

Monetary policy and the over-investment cycle China as an extreme case

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The recent turbulence in global stock markets has added to the problems facing monetary policy authorities worldwide. The analysis in this contribution suggests that the core of the problem is the bust of an over-investment cycle in China. The over-investment had been propelled by a self-reinforcing cycle of higher investment and higher growth. But this cycle is now operating in reverse: lower investment leads to lower growth and to lower growth expectations. The credit expansion that accompanied and financed the over-investment will make the bust worse, but it does not in itself constitute the root cause of the problem. It will take some time to resolve the savings-investment imbalances in China because they involve both stock and flow problems. The stock of investment has overshoot its medium-term equilibrium level and the flow supply of savings remains at extremely high levels. These imbalances have such a strong global impact because China now accounts for 28% of global savings and investment (similar to the US and the euro area combined), and the looming imbalance within China is likely to be larger than has ever appeared in any other country experiencing excess savings.

In short, the slowdown in China today is a reflection of an underlying 'real' domestic investment/savings imbalance that is so large that it will impact the global economy. But this imbalance is unlikely to be solved by monetary policy. The best that can be hoped for is that the central banks will manage to 'paper over' some of the unavoidable symptoms in credit markets.

China: Long-term sustainable investment and the accelerator

A defining characteristic of the Chinese economy is its combination of extremely high national savings and investment rates. The political leadership of the country has been trying for years to reassure the world that it is aware of these internal 'imbalances' and is committed to redirecting the growth model away from investment (and exports) and towards consumption. But so far, the switch away from investment has been very slow. The investment rate in 2014 was close to 48% of GDP only 1 percentage point lower than in 2009.

Over-investment cycles are so dangerous and difficult to identify because they create a self-reinforcing mechanism (also called an 'accelerator'): investment is part of aggregate demand and hence GDP. Higher investment thus increases measured GDP growth, which implies

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that a higher investment rate seems justified when higher growth rates materialise. Moreover, higher investment also increases future potential output growth. This feedback mechanism makes it very difficult to estimate the long-run sustainable rate of investment of a country, especially one engaged in rapid development.

But what it is certain, as suggested by both theory and historical experience, is that higher investment rates cannot lead to permanently higher growth rates, just a higher output level. The 'acceleration' of growth from higher investment cannot be permanent because once the investment rate reaches a certain level, returns will start to fall and growth will return to its underlying rate.

An over-investment cycle then arises if the temporary nature of the growth boost from a shock to investment is not recognised. This seems to have been the case in China after 2008.

The boost to investment driven by government policies in response to the global slump in demand was extraordinary under any measure. The investment rate rose from about 41% (in 2007) to 48% of GDP (in 2010); i.e. in about three years. This yielded an increase in measured GDP of several percentage points (as intended, since the investment programme was supposed to provide a stimulus to domestic demand). The problem is that the temporary nature of this investment boom was not taken into account, and growth rates at 10% were taken as a sign that China could maintain double-digit growth rates even when global growth had fallen in the wake of the great financial crisis. This miscalculation led to the conclusion that a permanently higher investment rate was appropriate for China.

In other words, it was a misperception about the underlying growth rate that seemed to make the combination of permanently higher investment and growth rates sustainable. As long as the capital-to-output ratio does not increase too much, the rate of return on investment does not deteriorate, confirming this perception. But this cannot go on for long. When the marginal productivity of investment eventually starts to fall, as it has now in China, the boom turns into a bust. At that point, the same 'accelerator' mechanism starts to work on the way down: once the capital stock has been recognised as being too high, a slowdown in investment leads to lower growth, which in turn would seem to make a lower investment rate appropriate.

This might be happening at present in China where the stimulus spending has run its course and the attempt to prop up private spending via a stock market boom has failed spectacularly. The observed growth rates in China from 2008 to 2014 might have been well above the longer-term sustainable rate, and the markets are reacting so strongly because they fear that Chinese growth might now undershoot the equilibrium rate for a time until the excess capital spending of the last five years has been absorbed.

What are the implications for the rest of the world?

To answer this question, one needs to know what happens to savings and hence to the savings/investment balance in China, i.e. how the current account will develop. If China's national savings rate were to remain at around 45-50% of GDP, a re-emergence of very large current-account surpluses seems unavoidable once the accelerator shifts into reverse gear.

An order of magnitude of the impact of an over-investment cycle in China on the world economy can be easily established. Assuming a longer-run growth rate of 6%, the investment rate that would prevent the capital-to-output ratio from increasing would be about 35% of GDP (see the table in the Appendix for calculations). This is 12 percentage point lower than the present investment rate. Since savings are unlikely to fall quickly by a similar amount, a large current-account surplus would be the consequence in the medium run. This would of course also require a substantial devaluation of the renminbi.

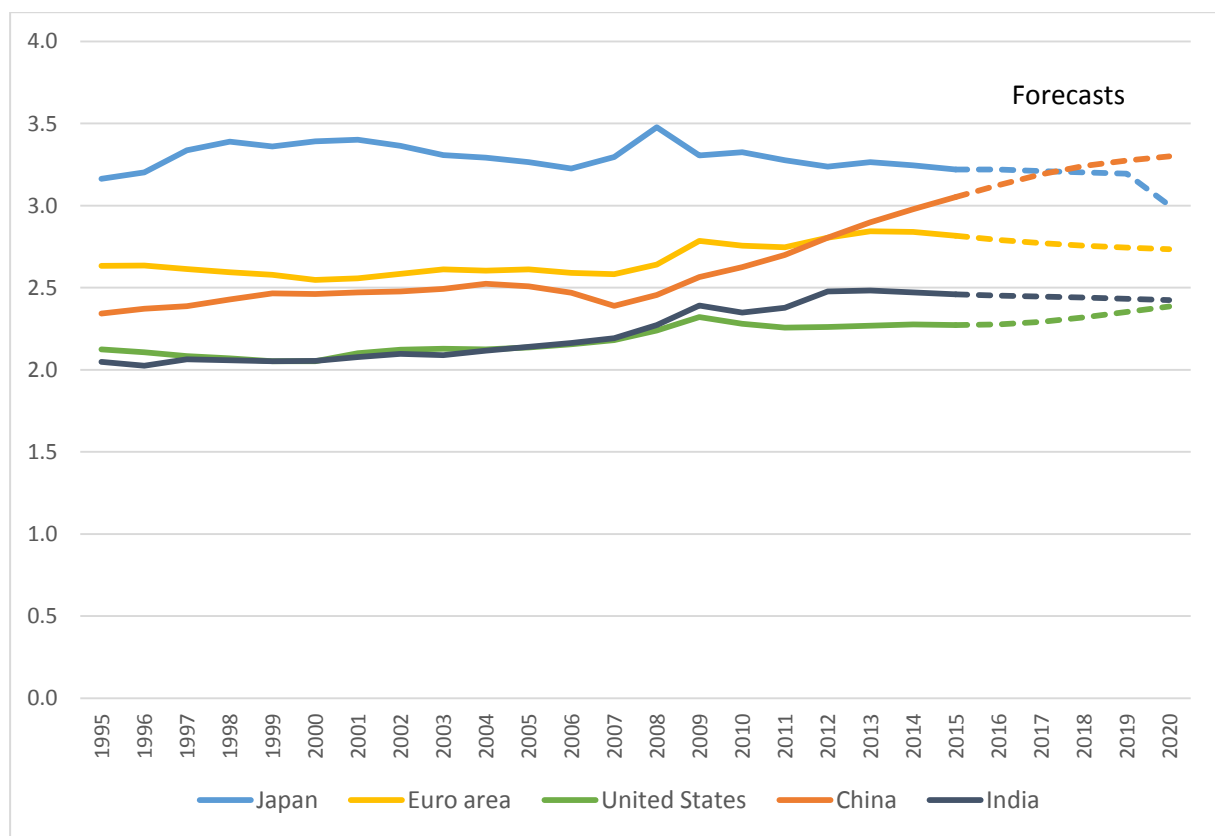
Moreover, while an investment rate of 35% of GDP would be sustainable in the long run with a long-run growth rate of 6%, it is likely that, because of the accelerator effect, growth would initially be potentially much lower, given that the fall in investment would also depress growth. The short-run impact on growth of scaling back investment might thus be larger.

This potential desire of China to run larger current-account surpluses clashes with the nascent recovery within the euro area. The adjustment in peripheral countries has so far been based mainly on compression of imports, and it was hoped that the expansion would now be underpinned by higher exports.

The assertion that China has been experiencing an unsustainable investment boom seems difficult to accept for a nation whose capital-to-labour ratio is still much lower than that of advanced countries. The capital stock per worker, for example, is still much lower (by a factor of five) in China than in the United States.

But what matters for investors and savers is not the capital-to-labour ratio, but the productivity of the capital, which can be seen from the capital-to-output ratio. Advanced economies typically have a capital-to-output ratio of between 2 and 2.5 (somewhat higher for the euro area with its stronger manufacturing sector). China has already exceeded this value. This year its capital/output ratio is above 3, as shown in Figure 1, below. And under current trends (as forecast by the IMF), the Chinese capital/output ratio would, in a few years, exceed even that of Japan. The current upheaval in financial markets is most likely due to the fact that these trends could not continue.

Figure 1. Capital-to-output ratios in major economies



Source: Author's own calculations based on IMF WEO data.

The looming end of over-investment in China is likely to constitute a major drag for the global economy for the medium-term future and could force central banks everywhere to keep their foot on the accelerator. The People's Bank of China is likely to join central banks elsewhere around the world with measures to stabilise the economy. But this is unlikely to be effective since the current downturn in China was not caused by a monetary squeeze, but rather by falling returns to capital as the result of a protracted investment boom.

Tabular Appendix

Table A1. Steady-state capital-to-output ratios for different growth rates and investment ratios (I/Y)

$I/Y \backslash$ <i>growth</i>	0.2	0.25	0.3	0.35	0.4	0.45
0.1			1.9	2.2	2.5	2.8
0.08		1.8	2.1	2.5	2.9	3.2
0.06	1.7	2.1	2.5	2.9	3.3	3.8
0.04	2.0	2.5	3.0	3.5	4.0	
0.02	2.5	3.1	3.8	4.4		

Source: Author's own calculations. For details see www.ceps.eu/publications/global-economy-2030-trends-and-strategies-europe-0