

China's Economic Transformation & Its Trend Growth

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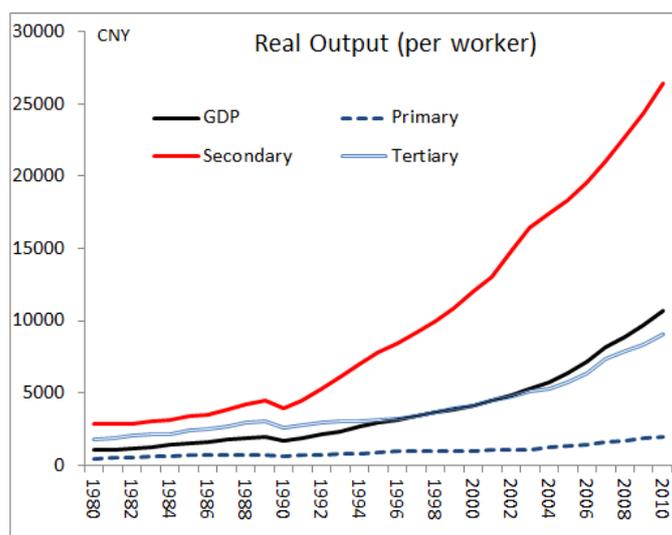
Bottom line: Productivity growth in the manufacturing sector in China is around 13 times higher than that in the agricultural sector. In the past years as the Chinese labour force migrated from the latter to the former to power the investment- and export-led economy, China has enjoyed extremely rapid labour productivity growth. However, if China is indeed at the inflection point of transforming its economy to one that is more reliant on consumption rather than investment and exports, it will also be necessary for China to rebalance away from manufacturing toward services. Since the service sector productivity is only a third of that in manufacturing, China's overall productivity, and therefore trend economic growth, should decelerate somewhat. Second, the service sector tends to be less capital-intensive. Already, there are signs that China is suffering from excess investment (now accounting for 48% of China's GDP growth). But the need for China to transit from manufacturing to services will further depress investment, and in turn, economic growth. Third, we show that time may be ripe for China to start making this sectoral transition, and for the government to take the lead in guiding this process. China's CPI has been higher than its PPI for some time, consistent with the Balassa-Samuelson Effect. However, for a year-and-a-half now, PPI has been in outright deflation while CPI has been positive. This is unusual and, to us, suggests that the excess capacity problem has become severe as firms' pricing power is significantly compromised, despite the generalized inflationary pressures. In sum, we believe China's impending economic deceleration is unavoidable, healthy, and timely. China should be able to take care of itself during this transition. It is the other countries that have risen with China in the past years that we are more worried about.

The logic behind a slower potential growth rate. We share the prevalent

view that Beijing is willing to sacrifice some short-term economic growth for structural reforms, and believe this is the right policy. In this note, we make the first point that, beyond the issue of whether China will see slower short-term economic growth, its long-term potential growth should in theory decline as a result of its structural transformation from being reliant on investment and exports to being driven by consumption.

It may be helpful to think about the long-term development in China being one of transiting between the three main sectors: (i) the primary sector is agriculture; (ii) the secondary sector is industry (manufacturing and construction); and (iii) the tertiary sector is services.

The chart below shows the labour productivity in the three sectors. Here, we stress that labour productivity is measured as real output per worker. Thus, this measure incorporates the impact of capital deepening, i.e., the size of the capital stock of the economy, as well as total factor productivity, i.e., the intrinsic productiveness of the average worker. Though all three sectors have seen improvements in the average labour productivity over the years, productivity in the secondary sector has grown most impressively in the past years. In fact, labour productivity in the manufacturing sector is more than 13 times that of the agricultural sector, and three times that in the services sector. As mentioned above, this is the result of both ‘matching machines with manual labour’, as well as workers and production processes becoming more efficient over time.



Source: SLJ Macro Partners, NBSC

From a macro perspective, as China’s labourers migrate from farms to factories, the measured overall labour productivity growth of China has accelerated and headline GDP growth has commensurately risen in recent years. This is also

why urbanization in China has been so instrumental in propelling China's growth over the years, as urbanization has permitted the manufacturing sector to reap the benefits of scale and mechanization. This 'industrial revolution' in China in the past two decades should be a process that is familiar to most investors.

However, in the next two decades, if China is to have a more balanced economy between I (investment) and NX (net exports) on the one hand, and C (consumption) on the other, it will also need to strike a better balance between manufacturing and services – which are required to satiate consumption demand. As labour 're-migrates' from the more productive manufacturing sector to the less productive services sector, *ceteris paribus*, there should be a *decline* in the overall labour productivity growth rate and China's headline economic growth rate.¹

As of 2011, in percent of China's nominal output, the agricultural sector accounted for about 10%, the manufacturing sector 46%, and the service sector about 44%. In percent of the labour force, the figures are 35%, 30%, and 35%. The table below shows comparable figures for the US, Japan, and Korea, based on output. Assuming that China's sectoral composition will converge toward those of the other countries, it does appear that the sectoral rebalancing China will need to undergo in the coming decades could be substantial.

	US	Japan	Korea	China
Agriculture	1.3	1.2	2.7	10.0
Industry	20.2	26.2	39.2	46.6
Services	78.6	72.7	58.1	43.4

World Bank WDI, values refer to 2011

A prospective decline in investment is also logical. Investment in China now accounts for 48% of its GDP each year. For comparison, investment is around 20% of GDP for most other countries. Consumption, on the other hand, accounts for about 35% of China's GDP – about half that in the US. We won't belabor the familiar point that China has likely over-invested in recent years, or replicate work already one by other researchers; we only mention a few academic studies on this subject supporting this view.

¹ Of course, the precise impact on China's overall labour productivity growth rate and in turn the overall economic growth rate will depend on how workers migrate between the three broad sectors, as well as how an improved allocation of labour and resources may affect China's TFP.

In a research paper done by Oxford University,² the researchers examined firm-level data covering 100,000 firms over the period 2000-07, and argued that *‘based on direct measures of overinvestment that we ... calculate, we find evidence of overinvestment for all types of firms, even in the most efficient and most profitable private sector. We find that the free cash flow hypothesis (the notion that excess cash holdings lead to over-investment) provides a good explanation for China’s overinvestment, especially for the private sector, while in the state sector, overinvestment is attributable to the poor screening and monitoring of enterprises by banks.’*

This conclusion was echoed in a recent IMF Working Paper.³ *‘There is little doubt that China’s extraordinary economic performance over the past three decades is in large part attributable to investment. Despite the prolonged period of heavy investment, China’s capital-to-output ratio is still in the range of those of other emerging market economies while its growth rate has far outpaced others over the last two decades. Nevertheless, the marginal contribution of an extra unit of investment to growth has been falling, necessitating ever larger increases in investment to generate an equal amount of growth... Measured against a norm estimated from a panel data on a large number of countries, China is over-investing. Moreover, the deviation has been accumulating over the last decade is larger and more persistent than the estimated over-investment in other Asian economies leading up to the Asian crisis. The latest divergence was understandably the result of the 2009 measures used to contain the spillover from the global financial crisis... Going forward, the challenge is to engineer a gradual reduction in investment to a path that would maximize social welfare... Based on cross-country regressions, lowering China’s investment by 10 percentage points of GDP over time would bring it to levels consistent with fundamentals.’*

Our modest contribution to this discussion of both the need and the likelihood of investment declining as a share of China’s GDP is that, as China strikes a better balance between the manufacturing and the services sectors (i.e., from the secondary to the tertiary sector), investment should fall simply because the service sector is less capital-intensive.⁴ Further, investment in the services sector should also be less energy- and resource-intensive.

² Sai Diong, Alessandra Guariglia, and John Knight, (2010) ‘Does China Overinvest? Evidence from a Panel of Chinese Firms,’ Department of Economics Discussion Paper Series.

³ Il Houg Lee, Murtaza Syed, and Liu Xueyan, (2012) ‘Is China Over-Investing and Does it Matter?’, IMF Working Paper WP/12/277.

⁴ Here is a relevant quote from another IMF Working Paper (‘China’s Path to Consumer-Based Growth: Reorienting Investment and Enhancing Efficiency’): *‘As China looks ahead, ensuring strong and stable*

Why the timing is ripe for such a sectoral transformation in China. There has been a proliferation of analyst reports highlighting the existence of an extended credit cycle in China, even though the latest burst of lending actually began as far back as 2009. Similarly, the festering problems related to the LGFVs, the ‘shadow banking’ activities, banks’ increasing reliance on the interbank market for liquidity (similar to the problem in Europe, incidentally), and the evolving global economy that may no longer accommodate the export-oriented growth model of China’s all have been issues for some time, but are just starting to get more investor attention lately. In our view, there are ample and compelling reasons for Beijing to lead through policy initiatives the needed structural changes.

In addition to the abovementioned list of reasons for China to embark on reforms, we point out that the recent rather extreme divergence in the CPI and PPI in China could be important, as it suggests that the over-capacity problem in China may finally be showing up through collapsing pricing power, even in an inflationary environment. Since February 2012, PPI has been in outright deflation, even though CPI has remained positive. The cumulative gap between PPI and CPI has reached a quite significant 6.5%. We believe that a part of this gap is due to the Balassa-Samuelson (B/S) Effect,⁵ and the rest may reflect a collapse in pricing power due to excess capacity in China.⁶

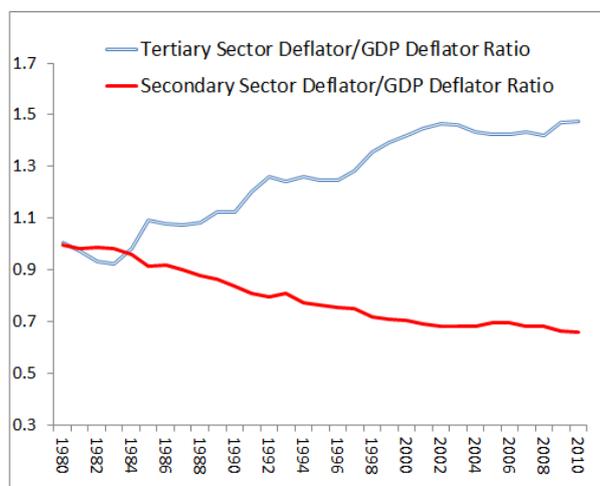
First, we briefly explain the B/S Effect. Essentially, the main thesis is that when the tradable sector has a much higher labour productivity growth rate, it drags up the wages of even the sectors that have lower productivity growth rate, due to mobility of labour. The implication is that the inflation rate of the tradables sector will be lower than that in the less productive sector, and that

consumption will be the key to sustained growth in the coming years. By boosting productivity and raising household incomes, investment will also have a role to play, albeit diminished from the outsized influence it has been enjoying over the last decade. In the past, China’s high levels of investment created capacity beyond its domestic ability to consume, but this could be absorbed outside its borders, by an exceptionally strong global economy. However, with the world economy unlikely to return to the same dizzying rates of growth and with China already a dominant global exporter, the capacity it creates will increasingly be for its domestic market... (O)verinvestment will have to be lowered and also reoriented by allowing consumption to guide what investments are made. In the past, investment was led by manufacturing, with one eye on the growing external market. Now, expanding agriculture and services – including investing in healthcare, education, and financial services – are likely to be more important instead of building more factories to supply steel, cement and appliances for foreign consumers.’

⁵ In 1964, Professors Bela Balassa and Paul Samuelson (a Nobel Laureate) independently argued that countries with higher productivity growth rates tended to also have faster real wage growth and real exchange rate appreciation.

⁶ PPI has declined also because of the fall in input/resources prices. However, the prices of resources have not been in decline for the whole duration of the last year-and-a-half, and therefore cannot be the main explanation for the PPI deflation.

leads to a real appreciation of the currency. In the case of China, this effect is very clear, as seen in the chart below.

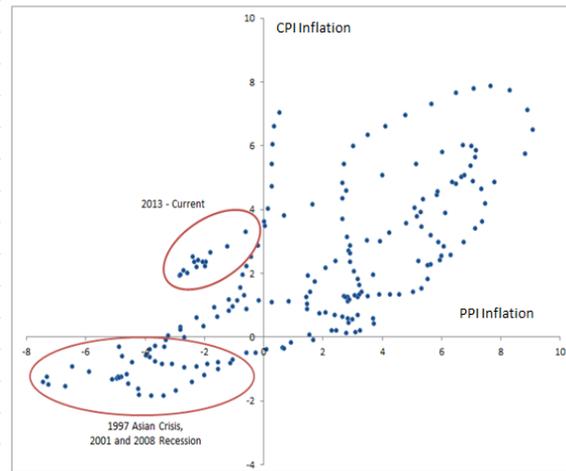
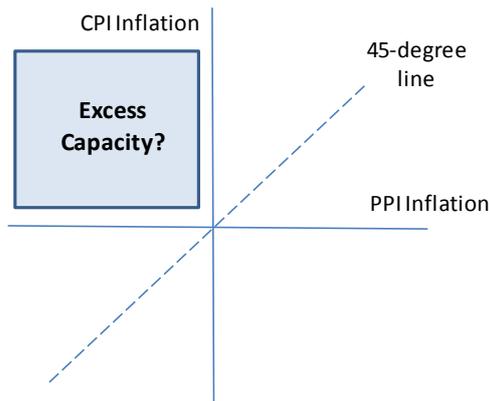


Source: SLJ Macro Partners, NBSC

As discussed previously, China's labour productivity growth has been extraordinarily strong, propelled by urbanization and the high labour productivity growth in the manufacturing sector. High productivity growth leads to higher real wages in the tradables sector. Because of migration, these upward pressures on wage growth are also felt in the non-tradables (and less productive) sector, pushing wages higher across the country. Overall CPI rises as a result, by *more* than the rise in PPI. In turn, this gap between CPI and PPI should lead to a real appreciation in the RMB.

The B/S effect explains a part of the gap between China's CPI and PPI, but does not explain how the PPI could be in outright deflation. We believe outright PPI deflation reflects the lack of pricing power for firms in China, resulting from excess capacity.

The stylized chart on the left below shows a 45-degree line in the CPI-PPI space. (1) If there were no B/S effect, over business cycles, CPI and PPI of a country should be highly positively correlated, i.e., move along this 45-degree line over time. Further, unless the economy in question falls into deep recession, neither CPI nor PPI should be negative. (2) If, however, we assume that there is the B/S effect, then the country in question should operate to the left of the 45-degree line, i.e., at each phase of the business cycle, CPI should be higher than PPI. (3) In the rare cases where the country in question experiences a severe excess capacity problem, with PPI in outright deflation even though CPI remains positive, it would be operating in the top-left quadrant in the chart.



Source: SLJ Macro Partners, Bloomberg, DataStream

The chart on the right is a scatter diagram of the actual data for China. (1) China's CPI-PPI have indeed been highly-correlated over time, and the only time when CPI-PPI entered the bottom-left quadrant was during the recessions/shocks of 1997, 2001, and 2008. (2) There is a bias in the CPI-PPI points to the left of the 45-degree line, consistent with the B/S Effect. (3) In the last few quarters, however, we have witnessed a highly-unusual development that China's CPI-PPI mix entered the top-left quadrant, suggesting that Chinese industries may be experiencing severer excess capacity problems.

In sum, we believe the combination of PPI deflation and CPI inflation suggests a perverse version of the B/S Effect, that the productivity of the tradables sector in China may be excessively high, artificially flattered by over-investment.

Bottom line. The prospective sectoral rotation in China is unavoidable, healthy, and timely. First, there will likely be labour re-migration from the manufacturing sector into the services sector. That process will likely reduce productivity, even if it enhances stability. Second, China's investment in the manufacturing sector is excessive. Further, an impending rotation into services should further restrain investment, because the services sector is not nearly as capital-intensive as the manufacturing or construction sector. Third, China has seen outright PPI deflation but CPI inflation for a year and-a-half-now. This suggests that excess capacity has become a severe problem. This sectoral transformation should lead to a *secular* slowdown in China's potential growth rate: this slowdown in China is not likely to be cyclical. The long-term impact on the countries that have capitalized on the rise of China and on commodity prices should be clear.