

Follow the “money” in China... to measure credit

6 June 2016

- A frequent inquiry from investors in recent months is how much credit has actually been extended to Chinese households and corporates. This arises from debates about the accuracy of the commonly used credit data (i.e., total social financing (TSF)) in light of an apparent rise in financial institutions’ (FI) shadow lending activity (as well as due to the ongoing municipal bond swap program).
- While it is clear that banks’ investment assets and claims on other FIs have surged, it is unclear how much of that reflects opaque loans, and also how much such loans and off-balance sheet credit are not included in TSF. By the very nature of shadow lending, it is almost impossible to reach a conclusion on these issues based on FIs’ asset information.
- We circumvent these data complications by instead focusing on the “money” concept, a mirror image to credit on FIs’ funding side. The idea is that money is created largely only when credit is extended—hence an effective gauge of “money” can give a good sense of the size of credit. We construct our own money flow measure, specifically following and quantifying the money flow from households/corporates.
- We find that a substantial amount of money was created last year, evidencing a very large supply of credit, to the tune of RMB 25tn (36% of 2015 GDP). This is about RMB 6tn (or 9pp of GDP) higher than implied by TSF data (even after adjusting for municipal bond swaps). Divergence from TSF has been particularly notable since Q2 last year after a major dovish shift in policy stance.
- Our finding suggests that the Chinese economy’s reliance on credit has deepened significantly. Our projection of China’s debt/GDP ratio for coming years has turned more unfavorable as a result.

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How much credit has really been extended?

In this report, we try to answer a frequently asked question from investors over the last several months: How much credit has actually been extended to households and corporates in China?

Total social financing (TSF) statistics are supposed to be a comprehensive measure of this¹, but their accuracy has been affected by recent events—in particular, the ongoing municipal bond swap program and an apparent rise in “opaque loans” and/or off-balance sheet lending by financial institutions (we will generally call such lending “shadow lending” in this report). [Recent official comments](#) suggesting scope for a more systematic compilation process for TSF also point to potential quality issues with the statistics.

The first data issue, i.e., municipal bond swap program, is relatively easy to address. It is mostly related to the different treatment of LGFV debt and municipal bonds in TSF statistics.² We have been adjusting for this factor by adding the municipal bond issuance for the swap program to the reported TSF to arrive at our measure of adjusted TSF, although the adjustment is not precise given uncertainty about the exact usage of the proceeds from the municipal bond swap issuance.

But the second issue, i.e., shadow lending by financial institutions, presents a much greater data challenge. In listed banks’ balance sheets, investment assets have been rising rapidly. Media reports (e.g., [here](#) and [here](#)) and disclosures by individual banks indicate that banks have embedded some of their loans to corporates in these assets, driven by regulatory arbitrage (our Banks research team has discussed these developments in recent notes).³ In part reflecting this phenomenon, macro monetary data published by the PBOC has also clearly shown that the banking sector’s “claims on non-bank financial institutions (NBFIs)” (and also banks’ “equity and other investment”) have been rising rapidly in the last several quarters (for the PBOC data on these items, see [this](#) and [this](#)).

These observations have raised questions and triggered debates, often revolving around the following issues:

- How large is the system-wide size of “opaque loans” or, put another way, how much of banks’ NBFI claims is a result of opaque loans? In our view, it is not likely that all NBFI claims are opaque loans; they may be related to “financial round-tripping”—i.e., banks lend money to NBFIs (e.g., investment funds) that invest in financial markets and this money just circulates in the financial system and eventually comes back to banks without being “leaked” to the real economy. The

¹ To be more precise, TSF includes non-debt, or equity, elements. In particular, TSF consists of RMB bank loans, FX loans, trust loans, entrusted loans, undiscounted bank acceptance bills, net corporate bond issuance and equity financing to corporates in the domestic stock market. More generally, as we also discuss below, the metrics used in this report refer to households/corporates’ total financing need.

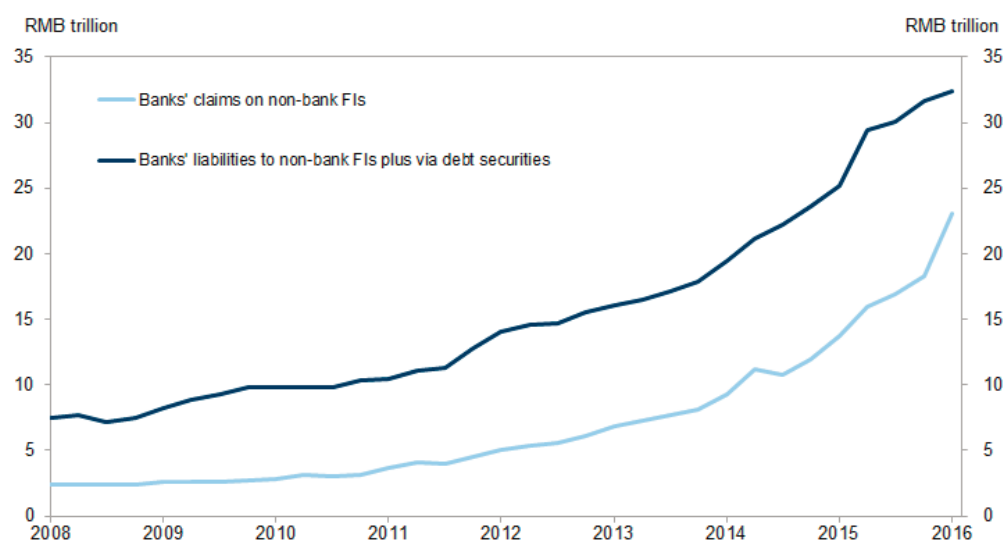
² The former is included in TSF stock, while the latter is not. Therefore, under the swap program, when municipal bonds are issued and their proceeds are used to repay LGFV debt, that would reduce TSF stock. As TSF flow is net change in TSF stock, it is also suppressed by the swap and understates the true flow of credit to the real economy.

³ See “China Banks: Interbank rules: Formalizing credit securitization; execution the key”, Equity Research, May 3, 2016.

“round-tripping” idea is indeed consistent with the corresponding very rapid increase in banks’ liabilities to NBFIs (Exhibit 1). It also dovetails with banks’ increasing tendency to allocate part of their capital to outside asset managers for financial investment in the secondary market (in what is called “entrusted investment” from banks), with the intention of boosting investment returns.⁴

- Besides the “opaque loans” held on banks’ balance sheet as part of investment assets, how much additional credit is extended off banks’ balance sheets?
- To what extent is shadow lending (i.e., the on-balance sheet opaque loans plus off-balance sheet credit) already captured in TSF data?

Exhibit 1: Increase in banks’ claims on non-bank FIs in lockstep with their liabilities to non-bank FIs



Source: CEIC, Goldman Sachs Global Investment Research

These issues lead to the ultimate macro question of how much credit has in fact been extended to the economy. It is naturally almost impossible to conclude by looking at the asset composition of FIs, as by design it is hard to tell what assets represent opaque loans and (to a lesser degree) how much off balance sheet exposure there is. Increasing interconnectedness amongst FIs via various evolving “channel” set ups certainly makes the task no easier.

Money money money

We therefore adopt another line of attack at the question: Namely, we look at the mirror image of credit (which is on FIs’ asset side) and focus on “money”, a metric related to FIs’ funding side. The basic idea is that credit generation is effectively a money creation process. Without credit creation, the amount of money would normally be unchanged no matter what happens in the real economy and vice versa (see Box 1 for more discussion on the general credit-money relationship).⁵ With this

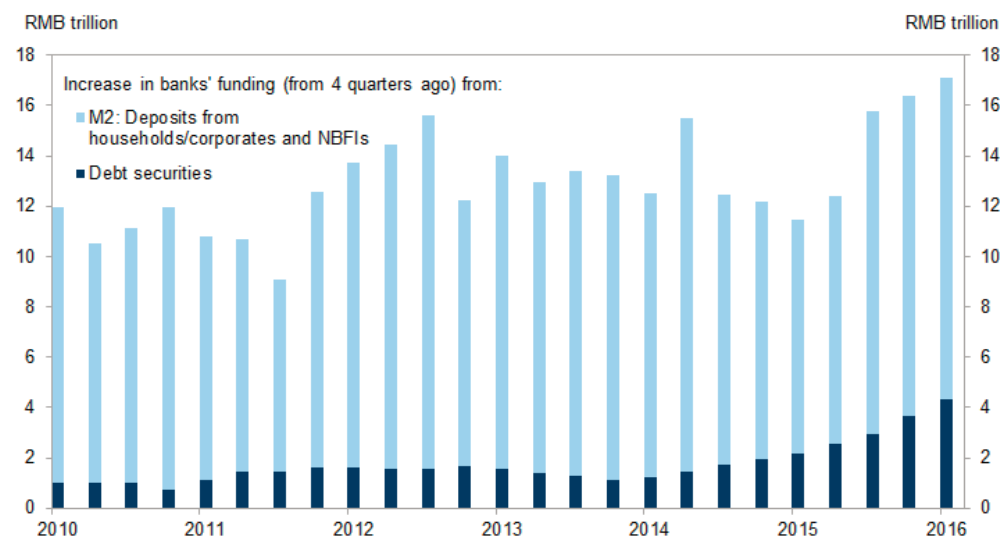
⁴ According to some listed banks, the underlying assets of some of the “trust beneficiary rights” and “directional asset management plans” in their investment book are indeed non-loan assets such as interbank repos and bond holdings.

⁵ As we discuss later, however, there are factors that may affect the quantity of money but are not related to credit generation.

linkage extended, it is possible to come to a reasonable estimate of the true pace credit flow (at least from banks) to the real economy by looking at growth of broad money, or M2, as we did a couple of years ago.⁶

There is a problem though with this simple proxy, i.e., China has been becoming much less banks-centric. M2, which is essentially banks' deposits, is no longer broad enough to reflect all key funding elements as the financial system diversifies. In fact, recognition of the growing diversity of the financial system already led the PBOC to expand the coverage of M2 in late 2011 to also include NBFIs deposits (vs. only household and corporate deposits previously), partly intended to account for the increasing importance of WMPs at that time. But even with that expansion, M2 does not sufficiently capture FIs' funding sources nowadays for two related reasons: i) banks have been drawing a significant amount of funding from non-deposit sources such as money market mutual funds' purchase of NCDs, which is not included in the current measure of M2 (Exhibit 2); and ii) NBFIs (e.g., investment funds, insurance asset managers) have been rising in popularity amongst households/corporates as saving and investment intermediaries, and their financial activity may not be fully reflected on banks' balance sheet (i.e., conducted off banks' balance sheet).

Exhibit 2: Debt securities (not in M2) have been rising in importance as banks' funding source



Source: CEIC, Goldman Sachs Global Investment Research

On the other hand, though, including all elements of FIs' funding side would not be ideal either, in our view, as that would overstate the pace of money created from lending to households/corporates, because of possible "financial round-tripping" (as discussed above) and double counting.

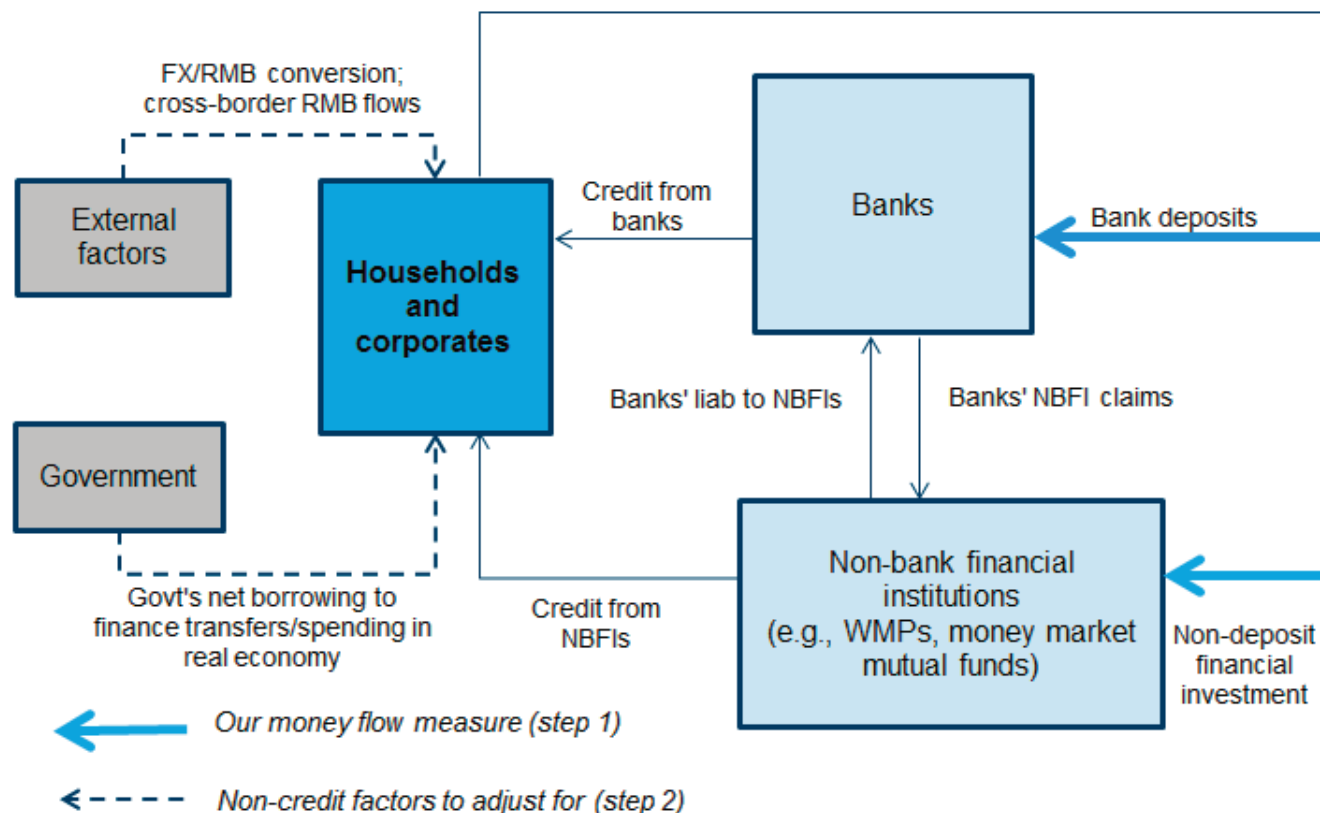
Therefore, to deduce the size of credit flow to households/corporates, we construct our own measure of adjusted "money," which is intended to be broad enough to capture increasing financial diversification but targeted enough to cover only funding that comes from and is owned by households/corporates.

⁶ See MK Tang, "China: The shadow or the cycle—the easing in interbank rates to stay?," EM Macro Daily, Mar 10, 2014.

Following the money trail

In other words, our approach is essentially to follow where “money” from households/corporates gets invested and aggregate their size—this is akin to tracking the flow of funds for households/corporates. In particular, the “money” measure from this exercise refers to households/corporates’ investment in deposit and non-deposit financial products.⁷ We also adjust this “money” measure to eliminate non-credit factors so as to tailor our concept to be a close mirror metric of the size of underlying credit flow. Exhibit 3 presents a visual summary of the idea.

Exhibit 3: Visually summarizes our approach



Source: Goldman Sachs Global Investment Research

Specifically, we use the following two-step procedure:

1) Quantify the money flow from households and corporates to various financial investments

- Bank deposits from households and corporates
- Non-deposit financial investment by households and corporates
 - Investment funds
 - Wealth management products (WMPs)
 - Insurance schemes
 - Collective trust products

⁷ The investment as recorded in book value, i.e., excluding paper gains.

2) Adjust the money flow measure above for factors that affect quantity of money but are unrelated to credit generation

- Net government financial balance
- FX/RMB conversion by households and corporates
- Cross-border RMB flow

Note that our money flow measure from the first step is different from M2 in that our measure does not include deposits from NBFIs but covers households/corporates' non-deposit financial investment. We discuss the idea behind our approach in greater detail in Box 1 and also present several Q&As in Box 2 to explain it further.

Deducing credit flow with our adjusted money flow measure

Exhibit 4 shows the estimates of our adjusted money flow measure for 2011-2015 (in RMB trillion). We emphasize that, on an absolute basis, the estimates are only approximate, especially as information on households/corporates' flow to non-deposit financial investment is quite noisy. That said, the broad trend of our measure seems clear, showing a significant jump in 2012 vs. 2011 and another, even bigger, jump last year vs. 2014. In comparison, M2 increased by only about RMB 16tn last year—a main reason for the difference is that a lot of “money” going into non-deposit financial channels is not included in M2. But in trying to follow the money flow more systematically as in our exercise, it seems clear that there was a lot of money created and circulating around amongst households and corporates relative to what the TSF shows, and this evidences that a very large relative amount of credit (as a % of GDP) was extended last year.

Exhibit 4: Estimates of our adjusted money flow measure for 2011-2015

<i>Unit: RMB trillion</i>	2015	2014	2013	2012	2011
1. Households/corporates' flow of financial investment	24.2	16.4	16.9	15.5	10.8
Bank deposits	11.7	8.4	11.7	10.5	8.2
o/w: Households	4.4	4.1	5.5	5.8	4.0
Corporates	7.3	4.3	6.2	4.7	4.2
Non-deposit financial investment	12.5	8.0	5.2	5.0	2.6
o/w: WMPs	6.0	4.2	3.1		
Mutual funds	3.9	0.9	0.2		
Insurance plans	1.6	1.3	1.1		
Trust products	1.0	1.6	0.8		
2. Money created for non-credit related factors	-0.4	0.8	2.1	1.2	2.0
Net government borrowing	2.5	0.3	0.1	0.5	0.1
FX/RMB conversion by households/corporates	-3.2	1.0	2.4	0.7	2.4
Cross-border RMB flows	0.3	-0.5	-0.4	0.0	-0.5
*Our adjusted money flow measure= 1-2	24.6	15.6	14.8	14.3	8.8
<i>as share of GDP</i>	36%	25%	25%	27%	18%

***Notes:**

Bank deposits: change in deposits from households and corporates (including public agencies and organizations)

Non-deposit financial investment: for years before 2013, we use NBS data on households and corporates' flow of funds for aggregate proxy, after adjusting for corporates' "net miscellaneous use" by 50% (based on gap between 2013 flow of funds data and sum of our disaggregate non-deposit financial investment data)

WMPs: change in value holdings of banks-managed WMPs by individuals, institutional clients and private bank clients

Mutual funds: change in net value of publicly offered investment funds, after adjusting for estimated value effect of equity market price change

Insurance plans: gross insurance premiums minus insurance payments

Trust products: change in asset value of collective fund trusts; we exclude single fund trusts as their funding is more likely sourced from other FIs such as banks.

Net government borrowing: sum of two elements-- i) net issuance of government debt (central plus local non-swap related) minus changes in fiscal deposits; and ii) local swap-related government debt minus estimated portion of proceeds used to repay LGFV debt owed to FIs (70% assumed, based on LGFV debt type from NAO 2013 report)

FX/RMB conversion by NFIs: banks' net FX settlement on behalf of clients

Cross-border RMB flows: Chinese residents' net receipts of RMB from overseas for trade and direct investment transactions

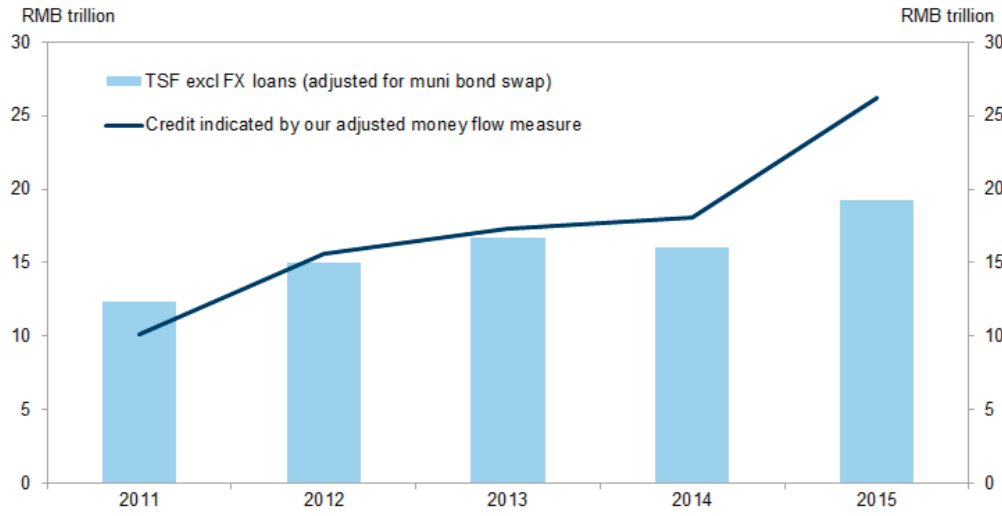
Source: PBOC, CIRC, China Central Depository & Clearing, China Trustee Association, China Asset Management Association, Ministry of Finance, Goldman Sachs Global Investment Research

How does our measure compare with the TSF data? To allow apples-to-apples comparison, we need a couple of additional adjustments:

- We take out the FX loan portion of TSF (to match our RMB money concept), and also adjust that for the municipal bond swap program since mid 2015 as we discussed in the opening section
- We add entrusted loans that are included in TSF to our adjusted money flow measure (as the money flow measure does not capture company-to-company lending, as we discuss in Box 2)

Credit flow to households/corporates as indicated by our measure is not entirely aligned with what is implied by TSF data, but the two metrics are fairly close in 2011-2014 (Exhibit 5). However, there is a large gap of some RMB 6-7tn for 2015, suggesting that TSF data (even after adjusting for the municipal bond swap) misses a significant chunk of credit extended to households/corporates last year.

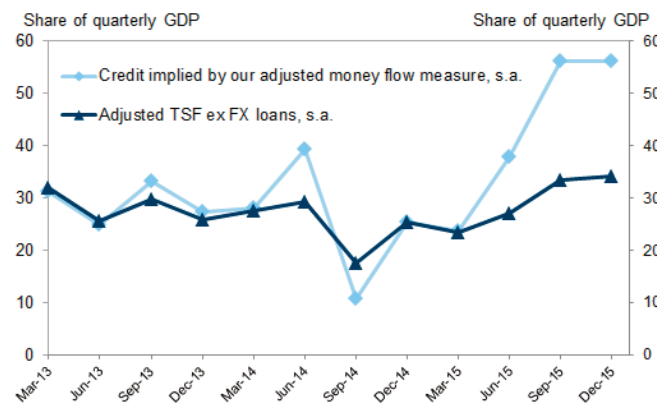
Exhibit 5: Our money flow measure points to much larger credit extended in 2015 than implied by TSF



Source: Goldman Sachs Global Investment Research, CEIC, WIND

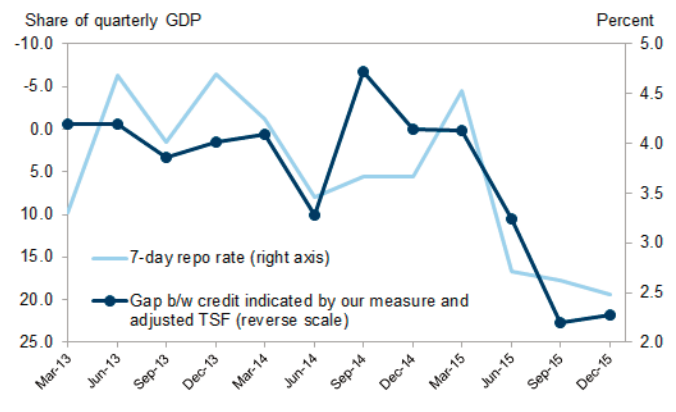
We next extend our money flow measure to quarterly frequency—we can only go back to 2013 when relevant information is available quarterly and can allow the quarterly series to be consistent with the annual one. The quarterly comparison shows that credit indicated by our measure and adjusted TSF began to diverge meaningfully in Q2 2015 and continued to widen in Q3-Q4 2015 (Exhibit 6). It is probably not a coincidence that the divergence happened amid a clear dovish shift in monetary policy stance (7-day repo interest rate fell about 200bps between Q1 '15 and Q2 '15; Exhibit 7), the general accommodative stance in Beijing following the major growth slowdown in early 2015, and policymakers' encouragement for more financial diversification and innovation to relieve corporate financing constraints.

Exhibit 6: Credit indicated by our measure started to diverge notably from adjusted TSF since Q2 2015...



Source: Goldman Sachs Global Investment Research, CEIC

Exhibit 7: ... and the divergence has been larger when interbank interest rates are lower



Source: Goldman Sachs Global Investment Research, CEIC

It is not feasible to construct our adjusted money flow measure for Q1 '16 yet given data limitations, but judging from the continued ytd increase in banks' "equity and other investment" assets (which has been statistically correlated with the gap between our implied credit measure and adjusted TSF), it seems that as sizable as adjusted TSF was in Q1 (at about RMB 7.5tn), it might still understate the underlying

credit flow to the real economy. In recent weeks, the regulator has announced some prudential tightening to discourage shadow lending activity, but how aggressively the regulator will implement the rules and the how effective the tightening will be remain to be seen (see [here](#)).⁸

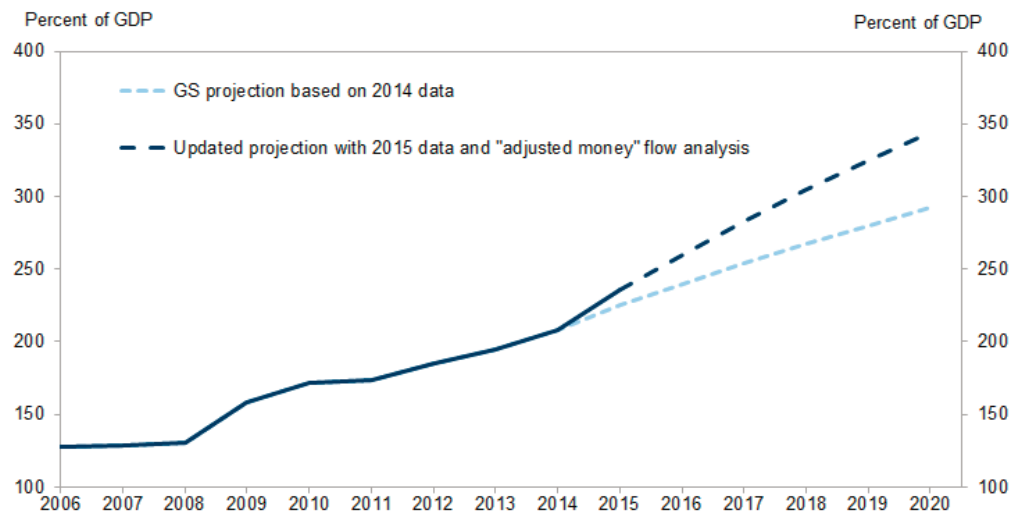
An uncomfortable trend that has gotten more discomfoting

The results of our analysis have a few implications for our macro outlook:

- In terms of short-term growth, **our implied credit metric suggests that credit impulse to growth may be greater than that based on adjusted TSF**, although the difference in magnitude may not be very significant (see our recent analysis on credit impulse [here](#)).
- For monetary policy, given that lower wholesale interest rates tend to give rise to more shadow lending (Exhibit 7), to the extent that the authorities intend to contain the latter, the **scope for a meaningful fall in 7-day repo interest rate seems more limited** in coming months unless growth sharply slows, in our view.
- More worryingly, our implied credit metric indicates that **the trend of China's leverage has probably deteriorated faster than we previously thought**, even though we had already expected the ratio to continue rising in the next few years (see [here](#)). Compared to our previous estimates, the experience in 2015 suggests that the economy's dependence on credit has deepened significantly and that it likely needs sizeable flow of credit on a persistent basis to maintain a stable level of growth. Exhibit 8 shows how much more unfavorable our baseline debt/GDP projection is now after incorporating our implied credit metric for 2015 vs. what it was based on data only until 2014.⁹
- Such a scale of deterioration certainly **increases our concerns about China's underlying credit problems and sustainability risk**. The possibility that there is such a large amount of shadow lending going on in the system that is not captured in official statistics also points to regulatory gap, and underscores the lack of visibility on where potential financial stress points may lie and how a possible contagion may play out.

⁸ A particular data constraint is households/corporates' investment in banks-managed WMPs for which we may not have full information until the relevant annual report is out in Q1 next year.

⁹ As we discuss in the Q&A in Box 2, our measure may also include Fls' non-debt, or equity, claims on NFIs; and TSF data do also contain equity elements. The metrics, therefore, more generally refer to households/corporates' financing needs.

Exhibit 8: Surge in shadow lending implies faster growth in debt-to-GDP ratio

Source: Goldman Sachs Global Investment Research

Box 1. How following the "money" can help measure credit

Credit and money usually go hand-in-hand. Credit refers to FIs' lending, belonging to the asset side of FIs' balance sheets. Given our interest in credit flow to the real economy, we only focus on credit lent to households and corporates (we call them collectively NFIs). On the other side of the coin, money typically refers to liquid sources of funding supplied to FIs, belonging to the liability side of FIs' balance sheet. Credit and money are closely linked: One unit of credit from FIs to NFIs would lead to a unit increase in NFIs' financial resources. Ultimately, this unit of financial resources would flow back to FIs as NFIs' financial investment (e.g., deposits, investment funds, etc.) and show up on FIs' funding/liability side. If the money flow measure is relatively narrow, it may not capture all NFIs' financial investment or funding to FIs (e.g., NFIs' financial investment in less liquid and non-bank products such as insurance plans). But if the money flow measure is extended to capture all key funding from NFIs to FIs, then changes in this money flow measure would reflect and can be used to deduce the flow of credit from FIs to NFIs. Creating such a money flow measure is the first step of our exercise.

There are still nuances to address before matching even this measure of money to credit because the quantity of money can be affected by factors that are unrelated to credit generation. Two of the main factors are related to changes in the government's financial balances and external flows. For the former factor, the government's net borrowing from FIs to finance its transfers to or spending on the real economy would increase NFIs' financial resources even without new credit extended by FIs to NFIs. For the latter factor, there are two aspects: i) if NFIs convert their FX resources to RMB, that would increase (RMB) money in the system and vice versa; and ii) if foreigners pay RMB to Chinese NFIs to buy goods/services/assets, that would also increase NFIs' (RMB) money holdings and vice versa. An increase in money in both situations is due to external flows and does not involve domestic credit extended by FIs to NFIs. These factors need to be netted out of the money flow measure so as to

make the measure comparable to the credit concept—and this is the second step of our exercise. We summarize in the following the various terms and concepts we use in this report (see Exhibit 9).

Exhibit 9: Glossary of abbreviations

FIs	Financial institutions, including banks and non-bank financial institutions, which intermediate financial resources
NBFIs	Non-bank financial institutions, including all investment funds, insurance companies, trust funds, securities companies, etc.
NFIs	Non-financial institutions, which this report defines as the household and corporate sector (not including the government)
NCDs	Negotiable certificates of deposit, which are short-term debt securities issued by banks
WMPs	Wealth management products (in the report, "WMPs" mostly refer to those managed by banks)
Opaque loans	Loans to households/corporates that are structured—e.g., via transactions with other non-bank financial institutions—as non-loan assets on banks' balance sheet (e.g., "trust beneficiary rights" and "directional asset management plans" booked under banks' investment receivables); note that they are still "on-balance sheet" (of banks) albeit not recorded as loans.
Shadow lending	Opaque loans, plus credit extended by NBFIs that do not show up at all on banks' balance sheet. An example is credit extended to households/corporates by WMPs that are not explicitly guaranteed by banks
TSF	Total social financing: monthly PBOC data on the amount of financing extended to households/corporates, including bank loans (RMB and FX), trust loans, entrusted loans, undiscounted bank acceptance bills, corporate bond issuance, equity financing via domestic stock market
M2	Official broad money measure compiled by PBOC, including bank deposits from households/corporates and non-bank financial institutions
Our money flow measure	Money flow measure constructed by our own, including flow of bank deposits from households/corporates, and flow of non-deposit financial investment from households/corporates
Our adjusted money flow measure	Our money flow measure, after adjusted for factors that affect quantity of money but not related to credit creation (i.e., government's net borrowing, and external flows)

Source: Goldman Sachs Global Investment Research

Box 2. Q&A on our approach

We provide further clarity on our approach in the following Q&As.

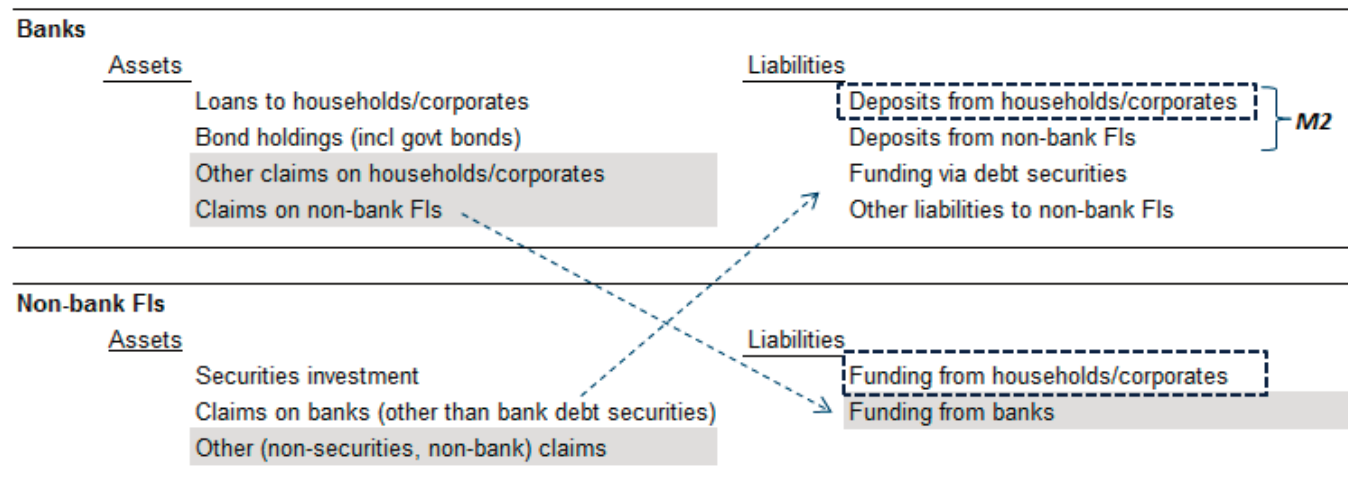
Q: Why don't we simply look at FIs' asset side to deduce credit to the real economy?

Increasing interconnectedness and prevalence of off balance sheet usage in the financial system make it difficult to decipher what FIs' asset exposures really are. For instance, almost by design, banks' shadow lending to NFIs (households and corporates) does not show up clearly as such in credit data. But including the full segment of possible opaque loans in banks' assets (e.g., the part called banks' claims on NBFIs) could overstate the actual amount of such lending, because some of those claims could be related to "financial round-tripping" (more on this below and as discussed above) and banks' entrusted allocation to outside asset managers for investment in the secondary markets (which do not involve new credit to the real economy). Moreover, the degree of overlap of banks' off balance sheet lending (e.g., via WMPs) with their on balance sheet opaque loan is unclear, making any aggregation difficult. Estimating credit flow based on FIs' asset information is sensitive to assumptions made on the true nature of various FIs' asset categories and their inter-dependence, which in our view can be hard to justify (see Exhibit 10).

On the other hand, deducing credit flow based on FIs' funding information, as quantified by our money flow measure, has the advantage of bypassing the complication of various "channels" arrangements (i.e., inter-FI transactions) that FIs have set up in which loans are reported as non-loan investments/off balance sheet. This approach could hence give what we think is a more conclusive indication on credit flow with fewer major assumptions.

Exhibit 10: Stylized balance sheets of banks and non-bank FIs

Stylized balance sheets of banks and non-bank FIs



■ : intertwined items that's possibly (but not necessarily) related to shadow lending
 □ : components of our money flow measure

Notes

- In reality, banks' balance sheet also includes many other items (e.g., reserves at PBOC on the asset side, deposits from the government and paid-in capital on the liability side)
- Degree of disclosure of non-bank FIs' balance sheet varies from one entity to another.
- E.g., information on asset composition is limited for securities firms' affiliated investment vehicles

Source: Goldman Sachs Global Investment Research

Q: If, say, a corporate or household borrower spends the credit rather than directly puts it back to FIs (as deposits or financial investment), would that obscure the relationship between credit and money?

No. The money received by the original NFI borrower is indeed likely to change hands many times through various transactions amongst NFIs (e.g., wage payment, goods purchases or even investment in non-financial assets such as property). But this "money" would in any case be a net increase in financial resources available to the whole NFI sector, and eventually this would most likely flow back to FIs as an NFI entity's financial investment.

Q: Would credit extended by non-bank FIs (e.g., investment funds investing in primary corporate bond issuance) create money?

Depends on how money is measured. Yes, according to our extended measure; no, according to usual definitions such as the one for M2 in China. Consider a specific example echoing the scenario in question, say a household (A) moving 1mn yuan from its bank deposit to buy shares of mutual funds which then use the proceeds to

buy primary issues of corporate bonds (which creates credit), and the proceeds to the corporate bond issuer (B) flow back to banks one way or another as 1mn yuan in deposits. In typical money definitions where money refers to bank deposits, the whole process of non-bank FI credit generation does not create money since the subsequent 1mn yuan increase in B's bank deposits is offset by the initial decline in A's deposits. But in the definition of our own money flow measure, this process creates money because we count also the mutual fund's increased funding from A in our measure. Specifically, our money flow measure would show 0 change in bank deposits (-1mn yuan from A plus +1mn yuan from B) and a 1mn yuan increase in mutual fund funding (from A), for a total of 1mn yuan increase—the same amount as credit generation through bond issuance.

Q: Why can't M2 be used for this exercise?

M2 misses a big portion of FIs' funding elements. In China, M2 is defined as banks' deposits from NFIs and non-bank FIs. However, this does not capture banks' financing through other means such as debt securities, which has been rapidly growing especially following the launch of NCD market in 2013. Moreover, per the above Q&A, credit generated through non-bank FI channels (including off banks' balance sheet) may not lead to a corresponding increase in M2—thus M2 may be an understated gauge of credit flow. The PBOC already expanded the M2 measure in 2011 to account for rising financial diversification, but even with that expansion M2 is still quite narrow relative to the current state of China's financial system. Some other countries have broader money flow measures such as M3 and M4, which capture flows related to wider non-deposit financial instruments.

Q: Why don't we just look at banks' total liabilities as the money flow measure?

Such measure would be too broad for our purposes. Banks' liabilities (and assets) could be inflated by "financial round-tripping"—e.g., a bank makes a loan to a securities company which is then used to buy shares from a mutual fund company in the secondary market, and the mutual fund company uses the proceeds to invest in banks' debt securities. But such series of financial transactions do not involve any new credit supplied to the non-financial sector (the "real economy"), which is our key interest. As China's financial system diversifies, financial "round-tripping" appears to have become increasingly common.

Q: What are the main caveats to our approach?

Our money flow measure does not include a few elements. One is intra-NFI lending/borrowing of which a main element is entrusted loans—largely company-to-company lending—which would not create money even according to our measure; in the comparison vs. TSF flow, we add the entrusted loan component to our adjusted money flow measure to make them comparable. Other intra-NFI lending, including P2P, is also missing from our measure.

Another one is funding to small, unconventional but growing FIs such as private funds and securities companies' affiliated asset management programs as our

measure captures only NFI funding to main FIs (with assets of RMB 8tn or above), which we detail in the main text. For those smaller and less conventional FIs, we assume their funding mostly comes from other FIs¹⁰. —to the extent that NFIs are in fact providing an increasing amount of funding to those FIs, our measure of money flow would be biased downward.

On the other hand, there are also factors for which our measure could overstate credit flow to the real economy. For instance, our money flow measure would record an increase even if FIs increase their equity investment in, rather than credit claims on, NFIs (e.g., NFIs raised about RMB 0.8tn in equity financing via the domestic stock market last year; but this financing is also included in TSF). Also, if NFIs borrow from FIs to leverage up on their financial investment (instead of spend/invest the credit in the real economy), that would also cause an increase in our money flow measure. Our equity strategists estimate that the “national team” spent about RMB 1.8tn on equity purchases in 2015¹¹ (see [here](#)), but the amount they borrowed for the purchase is likely smaller and might not have all generated “money” according to our measure.

¹⁰. There is no good data clarity on the sources of their funds, and we make such assumption given their typical high leverage and role as “channels” for banks.

¹¹. See “2016 Outlook: Structural opportunities, but higher risks”, Equity Strategy, December 3, 2015.

Forecast Tables

Real GDP Growth (year-over-year)

	2015	2016		2017		Potential Growth*
		GS	Consensus	GS	Consensus	
Asia ex-Japan	6.2	6.1	5.8	6.1	5.8	
China	6.9	6.6	6.5	6.4	6.3	6.0
India	7.6**	7.9**	7.6**	8.1**	7.7**	8.0
South Korea	2.6	2.5	2.6	2.8	2.8	3.6
Hong Kong	2.3	1.6	1.7	2.0	1.9	2.9
Taiwan	0.9	1.7	1.3	2.9	2.1	3.5
ASEAN	4.4	4.5		4.8		
Singapore	2.0	1.8	1.7	2.0	2.2	3.2
Malaysia	5.0	4.4	4.2	4.6	4.4	5.2
Thailand	2.8	3.0	2.9	3.2	3.3	4.0
Indonesia	4.8	5.1	5.0	5.7	5.3	6.3
Philippines	5.9	6.4	5.9	6.1	5.9	6.5
USA	2.4	1.9	1.8	2.1	2.3	1.8
Euro area	1.5	1.5	1.5	1.5	1.6	1.5
Japan	0.6	0.6	0.5	0.7	0.5	0.8

*GS estimates for annualized growth rate of potential output from 2015-19

**Fiscal year basis, 2014 is India FY15 (Q2 2014-Q1 2015).

Source: Consensus Economics, Goldman Sachs Global Investment Research, Bloomberg

Consumer Prices (year-over-year)

	2015	2016		2017		Inflation Target/Range
		GS	Consensus	GS	Consensus	
Asia ex-Japan	2.4	2.8	2.0	2.8	2.6	
China	1.4	2.0	1.9	1.7	1.8	3.0 ^A
India	4.9*	5.3*	5.1*	5.5*	5.1*	6.0*
South Korea	0.7	1.4	1.2	2.2	1.8	2.5-3.5
Hong Kong	3.0	3.0	2.4	3.1	1.9	-
Taiwan	-0.3	1.2	1.0	1.3	1.2	-
ASEAN	3.2	2.9		3.5		
Singapore	-0.5	-0.4	-0.3	1.0	1.0	-
Malaysia	2.1	2.9	2.5	2.7	2.7	-
Thailand	-0.9	0.2	0.4	2.0	1.9	1.0-4.0
Indonesia	6.4	4.7	4.3	4.8	4.9	3.0-5.0
Philippines	1.4	2.0	1.8	3.1	2.8	2.0-4.0 ^{AA}
USA	0.1	1.4	1.3	2.5	2.2	2.0
Euro area	0.0	0.1	0.3	1.0	1.4	1.9**
Japan	0.8	-0.1	0.2	1.1	1.7	2.0

*Fiscal year basis: 2014 is India FY15 (Q2 2014-Q1 2015); RBI inflation target: 6% by Jan 2016, 4% +/- 2% by Mar 2018.

**ECB aims to maintain inflation rates "below, but close to, 2% over the medium term"

^AWe see the "target" as the upper band of the desirable range. ^{AA}BSP inflation target 3% +/- 1% for 2015-2016.

Source: Consensus Economics, Goldman Sachs Global Investment Research, Bloomberg

Forecast Tables (continued)

Policy Interest Rates (percent)

	Current	2016				2017			
	Jun 3	1QF	2QF	3QF	4QF	1QF	2QF	3QF	4QF
Asia ex-Japan									
China	2.33	2.42	2.00	1.75	1.50	1.50	1.50	1.50	1.50
India	6.50	6.75	6.50	6.50	6.50	6.50	6.50	6.50	6.50
South Korea	1.50	1.50	1.25	1.25	1.00	1.00	1.25	1.50	1.50
Hong Kong	-	-	-	-	-	-	-	-	-
Taiwan	1.50	1.50	1.50	1.50	1.50	1.63	1.75	1.88	2.00
ASEAN									
Singapore	-	-	-	-	-	-	-	-	-
Malaysia	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Thailand	1.50	1.50	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Indonesia	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75
Philippines ^A	4.00	4.00	3.00	3.00	3.00	3.00	3.25	3.25	3.50
USA	0.29	0.36	0.38	0.63	0.88	0.88	1.13	1.38	1.63
Euro area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Japan	-0.06	0.00	-0.05	-0.15	-0.15	-0.15	-0.15	-0.25	-0.25

Policy interest rates: China: 7-day repo, India: repo rate; Korea: 7-day repo; Malaysia: overnight policy rate; Thailand: 1-day repo, Philippines: repo rate, Indonesia: Bank Indonesia policy rate, Taiwan: rediscount rate; USA: Fed funds effective rate; Euro Area: Main refinancing operations: fixed rate; Japan: Overnight call rate.
^AStarting from 2016 Q2, we forecast the overnight reverse repurchase facility (RRP) rate after BSP shifted to the IRC system. We interpret this change as a purely operational change, not as a change in policy stance.

Source: Goldman Sachs Global Investment Research, Haver Analytics, Bloomberg

Exchange Rates (local currency units per USD)

	Current	3-Month Horizon		6-Month Horizon		12-Month Horizon	
	Jun 2	Forward	Forecast	Forward	Forecast	Forward	Forecast
Asia ex-Japan							
China ^A	6.58	6.61	6.60	6.66	6.70	6.75	6.80
India	67.4	68.3	67.5	69.3	68.0	71.3	68.5
South Korea	1186	1189	1180	1190	1200	1190	1250
Hong Kong	7.77	7.76	7.85	7.76	7.85	7.76	7.85
Taiwan	32.7	32.6	33.0	32.6	33.0	32.6	34.0
ASEAN							
Singapore	1.37	1.38	1.38	1.38	1.40	1.38	1.43
Malaysia	4.15	4.16	4.10	4.17	4.20	4.20	4.40
Thailand	35.6	35.7	36.0	35.8	36.5	36.0	37.5
Indonesia	13695	13845	13400	14110	13600	14615	14000
Philippines	46.6	46.8	47.5	47.0	48.5	47.4	48.5
Euro area [*]	1.12	1.12	1.12	1.12	1.10	1.13	1.05
Japan	109	109	115	108	120	107	125

^{*} USD per Euro ^AWe forecast \$/CNY fix rate.

Source: Goldman Sachs Global Investment Research

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We, MK Tang, Yu Song, Zhennan Li, Maggie Wei and Andrew Tilton, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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