

# China's debt problem: How worrisome and how to deal with it?

Alicia Garcia Herrero and Le Xia

This paper investigates China's debt problem in various perspectives. We find that the reason that China has been getting into a debt problem was mainly due to the huge stimulus package and lax monetary policy during the 2008-2009 global financial crisis. We then estimate that China's total non-financial sector debt amounted to 235.1% of GDP, a high level relative to other emerging markets, among which public sector debt was 53.2% of GDP while private sector debt amounted to 181.9% of GDP. The debt problem may exacerbate banks' asset quality and weigh on growth rate. To solve the debt problem, we propose that the authorities should press ahead with structural reforms and financial liberalization while local governments can privatize their controlled SOE assets to raise funds for debt repayment.

## Introduction

After weathering the financial crisis of 2008-2009, China's economic clout has been relatively strengthened as most developed countries were mired in financial distress and anaemic growth. Now China stands out as the second largest economy (after the US) and the largest trade partner in the world.

What comes with China's stellar rise in economic size is its escalating overall debt level (in both public and private sectors). Garcia Herrero and Santabárbara (2013) consider it one of China's financial fragilities because it could lead to severe liquidity risk when the debt can't be rolled over in the event of adverse financial shocks. It has caused many China watchers to debate whether the alarming speed of debt accumulation would end with a hard-landing of economy or/and an implosion of the financial system. Indeed, China's debt problem has become increasingly relevant to the world given China's critical importance to the global economy and trade (for instance, according to the International Monetary Fund's "World Economic Outlook", China is the largest trading nation in the world in terms of the total trade volume, and it is the largest export country and the second largest import country).

Unfortunately, existing literature does not provide clear guidance on what level of indebtedness is healthy for a country because it seems to depend on a wealth of factors. From Barro's (1971) famous article proving that public debt does not really matter based on the principle of Ricardian equivalence, more recent literature is inclined to attach greater importance to public debt in the functioning of a particular economy. Elmendorf and Mankiw (1999) argue that debt has important effects on the economy in the short term rather than the long term, however it is hard to know at what level of debt such effects become more negative. More generally, economists are still attempting to find general standards for public and corporate debt. For example, according to the Maastrich Principles, the EU used to consider 60% of GDP as a healthy limit for the stock of public debt but of course this has changed due to the recent debt crisis in EU peripheral countries. Reinhart and Rogoff (2012) set a red line for public debt at 90% of GDP although their empirical results were challenged. In addition, Baldacci et al (2011) point out that the best predictors of a fiscal crisis are different for advanced countries and emerging



markets, which makes it even harder to find a benchmark level which can be useful for China's case.

It is even more difficult to gauge the appropriate level for debt in the private sector. Cecchetti et al (2011) conclude that when corporate debt rises above 90% of GDP, it becomes a drag on growth. On the other hand, Dell'Ariccia et al (2012) show that only one third of credit booms result in a financial crisis and that it is almost impossible to differentiate a "good" credit boom from a "bad" one *ex ante*.

In this article, we investigate why China was getting into a debt problem, how big the problem is and why we should worry about it.

## Why did China get into a debt problem?

Figures show that China's over-borrowing of the public and corporate sector can basically be traced back to the huge stimulus package and lax monetary policy that Chinese economic authorities introduced during the global financial crisis in 2008-2009. In fact, a massive stimulus package was unveiled to counteract the adverse impact of the crisis on the domestic economy. The stimulus package consisted of three key components. First, the authorities substantially relaxed lending with interest rate cuts, reduction in reserve requirements and even very aggressive credit targets for banks. Second, a tremendous investment plan was deployed with the main focus on infrastructure. The plan was estimated to be RMB 4 trillion (USD 650 billion) when announced but ended up being much bigger. Finally, the government subsidized the development of several important industries and lowered mortgage rates to boost housing demand.

According to the authorities' initial plan, funds needed for the stimulus package would come from three sources: the central government, local governments, and banks (each accounting for around a one-third share). However, in practice, given their limited fiscal capacity, local governments had to turn to banks to meet their borrowing needs. To circumvent the legal prohibition on local governments' direct borrowing from banks, local governments established special purpose vehicles (called "Local Government Financing Vehicles" or LGFVs) to obtain bank loans. Banks, for their part, could not decline loan requests from both the central and local governments because the majority of banks are -in essence- owned and controlled by governments. In the meantime, the government's subsidies for specific industries boosted credit demand as firms in these sectors sought to take advantage of policy support and expand their production capacity.

As a consequence, the stimulus measures implemented

during the global financial crisis led to a huge lending binge with Chinese banks splashing out a record-high RMB 9.60 trillion (USD 1.56 trillion) of new loans in 2009, compared to merely 4.2 trillion in 2008. Accordingly, the aggregate bank loans registered record growth of 31.7% in 2009 and 19.9% in 2010 year-on-year, substantially higher than the average loans growth rate of 15% during the 1998-2008 period.

Stimulus packages have since become the new norm of China's economic policy. When growth slowed down again in 2012 and 2013, the authorities responded by rolling out more infrastructure projects to revive the economy. Meanwhile, corporate borrowers felt they could leverage this new norm. Given that banks' balance sheets were not enough to accommodate the borrowing from both the public and the private sector, a good part of the corporate sector, especially the smaller corporate, has increasingly used the shadow banking sector to meet their financing needs and circumvent tightening regulations on bank loan issuance. As such, both public and corporate debt have snowballed during the last few years.

## How big is the problem and for whom?

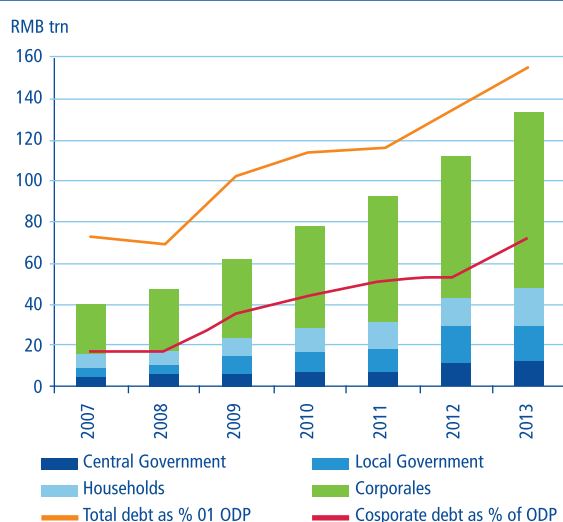
China's overall debt is not as well known as for other countries because of statistical deficiencies. Generally, the National Statistics Bureau (NBS) does not disclose debt levels of local governments. Moreover, according to China's budget law, local governments do not need to provide their debt figures to their congress either. However, combining different official sources, one can provide a relatively accurate estimate of the total amount of debt. In fact, we estimate that China's total non-financial sector debt amounted to RMB 133.8 trillion at end-2013 (235.1% of GDP). Public sector debt was RMB 30.3 trillion (53.2% of GDP) while private sector debt (including both household and non-financial corporate sector) amounted to RMB 103.5 trillion (181.9% of GDP).

The banking sector is still the biggest lender in China. However, the shadow banking sector has become an important fund source, accounting for more than one-quarter of total outstanding debt.

### Public Sector Debt

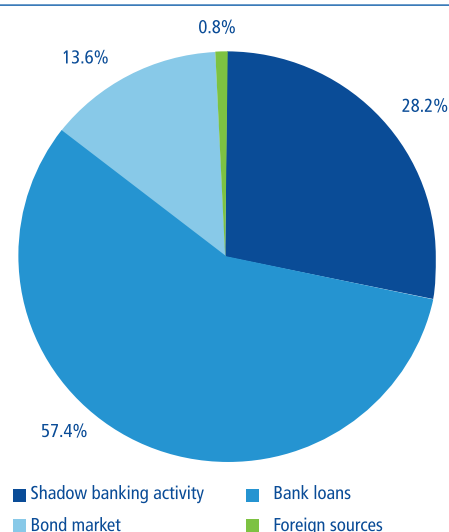
According to the latest NAO report released at end-2013, the total debt of the central government stood at RMB 12.4 trillion (or 21.8% of GDP), which can be divided into general fiscal debt of the central government (RMB 9.5 trillion, or 16.7% of GDP) and the debt of the national railway company (RMB 2.9 trillion, or 5.1% of GDP).

Chart 1. China's total debt has risen rapidly



Source: CEIC and BBVA Research

Chart 2. Shadow banking has become an important sources



Source: CEIC and BBVA Research

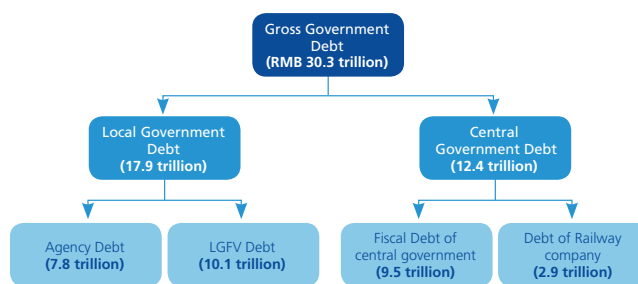
Meanwhile, the total local government debt (excluding SOEs debt and contingent debt of pensions, which are not covered in the NAO report) increased to RMB 17.9 trillion (31.5% of GDP) at end-June 2013 (Table 1).

Local government debt can also be classified into agency debt (direct borrowing by local government agencies such as schools and hospitals), and debt of LGFVs, used to finance infrastructure projects. According to the latest NAO report, agency debt has risen by 37% since June 2010, to RMB 7.8 trillion as of end-June 2013 while LGFV debt doubled to RMB 10.1 trillion. The fast growth in LGFV debt reflects the authorities' use of infrastructure investment to counter economic downturns over the past several years. (Chart 3) Local government debt can also be subdivided into direct, government guaranteed, and contingent debt. The borrowers of the latter two consist mainly of local government financing vehicles (LGFVs).

Some characteristics of local government debt ring alarm bells. (Garcia Herrero et al., 2014) First, maturity mismatches are present, especially in the case of LGFVs, where short-term borrowing is used to finance long-term infrastructure projects. Second, according to an IMF study, interest rates of local government debt (6-8%) are well above the average interest rate paid by the central government (4-5%) and the benchmark lending rate (6%). Third, as revealed by the NAO report, a large portion of local government debt (37.2% by end-2012) needs to be repaid through proceeds of land sales, which is apparently not sustainable in the long run.

Nevertheless, combined with local government debt, total public debt amounted to 53.3% of GDP, which is still not high compared to other countries (Chart 4). In particular,

Table 1 Debt Structure of China (at June 2013)



Source: CEIC and BBVA Research

the central government balance sheet is still in good shape, enabling it to provide necessary support to local governments if needed.

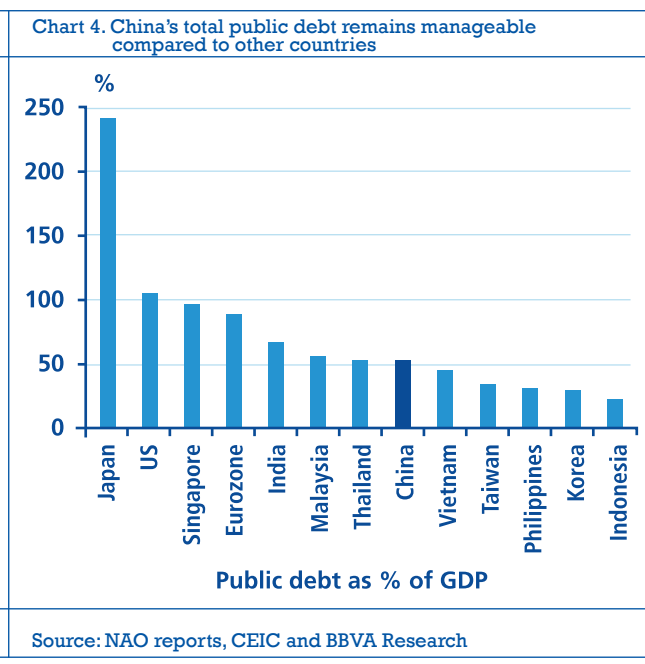
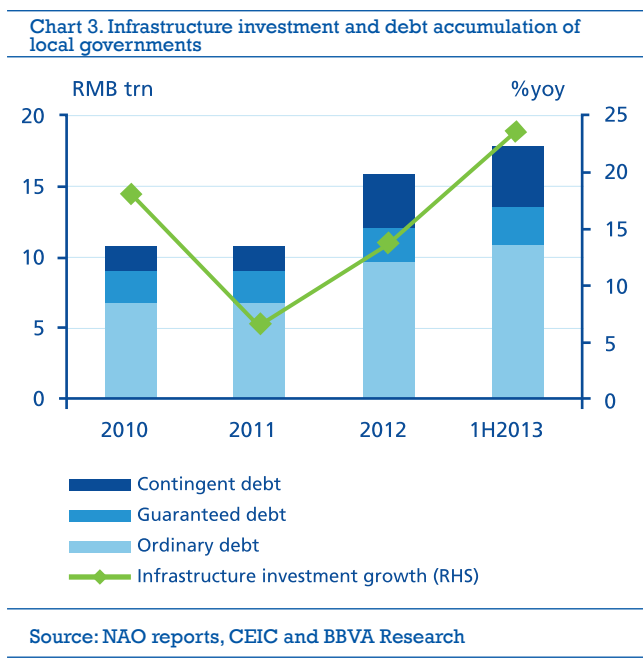
### Private Sector Debt

#### Household sector

China's household sector debt was around 30.9% of GDP at end-2013, comprising loans issued by banks (22.8% of GDP), microcredit company loans (1.4% of GDP), and private lending (6.7% of GDP). More than three quarters of household loans by banks consist of housing mortgages. Our estimate of household debt-to-GDP would place China broadly in line with the average for other emerging markets (29.7%), and well below that of advanced economies (80.9%), according to BIS data.

#### Non-financial corporate sector

The total debt of the corporate sector stood at 151.0%



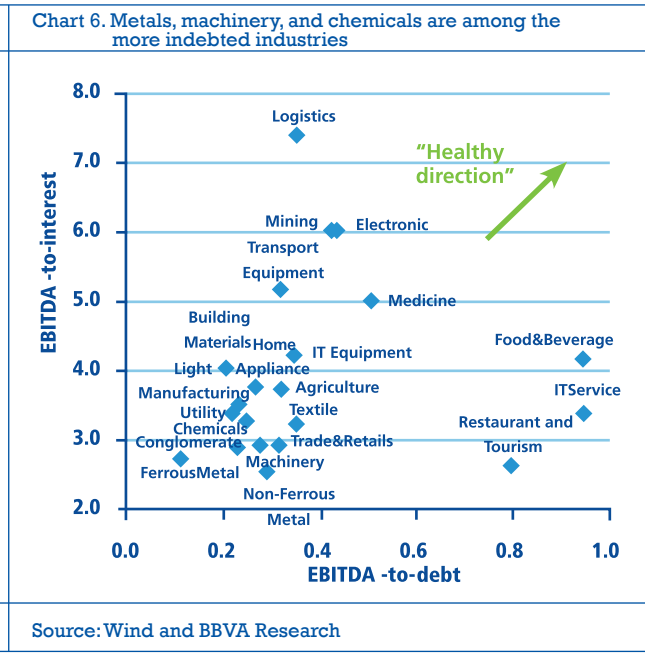
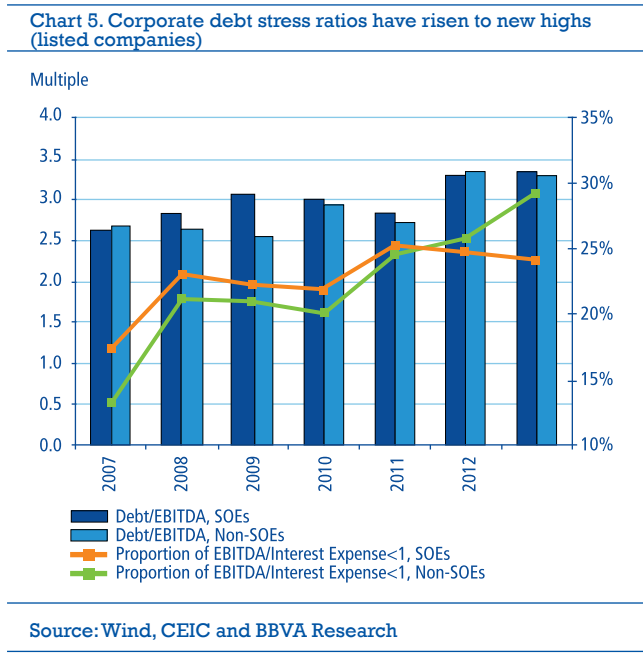
of GDP at the end of 2013, compared to 95.7% of GDP in 2008. Indeed, the corporate sector has been suffering a debt problem for several years (Chart 5). As of end-2013, more than 25% of the domestically listed companies registered a ratio of EBITDA to interest expenses of less than one, suggesting that their operating cash flow cannot fully cover their interest payments (Garcia Herrero et al., 2013).

The debt problem is particularly severe in the ferrous industry, non-ferrous metals industry, as well as the machinery and chemical industries (Chart 6). Importantly, these industries also have overcapacity problems. It provides further evidence that the debt problem of the corporate sector stems from the wasteful investment binge, which

resulted in a vast amount of obsolete production capacity. In this sense, the indebtedness can be considered as the flip side of the excess capacity problem.

**External Debt**

The State Administration of Foreign Exchange (SAFE) reported that China's external debt amounted to USD 863.2 billion at the end of 2013, or 9.3% of GDP. Its size relative to GDP has been almost flat since the 2008/09 financial crisis, despite a rapid rise in volume (doubled in five years from USD 390.2 billion in 2008). The stabilization of external debt to GDP level is mainly due to rapid GDP growth, inflation,



and RMB's appreciation during the same period.

The SAFE may underestimate the external debt level by excluding (i) RMB currency circulating overseas; (ii) overseas borrowing disguised under FDI inflows or over-invoicing exports; (iii) overseas guarantees provided by domestic entities, and (iv) the debt incurred by overseas subsidiaries of Chinese banks or firms. We address most of the under-estimation issues by adding international bank claims from the BIS and HKMA data. As a result, the estimate of China's external debt is lifted to 18% of GDP in 2013.

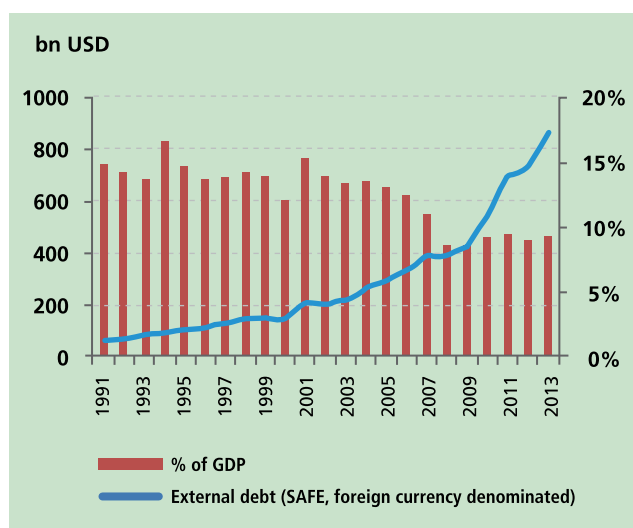
The rise in China's external debt cannot be explained by its trade flows. Indeed, China's current account still remains in surplus although its size relative to GDP has significantly narrowed to below 3% in the past couple of years

## Why worry about China's debt problem?

There are two main reasons why we should worry about China's large amount of debt problem. First of all, local government debt will need to be cleaned up at some point, which will exacerbate banks' asset quality. Second, as Elmendorf and Mankiw (1999) argue, a heavy debt burden could weigh on growth rate both in the short and long term.

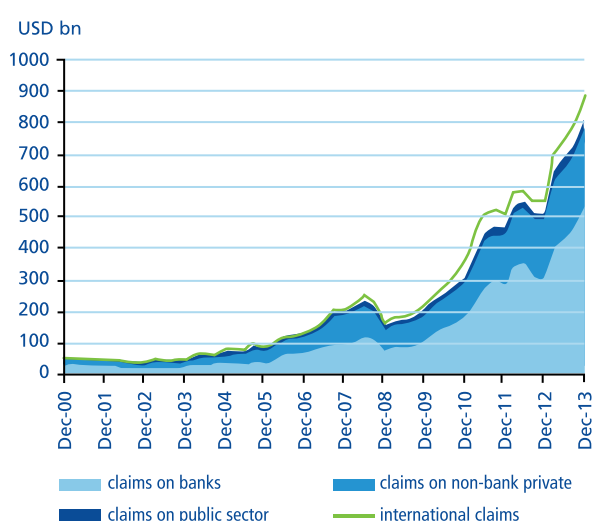
On the first issue, the clean-up of the local government debt problem will likely involve both a central government bailout and bank writeoffs, although it remains unclear how to split clean-up costs between them. In this respect, we assume two extreme scenarios: in our worst case for the central government, it would take over all the debts

Chart 7. China's headline external debt grows rapidly but is low as % of GDP



Source: SAFE and BBVA Research

Chart 8. Rapid rise in international claims was led by claims in the banking sector



Source: BIS and BBVA Research

(compared to its 10.6% high in 2007). A couple of financial factors lie behind the fast growth of external borrowing. First, some tightening measures against the domestic property market have pushed many property developers to go to the offshore market to meet their financing needs. Second, the entrenched appreciating expectations of the RMB and the relatively lower financing costs in the USD have also lured more onshore enterprises to borrow the USD in the offshore market.

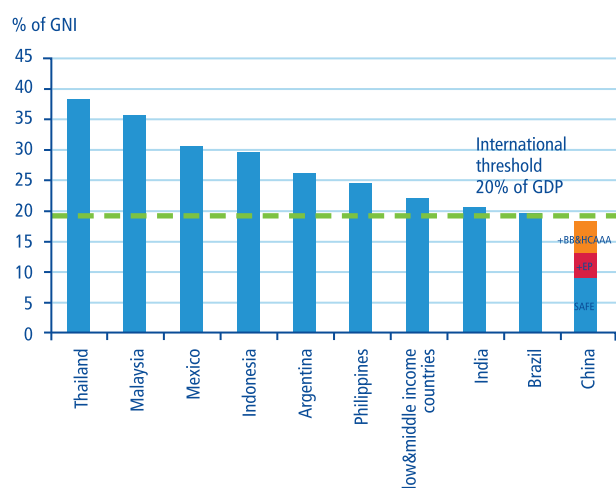
An international comparison shows that China's external debt level (as a percentage of GDP) remains low compared to other developing countries. It is still below 20% of the international threshold and the average level of low- and middle-income countries. Moreover, China's healthy ratio of external debt to exports, and the enormous foreign reserve suggest the country has the capacity to repay external debt.

borrowed by local governments, which is to bring its total debt level to 53.2% of GDP.

The alternative scenario is that we assume that banks need to absorb the cost of impaired LGFV debt. In such a scenario, we still assume that the central government would bear responsibility for direct debt of local government agencies (RMB 7.8 trillion) given the nature of central/local fiscal relations and the degree of integration of their budgets. We also assume that 50% of LGFV debt will go bad over the next five years.

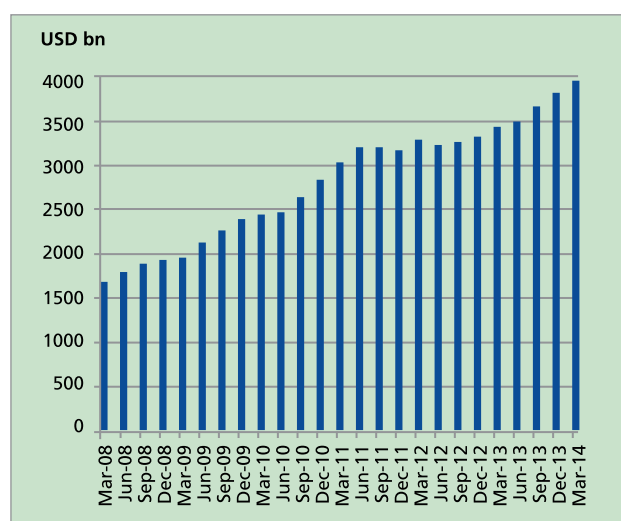
There are two possibilities open to banks in such a scenario. One is for them to provision and write-off these loans as they fall due over the next 5 years. Under this approach, banks would need to raise additional capital of RMB 1.4 trillion (which is around 15% of total capital in China's banking sector) over the next 5 years in order to

Chart 9. An international comparison of external indebtedness



Source: Haver and BBVA Research

Chart 10. Foreign reserve provides further buffer



Source: BIS and BBVA Research

maintain their capital adequacy ratios above the 11.5% minimum regulatory level required by the People's Bank of China, which is China's Central Bank. This amount of capital compares with RMB 880 billion raised during 2010-11.

A second option would be for banks to carry the problem loans as Non-performing-loans (NPLs) for an extended period, rather than writing them off. All else being equal, this would increase the banking sector's NPL ratio by 3.6 percentage points by end-2018, to 7.3%. Such a scenario, of course, would require banks to restructure loans and take capital losses at a later stage.

On the second matter, the cost of debt for growth, already today a considerable proportion of Chinese listed companies do not have sufficient operating cash flow to service their interest payments. For them to stay in operation, the most likely way is a combination of drawing down their assets (many firms have large liquid deposits) and/or borrowing to refinance loans falling due (including forms of ever-greening by the banks). As such, high corporate debt levels act as a headwind to growth as more companies are forced to divert funds from investment or sell assets. Indeed, the recent slowdown in manufacturing investment could suggest that such a process is underway.

A large part of local government borrowings, especially LGFVs, have been used to invest in infrastructure projects. When local governments are forced to implement financial consolidation to control their debt size, it will unavoidably trim their investment in infrastructure and therefore weigh on the growth momentum.

## How to deal with China's debt problem?

As we have noted before, China's debt problem is associated with several rounds of stimulus aimed to counter the negative shocks from the global financial crisis. The stimulus packages have led to over-investment in infrastructure by local governments and the buildup of excess production capacity in a number of industries.

On the positive side, all the investment in China is mainly financed by domestic savings given China's persistent surpluses under the current account. This should give some relief to investors worrying about an imminent crash in China. On the flip side, it also indicates that there exist deep-rooted institutional flaws in China's economy (such as a variety of financial repression), which channeled high national savings into less-efficient investment (wasteful infrastructure investment and the buildup of over-capacity). Therefore, whether China can solve its debt problem largely hinges on the pace at which the authorities press ahead with structural reforms as they pledged in the recent Third Plenum. Put another way, China can still achieve a soft-landing of its debt problem as long as the authorities can promptly implement the structural reforms, for instance, allowing the market to play a key role in the asset allocation and solving the over-capacity problem in certain sectors, motivating the development of Small and Medium private enterprises, improving the social security system, etc. The country's high level of foreign reserves can also help to cushion external shocks stemming from the Fed's QE tapering.



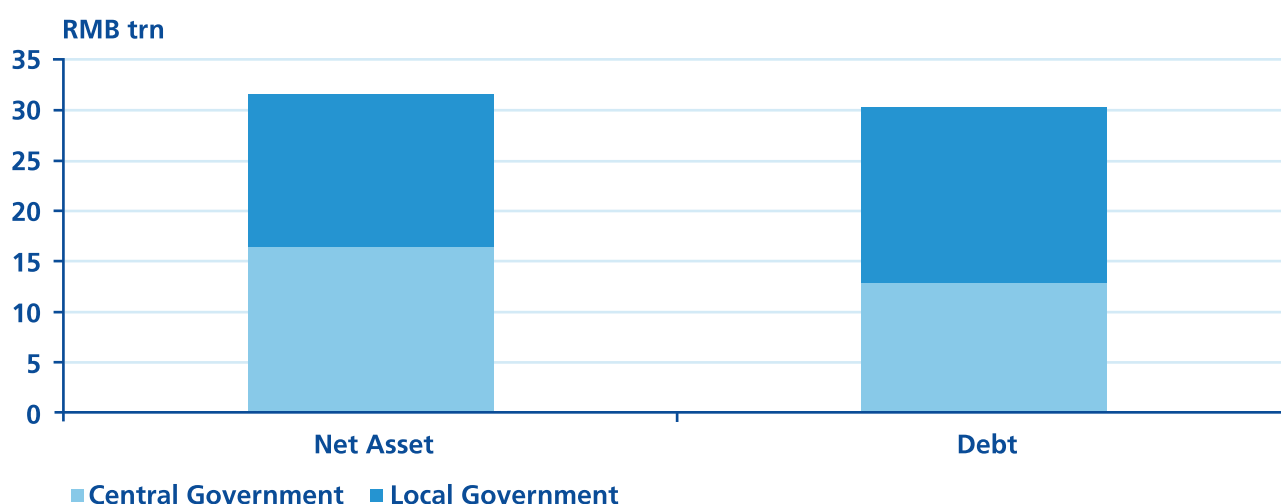
Some progress has been seen in this direction. The authorities have prioritized the overhaul of the fiscal relationship between the central and local governments to solve the problem of local government debt. Local governments will be entitled to more tax revenue, commensurate with their social spending obligations. The authorities are also seeking to lower the weight of provincial GDP in the performance appraisal system of local government officials, which would help reduce their incentive to engage in wasteful infrastructure projects, such as investing in some over-capacity sectors: iron and steel, coal, electrolytic aluminium, cement, etc. Finally, some local governments will be allowed to issue long-term municipal bonds directly instead of through the central government, to replace their existing debts, which should help alleviate the maturity mismatch.

The measures noted above will help prevent local

government debt from become too burdensome in the future. However, it will be equally important to address the existing stock problem. In this respect, one solution would be for local governments to sell their controlled SOE assets to raise funds for debt repayment. At the same time, this would have the benefit of boosting productivity and facilitate SOEs' privatization in the economy, a key goal laid out at the Third Plenum meeting.

Regarding the corporate debt problem, the authorities should push forward financial liberalization, especially interest rate liberalization to increase the efficiency of capital allocation. The authorities should also increase their regulatory efforts to effectively curb shadow banking activities and prevent a further build-up in the corporate debt level. In coordination with the above measures, the authorities should fine-tune their monetary and credit policies to help firms maintain their financial costs at a manageable level. •

Chart 11. Governments Net assets vs. Debt



Source: CEIC and BBVA Research

## References

Baldacci, Emanuele; Iva Petrova; Nazim Belhocine, Gabriela Dobrescu, and Samah Mazraani, "Assessing Fiscal Stress", IMF Working Paper, May 2011

Barro, Roberto, "Are Government Bonds Net Wealth?", *Journal of Political Economy*, 82 (6).

Cecchetti, Stephen G; M S Mohanty and Fabrizio Zampoll, 2011, "The real effects of debt", BIS Working Paper, September 2011

Dell'Ariccia, Giovanni; Deniz Igan; Luc Laeven, and Hui Tong, 2012, "Policies for Macrofinancial Stability: How to Deal with Credit Booms", IMF Staff Discussion Note, June 2012

Elmendorf, Douglas W. and N. Gregory Mankiw, "Government Debt" in John Taylor and Michael Woodford, eds. *Handbook of Macroeconomics*, Volume 1c, Amtersdam: Elsevier Science, 1999.

Garcia Herrero, Alicia, and Daniel Santabárbara. 2013. "An Assessment of China's Banking System Reform", in *Who Will Provide the Next Financial Model?*, edited by Kaji, Sahoko and Eiji Ogawa, Springer Japan, 2013

Garcia Herrero, Alicia; Stephen Schwartz, and Le Xia. 2013. "How big a problem is China's rising indebtedness?", *China Economic Watch*, BBVA Research, March 2013

Garcia Herrero, Alicia; Stephen Schwartz, and Le Xia. 2014. "Is China ready for asset sales to address its local government debt?", *China Banking Watch*, BBVA Research, March 2014

Reinhart, Carmen M, Vincent R. Reinhart, and Kenneth S. Rogoff, 2012, "Public Debt Overhangs: Advanced-Economy Episodes since 1800," *Journal of Economic Perspectives*, Vol. 26, No. 3, pp. 69–86

International Monetary Fund (IMF), "World Economic Outlook: April 2014", April 2014

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