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China's Bond Swap

Pricing Risk and Estimate Bank Impact

China's Rmb 2 trillion bond swap is designed to reduce local borrowing costs and improve the transparency of local government debt. It appears to be a simple program – exchange local debt for bonds that are sold to private buyers, mainly banks. In practice, assigning risk – along with pricing the bonds – is going to be difficult due to the lack of clarity in the policy and insufficiently accurate local data. The program is of significant importance for the fiscal health of local governments, the financial position of the state banks, and the ability of Beijing to control national debt. As with many policies mandated by the PBOC and the State Council, the devil is in the details. The main issues that have not been clarified are:

1) Whose debt is being swapped?

2) Who is making the loans?

3) Are these national or provincial bonds?

4) How should they be priced?

5) What is the likely impact on the state banks?

Conclusion: China's Rmb 2 trillion bond swap program is designed to lower interest costs for provincial governments by exchanging bank debt for lower cost bonds. Beijing has not clearly defined the debt, leaving much responsibility to provincial governments. This will lead to difficult negotiations among all levels of government and financial institutions.

In addition, given total local debt at Rmb 17 trillion – and probably closer to Rmb 24 trillion – the current program will need to be radically expanded. The initial Rmb 2 trillion program only covers bank loans. But these cover just 20% of the total estimated Rmb 10 trillion. In addition, there is additional debt from Trusts and other institutions. As a result, the state banks could be responsible for up to Rmb 16 trillion of debt ***. Assuming default rates of 50%, we estimate in the worst-case scenario this could cause a 70% decline in combined bank equity and profits.***

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A Debt Program with Loopholes

Directive 43 – State Council Weighs In

The origin of the debt swap was a document issued by the State Council in September 2014 called "Directive 43." It called for plans to "accelerate the establishment of standardized local government debt management" and "stop illegal local government debt borrowing." It stated that government debt "cannot be borrowed by enterprises" and corporate debt "cannot be pushed on to governments." It also calls for a reduction of local interest costs. This is an important point, as the leadership seems more concerned with Provincial governments going broke due to high interest costs than with reducing the amount of local debt. Among the mandates, it ordered all local debt to be consolidated at the Provincial level, granting much power to this level of government. This is another key issue as an estimated 90% of debt was incurred by sub-Provincial governments.

The original program called for Rmb 1 trillion to be swapped. But in June 2015, the amount for the entire program was doubled to Rmb 2 trillion.

How to Divvy Up the Debt?

According to Directive, 43, they key phrase regarding the debt swap states that local governments "can apply for replacement of debt with local government bonds in order to reduce the interest burden and optimize the term structure, freeing up more funds for key projects."

The Directive lays out three types of debt categories:

1) Project whose operating cash flow can pay debt servicing costs;

2) Projects with insufficient cash flow, under which governments can inject assets "to enhance solvency."

3) Projects with no future, which can be sold.

But it adds an odd instruction to "ensure financing for projects under construction" – a contradiction to the rules to reduce local borrowing. This last caveat is very typical of Chinese government policies that are issued with strong edicts and then later "cushioned" with various loopholes. This loophole could severely erode efforts to limit local debt.

The program has gone through several permutations since then as participants faced the reality of the market. But let's first take a look at the debt categories and what they mean.

Debt Categories Are Not Well Defined

The categories described in Document 43 are quite vague. A better description can be found in the National Accounting Office's 2013 survey. That survey allocated the debt into three categories: government, government guaranteed, and contingent liability.

Table 1

Categories of Local Debt

(RMB Billion)	Govt Debt	Govt Guarantee	Contingent Liability	Total	% Total
Municipal building	3,793.5	526.5	1,483.0	5,803.1	34.6%
Transportation facilities	1,394.3	1,318.9	1,379.5	4,092.7	24.4%
Land storage	1,689.3	107.8	82.1	1,879.2	11.2%
Affordable housing	685.2	142.0	267.6	1,094.8	6.5%
Education, Health	487.9	75.3	409.4	972.6	5.8%
Agriculture, forestry, water c	408.6	58.0	76.8	543.4	3.2%
Ecological construction and	321.9	43.5	88.6	454.0	2.7%
Industry and Energy	122.7	80.5	26.0	229.3	1.4%
Other	1,215.6	211.0	255.2	1,681.8	10.0%
Total	10,118.9	2,563.5	4,068.4	16,750.8	

Source: NAO Survey

Under these categories, Rmb 10.1 trillion or 60% is direct government debt, while Rmb 2.6 trillion or 15% is guaranteed by the government. The remaining 25% is considered the responsibility of local

companies, including the Local Government Financing Vehicles (LGFV) established primarily to spend the 2009 stimulus funds.

No Laws Apply

The problem with these categories is there is no legal basis for them. Local governments, even provincial, are prohibited in most instances from borrowing money. Commercial banks cannot lend to local governments. In addition, these governments are expressly forbidden from providing guarantees for other debt. Thus, ***the bonds would not have a legal provincial Government guarantee without a revision of Security Law Article 8 and the Budget Law Article 28 (local budgets "shall not contain deficit").*** The third category, contingent liabilities, is particularly unclear, as this could refer to any debt with a guarantee by the government – this does not have legal status, therefore it is so vague as to be meaningless. However, clearly the State Council has ordered the provinces to issue the bonds.

Regulatory Confusion

When the program was announced in March 2015, even the regulators were confused about the how the debt swap program would function. According to a March 10 article in China Daily, Liao Min, director of the China Banking Regulatory Commission's (CBRC) office in Shanghai, said:

> "There is very limited information in the budget report about how the principal and interest (of local government debt) will be repaid. Disclosure of this information is critical as it helps us evaluate risk, shapes public expectations and encourages private capital to help mitigate the risk….Bond swaps are just a temporary measure to reduce the interest payment burden. ***How revenue generated from local governments' projects can cover debt servicing remains unclear***."

As leading China economist Barry Naughton noted about the earlier issuance of bonds by LGFVs, investors often perceive bonds from local government funding vehicles as enjoying implicit government guarantees (although there is no legal basis for this belief). In some respects the State Audit Office contributed to this belief by providing an aggregate figure for debt for which local government bore contingent liability.

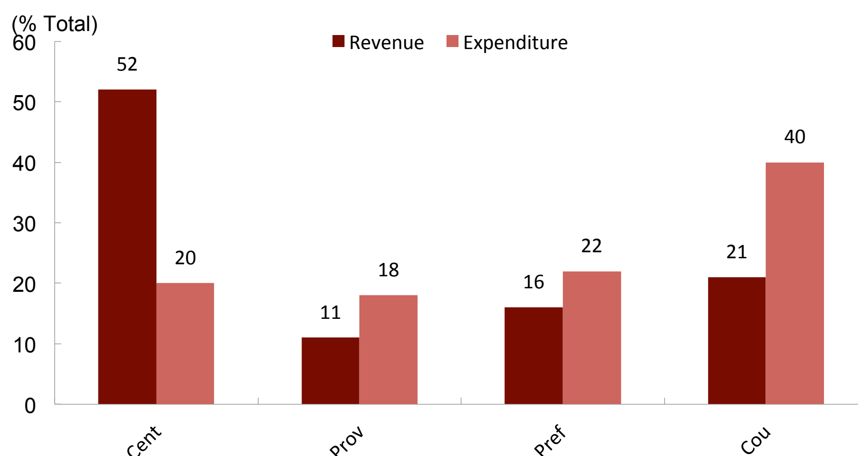
However, despite these legal issues, it is widely assumed in the markets that these bonds are backed by provincial governments – this is an assumption that could be tested in case of default. This assumption is supported by a comment by Minister of Finance Lou Jiwei, who stated that all local debt is essentially provincial debt.

Provinces Hold the Purse Strings

Under the new bond swap program, Beijing has granted discretionary power to provincial governments to run the program. This also including sub-provincial and private LGFV debt. This is an important point – ***most expenditure and debt is at the county level – but the provinces will control the swap program.*** Table 2 below tells the story. In 2009, the central Government kept 52% of national revenue but only controlled 20% of expenditure. Local county governments were responsible for 40% of expenditure. This could create problems as there will be disputes between governments.

Table 2

Revenue and Expenditure by Level of Government (2009)



Source: IMF

Who Loaned the Money and Who Borrowed It?

While there is a lot of discussion of general *categories* of debt as explained above, there is surprisingly little discussion about the actual *source* of capital, and the *use* of capital.

Many Sources of Loans

The general assumption is that local debt was loaned by the banks. But the banks are only one source of funds. The local debt was provided by numerous lenders. These include:

1) **Trusts**. These are provincially owned institutions that look a lot like unregulated banks. They collected money from corporations and private individuals and reloaned it mainly to LGFVs.

2) **Wealth Management Products**. These are basically personal loans banded together by a financial intermediaries including investment banks (e.g., Citic Securities), state banks (Bank of China, China Construction Bank); and smaller banks (Bank of Beijing).

3) **Entrusted Loans**. Money loaned to by corporations and then "entrusted" to other borrowers.

Bank Loans Half of The Total

Banks provided a little more than half of all capital supplied to LGFVs, according to the official National Accounting Office surveys. These surveys probably understate the amount of capital supplied through the Shadow Banking system but are the best data available. This is an important figure when we look later on at the potential impact of local debt on bank balance sheets.

Table 3

Sources of Capital to LGFVs

Funding source	2010 RMB bn	2010 %	1H13 RMB bn	1H13 %
Bank loans	8,468	79%	10,119	57%
Bonds	757	7%	1,846	10%
Others	1,493	14%	5,926	33%
BT (Build-transfer)	-	-	1,476	8%
Receivables	-	-	857	5%
Trust	-	-	1,425	8%
Other entities and individuals	-	-	839	5%
Others	-	-	1,328	7%
Total	**10,717**	**100%**	**17,891**	**100%**

Source: NAO Survey

Who Uses the Money?

In pricing risk, it is helpful to know how the capital is used as means of evaluating the potential for default. Here, once again, the data is sparse. I prefer to rely on micro level data as it is likely to be more accurate than aggregates collected by local government officials. One example is from a listed bank in Hong Kong, Huishang Bank in Anhui, whose published accounts provide some detail on borrowing. More than 65% of their local loans were allocated to infrastructure and industrial parks, and more than 90% was borrowed by sub-Provincial governments. These are two risky areas. Local governments have few fiscal controls. And infrastructure and industrial parks generally are not profitable. So the underlying collateral for the bonds is sub par.

Table 4

Huishang Bank's Loan Breakdown

Huishang Bank's Loan Breakdown	
By Geography	
Provincial LGFV	10.1%
Municipal LGFV	44.9%
Below Municipal LGFV	45.0%
By Industry	
Infrastructure	43.0%
Industrial Parks	22.5%
Land Reserve	16.8%
Affordable Housing Projects	10.5%
Other Industries	7.2%

Source: Huishang Bank Financial Statements.

Banks are Forced to Be the Buyers

Bonds Replace Bank Debt – At First

According to a May 15 article in China Daily, the bonds will replace bank debt. "At the center of the plan is a requirement that banks have to accept a minimum amount of bond placements, as defined by their pro rata share of an issuing local government's total debt to be swapped." But as we noted earlier, bank loans account for about one-half of total local debt (at least LGFV debt). What happens to the debt from other lenders, like Trusts and WMPs? There are three choices.

Negative for Bank Balance Sheets

The original intent of the bond swap was to replace local debt with bonds traded in the open market. However, the banks initially balked at the prices offered and the first sales failed to go through. Given that inter-bank trading accounts for more than 95% of volume of China's Rmb 35 trillion bond market, the banks are essential to the success of the program. They were ordered to participate. According to official documents reported in the Chinese press, the Ministry of Finance, the PBOC and the CBRC jointly issued a document requiring banks accept a minimum amount of bond placements, as defined by their pro-rata share of the local government's total debt to be swapped.

What does the bond swap mean for bank solvency, liquidity and profits? To persuade them to participate in the bond swap, the PBOC agreed to accept the bonds as collateral for loans from the central bank. This removes them from the bank balance sheets and frees up liquidity for additional loans. The collateralization program with the PBOC implies state support. But this is not guaranteed. A defaulting bond could be the responsibility of the bank that purchased it. That suggests a significant potential liability for the country's banks. How big is the liability?

Half of China's banking assets are held by the state banks, with another third in the commercial banks.

Table 5

Assets in the Chinese Banking System

Financial Institution	Assets (RMB Bln)	% Total
State Banks	151,355	50.2%
Large Commercial Banks	65,601	21.8%
Joint Stock Commercial Banks	26,936	8.9%
City Commercial Banks	15,178	5.0%
Policy Banks	12,528	4.2%
Rural Credit Cooperatives	8,595	2.9%
Rural Commercial Banks	8,522	2.8%
New Rural Institutions/Postal Bank	6,211	2.1%
Non-bank Financial Institutions	3,968	1.3%
Foreign Banks	2,563	0.9%
Total	**301,456**	**100%**

Source: CBRC

State Banks Have Most of the Equity

Total equity and profits in the banking system is Rmb23.8 trillion, with half, or Rmb 11.9 trillion, generated by the state banks. Let's assume a 50% default rate (which is generous considering the underlying assets are basically loss-making property projects). The banks could absorb Rmb 1 trillion in losses.

Table 6

Equity and Profits in Chinese Financial Institutions

Institution (2013, RMB Bln)	Equity	Profits	Equity+Profits
Banking Institutions	10,172	1,744.6	11,916.2
Policy Banks	631	92.2	723.4
Large Commercial Banks	4,439	838.2	5,277.6
Joint Stock Commercial Banks	1,592	294.5	1,886.7
City Commercial Banks	997	164.1	1,161.5
Rural Commercial Banks	673	107	779.6
Rural Cooperative Banks	109	16.2	125.2
Urban Credit Cooperatives	-	-	-
Rural Credit Cooperatives	452	72.9	524.6
Non-bank Financial Institutions	773	105.9	878.7
Foreign Banks	273	14	287.2
New Rural Institutions and Postal Bank	230	39	268.7
Total	**20,341**	**3,488.6**	**23,829.4**

Source: CBRC

Losses Could Grow as Banks Absorb More Debt

The total size of the potential bailout and the role of the state banks could be much larger than Rmb 2

trillion. Table 3 shows that Chinese banks have loaned Rmb 10.1 trillion to LGFVs. We can only estimate but perhaps 50%, or Rmb 5 trillion came from the state banks. **If we assume a 50% discount on the bonds that would cut state bank profits and equity in half.**

As the table 7 below shows, the state banks' equity could be eroded very quickly if it were to assume the total liabilities of the local governments. The alternative allocating debt to the banks through the debt swap program is for the banks, trusts and individuals to roll over the loans provided to local governments – even if the underlying projects are unprofitable. This would be the functional equivalent of holding the bonds.

Table 7

Impact on State Bank Balance Sheets of Default Various Levels of Local Debt

Default Scenarios	I	II	III
(RMB Bln)	Bank Loans	Bank Loans and Govt Guaranteed Loans	Bank Loans, Govt Guarantees, and Contingent Liabilities
State Bank Equity and Profits (2013)	11,916	11,916	11,916
Amount of Loans Swapped	10,118	12,681	16,750
NPL Discount @ 50%	5,059	6,341	8,375
Remaining Equity/Profits	6,857	5,576	3,541
Decline in Equity/Profits	**-42.5%**	**-53.2%**	**-70.3%**

Source: CBRC, Orient Capital Research

Another Alternative: The Other Lenders Don't Get Paid

An alternative to the banks taking all of the local debt on balance sheet is to divide the loans into two categories: bank and private debt. Half of local debt is bank debt; the rest came from corporates and individuals (although there is some bank debt there that was merely passed on by corporates but is difficult to disaggregate.) This is the view of some in the government. "I don't think all the trusts can get paid. Theoretically, that's impossible," a PBOC official said.

However, this is unlikely. Beijing does not want to have a massive private loan – even through the Shadow Banking market – default, causing lenders to protest. This occurred in 2014 with a Trust loan that was quietly recapitalized by a State Bank.

When asked these questions, one PBOC official in Shanghai told me, " That's so complex. It depends on political bargaining power." But at the end of the day, in his view, "Banks will get the money."

Arbitrary Bond Valuations

Given the uncertainties surrounding the debt – exact composition, source, destination, and guarantees -- the pricing becomes almost arbitrary. How can you assign risk when the nature of the issuance is unclear? There are several comps we can use to look at valuation.

Lower Pricing for Hebei

So far, the bonds have been priced as if they have different levels of risk and are not all supported by Beijing. In May 2015, Jiangsu became the first of several provinces to auction bonds. The province sold Rmb 52.2 billion of debt at interest rates that ranged from 2.94% for three-year debt to 3.41% for 10-year bonds. Other local governments that have followed suit include the provinces of Hebei, Shandong, Hubei, Guangxi, and the municipalities of Chongqing and Tianjin.

There was a brief delay caused by a protest by the banks at being force-fed these credits, The bank protests were a striking example of independence by banks that, after all, are 75% owned by the State and completely controlled by the PBOC and the Ministry of Finance. To reinforce their need for encouragement the PBOC swooped in with a last minute reprieve. The banks have been allowed use the new bonds as collateral for additional liquidity injections from the Ministry of Finance.

The market is pricing in different risk assessments between provinces – but it's not clear what criteria are being used. In June, following an earlier failed sale in Jiangsu, Hebei Province sold Rmb 11.15 billion yuan general bonds comprising 2.24 billion yuan in three-year bonds, 3.34 billion yuan each of five- and seven-year bonds, and 2.23 billion yuan in 10-year bonds. The yields for three-, five-, seven- and 10-year general bonds stood at 2.95, 3.31, 3.60, 3.62 per cent, respectively. Of the 1.65 billion yuan special purpose bonds, 501 million yuan were three-year bonds, 494 million yuan were five-year bonds, and 658 million yuan were seven-year bonds. The three-, five- and seven-year bonds yielded 2.90, 3.26, and 3.55 per cent, respectively. The yields were substantially lower than those realized for the sale by Jiangsu province, the first province to issue municipal bonds by private placement this year.

Given the uncertainties, it is not surprising that the **first sale failed** when the banks didn't agree to buy the bonds. The first bond sale, Rmb 64.8 billion in April by Jiangsu Province, collapsed after no buyers emerged. Out of desperation, the PBOC stepped in and agreed to allow the banks to use the bonds as collateral for liquidity injections from the Central Bank. So the Central Bank, once again, is the lender of last resort. But we don't know how large PBOC coverage is.

In a March report, Moody's discussed the bonds' risk but, unusual for a ratings agency, avoided establishing fixed criteria. Moody's said the credit of the 31 provinces and five central cities "is supported by their close ties with the central government...While we do not currently rate China's upper-tier regional level governments, their ratings would likely be in a tight range, and no more than two notches below that of the sovereign government, if we were to apply our global rating methodology to them." They failed to clarify the question of what these "close ties" between top cities and provinces and the Central Government means in China.

Some Measures of Risk Assessment for Local Bonds

To analyze the risk of these new provincial bonds, there are several potential indicators we can use.

One is provincial financial data. According to the World Bank, total interest payments for central government borrowing totaled 3.3% of revenue for China in 2011. Meanwhile, interest payments by local governments (in 2013) are more than double this amount, or 7.6% of revenue, for the provinces we examined. So the provinces' interest obligations, as a share of revenue, are double that for the national government.

Table 8

Provincial Debt (RMB Mln)

	Debt (1H 2013)	Debt/Rev	Interest cost	Interest/Rev
Jiangsu	8,163	1.8	886	10.9%
Hebei	4,573	1.6	451	9.9%
Hainan	1,016	1.4	85	8.3%
Shanxi	3,309	1.3	251	7.6%
Zhejiang	5,623	1.2	416	7.4%
Xinjiang	2,857	1.0	165	5.8%
Ningxia	993	0.8	47	4.8%
	Median	**1.3**	**251**	**7.6%**

Source: Provincial Governments

Including Unprofitable Local Companies Raises Risk Assessment

But this analysis above looks only at provincial debt. Local debt is mainly sub-provincial. Including just Provincial debt is like looking at only at New York State while ignoring New York City. Thus, we would have to include all levels of government within each province to make a reasonable assessment of risk. While we have data on provincial revenue and debt, it is much harder to obtain this for sub-provincial governments.

However, as a proxy, we can use data for the profits of LGFVs, as they comprise the majority of sub-provincial debt. The risk of default here is obviously quite significant. On average, profits from operations account for an average of just 3.8% of total LGFV profits. **The majority of LGFV profits – 84.9% -- come from government subsidies**. Clearly, most of the underlying projects for local debt – and we assume LGFVs account for the largest portion – are not profitable.

Table 9

	Ops Profit/Total Profit	Subsidy/Total Profit	LGFVs with Profit Greater than Subsidy
Township	-2.6%	100.2%	21.5%
City	-0.8%	97.3%	14.9%
Capital City	3.8%	84.9%	30.6%
Province	66.9%	21.3%	60.0%
Municipality	24.1%	47.1%	42.9%
Median	**3.8%**	**84.9%**	**30.6%**

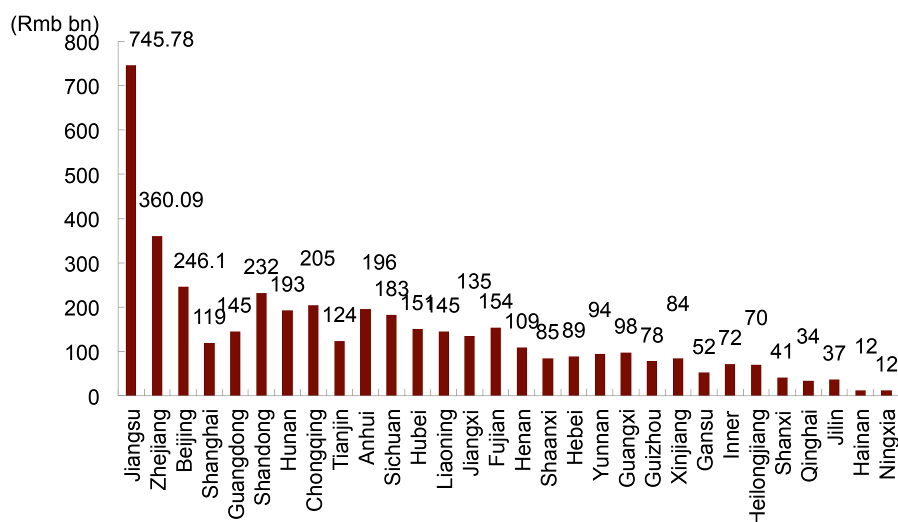
Source: 2011-2012. IMF, "Risks from Local Government Finance"

LGFV Bonds Provide Pricing Guidance

While local government financing is obviously not transparent, there is one published set of data that may be helpful in assessing the level of risks between provinces: local government bonds. During the global financial crisis, Chinese authorities provide a RMB 4 trillion ($250 billion) stimulus package to counter slowing economic growth. Only RMB 1.2 trillion was provided by the central government; the remainder of RMB 2.8 trillion was provided by local governments. Much of the funding came from bonds issued by LGFVs. By the end of 2014, there were Rmb 4.95 trillion LGFV outstanding. How were they priced?

Table 10

Outstanding Local Bonds by Province



Source: Great Wall of Debt, Columbia University

Research by three academics at Georgetown, Columbia and Tsinghua in Beijing found high correlations between LGFV bond yields and four factors:

1) The RMB Exchange Rate.

2) Sovereign Credit Spreads.

3) Local Real Estate Values.

4) Local Corruption.

The first two are macroeconomic factors. The bond yields of LGFVs in Provinces with closer financial links to Beijing, through trade, subsidies or other means, reflected the risks of the country itself. Therefore, their prices were correlated with Sovereign Debt spreads.

Local real estate values are a more logical contributor to bond prices because they “reflect the central role of real estate as LGFVs’ collateral and the fact the real estate plays a key role in the economic development of China,” according to the paper.

Political risk, as measured by official statistics on the number of officials under investigation, also had a significant impact on bond yields. These factors could also be relevant to pricing of the new, Provincial-level bonds.

Conclusion: The Bond Swap is the Grey Area of Chinese Fiscal Relations

The PBOC’s program to allow the Provinces to swap debt for bonds was a bold move by the country’s top policy makers to clean up local debt and make local government finances more transparent. It was a clever solution in that it was the single biggest tool available to the financial regulators to conquer this knotty problem in one fell swoop. However, policy formed in Beijing often is implemented completely differently locally. Beijing essentially told the Provinces, “Here’s our proposal and our offer for assistance. Now it’s your turn to clean up the mess.” But the underlying incentives remain for the creation of excessive local debt: a shortage of revenue, desire for funds for growth, and “rent seeking” among corrupt local officials.

Assuming that the Central Government will support the bonds is risky. As foreign investors in Guangdong International Trust and Investment Corp. discovered in 1998, Beijing would not back Gitic’s debt, even though it was issued by the investing arm of the Guangdong Government. It is not assured that Beijing will stand behind all of the debt it is now rushing forward to bring into the light of day.

It is likely that the banks – and the state banks in particularly – will be forced to absorb more and more debt. Meanwhile, the PBOC will find ingenious ways to provide support for the banks, such as the collateralization program, but will also attempt to avoid a direct addition of debt to the PBOC balance

sheet. The central bank tends to avoid overt increases in central government debt. This will only complicate the analysis as, once again, Beijing will refuse to draw a hard line the central government, local governments, and private economic actors.

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