



# China's sovereign debt: A balance-sheet perspective <sup>☆</sup>



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## ABSTRACT

We analyze China's sovereign debt by constructing balance sheets for China's government and public sector. We find that China's government debt-to-GDP ratio is lower than that of most large developed economies. We also find the debt-to-asset ratio of China's government and public sector significantly lower than its own historical height (1998–2002). Local government debt is mainly to finance infrastructure investments. Local government debt risk is amplified by two mismatches. The first is the income-expenditure mismatch between central and local governments. The second is the maturity mismatch of short-term debt and long-term infrastructure investments. The maturity mismatch may cause short-term repayment difficulties.

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## 1. Introduction

China's economy has been slowing down from hyper growth. As the world's second largest economy and largest international trader, China's slowdown represents a major risk for the global economy. The slowdown is accompanied by a series of worrisome signs, including resilient inflation pressure, booming housing prices, and increasing local government debt risk. Particularly, the fast growth of local government debt has spurred widespread concerns. Local government debt is only 5.7 trillion Yuan at the end of 2008. It grows rapidly in recent years, reaching 10.9 trillion Yuan by the end of 2010 and 17.9 trillion Yuan by the end of June 2013 (National Audit Office).<sup>2</sup> The explosive growth of local government debt is especially worrisome after the recent subprime crisis in the United States and the European sovereign debt crisis. In both cases, over-indebtedness lies in the core of the problem (Cecchetti, Mohanty, & Zampolli, 2011; Checherita & Rother, 2012).<sup>3</sup>

It is intensively debated whether China's government or public sector is seriously over-indebted. However, the answer is not clear yet. On the one hand, China's economy is still growing fast. The government aggressively collects revenues and invests in infrastruc-

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<sup>2</sup> As we will point out in Appendix 1, the statistics before 2011 do not cover debt balance in villages and towns. We make statistical adjustments in order to have consistent statistical coverage. The local government debt balance in 2010 is adjusted upward by 0.2 trillion Yuan to 10.9 trillion Yuan.

<sup>3</sup> Default already occurred in the Yunnan Province in April 2011, when the Yunnan Road Development Investment Co., Ltd. issued a letter advising of its objection to returning its debt principal to banks.

ture, which turns into sovereign assets that could be used for debt repayment when absolutely necessary. On the other hand, China's own experience of debt and deflation is still fresh and serves as a clear alarm. In many respects, the current round of expansion-inflation-tightening-debt-risk that started in 2009 is strikingly similar to what happened during 1992–1998. Policy stimulus since 1992, which occurred after Deng Xiaoping's southern trip, led to economic overheating and high inflation. The rectification that followed caused an economic stall. Consequently, bad debts, non-performing loans, and serious deflation occurred in 1998 and lasted for up to four years. Strikingly similar, the beginning of large-scale fiscal stimulus in 2009 also led to large increases in loans, investments, and inflationary pressure, followed by macroeconomic tightening. Whether a new round of massive non-performing loans and serious deflation is on the horizon is hotly debated.<sup>4</sup>

To determine whether China's economy is over-indebted, we must have a standard for comparison. In this study we employ two measures: debt-to-GDP ratio and debt-to-asset ratio. Debt-to-GDP ratio is the usual variable for international comparisons. We employ a debt-to-asset ratio for China's own intertemporal comparison. Unlike countries such as Greece, which consumes most of its debt revenue without accumulating assets (Cecchetti, Mohanty, & Zampolli, 2010), China invested a large amount of its fiscal and debt revenue and SOE profits, which accumulates a large amount of assets. At least some of the public assets are in good condition and can be used to pay off debts when necessary. Therefore, we need to analyze both debt and assets of the government and public sector.

Our study is closely related to literature on the estimation and construction of national and government balance sheets. The literature can be traced back at least to Dickinson and Eakin (1936), who systematically discuss the Balance Sheet Approach (BSA). Goldsmith and Lipsey (1963) and Goldsmith (1982) construct a governmental balance sheet for the United States. National and government balance sheets were also constructed for other countries, including the United Kingdom by Revell (1966) and Canada and other OECD economies by Holder (1998). Their calculations generally follow a stock-based method. That is, they classify assets into different categories, including fixed assets, inventories, land, and financial assets, and estimate and add the value of these assets.

In this paper, we construct China's government and public sector balance sheets. To our knowledge, this is the first paper to construct government and public sector balance sheets for China. Our methodology is also different from existing studies. Instead of applying the stock-based method used in existing studies, we employ a “flow-based method”. That is, instead of estimating the market value of all assets, we accumulate historical revenues and expenditures to construct the balance sheet, taking asset value depreciation and asset price appreciation into consideration. Our method is more appropriate in the context of China since comprehensive and detailed government and public asset statistics are not available. Estimating the market value of these assets also involves making debatable assumptions. Therefore, we adopt this flow-based method. The data we need are available from public statistics.

Our study also relates to the literature on the impact of public debt on economic growth. Existing studies argue that large-scale public debt raises interest rates, crowds out private investment, deteriorates firm balance sheets, and enlarges short-term fluctuations (Modigliani, 1961; Diamond, 1965; Blanchard, 1985; Woodford, 1990; Feldstein, 1998; Bernanke, Gertler, & Gilchrist, 1999). Empirical studies find that government debt has a significantly negative impact on economic growth (Reinhart & Rogoff, 2010; Caner, Grennes, & Koehler-Geib, 2010; Kumar & Woo, 2010). Based on these arguments, it is important to ask whether China's public debt is excessively high and potentially harmful.

The rest of the paper proceeds as follows. In Sections 2 and 3, we construct balance sheets for both China's government and public sector through a detailed analysis of historical data. Results show that the debt levels of China's government and public sector are much lower than in major developed countries. The balance sheets of China's government and public sector are overall healthy. In Section 4 we analyze the origins of the recent local government debt crisis. We find that the lack of fiscal income and long-term financing instruments for infrastructure investments is directly responsible for local government debt risk. In addition, we find that the rate of return to capital is still high. Based on these findings, it is premature to say that China's investment is excessive.<sup>5</sup> The fundamental solution for China's sovereign debt “crisis” is to reform the fiscal and financial systems. In Section 5, we set up a simulation model to project the future debt burden. The debt burden increases with interest rates but decreases with capital returns and government surplus. Section 6 concludes.

## 2. China's government balance sheet

### 2.1. Central and local government debt

China's central government began to issue debt in 1981 when the government passed the “Treasury Regulations of the People's Republic of China.” After 1981, central government debt gradually increased. Table 1 reports the balance of central government debt, fiscal deficits, and their percentage of GDP since 1998. Overall, China's budget deficit is low. It was slightly higher in 1999–2003 and 2009 when proactive fiscal policies were implemented, but never exceeded 3%. We notice a rebound of debt level in 2012, but the overall balance of central government debt has also been low, accounting for only 22.9% of GDP by the end of 2012.

<sup>4</sup> Compared to the debt-deflation crisis of a decade ago, the current debt crisis could be even worse due to three considerations. First, the absolute amount of public debt is much larger. Second, joining the World Trade Organization (WTO) in 2001 greatly helps China stimulate growth and stem deflation by allowing access to international markets. The recent deterioration of the international economy induces weak external demand, leading to a more difficult situation. Third, the scale of investment in China is already very large. Further increasing investment to stimulate domestic demand is not only difficult but also possibly problematic.

<sup>5</sup> There is a big debate over whether investment in China is excessive. On the one hand, investment accounts for nearly half of GDP in recent years, suggesting that investment may be excessive. On the other hand, the rate of return to capital is also high, suggesting that these investments are economically sensible (Bai, Hsieh, & Qian, 2006).

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