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CES17-124 Decision Letter

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Reply-To: pwachtel@stern.nyu.edu

To: carstenholz@gmail.com

Dear Professor Holz,

Re: tracking number CES17-124: article title "China's Investment Rate: Implications and Prospects"

I can now come back to you with a decision about the article you submitted to the Comparative Economic Studies. I have two thorough reviews of the paper which I just read carefully myself.

Unfortunately, I have to inform you that the article is not suitable for publication. You will find the referee's extensive comments below.

I find that I agree with many of the comments of Referee #1. The paper seems to be talking about a country other than the China that I am familiar with (though I am not a China specialist). The issues that strike me as enormously important are just ignored -- unprofitable investments by SOEs, dangerous leverage of firms, role of local government borrowing and subsidies. I appreciate your macro view of investment but it seems disingenuous to just bury the issues that concern most other China observers. It struck me that there is no effort to engage the literature that discusses these issues.

My term as editor of CES ends this year so I have been avoiding inviting revisions because I do not want to burden my successor. Nevertheless, I am sure that the new editor will welcome new submissions on China.

With kind regards

Paul Wachtel
Editor
Comparative Economic Studies

Referee #1

The author of this paper argues that investment has been a crucial driver of economic growth in China and that, despite the rapidly rising ratios of gross capital formation to GDP and of debt to GDP, China's investment is not too high, and there is no drastic decline imminent. In the process, the author gives us a flood of statistics and compares China with its neighboring East Asian economies, as well as with Germany and the U.S. In my view, however, the effect of his or her institution-free, surface-skimming analysis is to airbrush out key problems facing the Chinese economy that could certainly affect its level of investment.

To an extent, the author's claims are non-controversial. Without investment, economic growth cannot occur, and investment is therefore crucial to growth in every nation. It seems clear that China's government has enough levers to keep investment high if it wishes to, although the cost of doing so could also become high enough to discourage such a policy.

Let us therefore look at the cost of keeping investment high relative to GDP. The author is upbeat about the sustainability of China's investment policies, but there is an alternative scenario that he or she does not address. Key issues, such as the rising capital-to-output and debt-to-GDP ratios, are dismissed on questionable grounds or else ignored. (While many factors do influence capital-to-output ratios-as the author claims in Section 4.1-one of these is certainly an accumulation of low-yielding investments, which can also raise the ratio of debt to GDP since they have to be financed.)

The author is pre-occupied with the quantity of investment, but arguably, the quality is at least as important. Parente and Prescott [2004] argue that differences in GDP per capita, both between different nations as of a point in time and over time for a given nation, result mainly from differences in total factor productivity (TFP). Thus investments that raise TFP are crucial.

The quality of Chinese investment-which sometimes results in excess capacity, low levels of housing occupancy, little-used infrastructure, high levels of pollution, or other problems-is cause for concern. Over the past eight years, the debt-to-GDP ratio has risen by more than 70%, with debt often helping to finance production for which there is insufficient demand. Much of this debt will never be paid back.

In this context, investment in China frequently has a return to the government in terms of political influence or prestige. Such investments may be undertaken even if the economic return is low, and the government obliges the banking system to channel loans to relatively inefficient borrowers, mainly in the state sector. This causes loans to be poorly allocated-with too much money going to state firms and local governments-and makes reform of the financial sector more difficult. Zombie banks lend to zombie firms, and both must ultimately be kept afloat by subsidies and protectionist measures. We should bear in mind that a given type of economic institution, such as a bank, may work quite differently in an autocracy than it does in a democracy since the sources of political support are different in one than in the other. (The countries to which the author compares China are democracies.)

The counterparts of China's high rate of investment are an even higher rate of saving and a very low ratio of consumption to GDP, now less than 40 percent. This is way below Western nations and also well below the Asian nations that the author compares with China.

In analyzing China's economic growth, it is useful to go back to the contrast between extensive and intensive growth that was used to compare growth in the former Soviet Union with growth in developed Western countries. Extensive growth is growth of output owing to growth of inputs, with technology (TFP) held constant, while intensive growth is growth of output owing to technological improvement (increases in TFP), with inputs held constant. Soviet growth was said to be largely extensive, whereas Western growth is largely intensive. Extensive growth is mainly due to increases in capital in most places, including China, as the author notes (p.4).

Purely extensive growth dies out eventually, owing to diminishing returns to capital. Intensive growth can offset this, however, by raising the capital-to-labor ratio at which a given marginal product of capital occurs. This implies that comparing capital-to-labor ratios between countries with quite different levels of TFP, as the author does on p. 6, can be misleading. Diminishing returns to capital may be more pronounced in China than in the U.S. despite the much lower K/L in China because TFP is also lower there. The relatively low K/L in China implies a lot of room to raise this ratio only if TFP rises sufficiently as well. Again the quality of investment is crucial.

In China, TFP fell over the period, 1952-79, prior to reform, but has turned around and risen since then. Over 1979-2013, growth was almost evenly divided between extensive and intensive, as the author notes on p. 4. On p. 4, the author claims that "Pursuing TFP growth through specific government policies in order to achieve GDP growth is not a reliable option for achieving economic growth." Nevertheless, the switch toward intensive growth in China was deliberate government policy. Importing new technology was a key goal of the Open Door Policy and such importation continues unabated, using all manner of legal and illegal means. China also spends large sums to encourage

research and development and entrepreneurship. The government is now heavily involved in the supply of venture capital, with results that are yet clear. Thus it does have an arsenal of policies to raise TFP, and despite the low share of foreign investment in total investment, foreign investment could be playing an important role in bringing technology into China.

Even so, it is not clear that China can continue to have strong TFP growth. At the outset of reform, China de-collectivized agriculture, which revealed a huge surplus of workers-on the order of 250 million by some estimates-that was no longer needed in farming. China made a virtue of this potential crisis by making it legal to start millions of new, non-state firms in both rural and urban areas, as well as by loosening constraints on labor mobility, and using the Open Door to bring in new technology and management methods, as well as to start joint ventures. The Open Door also allowed China to achieve export quality in labor-intensive products, and economic growth became export-led. China competed mainly on the basis of price rather than technological sophistication.

With so much surplus labor to employ, China was in an environment similar to that described by W. Arthur Lewis in his famous article, "Economic Development With Unlimited Supplies of Labor." In this environment, large investments were necessary to put the unemployed labor to work. Much later, in response to the Great Recession in the West, which lowered the export demand for Chinese products, a \$586 billion infrastructure program prevented a dramatic rise in unemployment. Again large investments were necessary.

But that was then. Now the labor surplus has been absorbed, and China is close to market saturation in terms of her traditional exports, requiring her to compete more and more on the basis of technological sophistication. The Chinese government realizes this and around 2006 adopted a new policy framework based on the goal of building an "innovation-oriented" nation. Since then it has become the world's leading export nation, and its exports rank 17th in the world in terms of economic complexity (out of 89 nations), a position that has been rising. (China ranked 19th in 2014.) Because China lacks a sophisticated financial sector, however, and because the average return on investment appears to be falling, the ability to rise further and even to sustain past improvements is in some doubt.

Financial markets often work poorly, as noted above, and economic reforms, including financial reforms, have languished. Thus China still relies on large, even gargantuan projects, such as "One Belt, One Road" to boost demand. The resulting investments are risky, and many of them may well end up having low or even negative economic yields.

With TFP constant, increases in capital lower the marginal product of capital and sooner or later capital's average product, which is to say that such increases raise the capital-to-output ratio. If TFP does not rise rapidly enough, therefore, growth will result in a given amount of investment producing smaller and smaller increases in output. The cost of any given level of investment will be rising in the sense that the decrease in present consumption needed to finance this investment is getting larger relative to the increase in future consumption resulting from the investment. If this happens in a country, such as China, where consumption is already very low relative to GDP, it could cost the government support. The government might then respond by tightening and centralizing control over society and the economy, which would be unfavorable to the growth of TFP. In turn, this could lead to a middle-income trap.

This is the dark scenario, a possibility, but by no means the only one. The author does not argue persuasively against it, because he or she doesn't even consider it, preferring instead to take a simple rosy outlook while ignoring key problems facing the Chinese economy today.

REFERENCE

Parente, S.L. and Prescott, E.C. A Unified Theory of the Evolution of International Income Levels. Federal Reserve Bank of Minneapolis Research Department Staff Report 333, March 2004.

Referee #2

This paper tries to document some of the important stylized facts about China's fixed asset investment over time and across industries, and to debunk some popular myths about China's investment-driven growth through cross-country comparisons. It has largely achieved its goal. The paper finds that investment has indeed been a key driver of China's growth, but it is in line with the experience of other East Asian economies, and the level of capital per worker is still only a fraction of that for developed countries, leaving plenty of room for further catching-up. Moreover, the paper shows that China's investment is broad-based and balanced across all industries, presumably due to a large size of the economy, and that foreign investment has become increasingly insignificant.

There is of course a significant literature on the contribution of investment to China's growth, which this paper should probably cite, but few authors have carefully documented various stylized facts about China's investment from a cross-country comparative perspective. And as stated earlier, this paper has rather convincingly debunked a few popular myths about the health of the Chinese economy. For example, the paper makes a very important point that such measures like aggregate and incremental capital-output ratios and debt to GDP ratios suffer from severe deficiencies and are misleading indicators of the efficiency and sustainability of a country's investment. A few suggestions for revision are as follows.

- I think the demand-side analysis is misleading and difficult to interpret. For example, the paper stated that "private consumption was the main driver of economic growth" (for the US) in the period 1978-2014; and "In Germany, the average of annual contribution of (investment) to economic growth in the period 1992-2014 was exactly zero." These statements would sound ridiculous to a growth economist. Demand side analysis makes some sense when we talk about various contributing demand factors to a particular year's GDP growth rate over the previous year, but it does not make sense to average such numbers over decades. I suggest the author to delete the whole subsection.
- The paper also stated that "China's economic growth... is volatile", which is of course correct, but it is true of all other countries. In fact, China's growth is less volatile than most other countries when measured by the ratio of the standard deviation to the mean (or coefficient of variation).
- On p.4, there is a statement "Pursuing TFP growth through specific government policies in order to achieve GDP growth thus is not a reliable option for achieving economic growth." But pursuing TFP growth is precisely what the Chinese government is supposedly trying to do, and is what many Chinese economists have been trying to advocate. So more discussions on this are warranted.
- In "Conclusions", the paper mentions the so-called "middle income trap", which has been a popular term in China. But I have not seen a convincing study that shows its existence, and eminent economists such as Amartya Sen and Shangjin Wei have all questioned its use. I suggest the author to drop it.
- More citations of the literature may be needed. A couple of citations need to be updated: (1) Fang Liu, Jun Zhang, and Tian Zhu, "How much can we trust China's investment statistics?" Journal of Chinese Economic and Business Studies, 14(3), 215-228, 2016. (2) Jun Zhang and Tian Zhu, "Reestimating China's Underestimated Consumption", Comparative Economic Studies, 57 (1), 55-74, 2015.

