



How to Evaluate China's Economy

By Derek Scissors

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Key Points

- Official Chinese economic data are often the only game in town, but they are untrustworthy. Sometimes they prove inaccurate; during downturns they are falsified outright. Finding inconsistency in official statistics demonstrates the problem but offers no solution, since it is rarely clear which series is better.
- Examining 15 major indicators for importance and reliability shows that growth in gross domestic product (GDP) and GDP per capita should be deemphasized. To illustrate, China's GDP per capita is twice as high as *official* per capita disposable income. The latter can be spent; the former is an accounting result.
- Another conclusion: Arguably the most valuable indicators are the worst measured. Debt is reasonably estimated at present, but factor productivity and human capital are vital to medium-term performance and receive far too little attention.

This is not a report on how China's economy is doing. It is a much more difficult report on how to determine how China's economy is doing. At the time of writing, the rough consensus is Chinese economic performance is weakening. If so, is it a temporary, cyclical downturn or a sustained, structural downturn? Will further stimulus address the downturn, or does it require fundamental reform of some kind?

Such questions never seem to be resolved for long, and they understate the problem. How can we be sure the economic performance of the People's Republic of China (PRC) is indeed weakening in any meaningful fashion? Do we know the true situation a year ago? Five years ago? Twenty?

The obvious premise of the report is economic data published by the Chinese government are untrustworthy. There will be an attempt to demonstrate this but the effort may be pointless. Chinese government data will continue to be widely used because some users want to believe

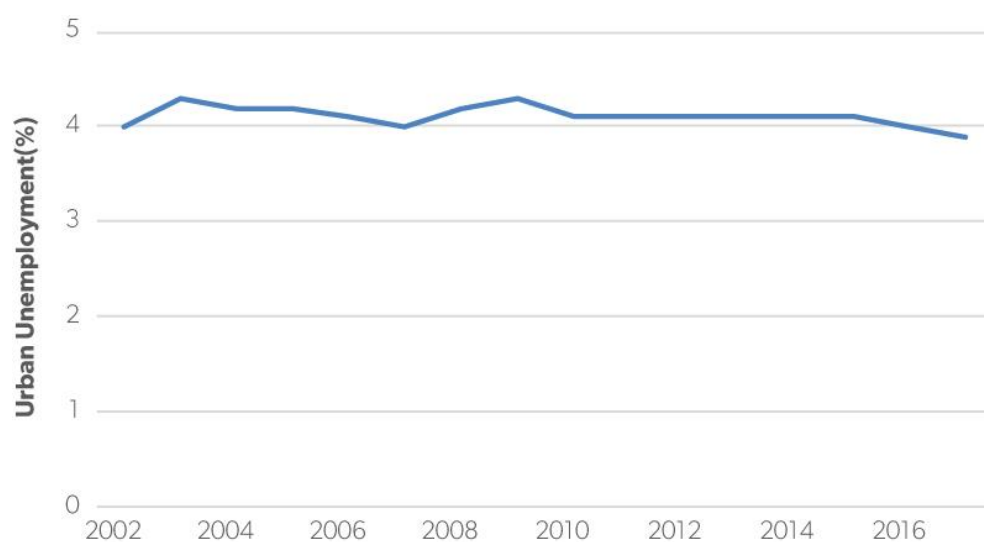
they are accurate but more because there is little choice, which is how the Communist Party likes things. While some figures can be calculated by independent actors, the level of detail provided by the central government cannot be matched by anyone else.

The quality of available numbers indicates these guidelines:

1. Deemphasize gross domestic product (GDP) and GDP per capita,
2. Turn more often to personal income and aggregate debt, and
3. In the longer term, upgrade measurements of factor productivity and human capital.

Doing one or more of these things will not yield a simple picture to guide policy or finance. It will, however, prevent more of the egregious mistakes that have been made to date regarding the direction and nature of China's economy.

Figure 1. Registered Urban Unemployment



Source: National Bureau of Statistics of China, Annual Data, <http://www.stats.gov.cn/english/statisticaldata/annualdata/>.

China-Specific Problems

The Communist Party loves stability.¹ Not coincidentally, China's domestic economic data—GDP, unemployment, and prices—are remarkably stable for a middle-income country. (See Figure 1.)

GDP wins the most attention. From the fourth quarter of 2013 to the third quarter of 2018, China's quarter-on-quarter growth remained between 1.4 and 1.9 percent. And those two limits were reached only once each in the first and second quarters of 2016, when China was forced to acknowledge a downturn but immediately reported a subsequent upturn. For the other 18 quarters and counting, on-quarter growth was always between 1.5 and 1.8 percent. Germany, a much richer economy that should be more stable, has seen growth vary over this period from -0.1 to 1.1 percent, a larger range in magnitude and far larger in proportion.²

In terms of annualized GDP growth, experienced observers looked at ongoing currency weakness in early 2016 and saw more economic trouble ahead. By late 2017, all was said to be well. In late 2018, the economy was said to be weakening again.³ Throughout this period, annual GDP growth stayed between 6.7 percent and 6.9 percent. How can this be? The National Bureau of Statistics (NBS) explains:

In the first half year of 2018, faced with extremely complex environment both at home and abroad, under the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, all regions and departments fully implemented the spirit of the 19th National Congress of the Communist Party of China (CPC), the second and the third plenary sessions of the 19th CPC Central Committee, adhered to the general working principle of making progress while maintaining stability, firmly put into practice the new development philosophy, actively took the requirement of high-quality development as the benchmark, worked to overcome obstacles and made solid progress in their work. As a result, the national economy sustained the momentum of steady and sound development with restructuring deepened, drivers of growth replaced and the quality and efficiency improved steadily, signifying a good start for national economy to move toward high-quality development.⁴

If this sounds like the NBS is a propaganda arm of the Communist Party, there is good reason.

High inflation and consistent deflation indicate different simmering problems. As with GDP, official

price indexes have been demonstrated to be smoothed, which obscures those problems.⁵ This can bring on the great joy of Chinese government statistics: deciding which falsified series is better. In 2017, the implicit GDP deflator—the difference between nominal and announced real growth—was more than twice as large as the change in the consumer price index (CPI). In 2016, the GDP deflator was smaller than CPI inflation. It is tempting to see greater variation in the GDP deflator as reflecting a more volatile economy than the smoothed CPI. But the deflator is equally likely to be a product of manipulation.

Unemployment is not smoothed; it is rigged outright. China has seen enormous demographic change, still ongoing, as the country first absorbed millions of new workers into the labor force annually and now is seeing them start to retire. The “Total Number of Employed Persons” from 2002 through 2016 rose every year, even during the global financial crisis when China supposedly had a jobs crisis.⁶ That year did prompt a revision to the series that saw both total employment and the average annual increment fall—Beijing’s way of admitting its numbers were fake. In both the original and revised series, though, annual employment always climbs, and the useless official unemployment series never tops 4.3 percent.

Alternative unemployment measurements are published only sporadically. The same is true for other prominent indicators.⁷ GDP is supposed to represent all transactions, but fixed asset investment has been larger than GDP at times in some provinces. At the national level, fixed asset investment plus retail sales plus net exports have been larger than GDP at times. The official explanation: We publish them every month, but fixed asset investment and retail sales are not the right indicators.⁸ The right indicators, from fixed capital formation to fertility levels, frequently do not get published.⁹ Enormous mistakes are made for years at the provincial, city, and county levels, with problems only acknowledged after they are supposedly solved.¹⁰

Because national surveys of labor, investment, and the like are expensive, the party usually does not need to discourage competing economic figures. But it occasionally does so, and effectively. In May 2006, Ernst and Young released a figure for the total volume of nonperforming loans that

was almost certainly too low, but far higher than admitted officially. The firm was immediately assaulted by the central government, and it retracted the figure. In November 2018, economic analysts were told to be disciplined and take state interests into account.¹¹ China has consistently made clear, in multiple ways, that its figures are manipulated.

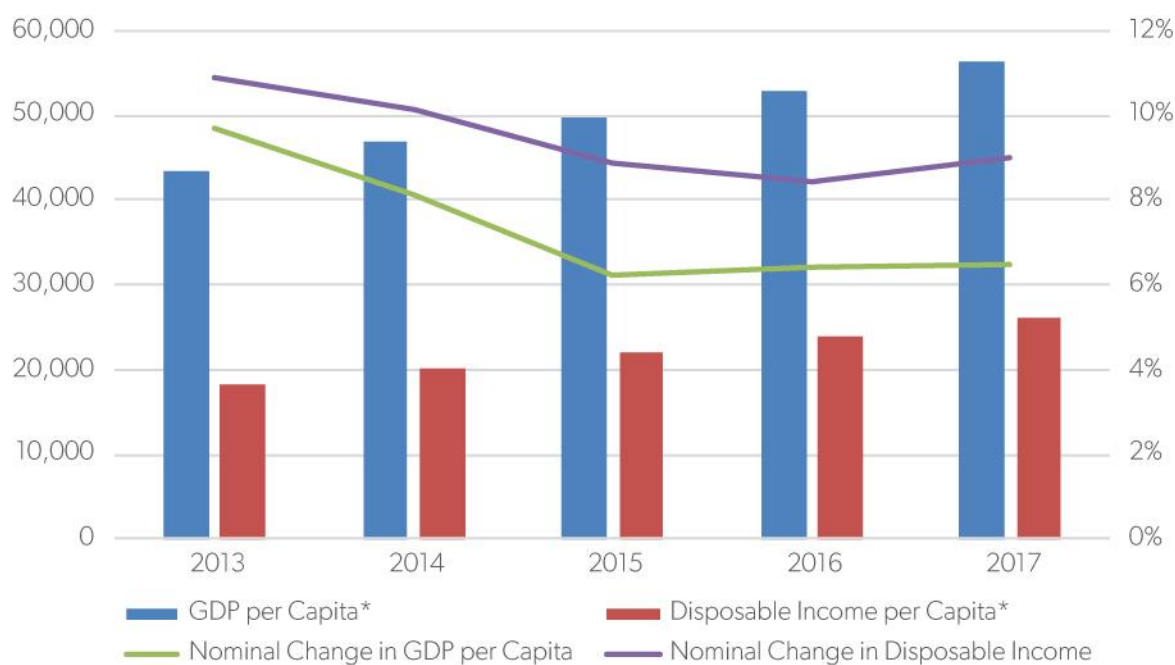
Bad Alternatives

The flaws in official statistics could fill books, but without alternatives, they will continue to be largely ignored. Making matters worse, several obvious alternatives are not useful. An easy barometer to dismiss is the stock market. Stock prices should move in the long run with profitability, but Chinese corporate books are notoriously unreliable.¹² This undermines the use of both return on assets as a financial indicator and the profit reports behind stock movements. The stock market is also comparatively small. The benchmark Shanghai SSE has a capitalization of less than \$4.5 trillion. Its closest counterpart in the US, the S&P 500, is more than five times larger.¹³ It is not surprising, then, that stocks do not match government reports on the broader economy. For example, Shanghai’s high-water mark over the past decade was late spring 2015, when the economy was not only slowing but heading toward its worst stretch since the 2008–09 global crisis.

Turning to labor productivity or the return to capital, instead, is highly promising on the surface. But they ultimately depend on the flawed national accounts series and thus may only serve to mask Beijing’s manipulations. As noted, this is largely unavoidable since large-scale independent surveys are extremely costly. Adjusting official GDP for purchasing power parity (PPP) actually makes matters worse. The basic thrust of PPP is that a dollar equivalent—the US is the base country—buys different amounts in different countries, which should be reflected in measuring prosperity.¹⁴ By itself, this seems reasonable.

However, even those claiming PPP is adequately measured do not issue annual growth estimates, limiting the utility of PPP regardless of accuracy. The main reason is the price comparisons required are not made nearly frequently enough. They are also badly simplified in a country as vast as

Figure 2. Activity vs. Income



* Currency amounts are in renminbi.

Source: National Bureau of Statistics of China, Annual Data, <http://www.stats.gov.cn/english/statisticaldata/annualdata/>.

China—where one price level is calculated for Tianjin, Tibet, and everywhere in between—and then compared to one price level for the entire United States. For Mexico, tightly linked to the US and far more easily studied than China, the empirical challenges still make it unclear that PPP holds.¹⁵

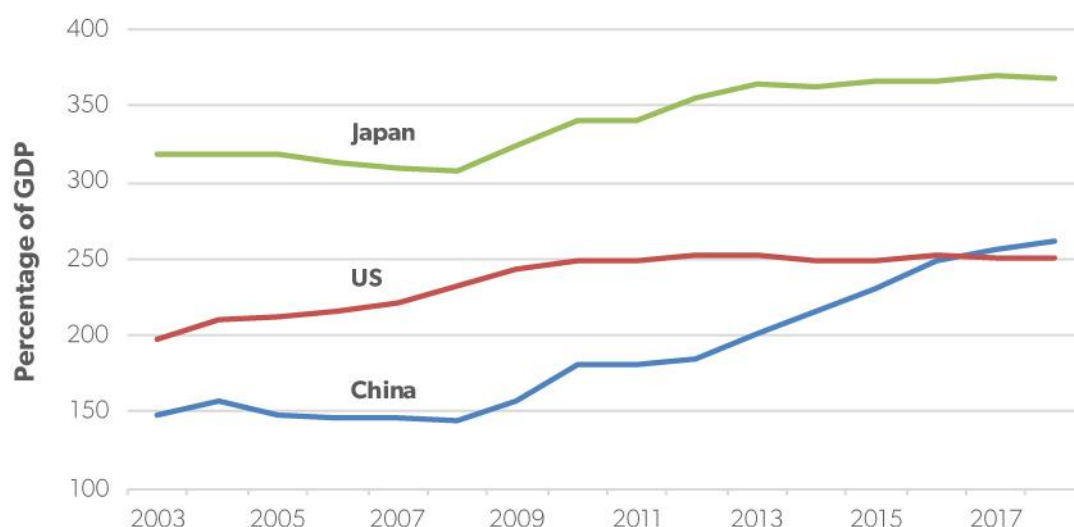
There are also conceptual problems with applying PPP to China, specifically. The thrust of PPP is to adjust buying power—consumption. Chinese consumption has the lowest share of GDP among all large economies, comparable only to commodities exporters and city-states. The converse is naturally true for investment.¹⁶ It does not seem intuitive to apply PPP to investment, and the problem goes further. PPP is based on the law of one price: The same good, service, or asset should have the same exchange rate-adjusted price regardless of location when traded in open markets. But China's capital market is explicitly closed, as well as warped by state ownership.¹⁷ PPP should not be applied to Chinese investment and, hence, not to GDP.

PPP is the core of many “China is winning!” arguments, but it is a bit esoteric. Much more

common is the use of GDP per capita. This has the same problem of starting with official GDP, plus (sometimes willful) misinterpretation of what GDP per capita represents. GDP per capita is not an income measure; no one owns their GDP per capita or can save or spend it. The claim that a country is high income or low income based on GDP per capita is common, but misleading. It is annual activity per person, more a transaction measure than a direct representation of prosperity.

Activity and income can be closely connected. American GDP per capita in 2017 was over \$59,000, while personal income per capita was over \$51,000.¹⁸ For China, however, 2017 GDP per capita was \$8,800 (using official GDP and population), and disposable income per capita, introduced by the central government in 2013, was just \$4,100.¹⁹ The annual changes match up better but not well, with income growing consistently faster and the growth gap fluctuating. Beijing does not actually publish a GDP per capita series, making it awkward to emphasize the value of both GDP per capita and official statistics when the latter is much less impressive. (See Figure 2.)

Figure 3. Credit to the Nonfinancial Sector



Note: Figures are for March of each year.

Source: BIS, "Credit to the Non-Financial Sector," September 23, 2018, <https://www.bis.org/statistics/totcredit.htm?m=6%7C380%7C669>.

Not as Bad Alternatives

It is also awkward to impeach official statistics and then cite official levels of disposable income. Income data, like other Chinese data, are sometimes arithmetically inconsistent.²⁰ Individuals have an incentive to underreport income, mirroring the incentive for government bodies to overreport GDP. Nonetheless, income is the right thing to measure, while GDP per capita is an accounting result. To its credit, Beijing introduced an integrated income measure in 2013, though it was painfully low. Better a dubious official indicator of something that matters than one of something that does not.

The accumulation of income over time is wealth. There is no official wealth measure, yet poor data quality applies here too. The most consistent attempt to measure aggregate wealth (not distribution or sustainability) comes from Credit Suisse, covering 174 countries back to 2000. But its 2017 report pegged the PRC's mid-2017 wealth at \$29 trillion, while its 2018 report revised mid-2017 wealth to over \$49 trillion, making official figures look reliable.²¹ Wealth measurements are not yet useful.

Similarly, it is unwise to take a snapshot of the quantity of money as signaling the state of the economy. For the PRC, this has a countervailing benefit: Incentives to falsify money data are lower. The money supply trend, while not definitive, is

disturbing. In September 2008, the official ratio of M2 to GDP was 2.2:1; in September 2018 it was 2.8:1.²² If that change seems minor, the American ratio is about 0.7:1. Rather than normalizing, the PRC is headed in the wrong direction. America and Japan are certainly not liquidity-starved, and Chinese M2 is bigger than both combined.

Money stock might have been too small when China grew rapidly with little inflation. More likely it is too large now, when China has slowed. This does not mean monetary policy has been harmful to this point, but it is no longer effective. Monetary policy will for the indefinite future be more of an exercise to manage risk than to promote growth, as reflected in several years of ostensible deleveraging. Usually useless monetary policy is a staple of Japan's long-term stagnation,²³ and it likewise represents a ceiling on Chinese performance.

Debt is more definitive, in principle. Debt reports can be falsified or suppressed. (See nonperforming loans.) But even Beijing's tentative embrace of global finance requires some information sharing, so statistics are not as easily manipulated as purely domestic figures. There is no ideal way to evaluate debt. A series that offers international comparison and historical trend is Bank of International Settlements' Credit to the Non-Financial Sector.²⁴ From March 2004 to March 2009, China's credit

to the nonfinancial sector fell as a percentage of (official) GDP. From March 2009 to March 2018, it rose by two-thirds, reaccelerating in 2012 when all other major economies controlled their borrowing.

This is *not* to say the PRC faces a financial crisis. Despite the debt surge, it is still less burdensome than Japan's 15 years ago. And Beijing has more control of its financial system than Tokyo does, to prevent panics. Debt shows China doing much more poorly than its official statistics argue, but it does not show an acute threat.

Traditional external indicators are no longer vital as the economy has developed and expanded. In the 1980s, the PRC was short of hard currency for imports. Now it has the world's largest foreign reserves. In the 1990s, export markets were indispensable for employment. Now the labor force is set to shrink indefinitely.²⁵

The world's largest exporter is unlikely to see more rapid gains, nor are they necessary for success. China just needs to avoid substantial export contraction. The 2008 crisis was an obvious threat to exports, and Beijing adopted intense stimulus despite claiming solid GDP growth. More frequent will be periods like 2015–16, when official exports fell mildly and some observers believed the PRC faced a crisis of sorts.²⁶ As for imports, commodities constitute approximately two-thirds of volume. They are connected to domestic production but also global prices. Import shifts can thus be difficult to assess.

Another external indicator is willingness to hold renminbi (RMB) assets, a more comprehensive version of willingness to hold stocks. If an economy is outperforming, money should flow into the country on a net basis. Sustained large-scale outflows are incompatible with anything like world economic leadership.

The PRC's balance of payments sees yet more unreliable statistics, featuring false corporate invoicing.²⁷ The best indicator is the broadest: total foreign currency in the financial system. This fell no less than \$800 billion combined in 2015–16. Comprehensive statistics then became

sporadic, but net outflow looks to have dropped to \$180 billion in 2017²⁸ and further through October 2018. The behavior of RMB holders says China's official economic performance is closer to accurate today than it was two to three years ago.

Education and health measures cannot serve as such real-time checks of economic results, but they are the surest signs of long-term success. The basic health variable is life expectancy at birth, compiled by international organizations but reliant on local surveys. The PRC has developed to the point that life expectancy can rise only slowly, and it is inconceivable the Communist Party will report declines.

Education is more informative. The PRC claims to be notably richer than Indonesia, for example, but lags a bit on the basic education indicator of mean years of schooling.²⁹ This certainly does not mean Indonesia must be outpacing China in 2018, but it casts doubt on the extent of China outperforming Indonesia up to now and perhaps its likelihood of doing so over the next generation. Low levels of education point to decades of roughly 3 percent Chinese GDP growth.³⁰ A long-term test of official statistics is whether they come with credible improvements in educational attainment.

Fifteen Bottom Lines

The typical response to the Chinese data mess is: Create an index. The first problem is the ensuing results appear easy to interpret but are not: What does a two-point increase in a 10-component index actually mean? The second is that indexes do not magically “average out” flaws in individual components. Inaccurate indicators can easily reduce the predictive value of the index sufficiently to make it inferior to a single statistic.

Instead, here is a brief guide to the importance and usefulness of different measurements. There is also a (sometimes very) rough description of the state of the economy at the start of December 2018, though the state changes more quickly than the underlying value of the measurement.

Table 1. Fifteen Indicators of China's Economy

Indicator	Data Quality	Economic Importance	Current Evaluation
Unemployment	Borderline Useless	High	Strong baseline with a mild negative trend
Stock Prices	Low	Low	Depressed, for good reasons
CPI/GDP Deflator	Low	High	Deflation becoming a risk
GDP	Low	Middling	Growth below official levels and weakening
Fixed Investment and Retail Sales	Low	Middling	Investment slow but stabilized, sales quicker but easing
Return to Labor and Capital (Factor Productivity)	Borderline Useless	High	Return on capital falling, labor productivity rising slowly
Education and Health	Low	High	Still improving but too slowly
PPP-Adjusted GDP	Borderline Useless	Middling	Uncertain due to lack of new price estimates
GDP per Capita	Low	Low	Growth below official levels and weakening
Personal Income	Middling	High	Either outperforming true GDP or being measured more comprehensively and accurately than in the past
National Wealth	Low	High	Large but rising unimpressively the past few years
Money Supply	High	Low	Slowing due in part to huge base
Aggregate Debt	Middling	High	Extremely large and still rising
Trade	Middling	Low (Now)	Still outperforming but on obviously shaky ground
Foreign Reserves	Middling	Middling	Roughly stable but with downside risk

Source: Author's research.

Conclusion

Combining data quality and economic importance leads to clear guidelines, some of which may be surprising. Stock prices and GDP per capita are the worst indicators, the latter because personal income is available and obviously superior. GDP, its components, and PPP-adjusted GDP are not much better. They receive attention because of breadth but are manipulated by China for the same reason. Another group of variables plainly matter but are prohibitively badly measured: unemployment, aggregate prices, national wealth, factor productivity, and human capital. More trustworthy, timely data would be most valuable for one or more of these.

What is left? Chiefly, personal income and aggregate debt. The first is how ordinary Chinese are doing, and the second has become how the economy as a whole is doing. Both of course can

be falsified, but the manipulation to this point seems to be comparatively minor. A step down, money supply and foreign currency in the financial system also appear fairly reliable and can be important at particular times.

There is one last “indicator” to consider. Arguments over the quality and importance of these 15 variables pale in comparison to differences over policy. Debates over the PRC's current and future economic performance can include fights over numbers, but those are typically not the core issues.³¹ Instead, the battles boil down to the level of comfort with a large state role in the economy. And such disputes are usually not based on facts and can be irresolvable.

That may not always be a bad thing. Where there are not enough data, turn back to theory. When assessing how China is doing, consider personal income, debt, GDP (if you must), and so on, but also consider the short-term and long-

term effects of policy. What is Xi Jinping's regime doing to support or undermine current economic performance? Future performance? China is

indebted, aging, and in need of an impressive economic strategy to respond to those challenges. Is there one in evidence?

About the Author

Derek Scissors (derek.scissors@aei.org) is a resident scholar at AEI and creator of the China Global Investment Tracker.

Notes

1. Ben Blanchard and Michael Perry, "China's Xi Demands 'Strong Hands' to Maintain Stability Ahead of Congress," Reuters, September 19, 2017, <https://www.reuters.com/article/us-china-congress-security/chinas-xi-demands-strong-hands-to-maintain-stability-ahead-of-congress-idUSKCN1BV07E>.
2. Organisation for Economic Co-operation and Development, "Quarterly National Accounts: Quarterly Growth Rates of Real GDP, Change over Previous Quarter," OECD.STAT, data extracted on December 10, 2018, <https://stats.oecd.org/index.aspx?queryid=350#>.
3. Bloomberg, "Soros: China Hard Landing Is Practically Unavoidable," January 21, 2016, <https://www.bloomberg.com/news/videos/2016-01-21/soros-china-hard-landing-is-practically-unavoidable>; Yawen Chen and Ryan Woo, "China September Data to Show Steady Growth Ahead of Key Communist Party Congress," Reuters, October 4, 2017, <https://www.reuters.com/article/us-china-economy-data/china-september-data-to-show-steady-growth-ahead-of-key-communist-party-congress-idUSKCN1C9oGI>; and Chao Deng, "China Growth Slows Slightly Ahead of Effects from U.S. Trade Fight," *Wall Street Journal*, July 16, 2018, <https://www.wsj.com/articles/chinese-economic-growth-slows-slightly-1531708688>.
4. National Bureau of Statistics of China, "National Economy Registered a Stable Performance with Good Momentum for Growth in the First Half of 2018," July 16, 2018, http://www.stats.gov.cn/english/PressRelease/201807/t20180716_1609894.html.
5. Emi Nakamura, Jón Steinsson, and Miao Liu, "Are Chinese Growth and Inflation Too Smooth? Evidence from Engel Curves," *American Economic Journal: Macroeconomics* 8, no. 3 (July 2016): 113–44, <https://www.aeaweb.org/articles?id=10.1257/mac.20150074>.
6. Sharon LaFraniere, "China Puts Joblessness for Migrants at 20 Million," *New York Times*, February 2, 2009, <https://www.nytimes.com/2009/02/03/world/asia/03china.htm>.
7. Zhang Jun, "China's Mysterious Investment Statistics," Project Syndicate, June 21, 2016, <https://www.project-syndicate.org/commentary/china-investment-statistics-unreliable-by-zhang-jun-2016-06>.
8. Bloomberg News, "Fast-Growing China Provinces Can't Quit Investment Addiction," November 1, 2016, <https://www.bloomberg.com/news/articles/2016-11-01/fastest-growing-china-provinces-can-t-quit-investment-addiction>; and "NBS Official Refutes Charges of Unreliable GDP Figure," *China Daily*, July 23, 2009, http://www.chinadaily.com.cn/bizchina/2009-07/23/content_8463840.htm.
9. Sidney Leng, "An Inconvenient Truth? China Omits Key Figures That May Have Highlighted Its Demographic Time Bomb from Official Statistics," *South China Morning Post*, October 27, 2017, <https://www.scmp.com/news/china/economy/article/2117167/inconvenient-truth-china-omits-key-figures-may-have-highlighted>; and Oceana Zhou and Eric Yep, "The Curious Case of China's Missing Trade Data," *Barrel*, June 15, 2018, <http://blogs.platts.com/2018/06/15/china-missing-trade-data/>.
10. Fran Wang, "Liaoning Government Admits False Growth Data from 2011–14," *Caixin*, January 18, 2018, <https://www.caixinglobal.com/2017-01-18/101046468.html>.
11. Agence France-Presse, "Ernst & Young: Sorry for NPL Report," *China Daily*, May 15, 2016, http://www.chinadaily.com.cn/china/2006-05/15/content_590282.htm; and Steven Yang et al., "China's Warning to Market Economists: Toe the Party's Line," Bloomberg News, November 20, 2018, <https://www.bloomberg.com/news/articles/2018-11-21/china-s-warning-to-market-economists-toe-the-party-s-line>.
12. Patti Waldmeir and Gabriel Wildau, "Big Chinese SOEs Falsified Revenues," *CNBC*, June 29, 2015, <https://www.cnbc.com/2015/06/29/big-chinese-soes-falsified-revenues.html>; and Issaku Harada, "China Admits to Revising Padded Corporate Profits," *Nikkei Asian Review*, July 19, 2018, <https://asia.nikkei.com/Economy/China-admits-to-revising-padded-corporate-profits>.
13. Shanghai Stock Exchange, "Shanghai Stock Exchange Monthly Market Statistics Report," November 2018, <http://english.sse.com.cn/indices/publications/monthly/c/4672618.pdf>; and YCHARTS, "S&P 500 Market Cap: 23.28T for Nov 2018," December 4, 2018, https://ycharts.com/indicators/sandp_500_market_cap.
14. Organisation for Economic Co-operation and Development, "Purchasing Power Parities—Frequently Asked Questions (FAQs)," <http://www.oecd.org/sdd/prices-ppp/purchasingpowerparities-frequentlyaskedquestionsfaqs.htm>.
15. Steven Yee and Miguel D. Ramirez, "Purchasing Power Parity: A Time Series Analysis of the U.S. and Mexico, 1995–2007," *International Advances in Economic Research* 22, no. 4 (November 2016): 409–19, <https://link.springer.com/article/10.1007/s11294-016-9598-4>.

16. World Bank, World Bank Open Data, s.v. “Final Consumption Expenditure (% of GDP),” <https://data.worldbank.org/indicator/NE.CON.TOTL.ZS>; and “Gross Capital Formation (% of GDP),” <https://data.worldbank.org/indicator/NE.GDI.TOTL.ZS>.
17. Zheng Song, Kjetil Storesletten, and Fabrizio Zilibotti, “Growing (with Capital Controls) Like China,” *IMF Economic Review* 62, no. 3 (August 2014): 327, <https://doi.org/10.1057/imfer.2014.18>; and KPMG, “Mainland China Banking Survey 2017,” August 2017, 50, <https://assets.kpmg.com/content/dam/kpmg/cn/pdf/cn/2017/08/2017-mainland-china-banking-survey.pdf>.
18. Federal Reserve Bank of St. Louis, “Economic Research,” <https://fred.stlouisfed.org/tags/series?t=gdp%3Bper+capita%3Busa>.
19. World Bank, World Bank Open Data, s.v. “GDP per Capita (Current US\$),” <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>; and People’s Daily Online, “China’s per Capita Disposable Income Up 9.0 Percent in 2017,” February 24, 2018, <http://en.people.cn/n3/2018/0224/c90000-9429702.html>.
20. National Bureau of Statistics of China, “2016: A Good Start for China’s Economy During the 13th Five-Year Plan Period,” January 20, 2017, http://www.stats.gov.cn/english/pressrelease/201701/t20170120_1455922.html.
21. Credit Suisse, “Global Wealth Report 2018,” <https://www.credit-suisse.com/corporate/en/research/research-institute/publications.html>.
22. National Bureau of Statistics of China, “China Monthly Statistics,” Volume 202, October 2008; and National Bureau of Statistics of China, “China Monthly Economic Indicators,” Volume 214, October 2018.
23. Zhang Zhongkai, “China Voice: China’s Miraculous Growth Ends, ‘New Normal’ Growth Story Dawns,” Xinhua, January 20, 2015, http://www.xinhuanet.com/english/indepth/2015-01/20/c_133932395.htm; and Ben S. Bernanke, “Some Reflections on Japanese Monetary Policy,” Brookings Institution, May 24, 2017, https://www.brookings.edu/wp-content/uploads/2017/05/es_20170523_bernanke_boj_remarks.pdf.
24. BIS, “Credit to the Non-Financial Sector,” September 23, 2018, <https://www.bis.org/statistics/totcredit.htm?m=6%7C380%7C669>.
25. Minchung Hsu, Pei-Ju Liao, and Min Zhao, “Demographic change and Long-Term Growth in China: Past Developments and the Future Challenge of Aging,” *Review of Development Economics* 22, no. 3 (August 2018): 928–52, <https://onlinelibrary.wiley.com/doi/abs/10.1111/rode.12405>.
26. Matt O’Brien, “How China Could Trigger a Global Crisis,” *Washington Post*, January 11, 2016, <https://www.washingtonpost.com/news/wonk/wp/2016/01/11/how-china-could-trigger-a-global-crisis/>.
27. Don Weinland, “China’s Capital Flight Shows Up in Over-Invoicing of Imports,” *Financial Times*, January 26, 2016, <https://www.ft.com/content/2401aa36-c426-11e5-808f-8231cd71622e>.
28. Xinhua, “Chinese Banks’ Forex Settlement Deficit Expands in December,” *China Daily*, January 19, 2017, http://www.chinadaily.com.cn/business/2017-01/19/content_27999555.htm; and Xinhua, “China Sees More Balanced Cross-Border Capital Flow in 2017,” January 18, 2018, http://www.xinhuanet.com/english/2018-01/18/c_136905018.htm.
29. UN Development Programme, “Human Development Indices and Indicators: 2018 Statistical Update,” 2018, http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/CHN.pdf.
30. Hongbin Li et al., “Human Capital and China’s Future Growth,” *Journal of Economic Perspectives* 31, no. 1 (Winter 2017): 25–47, <http://www.jstor.org/stable/44133949>.
31. Nicholas Lardy, “Writing China: Nicholas Lardy, ‘Markets over Mao,’” *Wall Street Journal*, September 2, 2014, <https://blogs.wsj.com/chinarealtime/2014/09/02/writing-china-nick-lardy-combats-conventional-wisdom-in-markets-over-mao/>; and Derek Scissors, “Is China’s ‘State Capitalism’ Dead? Another View,” *Wall Street Journal*, September 10, 2014, <https://blogs.wsj.com/chinarealtime/2014/09/10/is-chinas-state-capitalism-dead-another-view/>.

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