

CHINA ECONOMIC UPDATE MARCH 2019

Add it up: the uncertainty around China's economic data



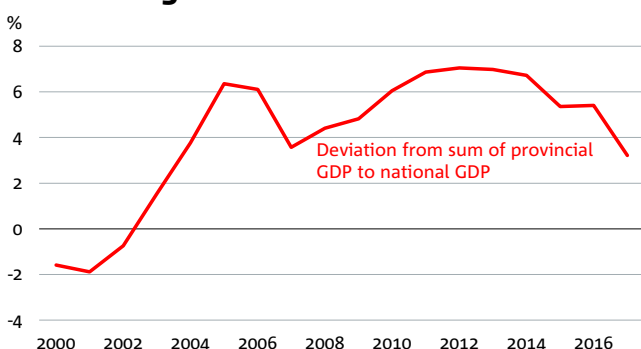
NAB Group Economics

The accuracy of Chinese statistics – particularly for key indicators such as economic growth – is widely scrutinised. These data tend to exhibit low levels of volatility, compared with other global economies, which some critics suggest point to their inaccuracy or even fabrication. Others suggest that this merely means the data is smoothed and that the underlying trend is credible. In the past, the modest size of its economy has meant that the validity of Chinese data has been of little importance, however since China is now the largest economy, and one critically integrated into global markets, its economic performance is closely watched and influences global asset markets.

There are a range of reasons why observers have scepticism around Chinese data accuracy. For an economy as large as China, data are produced very rapidly – with economic growth reported around three weeks following the close of the quarter – and is rarely revised (unlike other major economies). While most critics imply that either growth rates or the size of the economy is overstated, technical limitations mean that these data could be understated as well. The methodology of the National Bureau of Statistics has been questioned – with some observers suggesting that it under-reports smaller (mainly private sector) firms, particularly in the services sector. However, there are incentives to inflate data – particularly at the provincial level, where promotion within the Communist Party has historically been driven by economic performance. This means that the sum of provincial GDP regularly exceeds the national total.

INCONSISTENT GROWTH DATA

Provincial growth exceeds national total



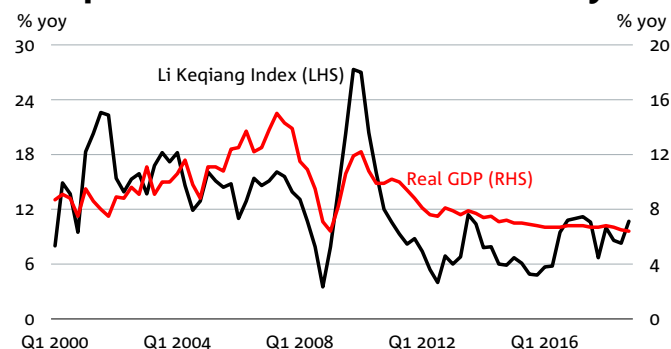
Source: CEIC, NAB Economics

ALTERNATIVE MEASURES SHOW MORE VOLATILITY

Uncertainty around the accuracy of Chinese official data has inspired a range of alternative measures, often constructed from lower profile data series that are thought to be less subject to errors or manipulation. The most high profile of these is the so-called Li Keqiang Index. Currently China's Premier (under President Xi), this measure was reportedly Li's preferred economic metric when he served as Party Secretary in Liaoning province. It weights the year-on-year growth rates for the railway cargo volumes, electricity consumption and bank loans (although there are no universally agreed weights, with a range of organisations producing subtly different indices based on these measures).

LI KEQIANG INDEX

Two post GFC downturns then recovery



Source: CEIC, Refinitiv, NAB Economics

The index suggests two notable periods of slowing in the post-GFC period – one in 2012 (which was followed by the mini-stimulus period) and another longer one starting in 2014, which bottomed out in late 2015 (corresponding with a downturn in exports) before subsequently recovering.

There are significant issues with this measure. First, it is heavily weighted towards the industrial sector – missing much of the significant growth in services over the past decade. Second, it is prone to double counting. Coal accounted for around 60% of rail cargo volumes in 2018 (and this share has grown since 2008) and is primarily consumed in electricity generation. Third, focusing on bank loans alone misses the growth in non-bank lending (which surged from 2012 until recently). Fourth, this rough indicator was intended for use in a single, highly industrial focused province, and it not clear that this can be extrapolated across the entire country. This suggests that as China has gradually transitioned away from industrial-led growth, the Li Keqiang Index is less representative of China’s economic development.

Several organisations produce alternate measures for Chinese economic activity, using differing selections of lower profile data. For example, Bloomberg Intelligence’s China Real Activity Index uses a range of measures to track “old economy” (heavy industry) and “new economy” (higher tech manufacturing and services) sectors. Similarly, Capital Economics’ China Activity Proxy uses construction, electricity production and transport data. Both of these measures display more volatility than China’s headline GDP data, and provide greater frequency (as they are monthly indicators).

ALT. MEASURES POINT TO SLOWDOWNS

Underlying indicators suggest similar trends



Source: Bloomberg, Capital Economics, NAB Economics

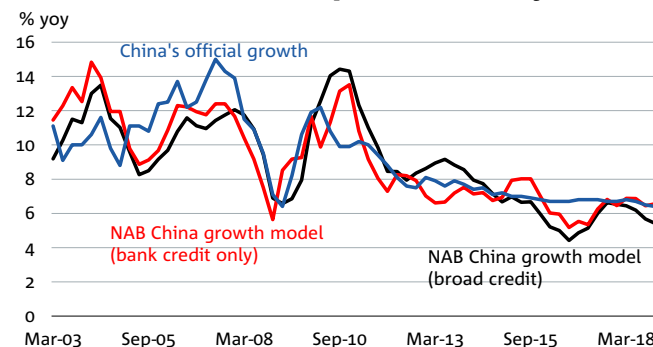
Both of these measures point to a slowdown in economic activity between mid-2015 and mid-2016 (much like the Li Keqiang Index) that does not appear in official GDP data. However it is interesting to note that the Bloomberg measure has not seen much

improvement since this time (with both the China Activity Proxy and Li Keqiang Index picking up).

NAB Economics has used a simple model of China’s growth for a number of years as part of our analysis. This measure uses just three inputs – bank lending (which as noted above does not account for the growth in shadow bank lending since 2012), the economic growth of major trading partners and the real exchange rate. Much like the Li Keqiang Index and the China Activity Proxy, the NAB model shows a notable slowdown missing in China’s official GDP data (albeit our measure slows a little later into 2016 than the others), before recovering to growth rates around the official total.

NAB GROWTH MODEL

Downturn a little later than other measures, but subsequent recovery



Source: CEIC, NAB Economics

To compensate for the limitations of using bank lending, we substituted total social financing (bank lending along with some components of shadow banking and corporate bond issuance) and re-estimated the model. For most of the history, the two versions track closely – with a divergence starting in 2012 (the start of the shadow banking surge), a deeper slowdown in 2015-16 and a modest slowing trend more recently.

Our simple model has its limitations like the other alternative measures – including the under representation of services. However it suggests that growth near the rates that China officially reports is not entirely unreasonable.

FIRM LEVEL DATA CAN PROVIDE A SIGNAL

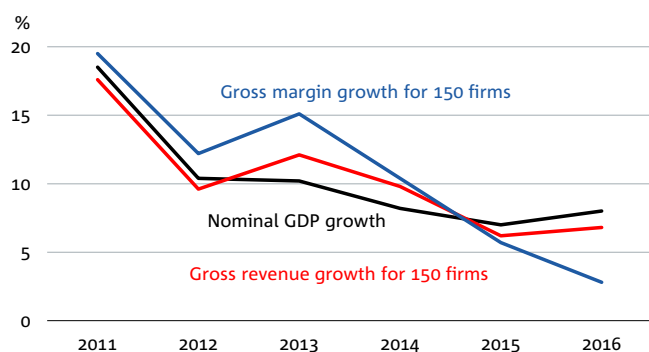
Another alternative measure for estimating China’s economic growth was proposed in a recent paper in the Journal of Chinese Economic and Business Studies¹. The authors used gross revenue and gross

¹ Williamson, P., Hoenderop, S., & Hoenderop, J. (2018). An alternative benchmark for the validity of China’s GDP growth statistics. Journal of Chinese Economic and Business Studies, 16 (2), 171-191. <https://doi.org/10.1080/14765284.2018.1438867>

sales margin data from 150 publicly listed and audited major Chinese firms across a broad range of industries, comparing it to nominal economic growth. As a way to validate this methodology, a similarly constructed measure for similar firms in the United States closely matched US economic growth. Much like the alternative indicators above, the results suggest a stronger slowdown in growth in 2015 and 2016 than indicated by official data. However due to slightly stronger growth prior to this period, the cumulative increase between 2010 and 2016 was broadly similar, consistent with the perception that Chinese growth data is smoothed.

FIRM DATA GROWTH ESTIMATES

Another downturn in 2016



Source: CEIC, Williamson et al, NAB Economics

Another recent study, released at a Brookings Institution summit in March², used value added taxes and corporate income taxes to estimate China's economic growth. This study suggested that between 2008 and 2016 China's official growth was inflated by around 1.7% a year. The cumulative impact of this overstatement would mean that China's economy would have been around 16% smaller in 2016 than was reported. That said this methodology assumes that tax receipts correspond accurately to corporate activity – which may not be the case, as tax enforcement varies across the country and by industry. It also has to assume a weighting for the composition of China's economy that may not be accurate – given that China's dated national accounting methodology likely under-represents the services sector.

CONCLUSIONS

The smoothness of China's official economic growth raises some justifiable doubts around the accuracy of the country's growth data. This is particularly the case when alternative measures (including our model) generally suggest that the economy slowed significantly in late 2015-early 2016 before subsequently recovering.

There are a wide range of views around the validity of Chinese economic growth data, along with a range of potential alternative indicators. Ultimately all of these measures have some shortfalls and cannot be independently validated. This means that we can't be certain that an alternative measure provides a more accurate picture of China's economy than official statistics.

Given China's significance to the global economy, a greater degree of transparency around China's national accounts (and other data) would be preferable.

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² Chen, Wei, Xilu Chen, Chang-Tai Hsieh and Zheng (Michael) Song. 2019. "A Forensic Examination of China's National Accounts" BPEA Conference Draft, Spring

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