Why Brookings is right on China growth, and why we're not surprised

Chinese growth since 2008 has been almost 2 percent lower than official numbers indicate, according to a recent Brookings research paper. We think the authors make a valid point, having used two independent approaches to the analysis and arriving at roughly the same outcome. The findings, however, shouldn't come as a surprise

A busy road in Shanghai

Ordinal or cardinal?

Saying that official Chinese GDP figures are not all they appear to be is a bit like saying that professional wrestling might not, in fact, be a competitive sport as claimed. But it is always helpful to be able to put some scale to that belief.

A recent Brookings Insitution paper has done just that, and in ways that seem highly credible. The report, titled "A forensic Examination of China's National Accounts" shows that Chinese GDP growth since 2008 may be close to two percentage points lower than the officially published figures suggest.

That means that at best, the official numbers are an ordinal measure of economic activity - helpful in terms of illustrating direction - but far more limited in terms of providing information about magnitude. It is not for nothing that alternatives to GDP, for example, the Premier Li index, have been popular unofficial supplements to the official data for years.

Crunching the numbers

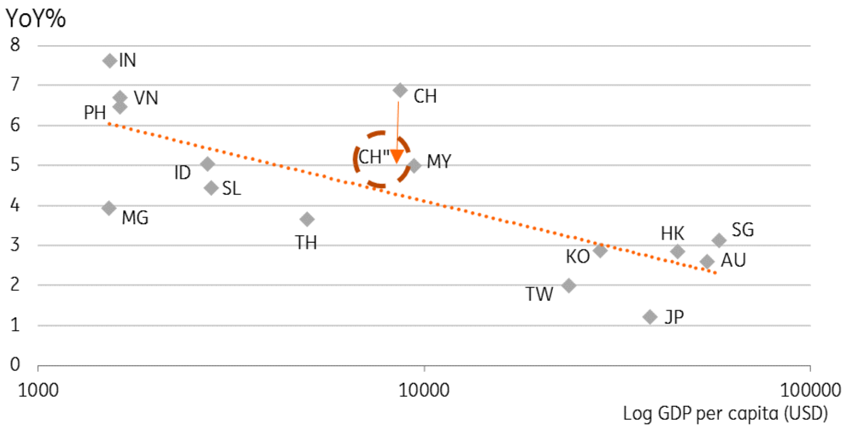
The four authors of this report take a rigorous approach to the data. Local GDP data is compared with national data, unveiling consistent discrepancies for industrial sector output and net exports. China's National Bureau of Statistics (NBS), attempts to reconcile the local figures which typically sum to more than the national total, by adjusting the figures down. By comparing the official numbers calculated in this way to GDP estimates based on value-added tax revenue growth reported by the State Administration of Taxation, the authors conclude that the adjustments made to local GDP were indeed roughly accurate up until around 2008. After then, the published data overestimate national GDP by around 1.7 percent per year.

The appeal of using VAT revenue data to adjust the figures is that the incentives to inflate these numbers are exactly the opposite to the incentives to inflate local GDP figures. That said, this does perhaps raise the prospect that systematic under-reporting of VAT revenue to avoid an offsetting fiscal adjustment might also bias the figures the opposite way. It's worth adding that when timely reporting is not an issue, tax data is often one of the most comprehensive and reliable sources of information on economic activity, so this is a minor caveat.

Top down meets bottom up

Moreover, the authors' bottom-up number crunching is supplemented by top-down statistical modeling. The model inputs include satellite night lights, electricity consumption, railway cargo flow, and trade flows. Many of these inputs will be familiar as inputs in the Li Kequiang index, and should also be relatively immune to human manipulation or mismeasurement. This statistical approach also found a structural break at 2008 consistent with the bottom-up analysis and supports the initial conclusions.

Average Asian GDP growth (4Y) and GDP per capita (log scale)



Source: ING

Does this matter?

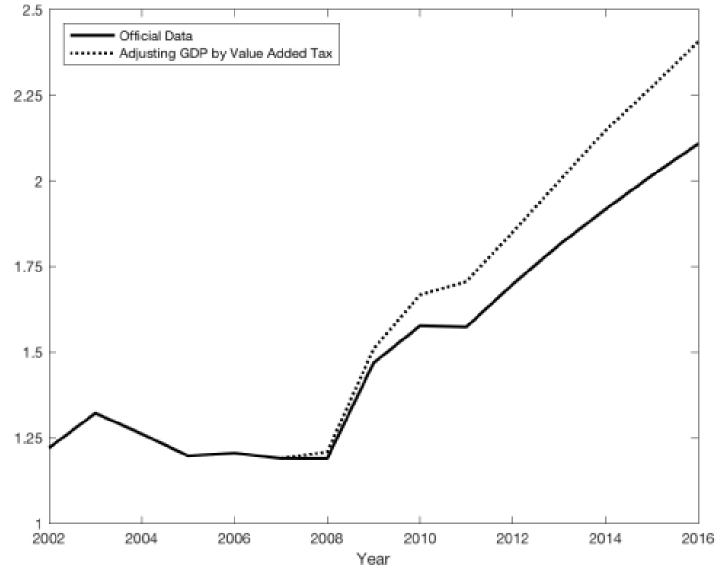
On one level, the potential for inaccuracy in China's GDP reporting is neither surprising nor terribly concerning. It is what I refer to as the "Celsius versus Fahrenheit issue". In other words, we know that a GDP growth rate of 6% is not as good as a GDP growth rate of 7%. What we don't know is whether GDP growth of 6% is really "hot" or really "cold", or neither.

> *The potential for inaccuracy in China's GDP reporting is neither surprising nor terribly concerning*

The Brookings paper doesn't get us much further, though to the extent that we can compare the newly computed Chinese figures with those for other countries in which we may have more trust, it might make comparisons easier. As a point of reference, GDP growth in Asian countries is explained to a large extent by the level of development (as measured by GDP per capita - also subject to mismeasurement, but measured on a log scale, this is far less serious). Such approaches show China as a massive outperforming outlier, though if we adjust Chinese growth in line with the Brookings paper suggestion (CH' in the chart above), it would lie much closer to the best-fit line. In other words, although the findings of the paper suggest that China is still growing fast for a nation at its stage of development, the discrepancy is credibly within the normal range of deviation.

Where the analysis is a bit more concerning, is in relation to China's debt to GDP ratios. With debt likely to be far more accurately measured relative to GDP, the analysis suggests that China's debt ratio might be about 30% (GDP) greater than ordinarily assumed. For those who worry about China's leverage, this doesn't provide any comfort. Total economic debt in China appears high relative to GDP even using official data, and very high for an economy at China's level of economic development. Though this data doesn't actually change that indebtedness, just our level of understanding.

Debt to GDP - official and re-estimated ratios



Source: Brookings' Economic Papers

People in glass houses

Before we get too judgemental, it is also worth reflecting on other countries' measures of GDP. Within the Asia region, many historical GDP releases lack the quarterly volatility that you would expect from such data, which undermines their credibility. That isn't to say that they are overstated, but they do seem to be unnaturally smoothed. Even in developed markets, statistical approaches such as hedonic price adjustment could be argued to artificially inflate real GDP estimates, and downplay inflation. Where inflation is used to adjust public payments such as pensions over time, this can save governments billions of dollars, at the expense of their population's incomes.

> *Before we get too judgemental, it is also worth reflecting on other countries' measures of GDP*

In truth, all measures of GDP are subject to the criticism that they provide only a partial description of the economic activity occurring at a national level. They frequently omit sizeable elements of economic activity, such as home working, grey or black market activity and voluntary work. All measures of GDP should, therefore, be considered as indicative measures of economic activity, rather than concrete representations of reality. The Brookings estimates shift China's GDP measurement in the direction of measures like EU and US GDP. But those measures themselves are far from problem-free.

You can download the full Brookings' report from their website here

Author

Olivia Grace
Editor
olivia.grace@ing.com

Julian Geib
Junior Economist, Global Trade
julian.geib@ing.de

Zoltán Homolya
Economic research trainee
zoltan.homolya@ing.com

Amrita Naik Nimbalkar
Junior Economist, Global Macro
amrita.naik.nimbalkar@ing.com

Mateusz Sutowicz
Senior Economist, Poland
mateusz.sutowicz@ing.pl

Alissa Lefebre
Economist
alissa.lefebre@ing.com

Deepali Bhargava
Regional Head of Research, Asia-Pacific
Deepali.Bhargava@ing.com

Ruben Dewitte
Economist
+32495364780
ruben.dewitte@ing.com

Kinga Havasi
Economic research trainee
kinga.havasi@ing.com

Marten van Garderen
Consumer Economist, Netherlands
marten.van.garderen@ing.com

David Havrlant
Chief Economist, Czech Republic
420 770 321 486
david.havrlant@ing.com

Sander Burgers
Senior Economist, Dutch Housing
sander.burgers@ing.com

Lynn Song
Chief Economist, Greater China
lynn.song@ing.com

Michiel Tukker
Senior UK & Eurozone Rates Strategist
michiel.tukker@ing.com

Michal Rubaszek
Senior Economist, Poland
michal.rubaszek@ing.pl

This is a test author

Stefan Posea
Economist, Romania
tiberiu-stefan.posea@ing.com

Marine Leleux
Sector Strategist, Financials
marine.leleux2@ing.com

Jesse Norcross
Senior Sector Strategist, Real Estate
jesse.norcross@ing.com

Teise Stellema
Research Assistant, Energy Transition
teise.stellema@ing.com

Diederik Stadig
Senior Economist, Healthcare & Technology
diederik.stadig@ing.com

Diogo Gouveia
Sector Economist
diogo.duarte.vieira.de.gouveia@ing.com

Marine Leleux
Sector Strategist, Financials
marine.leleux2@ing.com

Ewa Manthey

Commodities Strategist
ewa.manthey@ing.com

ING Analysts

James Wilson
EM Sovereign Strategist
James.wilson@ing.com

Sophie Smith
Digital Editor
sophie.smith@ing.com

Frantisek Taborsky
EMEA FX & FI Strategist
frantisek.taborsky@ing.com

Adam Antoniak
Senior Economist, Poland
adam.antoniak@ing.pl

Min Joo Kang
Senior Economist, South Korea and Japan
min.joo.kang@ing.com

Coco Zhang
ESG Research
coco.zhang@ing.com

Jan Frederik Slijkerman
Senior Sector Strategist, TMT
jan.frederik.slijkerman@ing.com

Katinka Jongkind
Senior Economist, Services and Leisure
Katinka.Jongkind@ing.com

Marina Le Blanc
Sector Strategist, Financials
Marina.Le.Blanc@ing.com

Samuel Abettan
Junior Economist
samuel.abettan@ing.com

Franziska Biehl
Senior Economist, Germany

Franziska.Marie.Biehl@ing.de

Rebecca Byrne
Deputy Global Head of Editorial and Supervisory Analyst
rebecca.byrne@ing.com

Mirjam Bani
Sector Economist, Commercial Real Estate & Public Sector (Netherlands)
mirjam.bani@ing.com

Timothy Rahill
Credit Strategist
timothy.rahill@ing.com

Leszek Kasek
Senior Economist, Poland
leszek.kasek@ing.pl

Antoine Bouvet
Head of European Rates Strategy
antoine.bouvet@ing.com

Jeroen van den Broek
Global Head of Sector Research
jeroen.van.den.broek@ing.com

Edse Dantuma
Senior Sector Economist, Industry and Healthcare
edse.dantuma@ing.com

Francesco Pesole
FX Strategist
francesco.pesole@ing.com

Rico Luman
Senior Sector Economist, Transport and Logistics
Rico.Luman@ing.com

Jurjen Witteveen
Sector Economist
jurjen.witteveen@ing.com

Dmitry Dolgin
Chief Economist, CIS
dmitry.dolgin@ing.de

Nicholas Mapa
Senior Economist, Philippines

nicholas.antonio.mapa@asia.ing.com

Egor Fedorov
Senior Credit Analyst
egor.fedorov@ing.com

Sebastian Franke
Consumer Economist
sebastian.franke@ing.de

Gerben Hieminga
Senior Sector Economist, Energy
gerben.hieminga@ing.com

Nadège Tillier
Head of Corporate Sector Strategy
nadege.tillier@ing.com

Charlotte de Montpellier
Senior Economist, France and Switzerland
charlotte.de.montpellier@ing.com

Laura Straeter
Behavioural Scientist
+31(0)611172684
laura.Straeter@ing.com

Valentin Tataru
Chief Economist, Romania
valentin.tataru@ing.com

James Smith
Developed Markets Economist, UK
james.smith@ing.com

Suvi Platerink Kosonen
Senior Sector Strategist, Financials
suvi.platerink-kosonen@ing.com

Thijs Geijer
Senior Sector Economist, Food & Agri
thijs.geijer@ing.com

Maurice van Sante
Senior Economist Construction & Team Lead Sectors
maurice.van.sante@ing.com

Marcel Klok

Senior Economist, Netherlands
marcel.klok@ing.com

Paolo Pizzoli
Senior Economist, Italy, Greece
paolo.pizzoli@ing.com

Marieke Blom
Chief Economist and Global Head of Research
marieke.blom@ing.com

Raoul Leering
Senior Macro Economist
raoul.leering@ing.com

Maarten Leen
Head of Global IFRS9 ME Scenarios
maarten.leen@ing.com

Maureen Schuller
Head of Financials Sector Strategy
Maureen.Schuller@ing.com

Warren Patterson
Head of Commodities Strategy
Warren.Patterson@ing.com

Rafal Benecki
Chief Economist, Poland
rafal.benecki@ing.pl

Philippe Ledent
Senior Economist, Belgium, Luxembourg
philippe.ledent@ing.com

Peter Virovacz
Senior Economist, Hungary
peter.virovacz@ing.com

Inga Fechner
Senior Economist, Global Trade
inga.fechner@ing.de

Dimitry Fleming
Senior Data Analyst, Netherlands
Dimitry.Fleming@ing.com

Ciprian Dascalu

Chief Economist, Romania
+40 31 406 8990
ciprian.dascalu@ing.com

Muhammet Mercan
Chief Economist, Turkey
muhammet.mercan@ingbank.com.tr

Iris Pang
Chief Economist, Greater China
iris.pang@asia.ing.com

Sophie Freeman
Writer, Group Research
+44 20 7767 6209
Sophie.Freeman@uk.ing.com

Padhraic Garvey, CFA
Regional Head of Research, Americas
padhraic.garvey@ing.com

James Knightley
Chief International Economist, US
james.knightley@ing.com

Tim Condon
Asia Chief Economist
+65 6232-6020

Martin van Vliet
Senior Interest Rate Strategist
+31 20 563 8801
martin.van.vliet@ing.com

Karol Pogorzelski
Senior Economist, Poland
Karol.Pogorzelski@ing.pl

Carsten Brzeski
Global Head of Macro
carsten.brzeski@ing.de

Viraj Patel
Foreign Exchange Strategist
+44 20 7767 6405
viraj.patel@ing.com

Owen Thomas

Global Head of Editorial Content
+44 (0) 207 767 5331
owen.thomas@ing.com

Bert Colijn
Chief Economist, Netherlands
bert.colijn@ing.com

Peter Vanden Houte
Chief Economist, Belgium, Luxembourg, Eurozone
peter.vandenhoute@ing.com

Benjamin Schroeder
Senior Rates Strategist
benjamin.schroder@ing.com

Chris Turner
Global Head of Markets and Regional Head of Research for UK & CEE
chris.turner@ing.com

Gustavo Rangel
Chief Economist, LATAM
+1 646 424 6464
gustavo.rangel@ing.com

Carlo Cocuzzo
Economist, Digital Finance
+44 20 7767 5306
carlo.cocuzzo@ing.com