

# John L. Thornton China Center

## **China's Rebalancing: Lessons from East Asian Economic History**

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## Summary

China's senior leaders have spoken for some time about the need to rebalance the economy away from such heavy reliance on exports and investment, towards consumption. This paper examines the earlier development experiences of Japan, South Korea, and Taiwan in order to shed light on the questions of whether China really needs to rebalance towards consumption and how it might be accomplished. The earlier developers had high investment rates peaking around 35% of GDP. Starting at about the level of per capita GDP that China has now, they all experienced a tapering off of investment. In general they rebalanced towards external demand which was possible because they had trade deficits in their rapid growth phases, which could then shift to trade surpluses. China differs from the earlier developers in several key dimensions. In recent years it has had 15-20 percentage points of GDP less in household consumption than the others; its investment rate has been noticeably higher; and it developed trade surpluses at an earlier stage of development. The unique aspects of China's development likely stem from key institutional features of its model: the *hukou* system limiting rural-urban migration, the large role of state enterprises in the economy, financial repression, and the system for evaluating and rewarding local government officials. These factors together create a heavy bias in the Chinese system against household income and consumption, and in favor of investment and exports. Reform of these institutional features provides the best hope of smooth adjustment of China's economy away from investment towards consumption.

## Acknowledgements

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**“China’s economy must be driven more by domestic demand, especially consumer demand. We should unleash the potential of individual consumption.”**

*– Hu Jintao’s opening address to the 18<sup>th</sup> Party Congress, November 2012<sup>1</sup>*

## **1. Introduction**

China’s senior leaders have spoken for some time about the need to rebalance the economy away from such heavy reliance on exports and investment, towards consumption. In recent years China’s external surplus has fallen sharply as a share of GDP, indicating less reliance on external demand. However, the shortfall in demand has been made up almost completely by an increase in the investment rate to half of GDP. So far, there is little evidence of rebalancing towards consumption. In this paper I draw on the earlier experiences of China’s neighbors – Japan, South Korea, and Taiwan – all of whom had periods of rapid accumulation and growth, in order to shed light on the questions of whether China really needs to rebalance its economy towards consumption and, if so, how it might be accomplished.

The paper is organized as follows: in the next section I provide a simple framework for thinking about rebalancing. We can use the new Penn World Tables version 8 to compare China’s rebalancing challenge with the earlier experiences of Japan, South Korea, and Taiwan. According to the Penn World Tables data, China’s real PPP GDP per capita in 2011 was similar to Japan’s in 1970, Taiwan’s in 1982, and South Korea’s in 1987. The tables also include data on the division of GDP into investment, household consumption, government consumption, and net exports. Rebalancing involves shifts in the composition of GDP among these categories.

Section 3 draws several stylized facts from the experience of the East Asian neighbors. It is remarkable how similar their experiences were, in many ways. First, they all showed a very high return to capital at an early stage of development, which gradually diminished as capital was accumulated. Second, and probably surprising to many readers, they all relied primarily on household consumption for demand throughout their development. South Korea and Taiwan had household consumption of 60-70% of GDP at the early stage of development. Third, investment rates were high compared to the global average, but generally peaked at around 35% of GDP at right around the stage of development where China is now. After that investment rates dropped, on average about ten percentage points of GDP. Fourth, these economies tended to shift from external deficit towards external surplus in this phase in which investment rates were declining. That is, China’s neighbors to a large extent rebalanced from investment towards external demand.

Having established these stylized facts, Section 4 then shows that China’s experience has some important differences with the neighbors. First, household consumption in recent years has been 15-20 percentage points of GDP lower than in the neighbors at comparable levels of development. Second, the largest share of that shortfall in demand can be accounted for by significantly higher investment rates than we have seen before. China’s investment rate in recent years has been more than eight percentage points of GDP higher than in the neighbors. Third, China developed external surpluses at an

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<sup>1</sup> Quoted in Hong Kong AFP in English, Nov. 8, 2012.

earlier stage of development than the others, so that the trade surplus has averaged about six percentage points of GDP more. Fourth, China in recent years shows sharply diminishing returns to capital, at an earlier stage than experienced in the other East Asian economies.

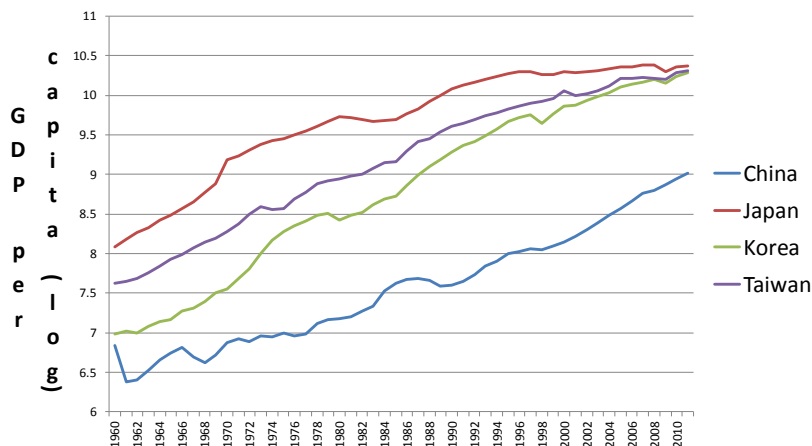
These factors together paint a challenging picture for China. Diminishing returns mean that market-oriented investment is likely to slow down, as already seems to be the case. State-driven investment at too high a level is likely to lead ultimately to fiscal and financial problems; hence the leadership's sensible desire to rebalance away from investment. Unfortunately, the neighbors do not provide much guidance here because they rebalanced towards external demand. China, however, has been relying heavily on external demand over the past decade and it would be difficult to increase that reliance in a world of slow growth in China's major trading partners, the U.S. and the E.U. The good news is that China has tremendous scope to increase household consumption, which is far below the levels seen elsewhere in East Asia at this stage of development.

Section 5 examines institutional features of the Chinese system that can account for its unique model: the *hukou* registration system, the large role of state enterprises in the economy, financial repression, and the system for evaluating and rewarding local government officials. These factors together create a heavy bias in the Chinese system against household income and consumption, and in favor of investment and exports. The concluding section argues that reform of these institutional features provides the best hope of smooth adjustment of China's economy away from investment and towards consumption.

## ***2. A simple framework for rebalancing***

In order to compare China's rebalancing experience with the experiences of its neighbors at a similar stage of development we first need a metric to compare level of development. I propose to use real PPP GDP per person from the recently released Penn World Tables version 8 (Feenstra et al. 2013). This measure captures the total value of goods and services produced per person in an economy, evaluated at the same prices. Figure 1 shows the evolution of this measure of GDP per capita, in logs, from 1960 until 2011. In general, the period 1960 until 1980 was one in which Japan, South Korea, and Taiwan were growing rapidly, while China was caught up in political and social upheaval. It is easy to see on the log scale that China was falling further and further behind. Since China initiated its reform and opening up in 1978 it has grown very rapidly; growth rates in the others naturally tapered off as they reached high income. Hence China has been catching up over the past 30 years. The Penn Tables put China's 2011 PPP GDP per person at \$8,189, around 9 on the log scale. Japan reached that level of development in 1970; Taiwan in 1982; and South Korea in 1987. One thing that is immediately clear from Figure 1 is that China still has much potential catch-up growth ahead.

Figure 1. GDP per capita in China and East Asian neighbors



Rebalancing refers to how GDP is used on the expenditure side. GDP ( $Y$ ) can be expressed as

$$Y = C + I + G + (X - M)$$

Where  $C$  is household consumption,  $I$  is gross investment,  $G$  is government consumption, and  $(X-M)$  is net exports. The Penn tables provide a breakdown of GDP into these categories. It is also useful to think about the production side of GDP. A common assumption is that GDP is produced by capital and labor through a Cobb-Douglas production function

$$Y = \beta K^\alpha L^{1-\alpha}$$

Where  $K$  is the capital stock and  $L$  is labor input. The parameter beta captures the overall technology level or Total Factor Productivity. If factor markets are efficient then alpha is capital's share of GDP. Bernanke and Gurkaynak (2002) show that in a large sample of countries the average labor share is about two-thirds and that it does not vary with the level of development. We will see later that China has much lower (higher) labor (capital) share than the world average, which means either that it has a different production function or that its factor markets are not efficient.

The Cobb-Douglas production function can be rearranged in various useful ways. First, dividing by  $L$

$$\left(\frac{Y}{L}\right) = \beta \left(\frac{K}{L}\right)^\alpha$$

Output per worker will rise as capital is accumulated, but with diminishing returns. Diminishing returns can be offset by increases in beta, that is, TFP. It is also useful to express the capital-output ratio as

$$\left(\frac{K}{Y}\right) = \beta^{-1} \left(\frac{K}{L}\right)^{(1-\alpha)}$$

Regardless of production function, the capital-output ratio has an intuitive interpretation. It shows how much capital is needed to produce a unit of GDP. In the case of the Cobb-Douglas function, the capital-output ratio will rise as capital per worker is accumulated. Also, it is pushed down by technological progress. A final useful feature of the Cobb-Douglas function is that the marginal product of capital, which is hard to measure directly, is inversely proportional to the capital-output ratio

$$MPK = \alpha / \left(\frac{K}{Y}\right)$$

The Penn tables provide estimates of the capital stock for each economy.

**3. Stylized facts from East Asian neighbors**

The development experiences of Japan, South Korea, and Taiwan have interesting common features. In this section I examine how a number of features of these economies changed over time as they developed, focusing on capital-output ratios, consumption and investment shares, GDP growth rates, and external balances.

Figure 2. Capital-output ratios in Japan, South Korea, and Taiwan

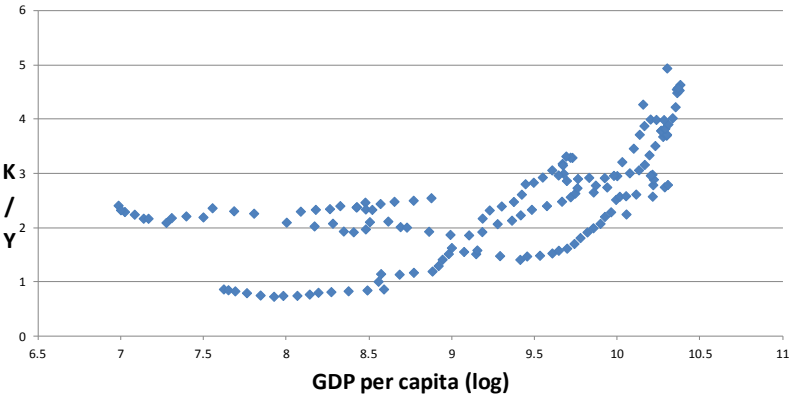


Figure 2 shows the evolution of capital-output ratios as per capita GDP rose in these three economies. All three started out with relatively low capital-output ratios; for Taiwan the ratio was close to 1.0 in the early 1960s at the beginning of economic reform. A low capital-output ratio is an indicator of high productivity of capital. A ratio of 1.0 means that with \$1,000 of capital, an economy produces \$1,000 of GDP. This high productivity arises from scarcity of capital (very low capital per person) as well as from efficiency gains associated with reform and opening up of these economies. In the special case of a Cobb-Douglas production function with a capital share of 1/3 (about the global average), a capital-output ratio of 1.0 corresponds to a marginal product of capital of 0.33. As accumulation proceeds, the marginal return to capital declines, and the capital-output ratio rises. Note that the East Asian economies all avoided large increases in the capital-output ratio until they reached the stage of development at which China is now. The flat sections of these plots can be interpreted as periods in which diminishing returns to capital are fully offset by TFP gains. Eventually, in all of these economies, diminishing returns dominate and the capital-output ratio rises. The observations to the far right in the figure are Japan in recent years, with a capital-output ratio around 5; that is, it takes \$5,000 of capital to produce \$1,000 of GDP. In the case of a Cobb-Douglas production function, the marginal product of capital has fallen to 0.067. So, these three Asian economies all follow the path of diminishing returns to capital as the capital stock is built up.

Figure 3. Household consumption was the main source of demand

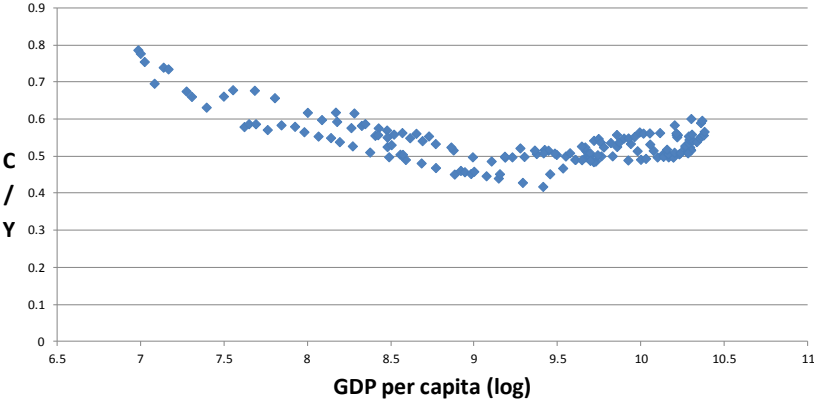
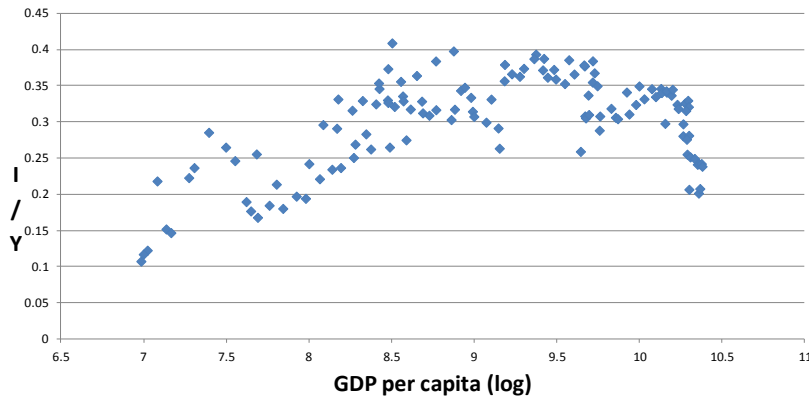


Figure 4. Investment rates rose and then tapered off



In all three of these economies household consumption has consistently been the main source of demand (Figure 3). This may seem surprising given their reputations as economies with high investment and external surpluses. In the early stages of development, household consumption was 60-70% of GDP for all three economies. By the time they reached China’s current level of development, the consumption share had declined to around 50% of GDP. In Taiwan’s case household consumption dropped to 42% in 1987. As discussed below, this was a period in which investment remained high but Taiwan developed a large trade surplus. Between 1987 and 1994 Taiwan had a mini-rebalancing in which consumption rose back to 52% of GDP while the external surplus dropped.<sup>2</sup> After that consumption rates for all three remained in the 50-60% of GDP range.

Investment shares (Figure 4) show more fluctuation than consumption shares as they are more severely affected by business cycles. For the three economies there was a tendency for the investment rate to rise initially. We have established that the return to capital was very high at the beginning of their development and tended to diminish after a certain point. The best interpretation of the rising investment share is that South Korea and Taiwan, in particular, were very poor societies with low savings at the beginning of reform. Furthermore, they had poor access to international capital markets, which themselves were under-developed in the 1960s and 1970s. As GDP per capita rose in these economies, savings and hence investment increased.

On average, investment rates peaked at 35% of GDP; the peak occurred at around the same level of development as China has today. A few observations can be seen around 40% of GDP; most of these are

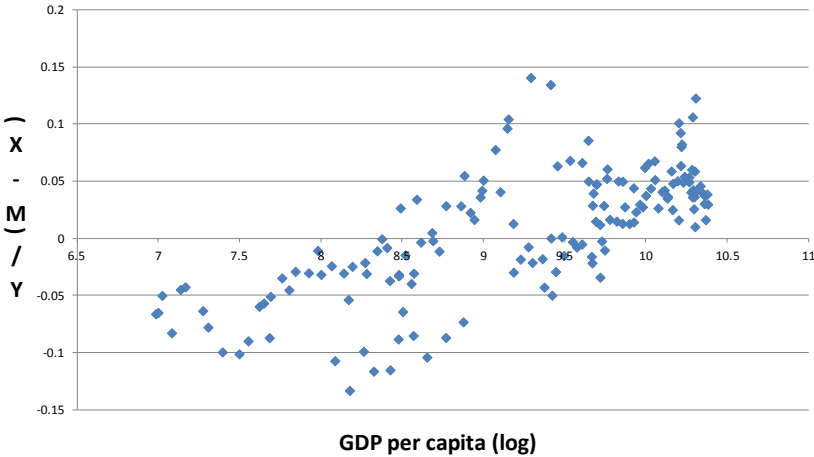
<sup>2</sup> Lardy and Borst (2013) analyze this rebalancing period for Taiwan and argue that it has some significant lessons for China, but also important differences because the investment rate was much lower than China’s and did not decline during the period.



South Korea just before the East Asian financial crisis, after which that country’s investment rate dropped sharply. Starting at about the development level at which China is today, there is a clear tendency for investment rates to drop. This makes sense given the logic of diminishing marginal returns. All three economies showed declines in investment rate on the order of 10 percentage points of GDP. In that sense these economies went through a rebalancing away from investment and potentially provide some lessons for China.

As investment rates fell, what made up for the lost demand? In general, the answer was the external sector. Figure 5 shows the trade balances relative to GDP of Japan, South Korea, and Taiwan from national accounts data.<sup>3</sup> This figure is a bit messy because the trade balance shows more volatility than the other components of GDP, and this is particularly true for Taiwan, the smallest of the economies. The general trend was for these economies to shift from trade deficits at an early stage of development (borrowing from abroad to augment investment) to trade surpluses later on (repaying debt and accumulating net foreign assets). This was logical given the high rates of return in these economies at an early stage of development and the diminished marginal returns later on. The general trend is muted by Taiwan’s rollercoaster experience. Taiwan developed a large trade surplus that reached above 10% of GDP in the mid-1980s, then fell back again towards balance during the East Asian financial crisis. Subsequently its surplus has risen back up above 10% of GDP.

Figure 5. Net exports shifted from deficit to surplus

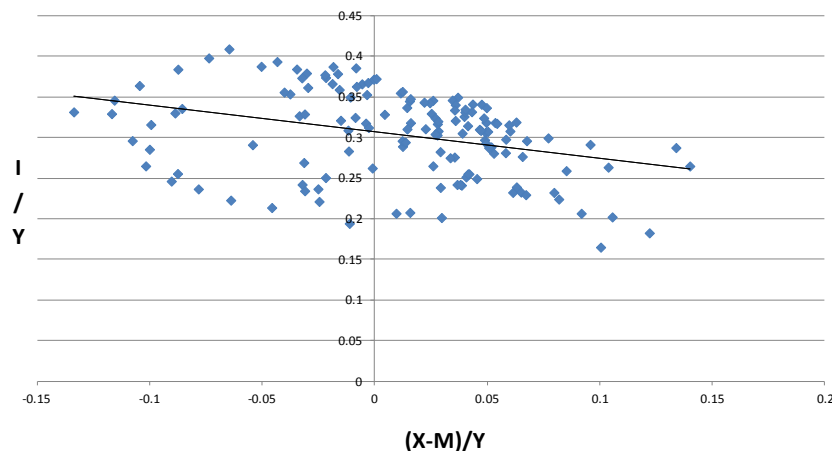


<sup>3</sup> The national accounts figures measure the value added in imports and exports and hence will be somewhat different from the commonly cited trade figures, which are gross values.

Some additional insight is gained by looking at the correlation between investment rates and trade balances in these three economies (Figure 6).<sup>4</sup> There is a clear negative relationship between the two, which is consistent with the notion that over time there was rebalancing away from investment towards external demand.

The final component of GDP that needs to be examined is government consumption (Figure 7). In all three economies there has been a clear tendency for government consumption to decline as a share of GDP until well past the level of per capita GDP at which China is now. That may seem surprising given the well-known tendency for the footprint of the government to increase with per capita income. But in developed economies most of the government's activity is transfer payments. Government consumption is comprised of the services that government provides such as education, public health, security, and defense. In Japan and Korea, in particular, government consumption was always low, and tended to decline over time. Taiwan at an early stage of development had a much larger government but by 1993 its government share had dropped to 15% of GDP, similar to the others. The observations on the far right of the figure are Japan in recent years, where there has been a large increase in government consumption. The main point for this analysis is that, except for that very recent Japanese experience, rebalancing away from investment did not go into government services.

Figure 6. Net exports and investment rate were negatively correlated



<sup>4</sup> South Korea and Taiwan in the early 1960s had large current account deficits and low investment rates. In this figure the data for those two economies start in 1967. The figure shows that since that time there has been a negative correlation between trade balances and investment rates for all three economies.

Figure 7. Government consumption trended down

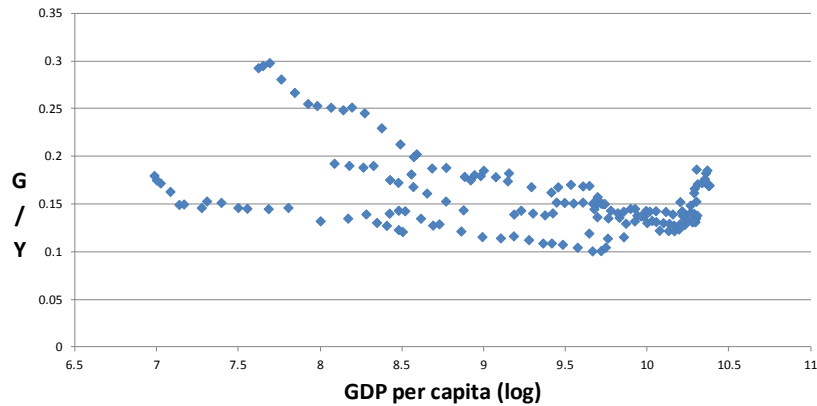
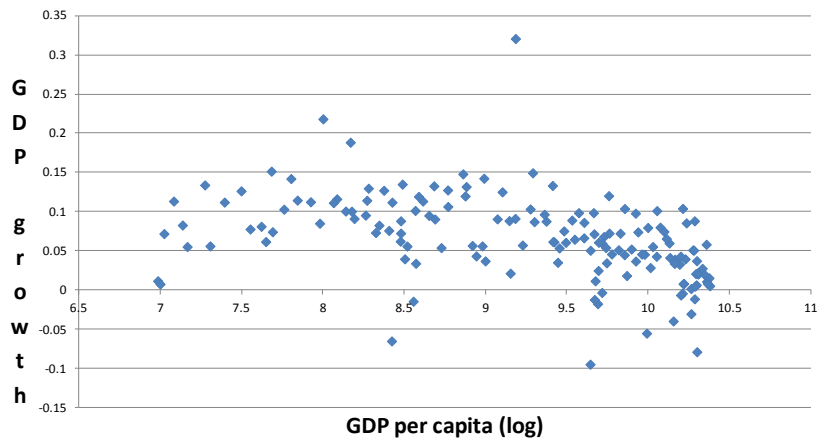


Figure 8. GDP growth tapered off as development proceeded



A final point to note about the neighbors is that their GDP growth rates averaged close to 10% in the early stages of accumulation, similar to China's performance (Figure 8). Beginning at about the stage of development where China is now, there was a tendency for growth rates to decline. There are three factors at work here. First, there are diminishing returns to capital so that \$1,000 of investment does not have as much growth impact as it did previously. Second, in a market economy, agents

respond to that by investing less (the empirical tendency for the investment rate to fall). Third, these economies benefited from opportunities to borrow more advanced technology from developed economies. As development proceeds, those catch-up opportunities are inevitably reduced.

In summary, there are a number of important stylized facts from the historical experiences of Japan, South Korea, and Taiwan. First, these economies had high productivity of capital at an early stage of development but the marginal productivity of capital naturally declined with accumulation. Second, household consumption was always the main source of demand, representing 50-70% of GDP. Third, these were high investment economies with the investment rate peaking around 35% of GDP and then gradually declining. Fourth, as investment declined, there was little tendency for either household or government consumption to pick up the slack in demand. Fifth, the rebalancing in these economies was towards external demand: they tended to have trade deficits during the rapid accumulation period, and then shifted to surpluses as investment slowed.

**4. China's unique growth model**

There are some similarities between China's development and the earlier experiences of its neighbors, but in this section I emphasize the differences and the fact that China has a unique growth model. The Penn data include the tumultuous period from 1960 until the beginning of reform in 1978. I include these in the interest of completeness, but I am skeptical about the quality of data from that period and note that they are not important to my analysis.

**Figure 9. China's capital-output ratio has been high and rising**

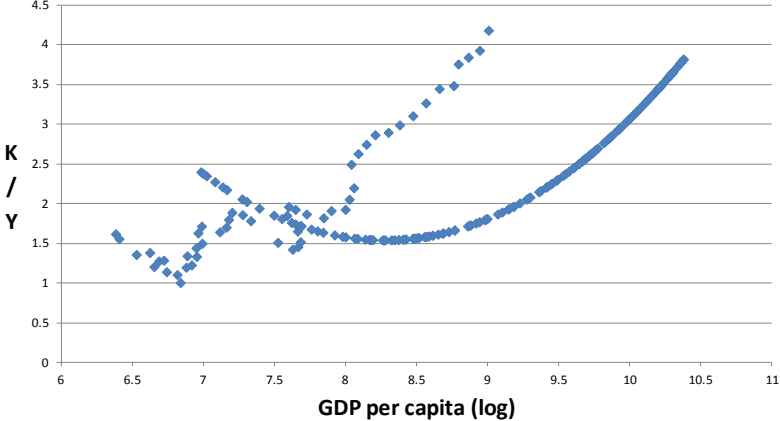
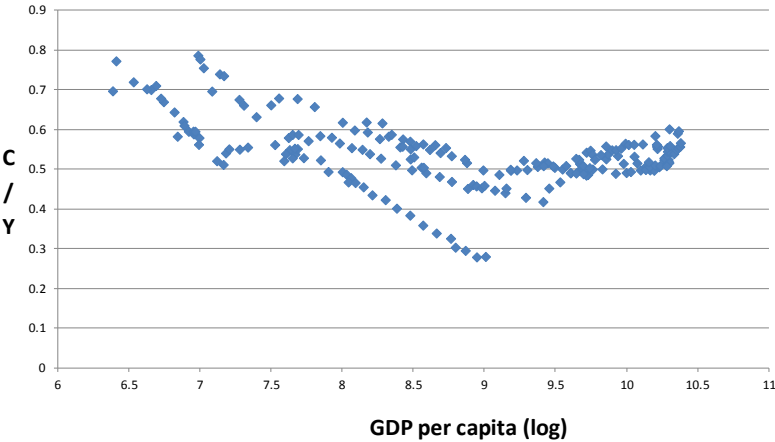


Figure 9 shows the capital-output ratio for China, plotted against the log of GDP per person. It also includes the trend line for the data from Japan, South Korea, and Taiwan as a reference. In 1978,

the log of China’s GDP per person was 7.1. As noted, I do not take the data before that point too seriously, but it is interesting that shortly after the beginning of reform there is a discrete drop in the capital-output ratio. At a given level of capital per person, a higher ratio of capital to output reflects lower efficiency in production. So, a discrete drop would be consistent with an immediate jump in efficiency from the early reforms. For the first fifteen years or so after the beginning of reform China’s capital-output ratio was similar to the average level of the neighbors. It was also relatively flat: this indicates a period of high and stable returns to capital in which total factor productivity growth is offsetting diminishing marginal returns. However, starting around 1995 the capital-output ratio starts to rise steeply, at a much earlier stage of development than observed in the earlier cases. Over this period China’s TFP growth has not been as strong as in the earlier developers. The rise in the capital-output ratio from 2 to 4 corresponds to cutting the marginal productivity of capital in half. Bai (2013) similarly finds that the real rate of return to capital declined by more than half between the mid-1990s and today.

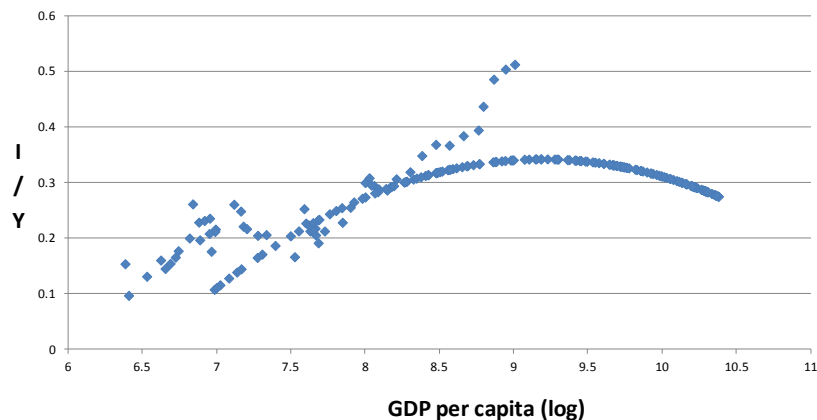
Figure 10. China’s household consumption is very low



The biggest difference between China and the neighbors is that household consumption is so extraordinarily low. Figure 10 adds the Chinese data to the earlier figure for Japan, South Korea, and Taiwan. At the beginning of reform the household consumption share was in the range of 50-60% of GDP, lower than in the others at similar stages of development but not so strikingly different. Starting around 1995, however, there was a tendency for the consumption share to drop sharply so that by 2011 it was around 30% of GDP, nearly 20 percentage points less than what was experienced by the neighbors at comparable levels of development. China’s consumption share in the Penn Tables is lower than the 35.7% of GDP reported by NBS for 2011 because the Penn exercise recalculates GDP using PPP relative prices. Still, the NBS data show the same downward trend to consumption levels well below the earlier experiences. Also, some commentators have suggested

that China's household consumption is under-estimated. However, it is very unlikely that data errors would explain 15-20 percentage points of GDP. Furthermore, there are institutional factors that explain the low household consumption share (discussed in the next section) as well as other data sources that are consistent with this picture.

**Figure 11. China's investment rate has risen to unprecedented levels**



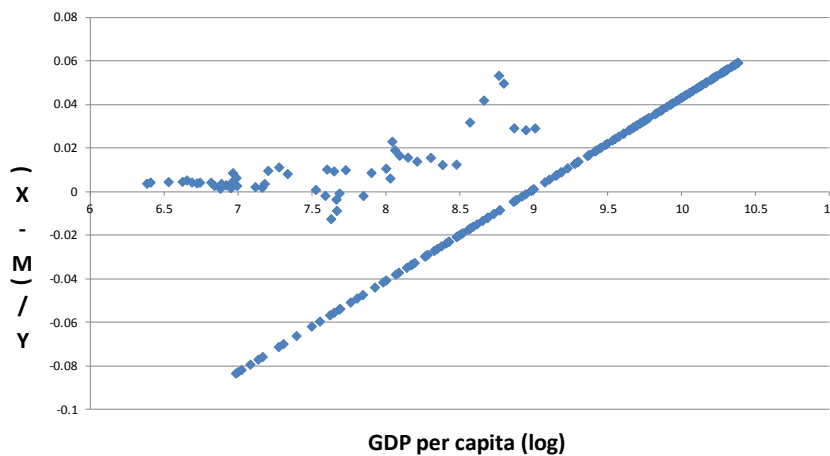
China's low consumption share is matched by an unusually large investment share. Figure 11 shows the average experience of the three neighbors, along with China's investment share, all plotted against log GDP per person. In the first fifteen years after the beginning of reform, China's investment rate was similar to the others' experiences. Starting around 1995, however, the investment rate starts an impressive climb that takes it above 50% of GDP in recent years. Given these recent extraordinary rates of investment, the capital stock as measured in the Penn tables doubled in the six years between 2005 and 2011. The macro evidence from the sharply rising capital-output ratio suggests that the marginal return to capital is rapidly falling, which in a market economy would tend to lead to less investment.

The micro evidence also suggests danger of over-investment. It is useful to think of the big chunks of investment as going to manufacturing capacity, infrastructure, and housing. In manufacturing there is concern about over-capacity such that NDRC recently announced a program to reduce capacity in certain, mostly capital-intensive sectors. Much of the infrastructure investment is backed by borrowing of local government (through their Local Government Investment Vehicles). The debt of local government has grown at an unsustainable rate for several years. The IMF, in its 2013 Article IV report, estimates that the consolidated fiscal deficit, including this borrowing by local governments, is 10% of GDP. China's overall public debt is not yet at a dangerous level, but if the current level of local government investment continues, China before

long would be heading into dangerous territory. Finally, in the case of housing, it is difficult to know how serious any over-capacity problem is because there are no good data on the total number of empty units. But it is worrying that the share of GDP devoted to real estate investment has risen from 4% in 1998 to 12.5% in 2012 (IMF 2013). Lardy and Borst (2013) estimate that the sustainable rate of real estate investment for China is in the range of 5-8% of GDP. Put it all together, and I am skeptical that China can double the capital stock again in the next six years and find productive uses and hence good returns from that investment. This suggests that, like the earlier developers, China needs to begin to rebalance away from such a reliance on investment. In China's case the challenge is greater because it starts from a higher level of investment.

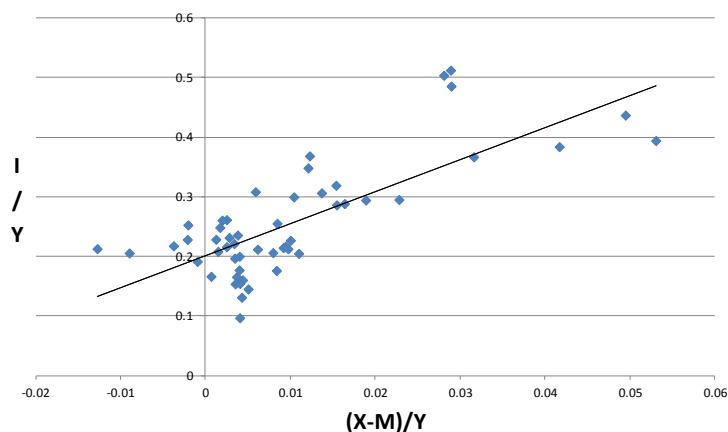
As noted, the earlier developers tended to rebalance away from investment towards external demand. That is going to be a difficult path for China to follow because it developed trade surpluses at an earlier stage of development than the others (Figure 12). Over the past decade, China's trade balance has been about six percentage points higher than its neighbors, at the same level of development. In the ten years before Japan (1970), Taiwan (1982), and South Korea (1987) reached China's current level of development, they averaged trade deficits in the national accounts of 3.5% of GDP. For China's most recent ten years it averaged surpluses of 3%. China's experience so far has more similarity with Taiwan's, which developed a surplus at an early stage, then saw it decline towards zero, and rebound to a high level around 10% of GDP in recent years. It will be difficult for China to replicate that experience because China is so much bigger than Taiwan and because the global situation has changed. China's two big markets, the U.S. and the E.U., are trying to increase savings and reduce trade deficits. It is difficult to see how in this environment the world could easily absorb Chinese surpluses in the 10% of GDP range. Given that China still has a fairly large trade surplus, it is unlikely that additional demand can come from increasing that surplus.

**Figure 12. China developed trade surpluses at an earlier stage of development**



In the discussion of Japan, South Korea, and Taiwan in the previous section I noted that there has been a negative correlation between investment rates and trade balances. In the case of China, on the other hand, there has been a strong positive correlation (Figure 13). In the past 20 years there has been adjustment in China away from household consumption towards both investment and exports. Rapid growth of exports stimulated investment, which in turn provided the capacity to produce more exports. This has been an effective growth model for China, but the problem now is that it has run out of steam. It is not plausible for exports to grow at the rates of the past decades now that China is the largest exporting nation; and the high investment rates and diminishing returns of recent years raise risks of over-capacity throughout the economy. The option that is left is to rebalance away from both investment and exports towards consumption.

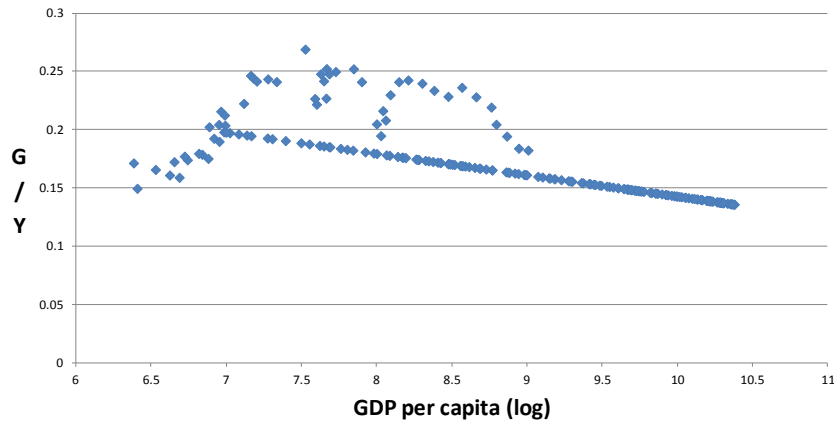
**Figure 13. China's investment rate is positively correlated with trade surplus**



The final component of demand in my analysis, government consumption, is already relatively high in China compared to its neighbors (Figure 14). Japan and South Korea, in particular, had government consumption below 15% of GDP when they were at China's current stage of development. Taiwan's share was similar to China's, around 18%. In Taiwan's case, the share then dropped steadily over the following years. Those other experiences suggest that a rising government share is not likely to be a main source of new demand for China. It is household consumption that has the most potential to provide additional demand.

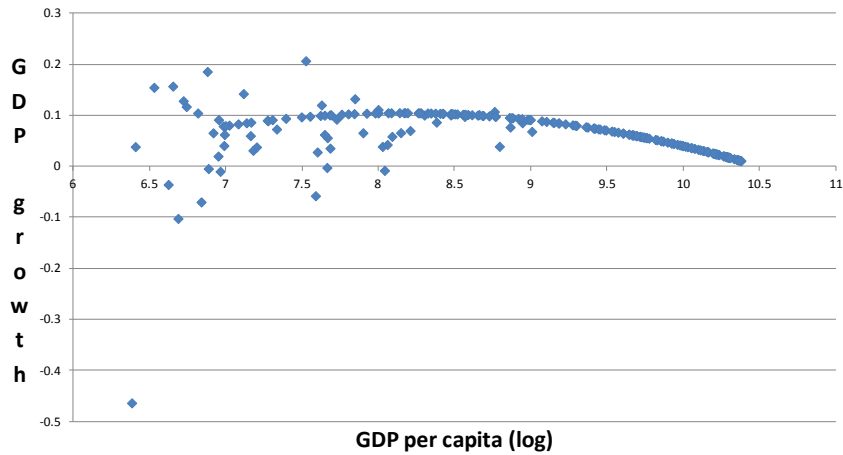


Figure 14. China's government consumption is now at an average level



Finally, Figure 15 looks at China's GDP growth rate. Pre-reform growth rates were all over the place. Since reform started, there have been cycles around an average growth rate similar to the earlier experiences of Japan, South Korea, and Taiwan. The recent data points for China are almost exactly on the trend line for the earlier developers. Starting around this stage of development, growth in those economies then tapered off. For China, smooth adjustment would involve gradual decline of the investment rate and a gradual tapering of the growth rate. In order for that to happen, household consumption will have to increase its role in demand.

Figure 15. China's growth has started to moderate



In summary, the most striking aspect of China's growth model is the low share of household consumption in GDP, around 30% in recent years. Second, the low consumption share is matched by a high investment share; China's investment rate in recent years has been nearly 10 percentage points above the rates for Japan, South Korea, and Taiwan at similar stages of development. Third, since China grew at similar rates to those earlier developers, we can conclude that the use of capital has generally been less efficient in China (takes more capital per person to produce the same GDP per person). Fourth, China developed trade surpluses at an earlier stage of development while it still had very high investment; this makes difficult the kind of rebalancing seen elsewhere in Asia, with investment declining and that lost demand replaced by a rising external surplus. China's adjustment away from over-reliance on investment and exports will require increases in the household consumption share of GDP. In the next section I discuss four institutional features of the Chinese model that account for the different results in China compared to its neighbors. A logical adjustment path going forward is to reform these institutional features.

### 5. *Institutional underpinnings of China's growth model*

There are four key institutional features of China's post-reform growth model that can account for the differences in China's development experience, compared to neighbors that have many cultural and geographic similarities: (1) the *hukou* registration system that limits rural-urban migration; (2) the large role of state enterprises in the economy; (3) the repressed financial system; and (4) the reward system for local officials within the ruling Communist Party. These are all areas in which there is active, current debate about reform.

Under the *hukou* system, each person is registered to a location, usually the place of their birth, and it is very difficult to formally change the registration. If a child is born in a city to a woman with rural *hukou*, the child retains the mother's rural registration. The public services to which one is entitled depend on *hukou* registration. It can affect matters such as the ability to buy a house or register a car. Currently, 38% of the population has urban *hukou* while in fact 52% of the population actually lived in cities in 2012. That discrepancy shows that people in fact can move around, and in particular migrate from rural areas to urban areas. Nevertheless, the *hukou* system affects the extent and the manner of migration. Under this system it is difficult for a rural *family* to migrate; rather, what typically happens is that one or both parents migrate to cities for work while children, literally known as "left-behind children," remain in the rural village with grandparents. This pattern arises not only because of the *hukou* system, but also because of land tenure issues. A family that divides in the way described can maintain its rights over agricultural land, even if the grandparents have to rent out the land for actual farming. If the whole family moved to the city, then rights over the land would be lost without compensation.

The impact of this unique registration system was to allow able-bodied men and women to move to cities as labor, but not as residents or consumers. Many of the migrant men work construction and live on the construction sites. Young women were more likely to work in labor-intensive factories (shoes, garments, and electronics) or in hotels and restaurants. In either case they were likely to live in dormitories. Migrant workers have tended to earn less than registered workers, even with the same education, which makes sense given that they have less freedom and hence bargaining power (Meng and Zhang 2001, Lu and Song 2006). In many cities migrants now make up more than half the labor force, so this system provided a low-cost supply of labor that fueled construction and the export-oriented industries. While the system allowed some migration, it is clear that, under the *hukou* system, less migration occurred than would have otherwise. Several pieces of evidence support this conclusion. Even counting migrants, China's urbanization rate is low compared to its Asian neighbors at similar levels of development. South Korea in 1987, for example, already was 68% urban. Taiwan had an urbanization rate of 66% in 1980 and 74% in 1989 (Tsai 1996). Japan's urban population was 76% of the total in 1980. Aside from the small urban population, China also has one of the largest urban-rural income gaps in the world, at higher than 3:1. The *hukou* system has prevented many rural workers from searching out higher income opportunities in cities.

It was emphasized in the previous section that China has very low household consumption as a share of GDP. That could reflect either an unusually high household saving rate and/or unusually low household income as a share of GDP. In fact, estimates of household saving rates for China are modestly higher than rates in the other East Asian economies during their rapid growth periods, but it is also the case that the household income share in GDP is very low in China.<sup>5</sup> In all economies,

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<sup>5</sup> Wang and Wen (2010) compare household saving rates in China (1998-2006) with Japan (1968-1976) and South Korea (1983-1991) and find that there is only a 2-3 percentage point difference. Since 2006, however, China's rate has continued to rise. Still, Chamon, Liu, and Prasad (2010) find that household saving as a share of GDP in China

labor income is the main source of household income. Bernanke and Gurkaynak (2002) provide estimates of labor's share for the period 1980-1995 for a large number of countries (not including China, unfortunately). They find a global average of 66% and no trend for the share to vary with per capita income. The Penn tables provide estimates of labor's share. Their figure for China in 2011 is a labor share of only 42% of GDP. This is well below labor's share in the neighbors at the same level of development: Japan, 60% in 1970, Taiwan 55% in 1982, and South Korea 55% in 1987. Dollar and Jones (2013) develop a formal model of the Chinese macroeconomy in which migrant workers are paid below their marginal products. They show that this kind of distorted labor market can lead to a low labor share of GDP, which in turn fuels a low-consumption, high-investment model of growth.

A second key institutional feature of China's economy is the still large state sector. At the beginning of reform, virtually all enterprises were owned and run by the state. An important part of reform has been to open up space for private investment, both foreign and domestic, and to privatize smaller, non-strategic firms. According to the National Bureau of Statistics, "state-owned and controlled enterprises" accounted for 41% of fixed asset investment during 2004 to 2012, indicating that China has a much larger state enterprise sector than the neighbors had as they were developing.

State ownership is strong in some heavy industrial sectors such as oil and minerals, but is particularly concentrated in the modern services (eg., finance, media, telecom, airlines, and logistics). In most of these sectors, there are several large state-owned entities competing with each other (for example, four big state-owned commercial banks). This provides some competition; however, in Chinese these are often referred to as "monopoly sectors." The modern service sectors are all effectively closed to international competition; and domestic private competition is limited by a combination of restrictive regulation and the enormous size advantage of the incumbents.

This state-owned sector earns a large amount of profit (or rent). Virtually none of this is paid into the government budget to fund public services. The IMF reports that in 2011 only 0.4% of central SOE profits were paid as dividends that went into the central budget. Rather than paying dividends to their owner, SOEs reinvest all their profits, giving the system a bias towards investment. An important reason why household income is low in China is that most of the income of capital never finds its way to households.

A third institutional feature is the repressed financial system. Important interest rates are controlled: there has been liberalization of lending interest rates, but the key deposit interest rate is still managed by the central bank. It has been maintained close to the inflation rate over the last decade, so that the real return on deposits is about zero. The stock and bond markets are underdeveloped as a result of deliberate regulation. Each corporate stock or bond issuance needs to be approved by multiple agencies, with the result that these markets are small relative to the economy. Finally, outward flows of capital are also tightly controlled. The result is that households have few

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has been fairly stable, at about 20%. What is striking about China is that enterprise plus government saving have risen to more than 30% of GDP.

channels in which they can put their savings. In practice households have deposited large amounts into the banks, receiving that zero real return, and those funds in turn have been lent at low interest rates, often to state-owned enterprises. The other major channel through which households can deploy their savings is housing investment. The repressed financial system is essentially a tax on households and a subsidy to investment. Lardy (2012) estimates that liberalizing deposit interest rates could raise the share of consumption in GDP by as much as five percentage points.

A repressed financial system was also a feature of Japan, South Korea, and Taiwan when they were at the stage of development that China is at now.<sup>6</sup> So, that by itself is not necessarily a difference between the models. However, it is plausible that the repressed financial system has a greater effect on investment in China because of the way it interacts with the other unique institutional aspects of the economy. In market economies, the repressed financial system levers up the profits of companies, which are owned by households (either directly in the case of small and medium firms or through stock ownership in the case of the big firms). Households in the other Asian economies certainly consumed some of the levered up profits. In China, SOEs have tended to invest all of their profits.

A final important aspect of the Chinese system is the reward structure for local government officials. Starting under Deng Xiaoping's leadership, local government was given more discretion and flexibility to carry out the five-year plans that continued to be the basis of the government's macroeconomic planning. Local officials generally had a five-year term, at the end of which they were evaluated almost exclusively on the basis of the investment and growth achieved during the period. The most successful local officials would be promoted up the line. Local government is not permitted to borrow directly or run up official debts. However, local governments have set up thousands of Local Government Investment Vehicles (LGIV). These are a special class of state enterprise that focuses on infrastructure development.

A local government trying to achieve or maintain a high growth rate would naturally want to keep investment at a high level. Its LGIV could borrow from banks at low interest rates to build roads, metro, rail, and power generation and distribution. Migrant workers could be brought in to provide low-cost labor. The construction activity itself is part of GDP; and the resulting infrastructure has been one reason why China is an attractive production platform for so many multinational firms. Local government had the power to dispossess peasants in the fringe areas around the city, pay below-market compensation for the land, and create the industrial parks in which much of China's manufacturing production takes place. Local governments have been very successful at generating investment and growth, contributing to China's extraordinary growth performance. On the other hand, they have not put as much effort into public goods such as environmental protection or social services.

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<sup>6</sup> Patrick and Park (1994) analyze the repressed financial systems of these three economies and the gradual process of liberalization that they carried out.

Given these promotion criteria, the key regional leaders throughout the country are ones who have done well via these incentives. This same incentive system has allowed many local government leaders and their families to become wealthy, especially through skimming off funds related to land development and large infrastructure projects. The fact that this incentive system both worked well to promote growth and also benefited local officials personally makes it especially hard to reform.

## **6. Conclusion: A Rebalancing Agenda for China**

China's leaders have already concluded that the economy needs to be rebalanced to some extent, away from over-reliance on investment and exports, towards consumption. The analysis in the previous section, of the sources of China's investment bias, naturally points to a reform agenda in which the key measures address changes to the *hukou* system, land tenure for farmers, state enterprises, the financial system, and the incentives for local government officials.

Reforms of the *hukou* system are already under discussion and on a pilot basis already underway. The question remains, how thorough the reforms will be. The easy reform would be to maintain tight control over residency in wealthy coastal cities while encouraging farmers to move to second- and third-tier cities primarily in the center of the country, where most of the remaining farmers currently reside. The problem with this approach is that it is the coastal cities that have the high productivity and income. The biggest economic benefits would come from allowing more people to move to these locations. They already have excellent infrastructure, which may need to be expanded somewhat to accommodate new entrants, but this would be a relatively inexpensive approach. The alternative involves building up infrastructure in the second- and third-tier cities, a relatively investment-heavy approach. Having a large new target for investment may appeal to central officials who only want to see the growth model change very gradually. The risk, however, is that such a directed approach to building new cities may not generate the desired efficiencies, so that China is stuck with the bill but not with the benefits. The *pull* factor for migrants is the attraction of better jobs in the cities. The new cities in the center of the country may not in fact have enough jobs once their construction is finished.

Thoroughness of *hukou* reform also involves the related question of land tenure for farmers. If farmers can sell out and take some capital to the city, that will make the whole migration process more attractive and feasible. If the land tenure system is not reformed, on the other hand, then there will still be too little rural-urban migration, even with *hukou* reform.

One of the objections that one hears in first-tier cities about thorough *hukou* reform is that it will be very expensive to provide a full range of social services to rural migrants. Looked at from the point of view of the whole country, China is spending public money for social services for everyone. China's public expenditure on health and education, however, is low by international standards. The amount spent on health and education in rural areas, in particular, is very low, and the quality of these health and education services is also low. There is a risk that rural students are not getting the

education that they will need to succeed in China's future economy, and that the economy will not have the skilled labor it needs in the future. My guess is that, adjusted for quality, it is less expensive to educate students in cities. The rural children are going to end up working in the city most of their lives. So, educating these students in the city is efficient from the point of view of the country as a whole, though incumbent residents will resist this conclusion. China may need to put more resources overall into social services in the aftermath of *hukou* reform, but that can be a helpful part of the rebalancing.

Local governments will be more likely to get on board with *hukou* reform if there are complementary changes in the system of inter-governmental finances that ensure that local governments have the revenue that they need to provide the required services. Local government finances would be on a sounder basis if localities could keep a larger share of the value-added tax and if China introduced an annual property tax at a modest rate, say 1%, of the value of real estate. Property tax can be a stable source of revenue for localities while also discouraging hoarding of empty apartments. It is also the case that the payroll tax is high in many cities, cutting into household disposable income. If more SOE dividends were collected (see below), that could be a source of funding for the social safety net while permitting a reduction in payroll taxes.

State-enterprise reform is going to be one of the thorniest parts of the reform agenda. The big state enterprises provide cushy, high-paid employment opportunities to children of well-connected families. These companies perform well enough to earn big profits so there is no immediate fiscal pressure to reform them. But they are an important part of the overall bias towards investment in the system. Radical reform would involve privatization. It would be useful to experiment with privatizing one or more of the big enterprises. There are other approaches to reform that could also provide benefits. The modern service sectors are almost completely closed to foreign competition (see, for example, the World Bank Services Trade Restrictiveness Database). If China opened up to foreign investment in these sectors, it would provide real competition to the state-owned incumbents. The foreign firms are not likely to win a large share of any market, but their competition would provide Chinese consumers with choice, cut down on the rents earned by state enterprises, and drive efficiency gains throughout the sector. China has reached a stage of development where most consumption is services, so relying more on consumption for demand means relying more on the service sectors for production. More competition from foreign firms and from the domestic private sector would lead to faster, more efficient development of services. One of the important agreements at the 2013 Strategic and Economic dialogue between China and the U.S. was that these two economies would try to negotiate a bilateral investment treaty. On the Chinese side this would require opening up most sectors to foreign investment and, as with WTO membership ten years ago, such an agreement could become an important anchor for China's next stage of reforms.

Another direction for SOE reform at both the central and local level would be to collect more dividends and to pass these to the public budget. If the resources funded more public services and/or tax cuts for households, that would also represent a shift from investment to consumption.

China's big financial firms are good examples of state-owned enterprises that need reform. In the case of the banks, they have the guaranteed low-cost source of funds already noted, and a comfortable spread between their cost of funds and their lending rates. Banks, insurance companies, investment firms, and other financial companies all enjoy protection from competition by international firms. The international firms have 1-2% of the financial services market, that is, a negligible share. The IMF has been recommending a phased program of financial liberalization that includes freeing up interest rates, opening up financial services to greater international competition, changes in stock and bond markets to make it easier for firms to go to the capital markets, a market-determined exchange rate, and eventual opening of the capital account. These reforms would give households more income from their accumulated savings and lead to a more realistic cost of capital.

Finally, it will be important to change the incentives for local government in order for these other structural reforms to be thoroughly implemented. In my time in China, working for both the World Bank and the Treasury Department, I had extensive opportunities to travel around the country and meet with local government officials. The capacity of local government is really top-notch, but I often came away with the impression that "they did not get the memo." The talk about rebalancing has been going on for years, but local governments have remained fixated on investment and growth. This is a very ingrained feature of the reward system. If one adds up all the local government investment and growth aspirations, they far exceed what could possibly be achieved macroeconomically. At the moment many activities at the local level go against what the central government is trying to achieve in terms of rebalancing.

In a one-party system, basing rewards on GDP growth is a relatively simple and easily implemented rule. But China has now reached a stage of development in which rebalancing towards consumption is needed; furthermore, people's wants are more complex as their income rises. There is discussion about basing evaluation of local officials on a more complex scorecard that includes environmental protection, social services, availability of housing, and other factors. In theory one could measure all of these things and agree on weights to attach to each, but that will be a very complicated evaluation system. This raises the question of whether political reform will be needed in order to carry out thorough-going economic reform. There are practical steps in political reform that the government and the party could easily take. For example, disclosing local government budgets, including the activities of local investment companies, would likely lead to public pressure on local officials to invest less and increase government spending on social services and the environment. Similarly, thorough income and asset disclosure by government officials and their families would discourage rent-seeking and probably lead to less demand from local officials for big investment projects.

A final point concerns what is likely to happen if China cannot induce greater household consumption. It is likely that market-oriented investment will continue to slow because of over-capacity in many sectors and diminishing returns. All else equal, that will lead to a rising external surplus which in turn will cause rising tensions with major trading partners. For the moment the government has the fiscal space to keep state-driven investment at a high level and even to raise it. However, within a few years China would then move into dangerous territory in terms of total public



debt, including the local government investment vehicles. Without more contribution from household demand or the external sector, the safe macroeconomic path would be to allow investment growth to slow and to accept a significantly lower GDP growth rate. Given the changing demographics of the country there is no longer a need for such a high growth rate to ensure sufficient job creation. Growth based on the services sectors will be more labor-intensive and more human-capital-intensive than the old model, so that a slower overall growth rate can meet China's evolving labor-market needs. If China tries to maintain a very high growth rate via continued reliance on investment as the main source of demand, it is likely that over-investment would produce a fiscal and financial crisis further down the road, and that would cause growth to fall even more sharply.

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