate bonds are a conventional asset class in most developed financial markets and so an unlikely source of financial market stress. But in China there have been very few corporate bond defaults in the history of the market, with the first official default taking place in 2016. Since that time, defaults have risen incrementally to just over 100 bonds as of June 2018 but still representing less than 0.5 percent of the overall corporate bond market.²⁰⁴ As a result, risk perceptions within the corporate bond market are highly asymmetric: risk has been historically low and can only expand over time toward more normal levels seen in developed financial markets.

Beijing's deleveraging campaign has contributed to the recent increase in corporate bond defaults and credit risk warnings, as corporate credit availability has suffered amidst the overall slowdown in credit growth. In addition, despite the defaults that have occurred, markets are generally still comfortable with the level of risk in the market as a whole and generally expect that the PBOC will step in to stabilize the market if defaults skyrocket. This perception was reinforced in late July 2018, when the PBOC reportedly made MLF funding from the central bank's balance sheet available to banks buying lower-rated corporate bonds, helping to restore liquidity to the market while also offering banks risk-free profits.²⁰⁵

Selloffs in the corporate bond market this year have been driven primarily by liquidity concerns resulting from banks withdrawing funds from NBFIs, rather than from broader concerns about the rising rate of defaults. Corporate bond ratings have very little correlation with underlying financial risk, as over 99 percent of corporate bonds in the market bear ratings of AA- or above.²⁰⁶ These ratings within China's corporate bond market often indicate levels of perceived government support rather than fundamental indicators of creditworthiness.

The key risk of financial crisis resulting from corporate bonds, therefore, is a perception that Chinese authorities' commitment to the stability of the market is changing rapidly, with government guarantees on or reassurances of stability for lower-risk corporate bonds being withdrawn, leaving a more significant probability of defaults in the broader market. This could be a result of simple necessity—that Chinese authorities have insufficient resources to effectively guarantee or support in a more limited fashion the riskier debt offerings of private companies and local government-linked firms within a 17.6 trillion yuan corporate bond market.²⁰⁷ However, the more likely path to reducing risk in the corporate bond market is a withdrawal by choice, in which authorities' official statements highlight the risks building in the market over time, and indicating that they will provide only limited assistance in addressing liquidity issues within the market rather than broader guarantees against a wider range of defaults.

The potential chain reaction from a breakdown in China's corporate bond market could be more significant than commonly understood. Commercial banks are significant holders of corporate bonds and

²⁰⁴ Rhodium Group, "A New Era in Credit Risk," China Markets Research, May 29, 2018.

²⁰⁵ 21st Century Business Herald, "Central Bank Window Guidance to Purchase Low-Rated Corporate Bonds," July 19, 2018, http://epaper.21jingji.com/html/2018-07/19/content_90434.htm. (Translated from Chinese). Reuters, "China's Central Bank to Encourage Banks to Lend More, Invest in Corporate Bonds: Source," July 19, 2018, <https://www.reuters.com/article/us-china-cenbank-banks/chinas-central-bank-to-encourage-banks-to-lend-more-invest-in-corporate-bonds-source-idUSKBN1K82CG>.

²⁰⁶ Data compiled from EastMoney, calculations by Rhodium Group.

²⁰⁷ Data from People's Bank of China, Monthly Financial Market Report, June 2018, <http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/3582032/index.html>.

entrust funds to third-party managers who use the corporate bond market to seek yield to repay WMP investors. Defaults on those products and redemptions from corporate bond funds could exacerbate the pressure on banks' formal liabilities as discussed in the first scenario above. In addition, liquidity difficulties in the corporate bond market would probably impact overall money market liquidity conditions as well, as government guarantees were increasingly questioned at higher and higher credit ratings. The stress within the corporate bond market is unlikely to remain completely contained and may drive markets to question the extent of government support for other areas of the financial system.

Even if stress in the corporate bond market is contained, the results of a significant increase in defaults resulting from weaker credit growth and weaker perceived levels of government support could produce widespread insolvencies among third-party financial institutions and losses for investors in bond funds and WMPs. The corporate bond market is an obvious place where financial risks are likely to increase and government credibility is likely to weaken. But the consequences of those two trends working in tandem could extend well beyond the corporate bond market.

LOCAL GOVERNMENT DEBT AND DEFAULTS

Perhaps one of the most dangerous sectors of the Chinese financial system is the debt accrued by China's local governments, both implicitly and explicitly. Many local government-linked companies and financing platforms (LGFVs) have issued bonds that pose explicit refinancing risks. Officially the scale of local government debt is limited to 16.6 trillion yuan as of the end of March 2018, almost all of which was supposed to be refinanced into bonds as of August 2018.²⁰⁸ But the true scale of local government debt is likely to be much larger, given the significant levels of "implicit debt" carried by firms linked to local governments and associated institutions such as universities, hospitals, and other quasi-governmental institutions. Provincial departments of the Ministry of Finance have started requiring localities to provide audits of "implicit debt" levels accrued within their jurisdictions, with an eye to having local governments repay these obligations within three to five years.²⁰⁹ A survey of LGFVs that have issued bonds publicly has identified a significantly higher level of debt than Beijing has officially acknowledged, as high as 41.8 trillion yuan, or 51 percent of GDP.²¹⁰ This only covers the portion of LGFVs that are actually issuing bonds but probably reflects the majority of such local government obligations.

In addition, Beijing authorities are asserting "plausible deniability" concerning the extent of local government debts and the central government's obligation to repay them. This is both perceptual and strategic in nature. Perceptually, should the central government explicitly take all local government debt onto its balance sheet, then its immediate fiscal leeway to stimulate the economy in case of a cyclical downturn would be far smaller. Strategically, a guarantee of local debts, even implicitly held debts, would only facilitate the further growth of debt, so Beijing's official line is that localities must repay these obligations on their own, even if it is an open secret that the central government will have to provide some support at some point. The PBOC and Ministry of Finance actually engaged in a surprisingly open debate in late July 2018 about how to manage local government debt burdens and distress among rural financial institutions.²¹¹

²⁰⁸ Xinhua News Agency, "China's local government debt balance at 16.61 tln yuan by end March," April 14, 2018.

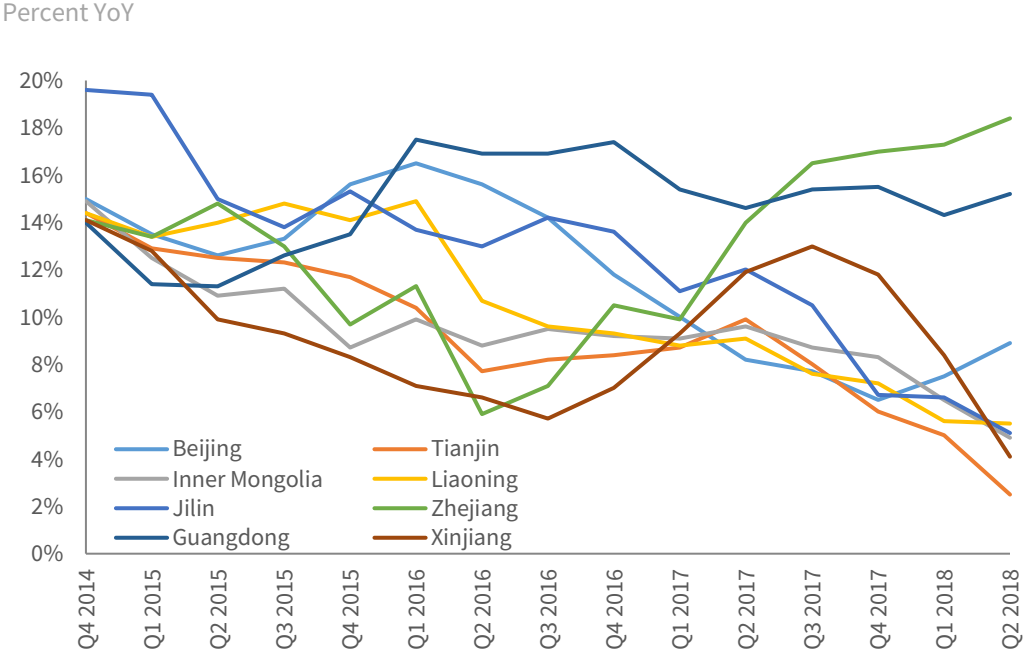
²⁰⁹ Rhodium Group, "Local Governments' Implicit Debt and the 2018 Fiscal Policy Outlook," China Markets Research, January 29, 2018.

²¹⁰ Rhodium Group, "Credit Risk Shifts to LGFVs," China Markets Research, August 8, 2018.

²¹¹ Xu Zhong comments mentioned within Michael Smith, "Policymakers Divided as China Weighs Up Fiscal Stimulus," *Australian Financial Review*, July 18, 2018.

A complicating factor is the uneven distribution of credit within China’s financial system. As the shadow banking system has contracted, the provinces that relied most heavily upon informal financing have seen the most significant slowdowns in credit growth, particularly in China’s southwest and northeast. This means that as Beijing’s deleveraging campaign continues, the probability of some degree of local government financial stress is likely to increase simply because of the disproportionate size of shadow financing activity for some localities.

Figure 7-2: Credit Growth in Selected Provinces, PBOC Provincial Total Societal Financing, Q4 2014-Q2 2018



Source: People’s Bank of China, RHG Estimates.

As a result, there is still a considerable degree of uncertainty concerning the central government’s attitude toward local government debt and default risk among LGFV bonds. As of late July 2018, no official LGFV bonds have explicitly defaulted in China’s financial markets (although the Xinjiang case was very close). The possibility of crisis or financial panic could emerge as Beijing’s commitment to stabilize local government financing conditions comes into question. A few LGFV bond defaults may go unnoticed. But if Beijing is seen as unable or unwilling to stop a local government from explicitly defaulting on obligations to its creditors, banks from that locality would also face scrutiny from the market. After all, some city and rural commercial banks are basically de facto secondary fiscal institutions of local governments themselves, and their own health will be seen as inextricably linked to that of the local government.

No market participants expect Beijing to explicitly stand behind all local government debt already accrued, as this would only encourage additional risk-taking. But the process of managing the risks from withdrawing Beijing’s support for local government debts could be quite complicated, as risks from the default of one locality would likely affect others in similar financial positions. The sudden loss of credibility for some local governments could also trigger a faster reconsideration of Beijing’s own credibility. After all, if Beijing will not stand behind its local governments because their debt burdens are too large, who else will provide support and under what conditions?

THE PROPERTY MARKET TURNS

A severe downturn in China's property market represents the slowest-moving scenario for financial distress, which is also perhaps the most dangerous to China's financial health in the long term. China's property sector has not only been a key anchor of economic growth throughout the past two decades, feeding construction activity and supporting China's heavy industries, but property has also been one of the most important financial assets in China, if not the most important. Under the years of financial repression, buying property was one of the only investment options available to Chinese households that could generate returns significantly higher than the deposit rates offered by the banking system. Over the past two decades, China's property market has seen steady appreciation of housing prices, buoyed by the tight linkage between land prices and the local land sales needed by local governments for fiscal revenue.

However, because rising housing prices have also been a social flashpoint in China, signifying growing inequality as many households are priced out of the market, there have been numerous central government efforts to control prices over the past decade, through direct administrative purchase limits as well as restrictions on financing channels for property developers. The result of these restrictions was often to push both lending to property developers and loans for mortgage down payments by buyers into the informal financing sectors. Consequently, in China's post-crisis era, the direction of the property market has been tightly correlated with trends in informal sector credit growth. Corrections in the property market, while short-lived, occurred in late 2011 and early 2014, when informal financing activities similarly weakened. Developers facing pressure to repay debt placed more housing on the market at greater discounts to raise cash. This caused market perceptions of property price trends to reverse and triggered further weakness in property sales in both primary and secondary markets.

Property is also the most common form of collateral for loans within the banking system, as Chinese banks have historically lent to firms with government guarantees and fixed assets as collateral. As prices have continued rising, banks have been rewarded for making loans in this fashion. Nonetheless, banking system asset quality and the resale value of that collateral have not been tested under conditions of property market stress because this has occurred so rarely in the history of China's commercial housing market. One of the rare episodes in which property held as collateral was liquidated under financial stress occurred in Wenzhou in late 2011. Wenzhou is historically a center of China's informal financing industry, and property was typically used as collateral for short-term loans to smaller manufacturing businesses in the area. When interest rates rose sharply in the informal market, many of these smaller loans defaulted and property was liquidated rapidly by the lenders.²¹² In this one market, prices plunged by 40-70 percent from their peak levels in a matter of months. This only took place because alternative forms of financing were not available quickly enough to prevent the liquidations and because Wenzhou was one of the few places where the informal financing market was large enough that a credit crunch there would have macroeconomic significance. Nonetheless, the Wenzhou episode highlights the potential losses when property buyers suddenly disappear and yet sales must proceed to repay defaulted loans.

Should property prices start to fall, the overall state of housing demand remains unknown. China's home ownership rate is very high, in the 80-90 percent range according to most household finance surveys.²¹³ While demand for upgrading existing housing remains strong, investment-related demand remains a critical driver of purchases, particularly in major cities, given limited alternative investment channels and

²¹² James Areddy, "Wenzhou: Financing in the Shadows," *Wall Street Journal*, China Real Time Report, November 15, 2011, <https://blogs.wsj.com/chinarealtime/2011/11/15/wenzhou-financing-in-the-shadows-of-china-lending/>.

²¹³ Gan Li, China Household Finance Survey, January 2013, <http://people.tamu.edu/~ganli/Report-English-Dec-2013.pdf>.

a strong history of housing price appreciation. Currently, informal financing channels are contracting significantly, with property developers facing the brunt of the slowdown in credit growth. Trust companies, usually strong lenders to property developers, are seeing falling rates of asset growth in 2018. Usually this ends up pressuring developers to liquidate some of their existing inventories, pushing prices down. So far this has not occurred, but it remains unclear how property developers will be able to refinance sustainably if national sales slow and informal financing channels continue contracting. And if prices fall, only a dramatic drop rekindling fundamental demand or a pickup in credit growth are likely to stabilize sales, given high home ownership rates and the significant levels of investment-driven purchases over the past decade.

The prospect of a sustained downturn in the property market is one of the most significant threats to China's financial stability and the government's credibility because there are so many participants in the property market, making it extremely difficult to control. Chinese authorities have struggled to contain the rise in property prices because investors saw through temporary administrative controls and recognized the underlying government incentives to support the market. In the event of a downturn in prices, transaction volumes would probably drop sharply at first, leaving underlying price signals difficult for investors to discover. The problem for most housing investors would be finding out the price at which their investments could be sold amid weaker market conditions overall. Posted prices may not be equivalent to transacted prices, and existing housing stock may turn illiquid in such circumstances. But the trends in prices would likely be in a similar direction, and government credibility could be imperiled because there is simply no available set of institutions that could easily step in and support China's entire secondary housing market, even as many investors would expect some sort of government support for the market.

In the past, Chinese authorities have responded to housing market downturns by cutting benchmark mortgage rates, reducing down payment requirements for mortgage loans, and lifting administrative purchase restrictions. The nationwide shantytown redevelopment program begun in 2014 was helpful in reducing idle housing inventory in smaller cities. Developers have received informal bailouts from local governments with state-owned enterprises stepping in to purchase large blocks of housing for other uses. In some cases, local governments have provided outright subsidies for new housing sales to maintain positive momentum in prices. But none of these measures would be likely to force a significant pickup in housing purchases if prices were widely expected to continue falling. With an aging society and a high home ownership rate, a significant jump-start in fundamental demand would require lower housing prices.

Should property market prices fall over a longer period, there are several channels of potential pressure on China's financial system. Economic growth would likely slow as residential construction activity weakens, which could hurt demand for most of China's heavy industrial sectors. Credit demand in the banking system for both mortgages and other types of property-related loans would slow overall loan growth as well. Collateral held in the form of land probably could not be immediately revalued, so the collateral held by banks might be relatively illiquid if they need to sell it. After all, if developers are unable to sell properties and are unwilling to buy land, banks may not find themselves as superior agents in any collection process. A long period of illiquidity in China's secondary housing market would essentially lock up significant portions of China's household wealth in illiquid assets, reducing household consumption growth. Local government financing conditions would also deteriorate as local governments would need to discount land prices to ensure sales, putting downward pressure on the asset quality at city and rural commercial banks. A property-induced financial crisis may be slower-moving than other scenarios listed

here, but China's credibility would be more directly challenged because there would be no easy interventions that would likely succeed in arresting a sustained decline in property prices.

The Importance of External Forces

All the above scenarios of paths to crisis have only been concerned with problems internal to China's financial system. But external forces potentially matter as well. Most prominently, U.S. monetary policy and the decisions of the Federal Reserve in setting U.S. interest rates can have a significant impact on China's financial conditions, through both the value of the U.S. dollar and the impact of differences in interest rates on capital flows. When the U.S. dollar is appreciating or expected to appreciate against other global currencies, this tends to create expectations of relative yuan depreciation, discouraging capital inflows and encouraging outflows from China. In addition, U.S. dollar appreciation encourages Chinese holders of debt denominated in dollars to either repay those obligations or buy additional dollars to hedge the cost of that debt. This tends to contribute to U.S. dollar demand and capital outflows as well.

As U.S. interest rates rise, the cost of financing in U.S. dollars also rises, which tends to tighten financial conditions and raise interest rates in emerging markets, because most lending to emerging markets is conducted in U.S. dollars.²¹⁴ China is no exception; Chinese banks and corporates have been heavy borrowers from foreign banks, with Bank for International Settlements (BIS) data showing \$961.6 billion in Chinese bank liabilities to BIS reporting banks as of the end of 2017 and SAFE data showing a total of \$1.84 trillion in China's total foreign debt as of the end of March 2018.²¹⁵ As U.S. interest rates rise, the cost of servicing this debt increases, both in U.S. dollar terms and in domestic currency terms if the yuan depreciates. As foreign borrowing becomes more expensive, short-term external borrowing tends to decline, reducing capital inflows and increasing demand for foreign currency, which tends to create additional depreciation pressure on China's exchange rate.

Under China's current exchange rate regime, capital outflows also tend to tighten domestic financial conditions. Should Chinese households or corporates purchase foreign exchange with domestic currency, they must sell domestic currency, contributing to depreciation pressure on the yuan. If these flows are sizable enough, and the PBOC wants to avoid a rapid fall of the currency, the central bank will sell its own U.S. dollar reserves, buying yuan and effectively removing the domestic currency from the money supply. The PBOC does not always intervene but has generally responded by managing the currency's movements carefully since the 2005 exchange rate reforms. As a result, capital outflows from China tend to remove domestic currency from the money supply and tighten domestic financial conditions. While the central bank has tools to counteract these effects, they require the PBOC to respond actively and generally occur only sporadically through injections of liquidity or cuts to banks' reserve requirements. In addition, not all banks may be affected equally because of transmission problems within China's money markets, so the usual impact of capital outflows is still to marginally tighten domestic funding conditions.

On balance, external pressures from U.S. monetary policy decisions, via the rising U.S. dollar or rising U.S. interest rates, are unlikely to independently trigger a financial crisis in China. However, tighter global U.S.

²¹⁴ See Carlos Caceres, Yan Carrière-Swallow, Ishak Demir, and Bertrand Gruss, "US Monetary Policy Normalization and Global Interest Rates," September 2016, IMF Working Paper, WP/16/195, <https://www.imf.org/external/pubs/ft/wp/2016/wp16195.pdf>; Falk Brauning and Victoria Ivashina, "US Monetary Policy and Emerging Market Credit Cycles," Federal Reserve Bank of Boston, Working Paper 17-9, October 2017, <https://www.aeaweb.org/conference/2018/preliminary/paper/ZzTS5sEd>.

²¹⁵ Bank for International Settlements, Joint External Debt Hub (interactive website with several options for displaying data), <http://www.jedh.org/>, State Administration of Foreign Exchange data on foreign debt, cited within Xinhua, "China's External Debt Continues to Grow," June 29, 2018, http://www.xinhuanet.com/english/2018-06/29/c_137290656.htm.

dollar liquidity conditions can act as a catalyst allowing pressures already building within China's financial system to suddenly surface. The last interbank market crisis, in June 2013, occurred during an episode of tighter emerging market funding conditions known in market discussions as the "taper tantrum," referring to anticipation of the Federal Reserve cutting back the asset purchases it had been using to ease monetary conditions in the United States. China's post-crisis credit expansion corresponded with the most accommodating period of U.S. monetary policy in nearly a century; as U.S. monetary policy continues to normalize, China's own financial system will need to adjust to different funding conditions overall.

However, Beijing does have a distinct option to increase its own autonomy relative to U.S. monetary conditions through allowing its exchange rate to become much more flexible. Should China no longer be concerned about defending the value of the exchange rate even if capital outflows intensify, then these outflows no longer have the same tightening effect on Chinese financial conditions because the PBOC would no longer intervene significantly to sell U.S. dollars and remove domestic currency from the money supply.

The problem for Beijing is how to adjust from the current system to a more flexible exchange rate regime because the likely response from global financial markets would be a dramatic adjustment in the value of the Chinese yuan, a rise in the cost of servicing external debt, and a significant deflationary shock to global markets. There may also be political consequences for China if Beijing is blamed for triggering such a move as a deliberate policy adjustment rather than as a result of simply allowing markets to operate. Currently the PBOC is trying to thread this needle by introducing more volatility into the movement of the currency, while also intervening far less frequently. The withdrawal is limited, and the PBOC is preserving their capacity to manage the currency through mechanisms such as the "counter-cyclical adjustment factor" in the daily fixing rate for the yuan.²¹⁶ But to carve out more autonomy for China from U.S. monetary policy decisions, Beijing must break the general expectation of persistent central bank intervention in the foreign exchange market, which will be a major step requiring sharper currency movements ahead and most likely a weaker yuan.

Outlook for China's Economic Policies

The discussion of China's exchange rate is one example where authorities in Beijing still have distinct policy choices to make in the period ahead, and those choices are likely to have implications for China's credibility, the likelihood of financial crisis, and the growth trajectory of China's economy. However, because of the legacy of China's post-crisis credit expansion, China's economic policy choices are far more limited in many respects, as the logic of path dependence is dominant. Most importantly, China's significant stock of debt, as well as the size of China's current banking system, with assets worth the equivalent of almost half of global GDP, limit the policy options that authorities have to manage the eventual costs of that credit expansion.

While it is impossible to predict exactly what Beijing might do in the coming years, a sustainable path to managing the risks within China's financial system will require key variables to move in predictable directions. In general, we would expect China's economic policy choices to manage the consequences of the post-crisis credit boom as follows.

²¹⁶ This "countercyclical adjustment factor" was first applied in May 2017, then removed in January 2018, and reimposed in August 2018. Bloomberg News, "China Central Bank Signals Renewed Action to Support the Yuan," August 24, 2018, <https://www.bloomberg.com/news/articles/2018-08-24/china-resumes-counter-cyclical-factor-in-yuan-fixing>.

- **Credit growth must be slower, which probably also slows the broader economy.** Credit needs to slow within China’s financial system as a matter of necessity. With banking assets already at almost \$40 trillion, the average credit growth pace of 17.5 percent seen from 2009 to 2016 is not sustainable; that would currently require the addition of almost \$7 trillion in new bank assets per year, equal to over 50 percent of China’s current GDP. The pace of credit growth has already slowed under Beijing’s deleveraging program to below 7 percent in bank asset terms and below 10 percent in total societal financing (TSF) terms as of June 2018. These growth rates may rebound from these lows, but there is no plausible path for China to return to the 15-18 percent pace of credit expansion seen in the post-crisis period. The system is now simply too large, and funding that rapid credit growth resulted in a very unstable liabilities structure, which Beijing has already started to consider a systemic threat.

Under conditions of weaker credit growth, the broader Chinese economy is also likely to slow as corporate capital expenditures and investment weaken. So far, Beijing’s deleveraging campaign has impacted corporates much more severely than households. Property construction is likely to continue slowing given the ongoing squeeze on informal financing channels. Consumption growth may pick up the slack to some extent, but expecting an offsetting rebound in household consumption is probably unrealistic, given rising consumer debt levels and worries about future income growth. The economy will probably decelerate below headline GDP growth of 6.7 percent in the second quarter of 2018 and below the targeted GDP growth rate of 6.5 percent. How Beijing reacts to the difficulty of maintaining growth at these rates is meaningful for the probability of financial crisis in the future. Potential growth rates are slowing, as discussed in Chapter 1, and without significant gains in total factor productivity, slower gross capital formation will limit long-run growth to the 3-4 percent range. However, accepting slower rates of credit growth and targeting slower rates of economic growth would likely improve China’s credibility overall and make it easier to manage China’s existing debt burden.

- **Interest rates in aggregate need to come down.** The essential difference between China and other highly indebted economies is the aggregate interest rate for most borrowers. Currently, the average interest rate on credit in China is 5.97 percent, according to PBOC data.²¹⁷ Government borrowing rates are lower, but most of China’s banking system assets are short-term, and corporate debt is a larger portion of China’s total debt stock than government debt. Chinese borrowers in aggregate pay an estimated 12-14 trillion yuan in interest to China’s banks every year, or around 14-16 percent of China’s GDP. This means a significant portion of new credit is simply used to manage the interest burden of existing debt. To improve the efficiency of credit and to reduce this interest burden over time, China’s aggregate interest rates need to trend lower. A significant reduction in aggregate interest rates can extend the timeframe for financial reform process, which probably improves Beijing’s policy credibility over the longer term.
- **Some interest rates for riskier borrowers need to rise.** However, not all interest rates should move lower, as one of the essential conditions of financial reform is that interest rates start to reflect actual credit risk rather than the expectation of government support, which is currently how many corporate bonds are priced. As more defaults occur within the bond market, riskier borrowers in sunset industries should face higher financing costs, which can help to facilitate exits

²¹⁷ People’s Bank of China, “Q2 2018 Monetary Policy Report,” August 10, 2018, <http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/3601278/2018081021363898908.pdf>.

for less competitive firms. Credit spreads between government bond yields and corporate bond yields will probably rise in the next few years, as corporate financing conditions are gradually viewed as more independent from government guarantors.

- **The central bank's balance sheet needs to expand, which probably means a weaker exchange rate.** To manage the consequences of financial system stress, Beijing will probably task the PBOC with more direct interventions to provide liquidity to financial institutions or industrial sectors in need. Over time, even if Beijing responds appropriately to incidents of financial stress as they occur, these interventions will probably require the central bank's balance sheet to expand in size. On balance, this expansion will place depreciation pressure on the yuan, as the central bank expands its domestic assets and indirectly contributes to faster growth of the domestic money supply. If the PBOC were to intervene to defend the value of the yuan, this may trigger additional capital outflows that could counteract the PBOC's efforts to stabilize domestic financial conditions. Using the PBOC's toolkit to manage the potential for financial crisis probably requires more flexibility in China's exchange rate regime, even though that likely would point to a weaker currency over time.

Explaining China's Financial Resilience

The resilience of China's financial system to crisis up to this point demands explanation, given the system's unprecedented size and the rapid pace of credit growth China has seen since the global financial crisis. Since 2012, the fundamentals of the financial system have changed considerably, making the system more vulnerable to changes in asset quality and variations in short-term funding conditions. Economic variables are only a small part of the explanation of China's unusual resilience. China's high savings rate is concentrated in areas of the financial system which would be difficult to deploy in case of funding pressures, and many other emerging economies have experienced distress while carrying low external debt burdens.

Political factors are far more important in assessing China's track record of financial stability. The extent of China's administrative controls over key financial system actors may help to reinforce China's credibility at the margin, but these tools are not fundamentally distinct from those in other centralized political systems. The most important factor anchoring China's stability so far has been China's credibility itself. Despite the rise in credit growth, there is general confidence that the government will undertake a meaningful and sufficient response to any financial stress that might emerge, and this confidence is prevalent in China's domestic financial markets as well as among overseas investors.

Ironically, the fact that political variables are more important to China's financial stability makes it more difficult for Beijing to prevent a financial crisis in the future, not less. Credibility is a powerful tool, but it is also fragile. China's credibility is not intrinsic to the country or the nature of its political system. It has been accrued based on China's past record of intervention in cases of stress, even in relatively risky asset markets. However, the political bargain at the heart of China's financial system has changed. Even as potential growth slowed, the financial system powered ahead, taking on riskier liabilities from Chinese households and corporates to do so. For Beijing, defending the stability of that financial system required defending the values of riskier forms of assets, which helped to reinforce Beijing's credibility to those investors.

The core of that bargain is now changing. Financial reform and China's deleveraging plan require Beijing to walk away from its previous pattern of intervention in China's financial markets. The hope is that credible market mechanisms can replace Beijing's implicit and explicit guarantees without sacrificing the broader credibility of a government commitment to stable financial markets overall. If Beijing's commitment to deleveraging and financial reform are credible, the track record that built China's credibility will no longer operate in the same fashion. Beijing is almost directly announcing to China's financial markets: "Past performance is no guarantee of future results."

Financial crisis is most probable during such a transition in market expectations, as Beijing's credibility is tested, than at other times. Beijing's first response as new financial stress materializes—perhaps in the corporate bond market, among rural commercial banks, or in the property sector—is unlikely to be a blanket guarantee of assets, which means that investors will need to assess their own potential losses. Should risk aversion accelerate and asset sales intensify, then Beijing will probably step in to stabilize markets. However, the uncertainty in markets about how these two decisions will play out is difficult for policymakers to assess, just as it was in June 2013 when the PBOC unexpectedly brought China's money markets to a standstill.

There are several scenarios for financial crisis in China, but it is impossible to forecast which specific path is most probable or in what timeframe. The section above highlights what we would argue are the most plausible scenarios for crisis because they involve significant changes in China's credibility. The fact that there will be tests of Beijing's credibility ahead appears nearly certain, which significantly increases the probability of some episode of financial stress in the next few years. Slower economic growth is highly probable as well, although the pace and extent of the deceleration will depend upon how severe financial stress becomes in the years ahead.

The eventual economic costs of rapid credit expansions (e.g., asset booms and busts, insolvent banks, and slower growth) are difficult to avoid and manage for all economies. China's credit expansion has been the world's largest in over a century. Credibility has helped Beijing to manage the typical consequences of rapid credit expansions so far, but that credibility is unlikely to hold forever, and will be tested in the near future. While China's financial resilience so far requires explanation, there do not appear to be compelling reasons to expect China's experience to be fundamentally different from other countries or for the country to avoid the typical consequences of rapid credit expansions over time.

Implications for the United States

The implications for the United States of the evolving risks posed by China's economic model have changed substantially since the beginning of China's reform period. Through four decades Washington counseled Beijing on how to bolster its growth and reduce financial risks, so that China could first serve as a bulwark against the Soviet Union and then later join the ranks of international economic system leadership. Of President Ronald Reagan's three top-level objectives for his pathbreaking trip to China, one was "To help China modernize, on the grounds that a strong, secure and stable China can be an increasing force for peace, both in Asia and the world."²¹⁸ Deputy Secretary of State Robert Zoellick's oft-cited 2005 "Responsible Stakeholder" framework for describing China's path ahead, and steering it into a leadership

²¹⁸ Reagan Administration, National Security Decision Directive 140, "President's Visit to People's Republic of China," April 21, 1984, <https://fas.org/irp/offdocs/nsdd/nsdd-140.pdf>.

role, took the narrative forward and global.²¹⁹ U.S. commitment to institutionalize bilateral policy coordination and build a relationship of burden-sharing was formalized from 2006 in Treasury Secretary Henry Paulson’s Strategic Economic Dialogue and later expanded under President Barack Obama. The U.S. interest was defined as a strong China converging with advanced economy norms. Core to that was a financial system capable of facilitating rebalancing from heavy industrial, trade surplus-dependent growth toward domestic consumption-led growth. Redeployment of credit from capital-intensive to labor- and consumer-intensive industries through capital markets responding to normal, long-term value creation incentives was critical.

The implications of China’s economic success have changed as China’s reform dynamics have changed, making the U.S. interest far more complicated. In 1994, Federal Reserve Chairman Alan Greenspan said in a meeting with Vice Premier Zhu Rongji in Beijing that, “it is very important to the United States as well as to the whole world that China succeed. . . . Therefore, we are willing to provide as much assistance as we can to your central bank in those technical areas in which we have many years of experience.” Constructive advice for China’s policy reform was a clear tenet of U.S. diplomacy, communicated both directly and through Bretton Woods institutions. But Beijing’s revealed preference in recent years for growth and political stability over a number of the market-driven reforms and structural adjustments that Greenspan and Zhu discussed as shared objectives on that October day—while across town Morgan Stanley and China Construction Bank were toasting the creation of a first joint venture investment bank—has precipitated a deep reevaluation in Washington.²²⁰

The new U.S. calculus of self-interest in light of China’s economic character and trajectory is not yet clear. Analysis of the U.S. interest vis-à-vis China’s economy now involves major participation from the security community. China takes a “whole of society” view of national interest which includes the manner in which the economy—including the financial system—serves larger political interests and secures the leadership position of the Party. The U.S. security community has countered with a like response, stating in the December 2017 National Security Strategy²²¹ that for the United States too “economic security is national security.” Radically revising the dictum that China’s success was U.S. success, the document goes on:

The United States helped expand the liberal economic trading system to countries that did not share our values, in the hopes that these states would liberalize their economic and political practices and provide commensurate benefits to the United States. Experience shows that these countries distorted and undermined key economic institutions without undertaking significant reform of their economies or politics. They espouse free trade rhetoric and exploit its benefits, but only adhere selectively to the rules and agreements.

This dark view is directly related to the policy choices evident in our framework, even if this present U.S. analysis gives Beijing far too little credit for the many reforms it did undertake, at significant cost, and the extent to which many, if not all, our values are shared. Practically, this means that the implications of China’s economic choices are viewed as a national security consideration for the United States as never before. This is expressing itself in new legislation such as the Foreign Investment Risk Review Modernization Act (FIRRMA), which was motivated by the belief that China’s financial sector is an agent

²¹⁹ Robert Zoellick, “Whither China? From Membership to Responsibility?” Remarks to National Committee on US-China Relations, September 21, 2005, <https://2001-2009.state.gov/s/d/former/zoellick/rem/53682.htm>.

²²⁰ Zhu Rongji, 259-266.

²²¹ National Security Strategy of the United States of America, December 2017, 14, <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf>.

of national political intention supporting the acquisition of U.S. firms. But while the threats presented by China's choices are a motive for this Hobbesian turn of the tide, China's vulnerabilities play a role as well. The United States' unilateral trade war strategy is egged on by a theory of China's economic fragility—that Chinese powerhouses will turn out to be flimsy when cut off from their advanced economy feeding grounds. Our analysis suggests China's systemic defects are real, but that there is little near-term likelihood of a crisis trigger from the outside; internal fault lines are far more concerning.

We identify eight implications with first order importance for Washington from our framework:

1. **Contingency:** Beijing can either replenish long-term credibility by undertaking a profound program of policy reforms that slow near-term growth and introducing real risks to social stability or sustain current growth and stability conditions for a few years more until deterioration accelerates. China cannot do both, as demonstrated by the impact of deleveraging on the economy in 2018. A China spending trillions of dollars on politically motivated projects at home and abroad cannot be credible in the longer term, and hence is untenable. A credible China is one convergent with U.S.-compatible economic policy norms, which Washington is able to work with in a conventional manner, even as it becomes a larger and more formidable challenger; a China lacking credibility even within domestic financial markets is not going to be a long-term global peer competitor. It is important for the United States to defend and maintain its own credibility, not deplete it, to prevent a China-driven scenario which isn't going to happen. A faulty assumption of Chinese exceptionalism should not form the basis for fundamental policy reorientation in the United States.
2. **Risk:** The evolving nature of the Chinese economic system implies that the United States faces growing international economic risk, from a new direction. When it was a \$1.2 trillion economy during the Asian financial crisis (2000 figures), China represented an inconsequential share of the global economy (just 3.6 percent) and hence a marginal concern for spillover impacts on the United States. Today, China is 16 percent of global activity (\$12.8 trillion), and a far larger proportion of global marginal growth (40-50 percent). A substantial disruption of China's growth would result in negative international shocks, such as deflationary pressures from its falling demand, surging export of mushrooming overcapacity, and rising U.S. trade deficits. U.S. firms hold an estimated \$256 billion in direct investment assets in China, which produce significant annual profit streams, and these would be at risk.²²² Second-order effects would probably occur through commodity prices and U.S. investment in sectors dependent upon sustained emerging market growth.
3. **Competition:** Superficially, China's prioritization of growth over credibility and market-based resource allocation presents the appearance of an alternative economic model, confronting the United States with heightened policy competition for its regulatory and economic model. This is profound, as the prevailing U.S. norms were the hard-won result of almost a century of experiments with markets versus state planning and democracy versus authoritarianism. The framework we elaborate in this study argues that the United States remains on the right side of history in these debates, and that enduring forces of economic nature will reassert themselves in China in the years ahead despite Beijing's efforts to fight the forces of financial gravity; based on

²²² Rhodium Group, "Two-Way Street: 2018 Update," April 2018, https://rhodiumgroup.gistapp.com/static/downloads/RHG_TWS_2018_Update_Executive_Summary_Final.pdf.

the operations of China's financial system, there is no economic or political basis for Chinese exceptionalism. But in the interim, the reopening of the contest of ideas will be distracting in the United States and elsewhere. The effects on the competitive landscape are not just intellectual: in the commercial sphere China's penchant for maintaining above-trend potential economic growth relates directly to subsidies and other benefits that distort international competition and promote illiberal attitudes. The exporting of China's financial overcapacity is a competitive threat in global commerce.

4. **Timing:** Putting the preceding points together, another implication of this study is that even if China finds its way toward Beijing's ideal scenario as described above, the challenges—risk and competition—will likely get worse before they get better. As discussed in Chapter 2, the factors constraining the Chinese policy mix and outlook are coming to a head even now, as shown, for instance, by the rising defaults of local government-linked firms and the political pressure to relax the deleveraging campaign. We are likely to see changes in perceptions of China's financial stability within the next three years. Until an inflection point arrives—and there is evidence of deteriorating stability in several markets as of this writing—the risks associated with an expected transition will likely compel leaders to double down on problematic elements of the present model in hopes of allaying concerns.

5. **Inflows:** Our framework describes a Chinese economy in which the motive for capital outflows is hardwired and the case for corresponding inflows is not. The home bias of Chinese investors is currently overwhelming: virtually all of the nation's savings is at home in a single emerging market with mounting structural challenges. However, that home bias is rapidly changing. Even a modest shift from the current level of approximately 2 percent²²³ to 10 percent foreign portfolio asset holdings by Chinese residents (compared to global averages of 37 percent for equities and 25 percent for bonds, according to Coeurdacier and Ray)²²⁴ would translate into \$2 trillion in portfolio outflows. Combine this with reasonable estimates that upwards of \$2 trillion in Chinese outbound foreign direct investment is likely to be deployed worldwide by 2025 (likely much more, since we are well past \$1 trillion now with seven years more to go), and the magnitude of projected outflows is apparent.²²⁵ On the inbound side, there is hearty global appetite for exposure to China, but this is contingent on resolving stark challenges: Beijing must settle its economic "wars" with the United States and others in the OECD; repair and liberalize domestic capital markets and put in place an independent legal system to back them up; and normalize financial account controls and management of the exchange rate regime, while shielding both from arbitrary political power. Given the difficulty of these imperatives, we expect that China will be far more sensitive to the importance of attracting global capital (direct and portfolio), which in turn should soon start to influence Chinese policy behavior in ways relevant to U.S. policymaking. Beijing is likely to more highly value constructive relations with monetary policymakers in advanced economies and is likely to work collegially to stave off external crises triggered by factors such as U.S. monetary policy. The alternative for China's leaders is a country with far less influence on the global

²²³ Estimates made based on the proportions of total outbound portfolio assets between 1998 and Q1 2018 within China's balance of payments data, compared to the stock of total domestic deposits in the banking system in both foreign and domestic currency. This is not exactly comparable to Coeurdacier and Ray's more sophisticated approach but is meant only to illustrate the potential changes in flows should home bias continue to shift.

²²⁴ Nicolas Coeurdacier and Helene Ray, "Home Bias in Open Economy Financial Macroeconomics," National Bureau of Economic Research, working paper no. 17691, December 2011, <http://www.nber.org/papers/w17691.pdf>.

²²⁵ Estimate from Rhodium Group, based on trends in outbound Chinese investment since 2000.

economy because the exchange rate and Chinese asset prices are highly likely to depreciate more sharply under the pressure of sustained capital outflows. A China attempting to aggressively export its excess savings to the rest of the world without corresponding capital inflows is consistent with a far weaker global economy as well.

6. **Uncertainty:** The analysis of China's growth endurance set out in this study is complex; that is a function of China's reality. Given the cacophony of debate about China's past, uncertainties about the future come as little surprise. Issues as fundamental as the actual current pace of China's GDP growth still ignite considerable debate. U.S. domestic debate over the strength of China's economic outlook will be confused and lack consensus for some time, with some observers reading China's persistence as evidence of strength and staying power, and others diagnosing a depletion of the seed corn for future growth. This in turn will keep U.S. China policy volatile and divisive—as it has become over the past two years. Credibility—the most essential component of China's ability to sustain growth and prevent crisis—is very difficult to define and observe in a manner that supports agreement, and its effects will be most apparent in China's domestic financial markets, which in some cases are difficult to discern from Washington. This calls for careful observations of those markets, but there are no easy solutions to reduce this uncertainty.
7. **Alignment:** A broader international implication of this uncertainty on how to read China's prospects is that other advanced economies will struggle with their prognosis just as much as Washington, and probably more so, as they will tend to have fewer resources for analysis and evaluation and may be more subject to intellectual influence by Chinese public diplomacy efforts aimed at forestalling doubts about China's trajectory. This will impact advanced economy efforts to coordinate their economic views on China and so will make policy alignment among erstwhile like-minded nations more difficult in the next few years. It will also hamper collective action supportive of China should a systemic crisis arise in the world's second largest economy.
8. **Vigilance:** Finally, the lead time for recognizing key turning points in China's outlook may be extraordinarily short, since many of the pathways to crisis described above can eventuate within China's domestic financial markets in practically no time at all, leaving U.S. policymakers little time to formulate and implement a response, both rhetorically and practically. Advance scenario planning for financial instability in China is essential.

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