

FINANCIAL INSTABILITY IN CHINA: POSSIBLE PATHWAYS AND THEIR LIKELIHOOD

Victor Shih, Visiting Fellow, MERICS, Associate Professor, UC San Diego

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MAIN FINDINGS AND CONCLUSIONS

- **Total non-financial credit in China has reached record highs.** It stood around 254 trillion RMB as of May 2017, equivalent to 328% of 2016 nominal GDP.
- **Despite the enormous debt load, a domestically triggered crisis is not likely in the next five years.** Trouble is more likely to come from some combination of capital flight and sudden withdrawal of external credit.
- **Capital flight:** China's foreign exchange reserve now totals only 10% of money supply and 30% of household savings, leaving China vulnerable to capital flight that depletes liquid foreign exchange reserves. If large outflows resume despite capital control measures, "maxi-devaluation" and external defaults may be the only means of preserving China's reserves.

Crisis scenarios:

- **Sharp household deleveraging:** Because Chinese household debt is still a relatively small share of banking sector assets, a rise in distressed household debt by itself will not impact the financial system by much. Beijing has guarded against this by requiring high down payments from home buyers.
- **Withdrawal of credit by international lenders:** Including net Hong Kong-domiciled debt, Chinese external debt exceeded 1.9 trillion USD, 1.2 trillion of which in short-term debt to Chinese financial institutions. Additional external borrowing muted the impact of capital flight to the tune of 140 billion dollars in the past two years. Sudden withdrawal of foreign credit would immediately lead to severe reserve depletion, which can only be stopped by "maxi-devaluation" and defaulting on external debt.
- **Panic in shadow-banking sector:** Off-balance-sheet non-standardized credit to the corporate and government sectors has reached 50 trillion RMB by May of 2017, or 64% of GDP. Despite the enormity of shadow credit, as long as the flow of liquidity continues from the banking sector, shadow finance is unlikely to implode in the near future. However, given the enormity of shadow finance and the PBOC's periodic tightening, miscalculation by the PBOC can cause a temporary panic.

1. Financial instability in China: possible pathways and their likelihood

Table 1

As credit in China continues its rapid build-up, an increasing number of scholars, policy makers, and investors wonder how long China can sustain such a high pace of leveraging before a financial crisis. Yet, analysts of past bubbles also underestimate the extent to which the ruling Chinese Communist Party controls nearly every aspect of the financial system through party committees in every financial institution in China. This control decreases the chance of panic selling, often the trigger of a crisis.

In the analysis below, I first calculate outstanding debt and interest payments, followed by analysis of four plausible scenarios of financial crisis in China: household defaults, shadow banking panic, capital flight, and a sudden stop of international lending. I conclude that China's greatest vulnerability resides in its dwindling foreign exchange reserve and escalating external debt, which one day can trigger a confluence of maxi-devaluation, external defaults, and sharp asset price depreciation.

An estimate of the leveraging

To get a sense of China's leverage level, this report first provides an estimate of total non-financial debt in China. Estimating total outstanding debt and, related, interest payments on the debt, is important because high debt and onerous debt servicing ultimately lead to, as Reinhart and Rogoff point out, the evaporation of confidence overnight.¹ In the case of China, high debt necessitates a high pace of monetary expansion, which ultimately brings into question the worth of the Chinese currency.

In the analysis below, I calculate China's non-financial debt, which is borrowing undertaken by firms, individuals, and government.² Table 1 shows **that total credit in China has reached around 254 trillion RMB as of May 2017 with 147 trillion of it sitting on banks' balance sheets and 107 trillion in shadow banking credit.** Total credit as of May 2017 was equivalent to 328% of 2016 nominal GDP, a 28% increase as a share of GDP compared with the end of 2015.

While some categories of shadow finance, including bill finance and non-loan trust credit, actually declined, most other categories rose by double digits in percentage terms in the year and half between the end of 2015 and May 2017. Credit held by funds, which will be discussed in greater detail below, rose by 116%.

Shadow banking rises faster than on-balance-sheet credit

On-balance-sheet credit, off-balance-sheet credit, total credit (bn RMB)³



	2015	2017-May	Change
Total undiscounted bills	5,494	4,131	-24.8%
Total trust loans	5,279	7,201	36.4%
Total entrusted loans	12,396	15,184	22.5%
Non-bank bond balance	9,790	17,618	80.0%
Adjusted trust products	11,024	14,765	33.9%
Loan interbank assets	15,709	14,972	-4.7%
Underground loans	7,500	8,600	14.7%
Credit held by funds	8,773	18,970	116.2%
Loans on insurance balance	3,203	5,505	71.9%
Total shadow-banking assets	79,168	106,946	35.1%
Total on-balance credit	123,000	147,750	20.1%
Total credit	202,168	254,696	26.0%
Total credit as a percentage of GDP	295%	329%	33.8%

Sources: CEIC, PBOC, Chinabond.com, China Trust Association, China Fund Manager Association, China Insurance Association

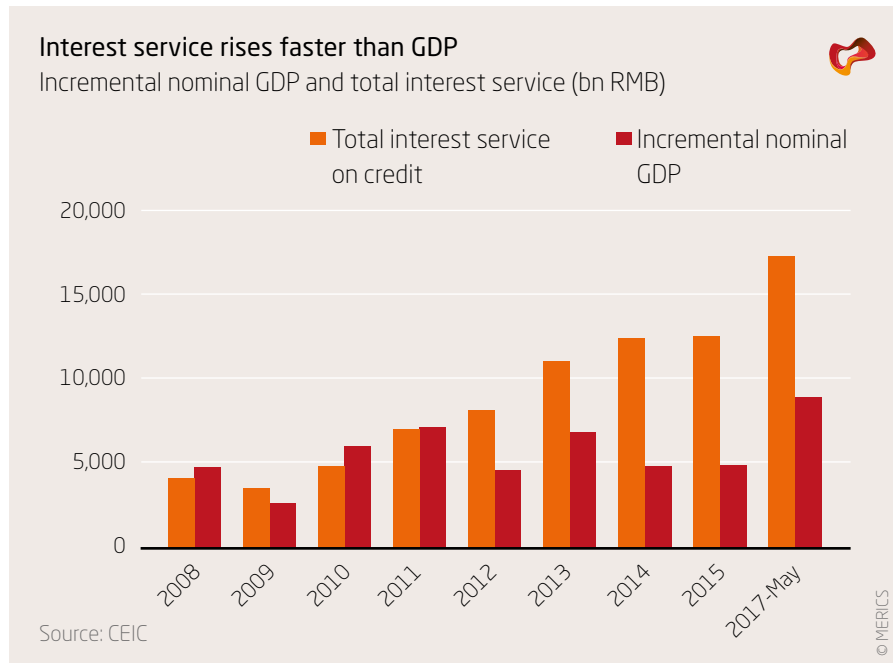
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With credit fast approaching 328% of GDP, how much longer can this go on? Here, the amount of interest that debtors in China must pay creditors provides clues on the costs of such a high debt level. If interest servicing exceeds incremental increase in nominal GDP, the debtor would need to pursue one of two courses of action to avoid a crisis. First, creditors can extend even more credit to the debtors

so that interest payments are serviced with new credit. This mechanism renders China more of a Ponzi unit, which requires new credit to service interest payments. Alternatively, a rising share of income for households, firms, or government will go toward servicing interest. While the first dynamic would cause the acceleration of debt accumulation, the second dynamic is tantamount to a massive tax which will slow growth for an extended period.

China as a whole is a Ponzi unit. Total interest payments from June of 2016 to June of 2017 exceeded incremental increase in nominal GDP by roughly 8 trillion RMB (Figure 1). Since we did not see large-scale defaults in China, the new additional interest burden must have been financed in some way. Most likely, roughly this amount or more was capitalized as new loans, contributing to the rapid rise in total debt. As Figure 1 shows, this was not always the case. Prior to 2011, incremental nominal GDP roughly matched or even exceeded interest payments. The advent of high-yielding shadow banking led to the explosive growth in interest payments, and thus the need to capitalize interest payments, starting in 2012. This is a dynamic which will drive debt growth in China for years to come, or until the debt bubble ends.

Figure 1



Channels for financial crisis

HOUSEHOLD SECTOR CRASH

The financial malaise that the United States experienced in recent years stemmed from household sector indebtedness, which led to distrust between financial institutions over distressed household debt they held on their balance sheets. Is this a possible scenario for China? Because Chinese household debt is still a relatively small share of GDP and of banking sector assets, the sudden appearance of a large amount of distressed household debt by itself will not impact the financial system significantly. However, because the appearance of distressed household debt likely will correlate with a serious economic downturn, this will feed into debt deflation triggered by the highly-indebted corporate sector.

We calculate household debt by adding the PBOC official statistics of other depository institutions' claims on the household sector to loans made by housing providence funds (HPF), which are non-bank entities, to households.⁴ To be sure, a pattern of rapid leveraging is apparent. While household savings growth has fallen to under 10%, recent months have seen household borrowing exploding at 30% growth rates. Household debt has reached 41 trillion RMB as of the end of June 2017, which included 36.7 trillion in bank loans and over 4 trillion in housing providence loans. Because of the high speed of growth, Chinese household debt has reached nearly 60% of GDP by June 2017 (Figure 2). It is poised to reach over 90% of GDP by 2020, essentially pre-crisis level in the United States.

Yet, Figure 2 also reveals that even if we assumed that household debt will grow by 25% in the years leading up to 2020, it will remain a modest 20% of overall bank assets because overall banking sector assets also will rise quickly. Thus, even 25% NPL ratio for household debt would only require a write-down of roughly 5% of bank assets. If this were to occur in isolation (a big if), a combination of government bailout and bank write-down likely will resolve the problem with little difficulty. It is likely that households also borrowed additional amounts to pay down payments in recent years. From 2013 to the end of 2016, buyers in China paid approximately 13 trillion RMB in down payments. If a quarter of that was borrowed, household debt would increase by another 3.25 trillion, again a relatively modest amount in China's banking system.

Chinese household debt is poised to reach over 90% of GDP by 2020

Figure 2

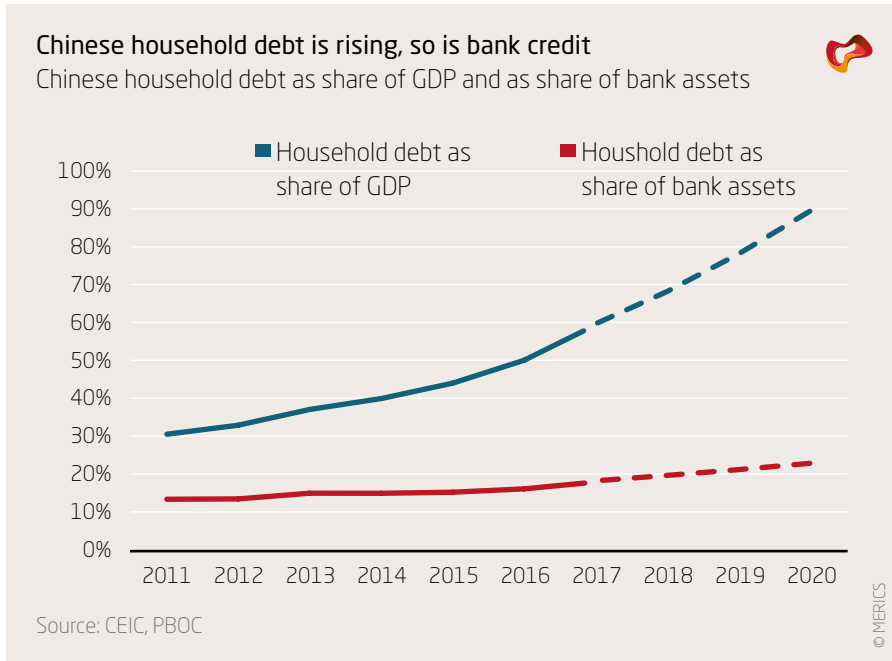
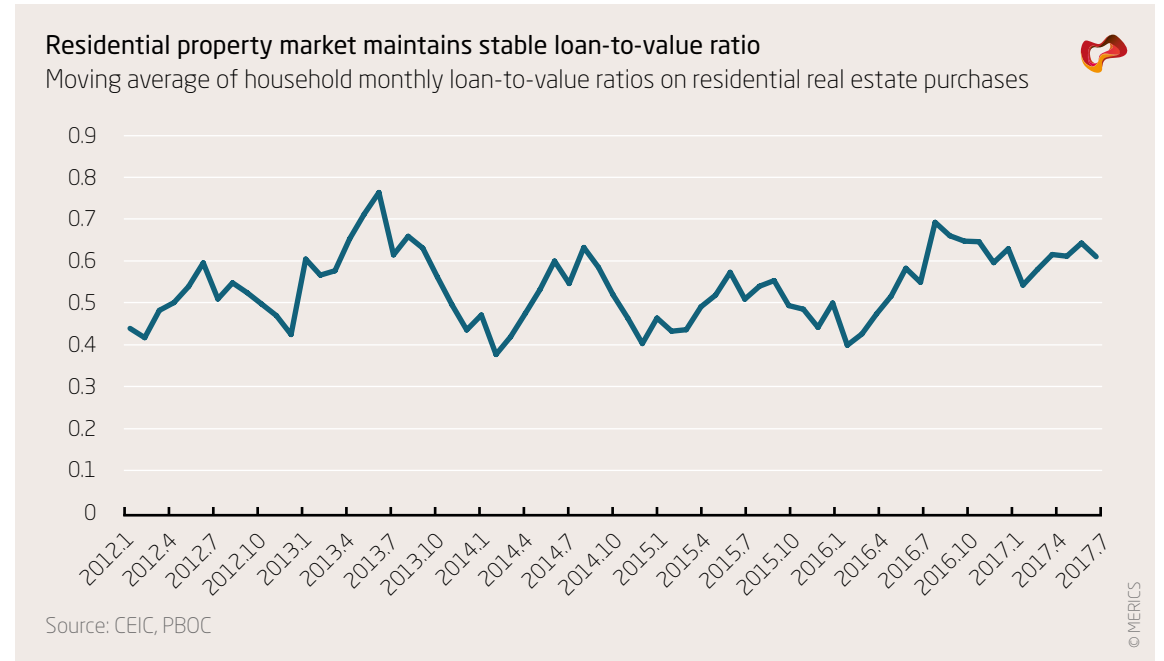


Figure 3



But even with a relatively low aggregate level of household debt, households may be borrowing heavily on the margin to buy increasingly expensive real estate, which would be a warning sign for a sharp deleveraging by the household sector in the near future. As in the United States, the highly leveraged marginal buyers of real estate may be the first to default or to sell in a panic, causing a spiral of default-driven asset price deflation.

The Chinese government has increased down payment requirements for mortgages to limit leveraging and to control prices in China's top cities. In Beijing, for example, financial regulations mandate 35% down payment for the first home and a whopping 50% down payment for second homes. To ascertain whether these regulations are effective, we calculate a rough loan-to-value (LTV) ratio for new real estate purchases.⁵ If the marginal buyers are more leveraged, we should see an upward trend in this line toward 1. Yet, as Figure 3 reveals, although household LTV ratios went up during property peaks, there is no clear sign that households were borrowing more relative to purchasing prices in order to buy real estate in the current cycle.

Although household debt on its own is unlikely to trigger a financial crisis, the household balance sheet is increasingly squeezed on both the asset and the liability columns by China's credit bubble. On the liability side, households are forced to buy increasingly expensive properties with more leveraging. In the short term, this allows growth to continue. In the medium term, however, household discretionary spending will fall as households are saving for down payments or paying burdensome interest on mortgages. Thus, the main impact of rising household leveraging will be on the consumption front rather than as a trigger of a financial panic.

On the asset side, households with properties gain from the financial bubble through asset price inflation. However, households' financial assets are almost 100% invested in financial instruments helping to roll over the debt of highly indebted government and corporate sectors. If the asset bubble were to burst in China, households, like the government and much of the corporate sector, will have negative balance sheets due to high debt and rapidly shrinking value of both their physical and financial assets. To be sure, the Chinese government has succeeded in avoiding the bursting of the asset bubble, but this has been achieved by a greater degree of leveraging.

If the asset bubble were to burst, households, government and the corporate sector will have negative balance sheets

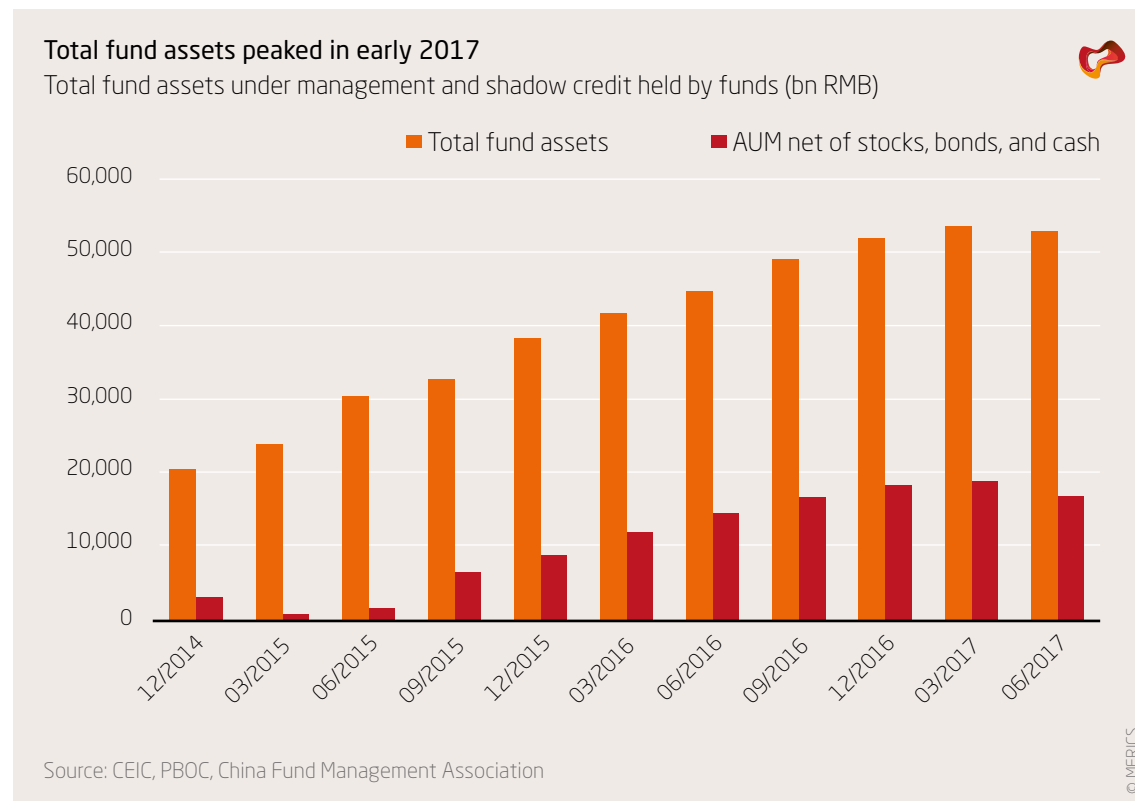
SHADOW BANKING PANIC

As alluded to in the first section, off-balance sheet credit has grown tremendously in recent years. The growth of shadow financing in China is closely linked to banks' desire to transfer primarily corporate loans off of their balance sheets in order to circumvent various regulatory requirements and in order to roll over distressed loans. It is a symptom of a highly leveraged corporate sector and pervasive moral hazard in the financial system. If a panic were to ensue for the holders of these assets, both the corporate and household balance sheets would suffer substantially. Yet, despite explosive growth, shadow banking assets remain a modest share of total banking assets, and both the central banks and commercial banks continue to support shadow banking with interbank loans. As long as the flow of loans continued, shadow finance should not be the source of a financial panic. Conflicting objectives at the PBOC and CBRC remain the biggest threat to stability in the shadow-banking world, as recent volatility in the interbank market has shown.

In the classic set up of shadow financing, a bank transfers an on-balance sheet loan to an off-balance sheet vehicle such as a wealth management product (WMP), trust product, or an asset management plan (AMP). The funding for that "purchase" comes from the private banking division of the bank, which channels clients' deposits into a shadow banking product.

Shadow credit has seen explosive growth in recent years, growing from nearly zero to a 50 trillion RMB phenomenon.⁶ Even at 50 trillion RMB, however, shadow credit still pales in comparison to assets held by the formal banking system, which had 240 trillion RMB in assets at the end of June 2017. The biggest new category of non-financial credit is that held by investment funds, which include stand-alone funds, as well as asset management subsidiaries of major banks, insurance companies, and brokers. Figure 4 shows that fund assets grew from around 8 trillion RMB at the beginning of 2013 to over 50 trillion by June 2017, a six-fold increase in a little over 4 years to 65% of China's GDP. Meanwhile, funds' holding of off-balance sheet credit rose from 1.6 trillion RMB in mid-2015 to a whopping 17 trillion by June 2017 (Figure 4).

Figure 4



Despite the modest size of shadow financing relative to the banking sector, at 50 trillion RMB, a panicky unwinding of assets in the shadow banking world can spell serious problems for China. In fact, China already experienced a panic among non-bank financial institutions in the fall of 2016. Non-bank financial institutions (NBFIs) borrowed from banks (i.e. repos) to finance around 50% of their bond holding as of early 2016. To lower this level of leveraging, the PBOC increased repo rates in the fall of 2016, which caused NBFIs' leverage ratio to drop by 20%, a 2 trillion RMB reduction in borrowing in one month.

In any other market, this would have caused a panic in the interbank bond market and distress in a number of NBFIs. In China, however, NBFIs hardly sold any bond holdings. The reason for calmness is that many shadow banking par-

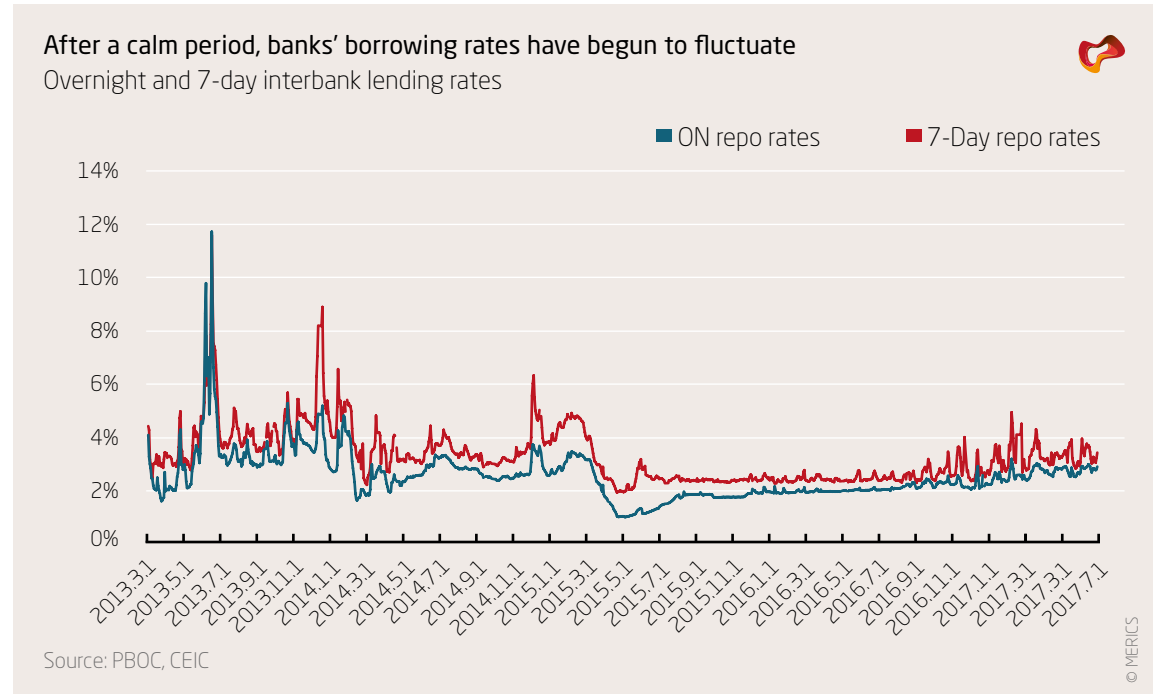
ticipants, including funds, insurance companies, and brokers, had access to the interbank market and thus access to a nearly limitless amount of money provided, ultimately, by the central bank.⁷

Even when short-term repos shrank rapidly, NBFIs still received longer-term facilities from the PBOC and the banks. PBOC lending to banks nearly doubled in 2016 alone, from 5 trillion RMB outstanding to nearly 10 trillion RMB. Meanwhile, banks took PBOC money, which increased the money supply through the multiplier effect, and lent an additional 10 trillion RMB to NBFIs in the same period.

Although PBOC liquidity can avert crises, too much liquidity conflicts with other policy objectives. In recent months, the PBOC has increased interbank rates intentionally in order to deter too much leveraging by smaller banks and NBFIs, as well as to discourage capital flight. Given the high indebtedness of the corporate and government sectors, higher rates made debt rollover much more difficult and costly. Higher rates also have slowed down bond issuance. Monthly bond issuance (net) was around half the level in spring of 2017 compared to levels in the spring of 2016.

The CBRC likewise has tried to lower leveraging by NBFIs by placing limits on interbank (including loans to NBFIs) exposure by banks. Yet, given the enormous size and the questionable quality of the assets in shadow banking, a draconian regulatory crackdown may risk triggering a financial crisis. Thus, in June 2017, the Chinese media reported that the CBRC has delayed the timetable for banks' self-audit for exposure to shadow banking.⁸

As long as the central bank is not compelled to stop the flow of liquidity and as long as regulators do not place any hard limit on the amount that NBFIs can borrow, rising shadow credit in itself likely will not be the trigger of a systemic financial crisis. However, if the PBOC neglected to provide sufficient liquidity for long periods of time due to another policy priority, as it did in 2013 and 2014, interbank rates will spike up, indicating a panic in the entire financial market (Figure 5). Recent regulatory actions, although having a muted impact compared to 2013, already caused greater fluctuation in interbank rates starting in late 2016, reflecting nervousness among banks. Also, central bank provision of credit will necessarily lead to a relatively fast increase in money supply.



CAPITAL FLIGHT

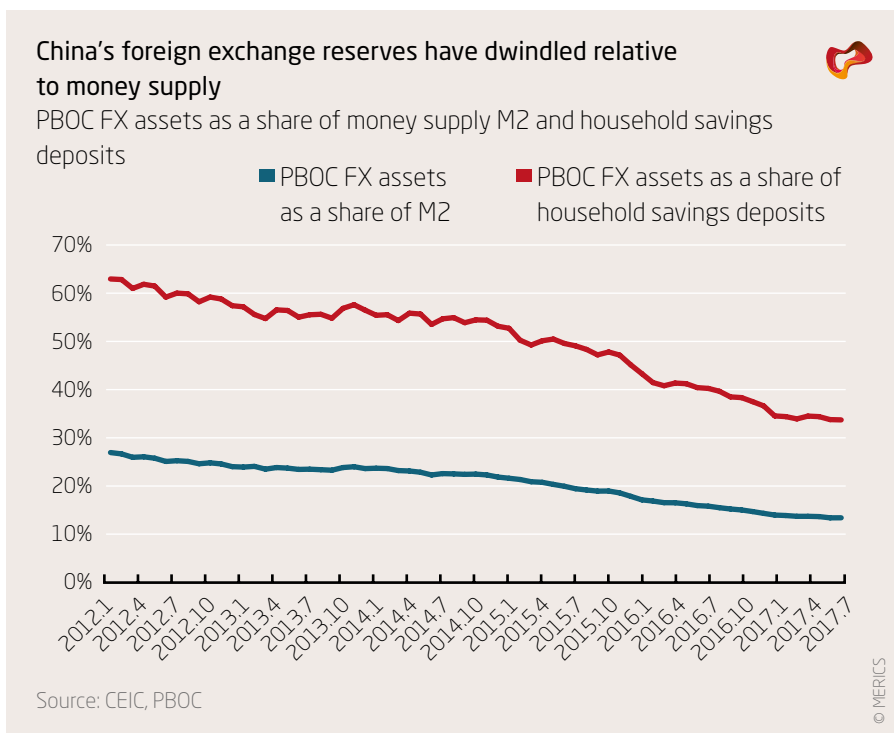
As debt accumulates in a country, expectation of future growth may decline, and wealthy households may be afraid of a massive tax in the future to help bail out the financial system.⁹ These considerations may prompt wealthy households to move money out of a country, depleting a country's foreign exchange reserve and forcing a dramatic maxi-devaluation of the currency. These events could in turn trigger severe inflation, high interest rates, and substantial asset depreciation.

Prior to 2013, severe capital flight was considered only remotely possible in China. However, between the middle of 2014 and the beginning of 2017, China's foreign exchange reserves lost nearly 1 trillion USD. The question is no longer whether massive capital flight is possible; it clearly is possible. The main question now is whether the Chinese government can prevent capital flight of the same

scale in the near future. Given the enormous trade flows that go through China and China's large monetary base, China remains highly vulnerable to another bout of capital flight.

To begin, I assess how ample China's foreign exchange reserves are against capital flight. Figure 6 shows that the foreign exchange reserves, as calculated in the RMB-denominated PBOC foreign exchange assets numbers, used to be over 20% of money supply and 55% of household savings deposits as of mid 2014. In the subsequent two years, however, the depletion of the reserves and continual increase in the money supply have lowered these ratios to just above 10% for money supply and 30% for household savings. In other words, if households and firms were to move just 10% of money supply overseas, China's FX reserves would basically be depleted. The need for China to increase its money supply directly links its domestic credit bubble to a potential crisis triggered by capital flight.

Figure 6



The legal channel for moving money out of China by and large is composed of two steps. First, banks have to convert RMB into US dollars for customers. Second, customers have to get their banks to wire the converted US dollars to Hong Kong or other offshore locations. Figure 7 shows the ebbs and flows of banks' net conversion (negative denotes conversion into dollar) and banks' net remittance (negative denotes moving funds out of China) on behalf of customers, as well as monthly changes in the FX reserves, including reserves net of the valuation effect.¹⁰ As one can see, these numbers largely correlate with each other. That is, when bank customers convert RMB savings into dollars, banks have to buy more dollars from SAFE to satisfy dollar demand, thus depleting the FX reserves. We saw two major waves of outflows in recent years, one in the fall of 2015 and the other in early 2016. In both waves, monthly reserves depletion reached 100 billion USD while close to that amount was converted into dollars or even moved offshore (Figure 11).

Figure 7

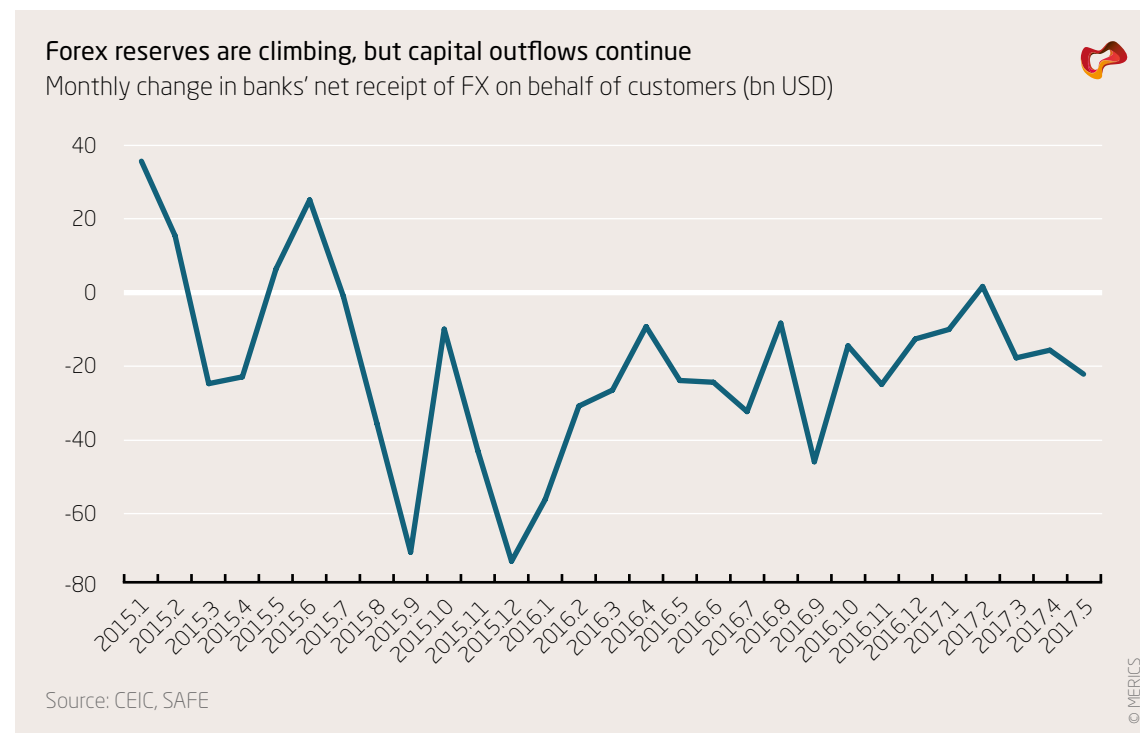
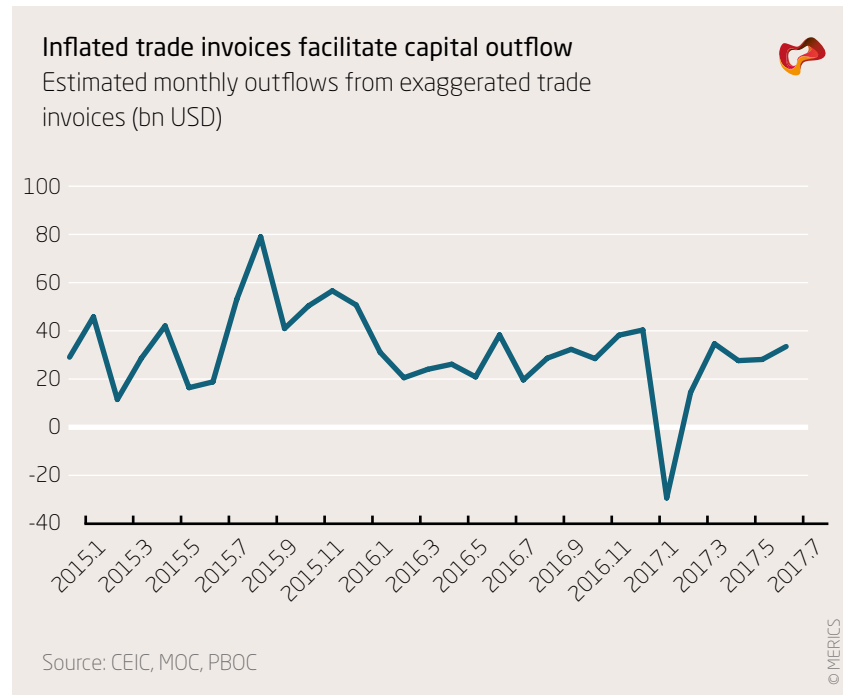


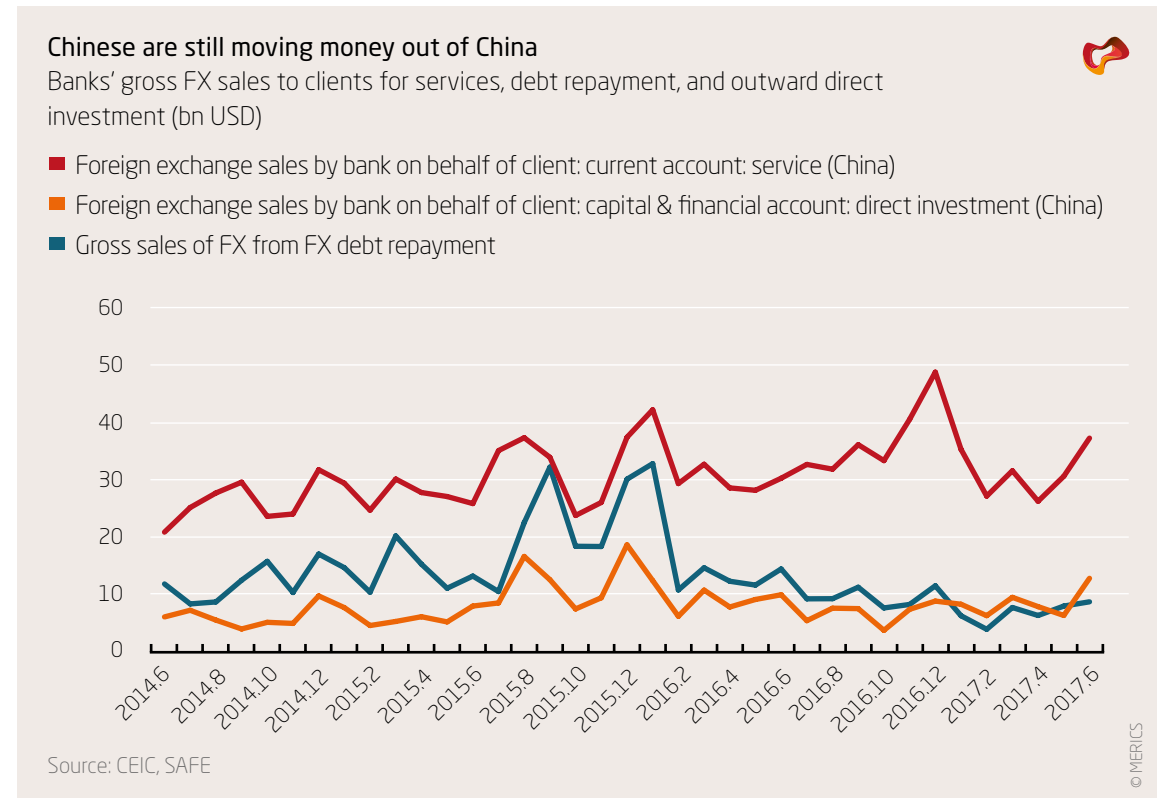
Figure 8



estimate the extent of this phenomenon by subtracting gross export receipts by onshore banks from the monthly gross exports numbers and subtracting monthly imports from import invoices that onshore firms have paid to offshore counterparties (Figure 8). As one can see, such trade exaggerated invoicing led to monthly outflows of 80 billion USD in September 2015. Exchange regulations have lowered the level of such outflows, but they by no means have disappeared. Through most of 2017, China still lost 20 to 30 billion USD per month to trade misinvoicing or offshore payments of export.

Figure 9 shows the major categories of gross outflows from China. As one can see, repayment of FX debt and outward FDI were two major channels through which money flowed out of China in the fall of 2015 and early 2016. After March 2016, new FX regulations, which put a monthly and regional ceiling on outward FDI and FX debt repayments, managed to control outflows in these two categories.

Figure 9



As Figure 7 shows, starting in early 2017, a divergence began to emerge between headline reserves changes, which have been positive, and banks' net purchase and remittance of dollars for customers, which have been negative. In May 2017, for example, the FX reserves gained by 24 billion dollars, whereas banks remitted 21 billion dollars out of China on behalf of customers.

Regardless of the discrepancies, onshore entities have converted much less RMB into dollars since 2Q 2016, compared with late 2015. This obviously was the result of escalating capital control measures. These measures have included limitations on corporations to swap RMB into US dollars without underlying trade invoices, checks on the veracity of trade invoices, higher hurdles for individuals to convert RMB into dollars, crackdowns on underground banks and popular offshore locations to convert money, including Hong Kong and Macau.

Faced with increasingly draconian capital controls, exporters who earned USD increasingly opted to receive payment abroad (i.e. in Hong Kong). Meanwhile, importers exaggerated imports in order to remit more money overseas. One can

ries to less than 10 billion USD per month. This was a great success for Chinese capital control. However, even with the advent of tighter regulations, China continued to struggle with payments for services to counterparties overseas. Chinese banks sold 30 to 50 billion dollars per month to customers who traveled, shopped, received medical care, and studied overseas (Figure 9).

The open current account and Chinese citizens' trips overseas continued to provide ample opportunities to move money out of China or to spend money outside of China. As long as the authorities do not close down China's border to outward travel or to devalue the currency severely, monthly net outflows of over 100 billion USD remain possible. If this were to happen for a few months, it may lead to a crisis of confidence in the RMB, which further accelerates outflows.

As seen in the case of Russia from 2012 to 2013, the result may not be catastrophic, but maxi-devaluation would lead to several years of negative growth, some external default, and asset deflation. As will be discussed in the next section, if this were to happen in lockstep with an international panic about the entire emerging market or China, the squeeze on China may be worse.

SUDDEN STOP OF INTERNATIONAL CREDIT

The common perception is that China drastically pulled back on its international borrowing in the aftermath of the devaluation episode on August 11, 2015. Thus, the possibility of a sudden stop, i.e. sudden withdrawal of credit to China, is much smaller today than prior to August 2015. In any event, as a share of GDP, official Chinese external debt remains modest.

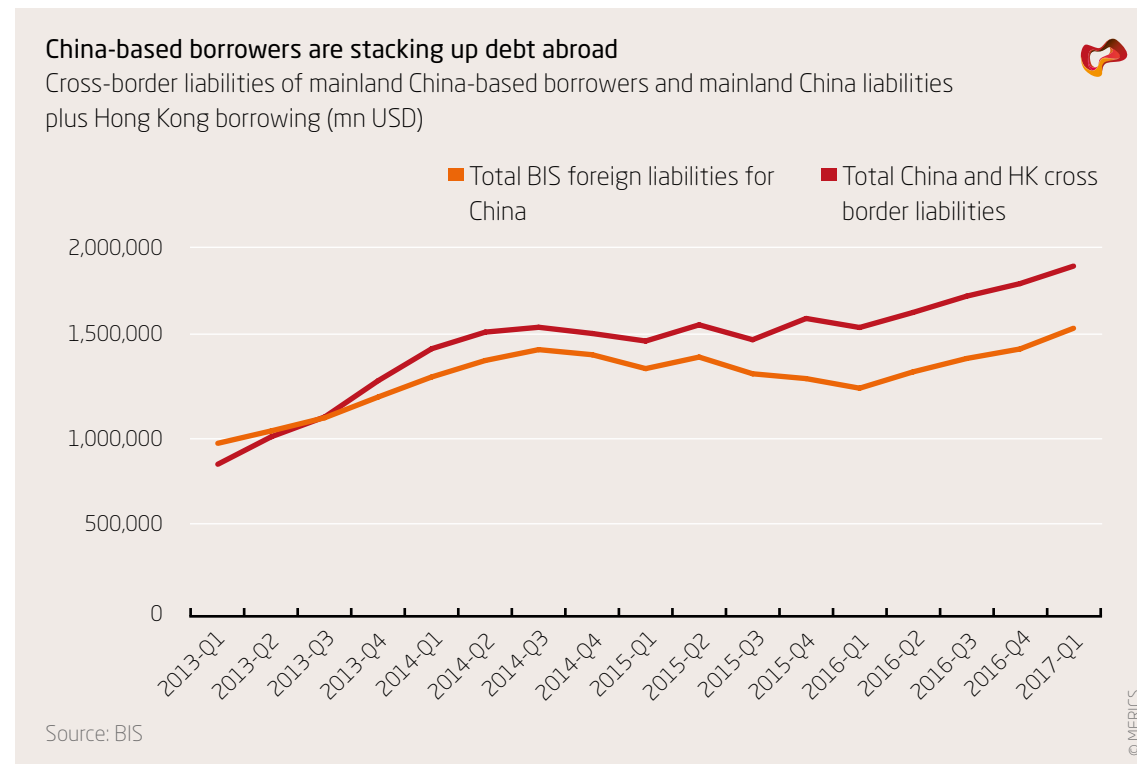
Yet, two concerns remain. If one included Hong Kong external debt in the calculation, which is reasonable because Hong Kong is a part of China and because Chinese firms and banks borrow aggressively through Hong Kong subsidiaries, Chinese external debt is much less modest at over 1.9 trillion dollars, over a trillion of which is short-term interbank borrowing. Second, on the margin, China has met outflows with aggressive external borrowing. As such, a sudden stop in foreign credit to Chinese banks and companies may once again lead to large-scale net outflows from China, which may lead to a combination of sizable devaluation and defaults on external debt. While the PBOC printing press can mitigate a domestic crisis, the PBOC cannot print foreign currencies and cannot stop an externally originated panic.

On the face of it, official figures on external debt suggest a whopping 400 billion US dollar repayment, followed by some modest increase in external debt

in recent months. But was this really the case? I turn to Bank for International Settlement (BIS) statistics, which provide a much more comprehensive look at cross-border borrowing by financial and non-financial entities.

The BIS reported "locational" statistics, which calculates debt by the locations of the registered addresses of the borrowers.¹¹ Obviously, we assume that most of the borrowing by entities domiciled in China was done by Chinese entities. In addition, however, Chinese entities could be borrowing through subsid-

Figure 10

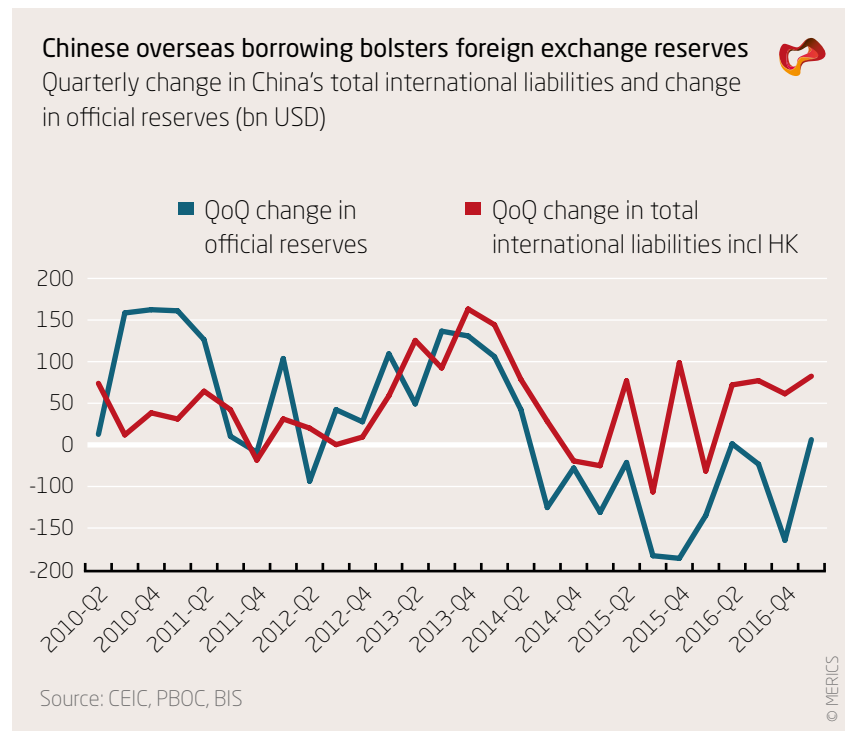


aries overseas, which would be difficult to track using locational statistics. For example, a Chinese-owned company registered in Luxemburg would be reported as a Luxemburg-based borrower. Fortunately, the vast majority of "overseas" borrowing by Chinese companies and banks still takes place in Hong Kong. Assuming that much of the marginal *cross-border* borrowing conducted in Hong Kong was

done by mainland entities, we add the BIS numbers for mainland located borrowers to the BIS statistics on Hong Kong borrowers, but also net out Hong Kong banks' lending to mainland entities to avoid double-counting.¹²

BIS figures displayed in Figure 10 show that although there was a slight hiccup after August 2015, borrowing resumed soon thereafter. Still, just looking at mainland-domiciled companies and banks, external debt dropped by nearly 200 billion USD after August 2015. Once we included external borrowing in Hong Kong, however, Greater China's external deleveraging was only 80 billion US dollars. In the year since August 2015, Hong Kong's cross border debt jumped by almost 100 billion USD. Thus, including Hong Kong-domiciled Chinese borrowers, Chinese external debt reached 1.9 trillion USD by Q1, 2017. That figure likely will be over 2 trillion USD by the end of 2017.

Figure 11



What gave rise to the jump? One hypothesis is that Chinese firms, especially the SOEs, were able to take advantage of Hong Kong's dollar-pegged currency to continue borrowing in the international market. If they couldn't borrow directly themselves, they would get their Chinese banks to borrow through the global interbank market and on-lend to them. Another hypothesis is that Hong Kong banks borrowed heavily in the international market because of the surge in demand for mortgages in Hong Kong as the housing market heated up in 2015 to 2016.

BIS statistics on Hong Kong banks suggest that much of the money did not stay in Hong Kong. In essence, Hong Kong banks borrowed heavily from the international market in the year after August 2015. If they borrowed the money for the Hong Kong housing market, Hong Kong banks' cross-border claims on banks and companies should not have gone up because the purpose of the money would be to finance activities in Hong Kong. BIS numbers, however, show a marked increase in *cross-border claims*.

Thus, the surprisingly smooth increase in Chinese external borrowing after August 2015 was due mainly to aggressive international borrowing by Hong Kong-domiciled Chinese banks and companies, which on-lent the funds to parents and affiliates in mainland China and elsewhere. The scale of this operation was roughly 140 billion US dollars since August 2015. In essence, anticipating foreign banks restricting or even pulling credit lines from mainland-based companies, the PBOC might have coordinated Hong Kong-based Chinese banks to borrow aggressively in the international market so as to on-lend the funds to Chinese banks and companies facing credit calls from their foreign lenders.

Because Hong Kong-domiciled mainland Chinese banks and companies were able to borrow directly from international banks, they did not draw from China's rapidly dwindling FX reserves for debt repayment or overseas investment. In fact, Chinese entities may be borrowing dollars from foreign or Chinese banks *in order to replenish* the FX reserves. Basically, if an SOE borrowed 10 billion USD from international creditors to invest in or swap back to China, the 10 billion would be added to the FX reserves. Figure 11 shows that prior to the third quarter of 2014, both Chinese foreign exchange reserves and Chinese external borrowing increased on a quarterly basis. Into 2015, however, China's foreign exchange reserves dropped in every quarter, but China's external borrowing, including Hong Kong, rose in the majority of quarters, especially in 3Q, 2015. Without the ability to borrow massively through Hong Kong, China's foreign exchange reserves would have diminished by an additional 140 billion USD, all else being equal.

Through Chinese policies to smooth China's external leveraging by increasing borrowing through Hong Kong, the world's exposure to the Chinese financial sys-

After the rapid increase of its foreign debt in recent months, China may no longer have sufficient liquid reserves to meet its liabilities

tem also grew substantially. If one added cross-border liabilities of Chinese financial institutions, including international bonds issued by financial institutions, to the cross-border liabilities of Hong Kong-domiciled financial institutions, the world has lent Chinese and Hong Kong-based financial institutions a whopping 1.2 trillion USD as of 1Q 2017, most of it presumably in short-term interbank loans (Figure 12).

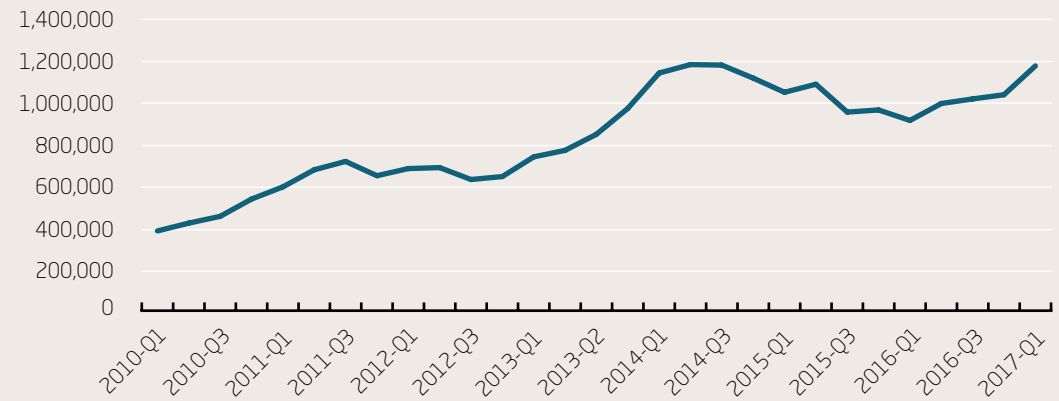
What can go wrong? When a bank in London lends to a Hong Kong-based bank, the presumptions are that the ultimate risks are with relatively liquid assets denominated in a freely tradable currency and that credit risks are managed strictly. None of these assumptions hold up. If the London bank lent to a subsidiary of the Big Four state banks, such as BOCHK, the funds may be lent to an SOE, which immediately converts the funds into RMB to invest in China. Like other illiquid investment in China, borrowers may not generate sufficient cash flows with which to repay interest on the loans. Perhaps, like Huishan, the value of collaterals provided by the borrower is inflated. Finally, when repaying their dollar-denominated debt, a Chinese company would need to convert RMB into USD, but SAFE may not allow a Chinese company to do so in order to meet internal targets on net conversion for the month. All of these events can create risks for the Chinese banks and indirectly for their foreign creditors.

In the past, no one would have questioned China's ability to use its reserves to repay foreign creditors, but with the rapid dwindling of its FX reserves in recent months and, as it turns out, the rapid increase of its foreign debt, China may no longer have sufficient liquid reserves to meet these liabilities, especially the 1.2 trillion USD in interbank liabilities which tend to be short term. If foreign creditors one day discovered the precarious nature of their loans to Hong Kong or China-domiciled companies, or if an interest rate spike in the United States caused a reversal of the flow of funds to emerging markets, Chinese and Hong Kong banks may suddenly find themselves unable to roll over the massive amount of liability to foreign banks.

To be sure, these Chinese banks may be able to draw from China's foreign exchange reserve to meet these calls. Even if Chinese banks only needed a couple hundred billion from the FX reserves to repay foreign counterparties, however, China may not want to expend a sizable portion of its dwindling liquid reserves to repay debt. For a Chinese government obsessed with control, defaulting on global obligations is much preferred over the uncertainty of running out of reserves. If defaults were to occur, the global financial market would lapse into turmoil. For China, however, its foreign funding also will be cut off, and every connected tycoon and princeling will desperately try to obtain some part of the remaining foreign exchange reserve. After the reserves dwindle some more throughout this

Chinese banks have borrowed 1.2 trillion dollars from the world

Gross international liabilities of Chinese banks, including Hong Kong (mn USD)



Source: BIS

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process, the government will realize that the only way to stop the loss of reserves is a maxi-devaluation, which destroys the wealth of these billionaires.

Unlike in the case of a domestically generated crisis, the PBOC will be powerless to stop many of the deleterious consequences. To be sure, the PBOC can use draconian capital control to stop outflows, but events in the past two years have shown that the PBOC used a mixture of capital control and additional external borrowing to meet outflows demand. Without additional external funding, it would be very hard for the PBOC alone to stop politically connected insiders from moving sizable amounts of funds out of China. As Russia discovered in 2013, maxi-devaluation, followed by an aggressive interest rate hike, may be the only effective way of preserving the foreign exchange reserve, presumably still the highest priority for China's FX policy.

- 1 | Carmen M. Reinhart and Kenneth S. Rogoff, *This Time is Different: Eight Centuries of Financial Folly* (Princeton: Princeton University Press, 2009).
- 2 | Following Chinese government convention to divide non-financial credit into on-balance sheet (of banks) and off-balance sheet credit, we use the on-balance sheet figures from “assets of other depository institutions” published by the PBOC. For off-balance sheet credit (used interchangeably with shadow credit in this paper), some of the shadow credit is derived from the TSF statistics, including entrusted lending, bankers’ acceptance, and trust loans. Other, such as the amount of underground credit, is estimated based on investment bank studies. We also estimate the amount of shadow credit held by asset managers, trust companies, and insurance companies based on official data from the asset management association, the trust association, and the insurance association.
- 3 | Among the figures on this table, undiscounted bills, entrusted lending, trust loans, and on-balance sheet credit are from official PBOC numbers. Non-bank bond balance is bond held by NBFIs and non-banks. Adjusted trust product is total trust assets published by China Trust Association minus trust loans. Loan interbank assets are 1/3 of total interbank assets, assumed to be loans repo’ed by banks. Underground loan is a rough estimate based on studies done in 2013 on this issue. Credit held by funds is total fund AUM minus bonds, stocks and cash held by them. Loans held by insurance companies are “other assets” reported by the China Insurance Association.
- 4 | Ministry of Housing and Urban Development, Ministry of Finance, and People’s Bank of China, “全国住房公积金2016年年度报告 (Report on the National Housing Provident Fund in 2016)” (Beijing: Ministry of Housing and Urban Development, 2017).
- 5 | I divide monthly increase in all on-balance sheet household debt by monthly sales of residential real estate, a proxy for household incremental loan-to-value (LTV) ratio.
- 6 | The definition of shadow credit used here is slightly different from the one used in the first section. Whereas total credit calculations need to take into account bonds held by NBFIs and interbank loans, the shadow credit number mentioned here excludes bonds and stock holdings in NBFIs and interbank loans. Wealth management products, which tend to source assets from these other categories of funds, are not included in the calculation. In other words, the 50 trillion in shadow credit here include all trust AUM, other assets of insurance companies, and non-standard credit held by funds.
- 7 | According to official statistics of the National Interbank Funding Center, there were over 3500 “funds” and over 4000 “designated client accounts of funds” which could borrow from the interbank market as of early June, 2017. Nearly all the major brokers and insurance companies also had interbank licenses.
- 8 | Yuran Wuhong, “银监会 “三三四” 检查延期 强调风险摸底 (CBRC’s ‘334’ inspection has been delayed with an emphasis on getting to the bottom of risks),” *Caixin*, 6/16/2017 2017.
- 9 | Reinhart and Rogoff, *This Time is Different: Eight Centuries of Financial Folly*, pp. 166
- 10 | Because China’s FX reserves hold some non-dollar assets but the accounting is in USD, if the dollar depreciated vis-à-vis the Euro and other major currencies, the FX reserve would gain merely on valuation. In this figure, we assume 20% of the reserves are non-USD and net out the monthly valuation effect.
- 11 | The BIS used to publish very helpful “nationality” statistics which reported the nationality of borrowers from BIS-reporting banks. So, even if Chinese entities borrowed through offshore subsidiaries, the BIS nationality statistics would have reported them as Chinese borrowers.
- 12 | We also add the official trade credit number since inter-company trade credit is not recorded by the BIS.

YOUR CONTACT FOR THIS ISSUE OF CHINA MONITOR

Victor Shih
vicshih@gmail.com

Victor Shih is the author of this report and solely responsible for its editorial content.

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Klosterstraße 64
10179 Berlin
Tel.: +49 30 3440 999 0
Mail: info@meric.de
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