What Makes China Grow?

by

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1. Introduction

China has made tremendous progress in its economic development since it began its economic reform and opened to the world in 1978. It is currently the fastest growing economy in the world—averaging 9.8% per annum over the past 36 years (even though it has begun to slow down, to a little over 7% year-on-year growth). It is, however, historically unprecedented for an economy to grow at such a high rate over such a long period of time.

It is useful to compare the growth of Chinese and U.S. real GDP in both aggregate and per capita terms (see Charts 1 and 2 below). The red and blue lines represent the levels of real GDP of China and the U.S. respectively. The red and blue columns represent the annual rates of growth of real GDP of China and the U.S. respectively. In 1978, U.S. real GDP (US$6.7 trillion in 2013 prices) was 18.7 times Chinese real GDP (US$356.5 billion). Between 1978 and 2013, Chinese real GDP grew more than 26 times to US$9.32 trillion (in 2013 prices), to become the second largest economy in the world, after the U.S. By comparison, the U.S. GDP of approximately US$16.8 trillion was 1.8 times Chinese GDP in 2013.

[1] Ralph and Claire Landau Professor of Economics, The Institute of Global Economics and Finance, The Chinese University of Hong Kong, and Kwoh-Ting Li Professor in Economic Development, Emeritus, Stanford University. The author wishes to thank Lau Chor Tak for his generosity in endowing the Lau Chor Tak Distinguished Lecture on Global Economics and Finance; Dale Jorgenson, Linda Jorgenson, Ayesha Macpherson Lau and Yanyan Xiong for their invaluable advice, comments and suggestions; and Yousha Liang and Sophia Lok for their able research assistance; but retains sole responsibility for any remaining errors. Moreover, all opinions expressed herein are the author's own and do not necessarily reflect the views of any of the organisations with which the author is affiliated.

Chart 1: Chinese and U.S. Real GDPs and Their Rates of Growth since 1949 (2013 US$)

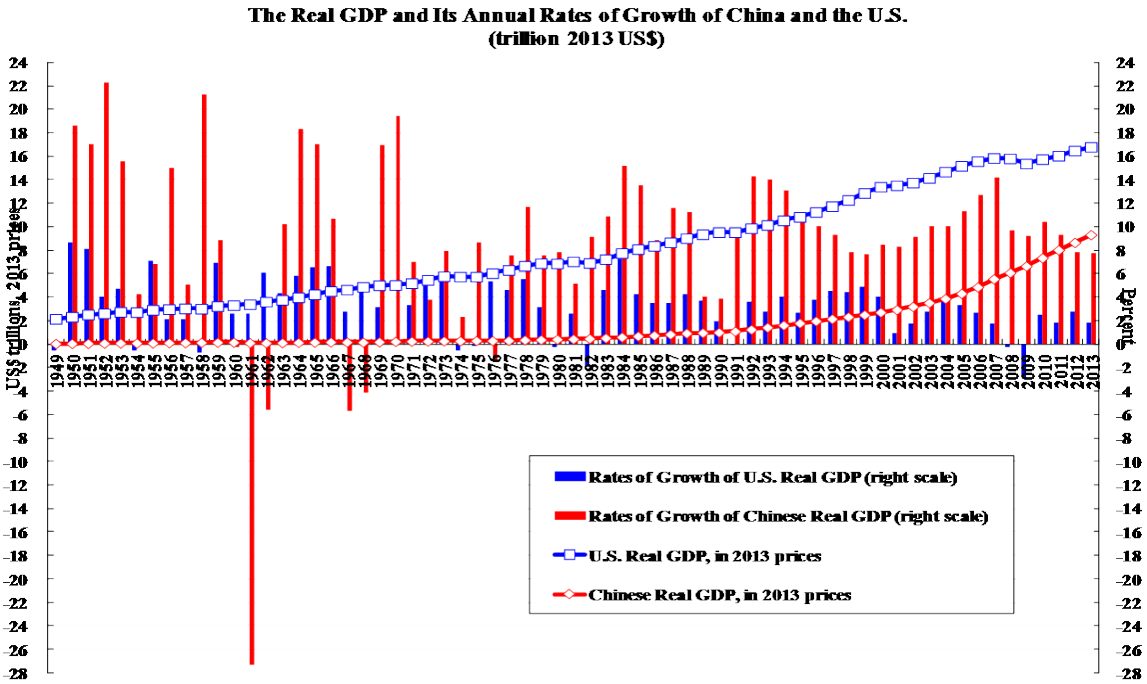
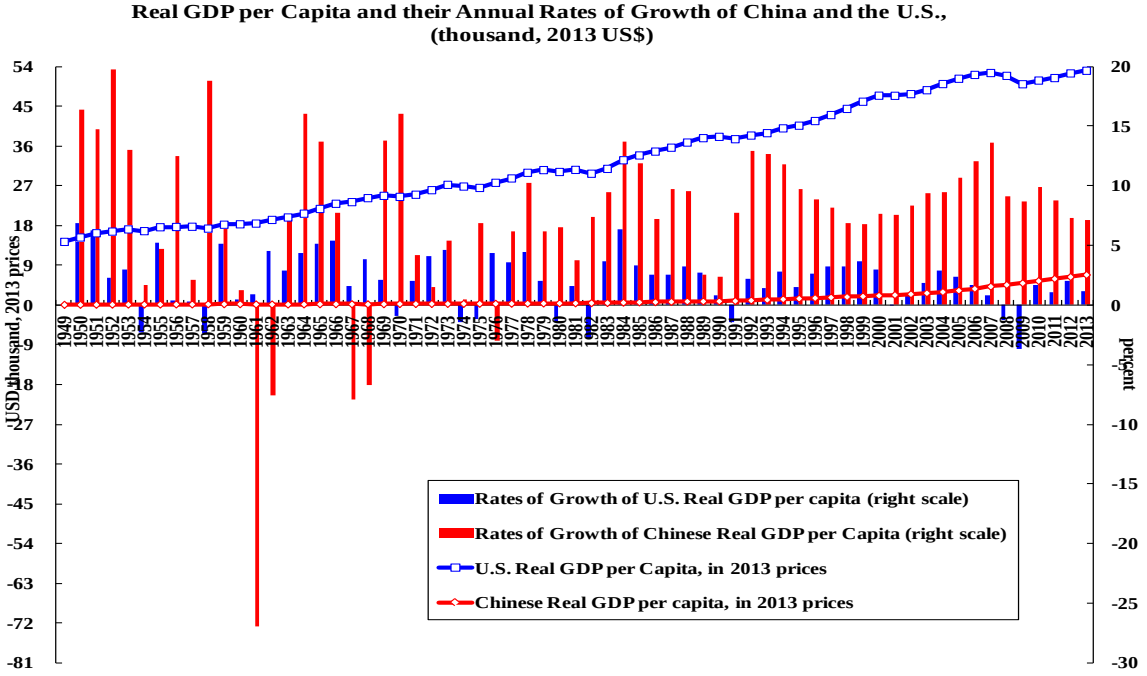


Chart 2: Chinese and U.S. Real GDP per Capita and Their Rates of Growth since 1949 (2013 US$)



However, even though Chinese real GDP has been growing much faster than U.S. real GDP in both aggregate and per capita terms (compare the red and blue columns in Charts 1 and 2), Chinese real GDP per capita still lags behind U.S. real GDP per capita by a large margin (see Chart 2). In 1978, the U.S. real GDP per capita (US$30,046 in 2013 prices) was 81 times the Chinese real GDP per capita (US$370 in 2013 prices). Between 1978 and 2013, Chinese real GDP per capita grew 18.5 times to US$6,850.5. By comparison, the U.S. GDP per capita of US$53,086 was 7.7 times the Chinese GDP per capita in 2013. China is still very much a developing economy.

Chinese international trade in goods and services has also grown very rapidly since the beginning of its economic reform in 1978, and the rate of growth accelerated after Chinese accession to the World Trade Organization (WTO) in 2000. Chinese total international trade grew from US$20.3 billion in 1978 to US$4.61 trillion in 2013, making China the second largest trading nation in the world, just after the U.S., with its total international trade of US$5.02 trillion (see Chart 3). Moreover, as of 2013, China has become either the most important or the second most important trading partner country/region of almost all Asia Pacific economies, including the U.S. (see Table 1).

Chart 3: Chinese and U.S. International Trade and Their Rates of Growth (US$) since 1970

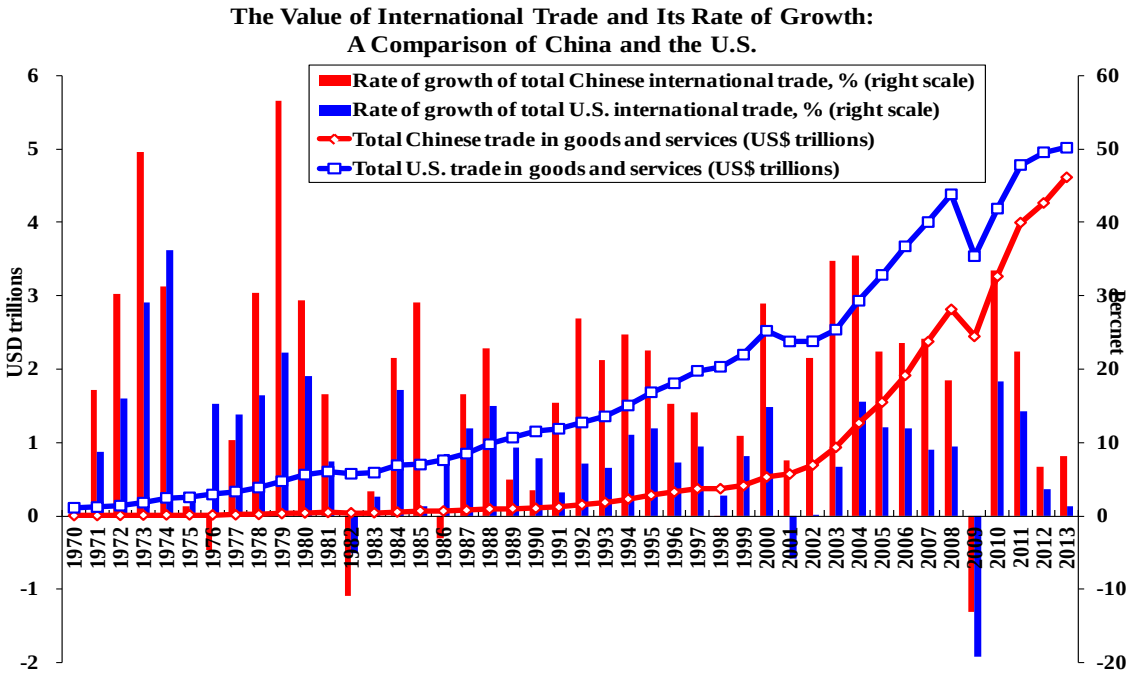


Table 1: The Rank of China as a Trading Partner of Asia-Pacific Countries/Regions and Vice Versa, 2013

Country/Region	Chinese Rank as Trading Partner of Country/Region	Rank of Country/Region as Trading Partner of China
Australia	1	7
Brunei	3	104
Cambodia	1	78
Hong Kong	1	2
Indonesia	1	16
Japan	1	3
Korea	1	4
Laos	2	90
Macau	1	85
Malaysia	1	8
Myanmar	1	51
New Zealand	1	43
Philippines	2	27
Singapore	1	11
Taiwan	1	5
Thailand	1	13
United States	2	1
Vietnam	1	18

Source: International Monetary Fund, Direction of Trade Statistics.

The performance of the Chinese economy before and after its economic reform and opening to the world in 1978 is compared in Table 2. It is clear that the Chinese economy has done much better under economic reform in almost every dimension—real GDP, real consumption, exports and imports—on both an aggregate and a per capita basis. The only economic indicator that has performed worse is the rate of inflation, as measured by the GDP deflator, which rose from 0.5% per annum in the pre-reform period to over 5% per annum in the post-reform period.

Table 2: Key Chinese Economic Performance Indicators before and after the Economic Reform of 1978

	Growth Rates percent per annum	
	Pre-Reform Period	Post-Reform Period
	1952-1978	1978-2013
Real GDP	**6.15**	**9.82**
Real GDP per Capita	**4.06**	**8.74**
Real Consumption	**5.05**	**9.21**
Real Consumption per Capita	**2.99**	**8.14**
Exports	**9.99**	**16.76**
Imports	**9.14**	**15.98**
Inflation Rates (GDP deflator)	**0.50**	**5.19**

While many problems have also arisen in the Chinese economy within the past decade—for example, increasing inter-regional and intra-regional income disparity, uneven access to basic education and health care, environmental degradation, inadequate infrastructure and corruption—it is fair to say that every Chinese citizen has benefitted from the economic reform and opening to the world since 1978, albeit to varying degrees, and few want to return to the central planning days.

Historically, most currently developed economies would have undergone a couple of decades of rapid growth, and then slowed down. The U.S. economy grew the fastest in the two decades between 1870 and 1890. Japan experienced its fastest economic growth between the mid-1950s and mid-1970s. Why has China been able to grow at such a high rate (9.8%) over such a long period of time (36 years)? What makes China grow? Will China be able to continue to grow at such a high rate in the future? Of course, the adoption and implementation of the correct economic policies and measures by the Chinese Government, led by the Chinese Communist Party, is an important reason for China's highly successful record of economic growth. However, we shall also examine the Chinese economic fundamentals as well as the Chinese initial conditions in 1978 to analyse why the adopted and implemented policies and measures were so effective in China.

2. The Chinese Economic Fundamentals

A natural first explanation for the sustained high rate of Chinese economic growth since 1978 is the highly favourable Chinese economic fundamentals. Long-term economic growth of a country depends on the rates of growth of its primary inputs: tangible (or physical) capital and labour, and on technical progress (or equivalently, the growth of total factor productivity, that is, the ability to increase output without increasing inputs). The rate of growth of tangible (or physical) capital depends on the rate of investment in structure, equipment and basic infrastructure, which in turn depends on the availability of national savings, supplemented with inflows of foreign capital if necessary. The rate of technical progress depends on investment in intangible capital, including human capital and research and development (R&D) capital.

Chinese economic development since 1952 has been underpinned by a consistently high domestic investment rate that regularly exceeded 25% of GDP, with the exception of a brief start-up period in the early 1950s and the years of the Great Famine (1959–1961). Since 1970, the Chinese domestic investment rate has ranged between 30% and 45% (see Chart 4). This investment rate has been enabled by an even higher national saving rate that has at times exceeded 50%. The Chinese national saving rate is among the very highest in the world (see the red line in Chart 5, in which the annual saving rates of selected Asian economies are presented).

Chart 4: Chinese National Saving and Gross Domestic Investment as Percents of GDP

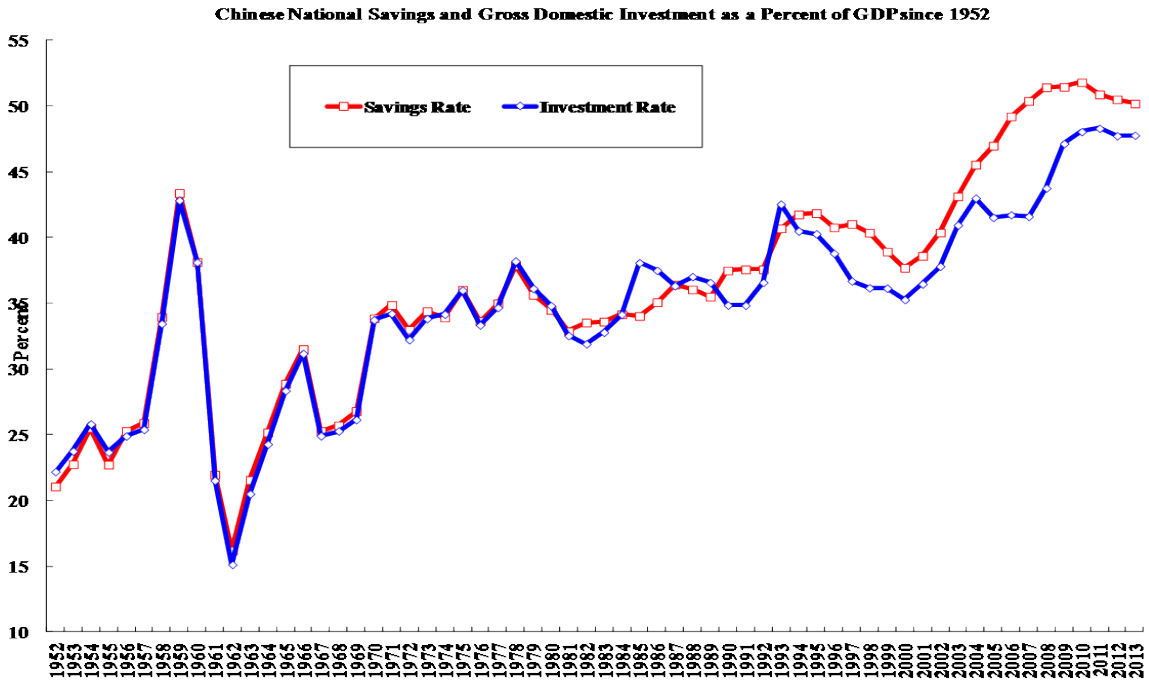
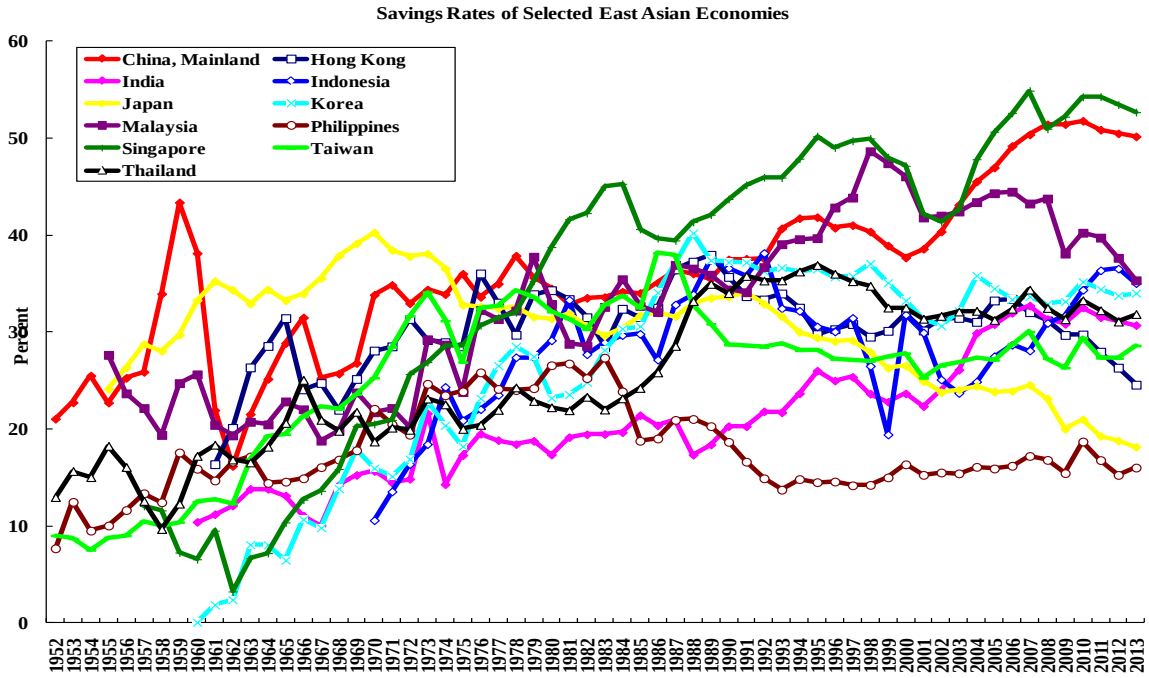


Chart 5: Saving Rates of Selected Asian Economies, 1952–present



This means, among other things, that the Chinese economy can finance all of its domestic investment needs from its own national savings alone, thus assuring a high rate of growth of its tangible capital stock, without relying on the more fickle foreign capital inflows (including foreign direct investment, foreign portfolio investment, foreign loans and foreign aid). In particular, it does not need to borrow abroad and bear the potential risks of a large, and often interruptible, foreign currency denominated debt. Hence, the Chinese economy is able to grow much more consistently and is also relatively more immune from external disturbances than other economies.

China, like Japan, Taiwan, and South Korea in their respective early stages of economic development, is also endowed with an unlimited supply of surplus labour in the agricultural sector. This means the non-agricultural sectors of the Chinese economy should be able to grow without being constrained by the shortage of labour or by rising real wage rates of unskilled, entry-level labour over an extended period of time. Investment in tangible capital such as structure, equipment and basic infrastructure is very productive under conditions of surplus labour. As long as there is sufficient complementary domestic tangible capital in the non-agricultural sectors, the surplus labour can be gainfully transferred and employed there and thereby enables the real output of the economy to grow rapidly. This is exactly what the late Professor W. Arthur Lewis (1954), Nobel Laureate in Economic Sciences, showed in his celebrated article on surplus labour sixty years ago.

It is revealing to compare the distribution of Chinese GDP with the distribution of Chinese employment by originating sectors. In 2013, the distribution of Chinese GDP was approximately as follows: Primary (agriculture), 10.0%; Secondary (manufacturing, mining and construction), 43.9%; and Tertiary (services), 46.1%.[2] (See Chart 6.) By comparison, the distribution of employment by originating sectors in 2013 was as follows: Primary, 31.4%; Secondary, 30.1%; and Tertiary, 38.5% (see Chart 7). The agricultural sector employed 31.4% of the Chinese labour force but produced only 10% of the Chinese GDP. Thus, labour can be gainfully transferred from the agricultural sector to the other two non-agricultural sectors, where labour productivities and wage rates are higher, as long as complementary tangible capital and additional aggregate demand are available there. With the percentage of labour force employed in the primary sector (31.4%) significantly exceeding the percentage of GDP originating from it (10%), surplus labour will continue to exist in the Chinese

[2] Note that mining is normally considered to be part of the primary sector in most other economies.

economy, and there will be little or no upward pressure on the real wage rate of unskilled, entry-level labour in the secondary and tertiary sectors.

Chart 6: The Distribution of Chinese GDP by Originating Sector since 1952

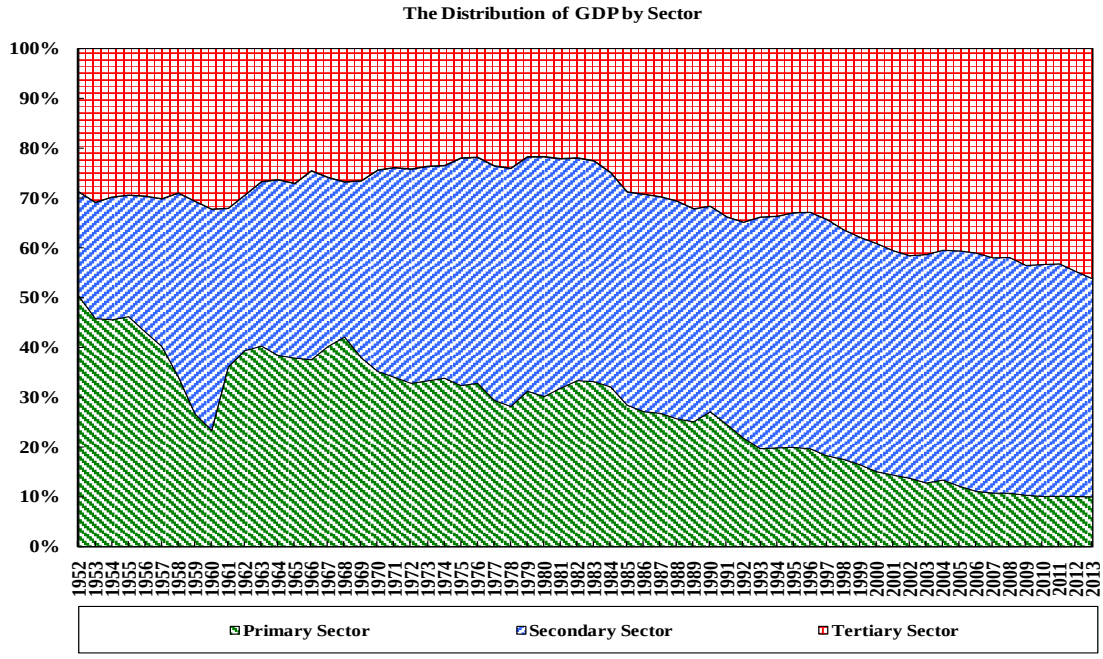
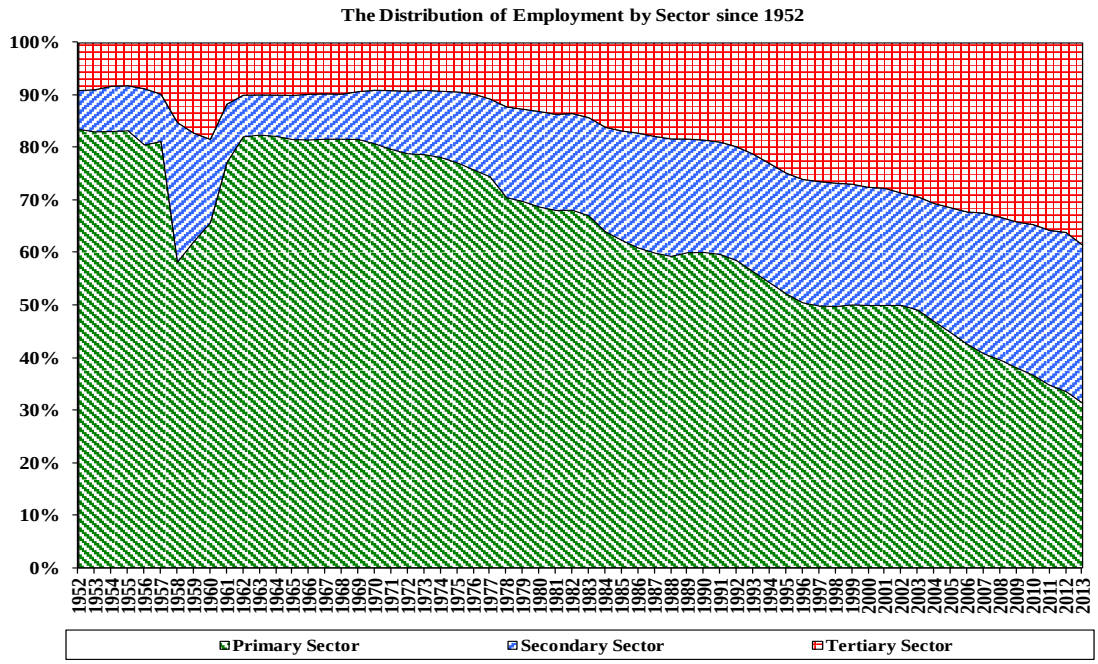


Chart 7: The Distribution of Chinese Employment by Sector since 1952



It took more than thirty-five years for the percentage of the Chinese labour force employed in the primary sector to decline from 70% in 1978 to 31.4% in 2013, at the approximate rate of 1.1 percentage points per year. It will take approximately another 20 years for the percentage of the Chinese labour force employed in the primary sector to decline from 31.4% to below 10%, the percentage of Chinese GDP produced by the primary sector today. By that time (2033), it is expected that the primary sector will account for no more than 5% of the then Chinese GDP. China will therefore continue to have surplus labour for another two decades. We may further note that the surplus labour model of economic development, which depends on the transfer of labour from the lower-productivity agricultural sector to the higher-productivity non-agricultural sectors, still applies even if the total labour force of the economy is not growing.

In addition to the favourable supply conditions for tangible capital and labour, the Chinese economy has the additional advantage of a huge domestic market consisting of 1.34 billion consumers with pent-up demand for housing, transportation and other consumer goods and services (e.g., education, health care, and more recently, elderly care). This huge domestic market enables the realisation of significant economies of scale in production and in investment in intangible capital, based on the demand of the domestic market in China alone. The huge domestic market greatly enhances the productivity of intangible capital (e.g., R&D capital and goodwill, including brand building) by allowing the fixed costs of the R&D for a new product or process or advertising and promotion in brand building to be more easily amortised and recovered.

Another important advantage of a large domestic economy is the relatively low external economic dependence, and hence low vulnerability to external economic disturbances. In Charts 8 and 9, the percentages of exports and imports of goods and services in the GDPs of selected economies respectively are presented. These percentages are never very high in large economies (compare China, Japan, Russia and the U.S. with other economies such as Hong Kong, South Korea, Malaysia, Singapore, Thailand, Vietnam and Taiwan in Charts 8 and 9). Moreover, large continental economies, such as China, Russia and the United States, are likely to be self-sufficient in many of the natural resources because of their large sizes and geographically diversified locations.

Chart 8: Exports of Goods and Services as a Percent of GDP: Selected Economies

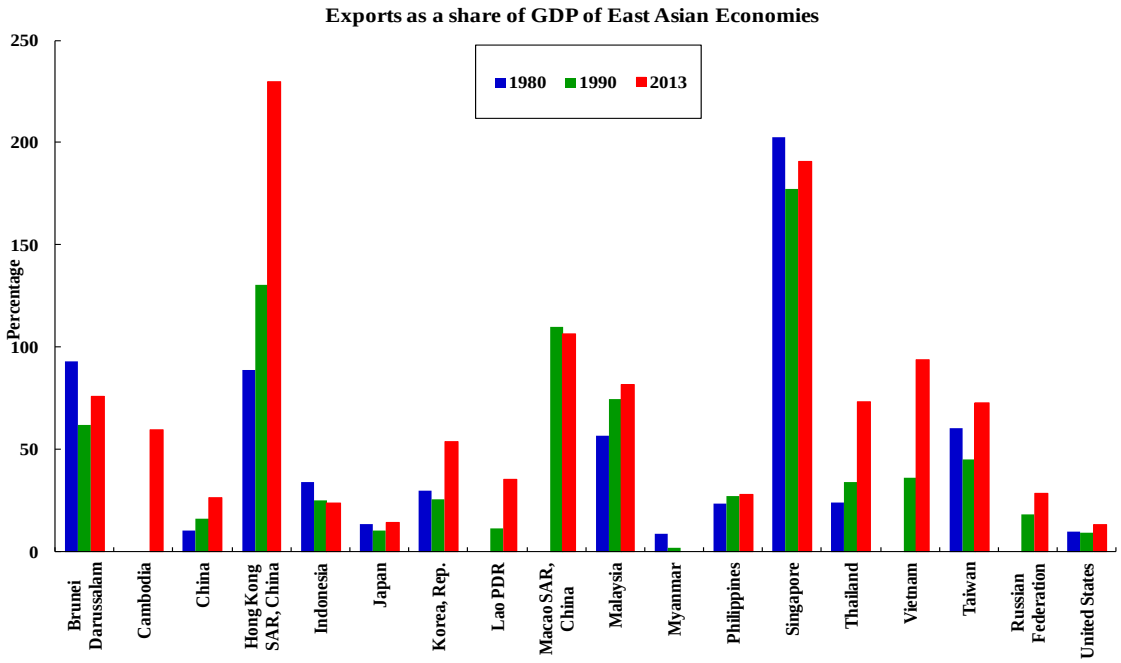
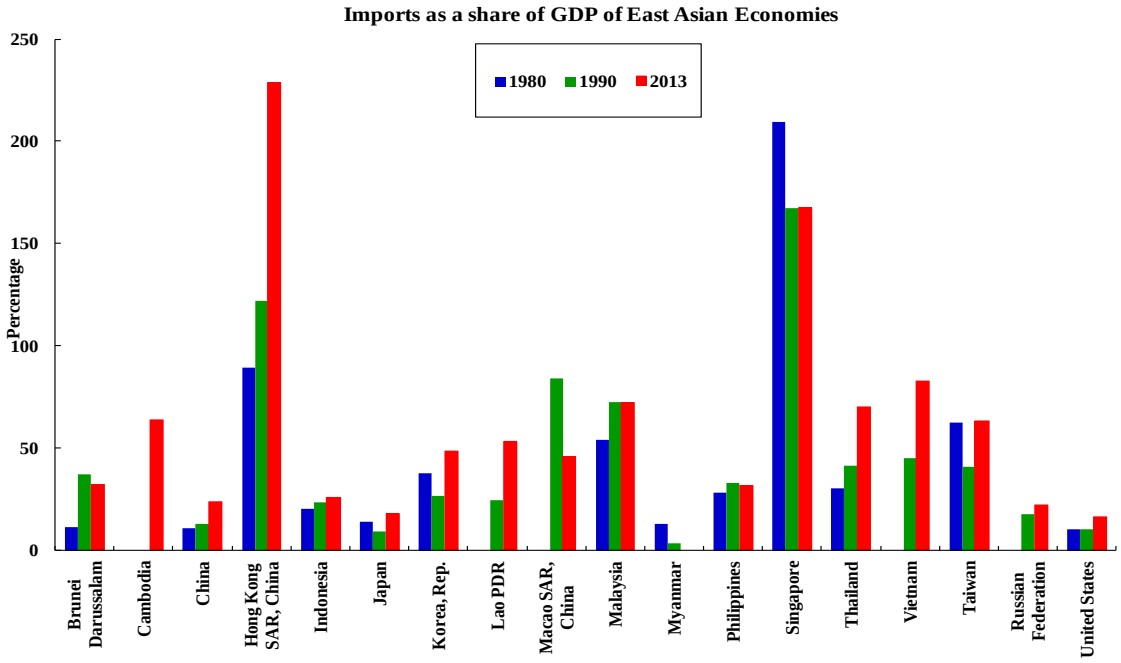
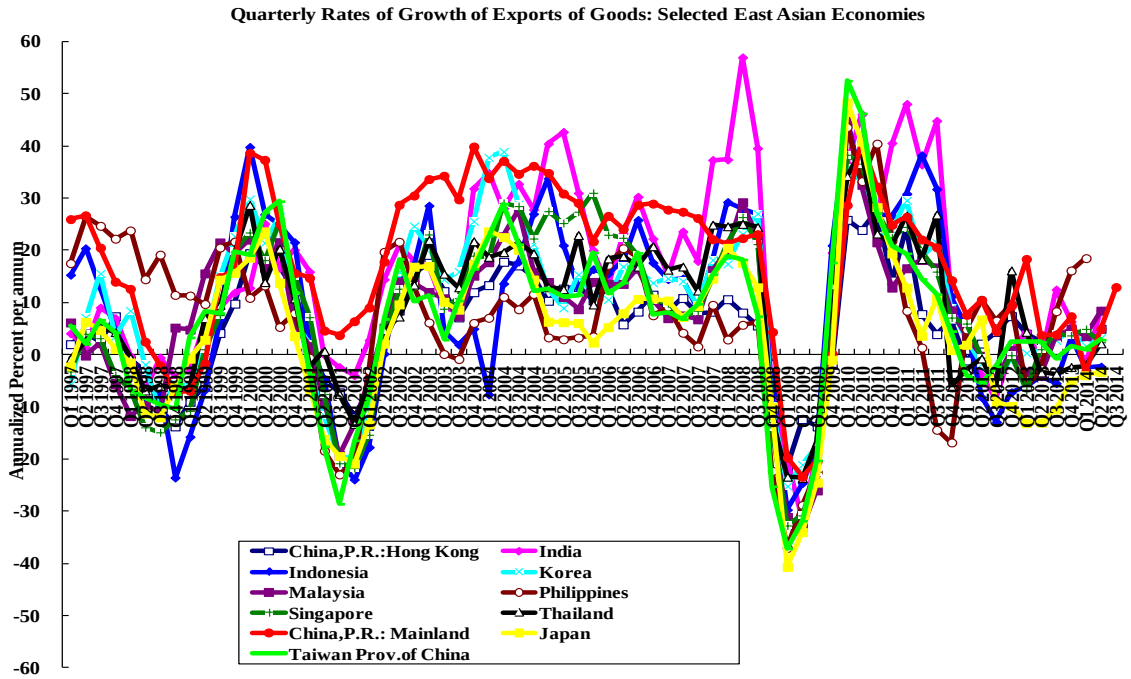


Chart 9: Imports of Goods and Services as a Percent of GDP: Selected Economies



In Charts 10, 11 and 12, the quarterly rates of growth of exports and imports of goods[3] and real GDP respectively of selected Asian economies—China, Hong Kong, India, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand (with the red line representing China)—are presented. It is evident that even though the rates of growth of Chinese exports and imports fluctuate like those of all the other Asian economies (see Charts 10 and 11), the rate of growth of Chinese real GDP has been relatively stable compared to those of the others (see Chart 12).

Chart 10: Quarterly Rates of Growth of Exports of Goods: Selected Asian Economies



[3] The quarterly rates of growth of exports and imports of goods are used because data on the quarterly rates of growth of exports and imports of goods and services are not generally available.

Chart 11: Quarterly Rates of Growth of Imports of Goods: Selected Asian Economies

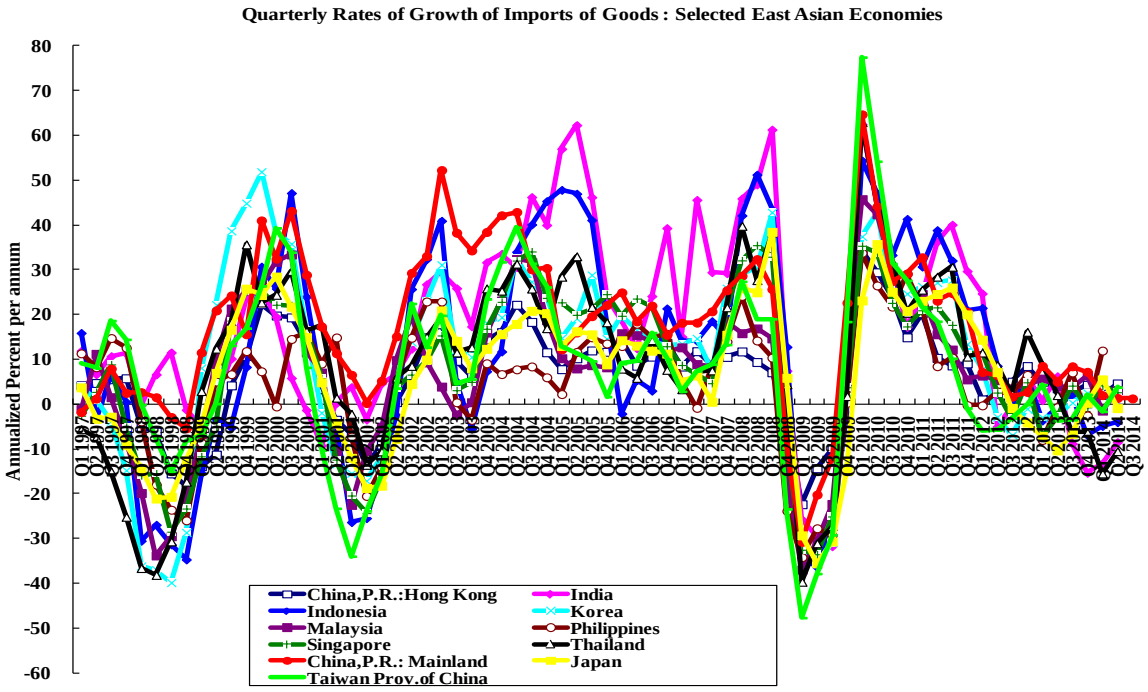
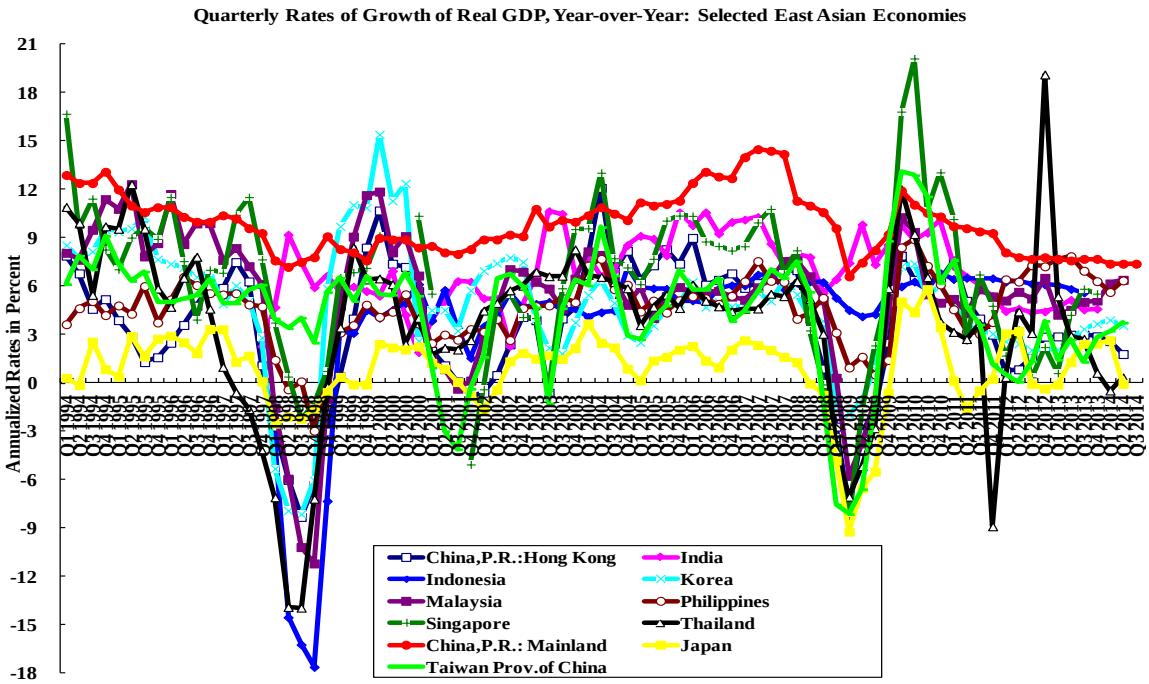


Chart 12: Quarterly Rates of Growth of Real GDP, Year-on-Year: Selected Asian Economies



However, while favourable economic fundamentals are necessary for a sustained high rate of growth of an economy, they are by no means sufficient. In the three decades between 1949, the year of the founding of the People's Republic of China, and 1978, the first year of the Chinese economic reform and opening to the world, China also had the same favourable economic fundamentals: (1) a high national saving rate (with the exception of a brief initial start-up period); (2) an unlimited supply of surplus labour; and (3) a large domestic economy. But the Chinese economy did not experience a sustained high rate of growth during this earlier period. Similarly, the former Soviet Union also had a high rate of tangible capital accumulation as well as a large domestic economy but did not experience a sustained high rate of economic growth either.

3. The Inherent Economic Inefficiency of Central Planning

Why did China before its economic reform of 1978 and the former Soviet Union before 1989 not experience a sustained, high rate of economic growth, despite seemingly favourable economic fundamentals? The answer is that both economies operated under mandatory central planning during the respective periods. From 1953, when China adopted its First Five-Year Plan, to the end of the last century, the Chinese economy operated under a series of mandatory five-year central plans. The former Soviet Union (as well as the Eastern European economies) also operated under mandatory central planning until 1989. However, in a centrally planned economy, there is always inherent economic inefficiency, which in turn implies the continuing existence of surplus potential but unrealised output in the economy. This surplus potential output can in principle be realised with the introduction of economic reforms granting autonomy to the producers and providing incentives for them through the free markets, which should then lead to a spurt in the growth of real GDP even in the absence of the growth of inputs.

A principal characteristic of a centrally planned economy is the administrative allocation of resources. What goods and services to produce? How much to produce? Where to produce them? What raw materials and parts should be used to produce them? From which enterprises should the raw materials and parts be bought? To which enterprises should the outputs be sold? All of these decisions are made by the central planners and embodied in the mandatory central plan. Enterprises do not have any autonomy in these decisions. The prices of goods and services are also completely set in the central plan and are

only used for accounting purposes. They do not necessarily reflect relative scarcity in the economy and do not play any role in the equilibration of market supply and demand.

Why is there inherent economic inefficiency in a centrally planned economy? We first define what efficiency means to economists. A production plan for an economy is said to be efficient if, for given aggregate quantities of inputs (the tangible capital stock and labour), no output of any good or service can be increased without decreasing the output of another good or service. In other words, the economy is operating on the frontier of its set of production possibilities—there is no surplus potential output, no slack. For reasons to be explained below, a centrally planned economy always has slack—always operates in the interior of its set of production possibilities. Thus, output can be increased by simply eliminating the slack by moving to the frontier from the interior of the set of production possibilities without increasing any inputs. The existence of inherent inefficiency therefore also implies the existence of surplus potential output.

In order to understand why there always exists inefficiency in a centrally planned economy, we consider the following simple example drawn from agriculture. There are two farm households, headed by two farmers, A and B. Each has a hectare of land. Both cotton and rice are needed by the economy. The central planner's problem is to decide which household should grow cotton, which household should grow rice as well as how much of each crop to grow.

First of all, there is a problem of insufficient or inaccurate information on the part of the central planner. The central planner may not know which one of the two plots is more suitable for growing cotton or rice. Moreover, the central planner may also not know whether Farmer A can grow cotton better than Farmer B or vice versa. If the central planner makes any mistake in the assignment of the production responsibilities, a simple rearrangement of the assignment can increase total output without having to increase any input.

Second, there is also the problem of a lack of incentive on the part of the farmers to exceed the assigned production targets even if they are in principle able to do so. To the farmer, if he or she manages to produce an output that exceeds the assigned production target, not only would his or her income not increase, so that the extra efforts would not have been rewarded, but the assigned production responsibility for the following year might also be

increased, making it more difficult for the farmer to fulfill his or her obligation then. (This is sometimes referred to as the "ratchet" effect.) Thus, the optimal strategy for the farmers is to try to produce only the assigned target output as specified in the mandatory central plan and not to try to exceed it, even if it is possible to do so.

For these reasons, there is always slack, or surplus potential output, in a centrally planned economy. However, if there is a way to provide the necessary incentives to the producers, then without increasing the aggregate inputs assigned under the central plan, aggregate output can be increased. For example, the farmers can be given the autonomy to grow anything on their plots once they have fulfilled their obligations under the central plan, and to retain the resulting profits (and to bear the resulting losses), if any.

We have identified two factors that contributed to the high Chinese economic growth rate since 1978: favourable economic fundamentals and the prior existence of surplus potential output. But these factors were also common to other transition economies such as the former Soviet Union, which for seven decades before it was dissolved in 1989 operated under mandatory central plans (and hence should also have had significant surplus potential output on the eve of its economic reform). However, the introduction of producer autonomy and free markets and opening to the world in 1989 were not sufficient to enable the economies of the former Soviet Union, notably that of the Russian Federation, to achieve sustained economic growth and a successful transition from a closed centrally planned economy to an open market economy. Only China was able to do so.[4]

In the former Soviet Union (and the Eastern European) economies, the transition from a closed centrally planned economy to an open market economy in the late 1980s and early 1990s was both difficult and painful. Almost all of these countries experienced negative real rates of growth, and for many of them for as long as a full decade or more (see Chart 13, in which the Russian Federation was represented by a red line). They also suffered from extremely high rates of domestic inflation (see Chart 14). Real GDPs per capita in these formerly centrally planned economies took even longer to recover to the 1989 levels. For example, real GDP per capita of Russia did not recover to its 1989 level until 2007, 18 years after the beginning of its misguided economic reform through "shock therapy" (see Chart 15). If we take account of the fact that the distribution of income in Russia has also become much

[4] To a lesser extent than China, Vietnam was also able to succeed in making the transition from a closed centrally planned economy to an open market economy.

more unequal during the period, the lower-income households in Russia must have seen their standard of living deteriorate drastically. Similar phenomena occurred in other former Soviet Union and Eastern European economies in varying degrees, as evident from Chart 15.

Chart 13: Rates of Growth of the Real GDP of the Former Soviet Union and Eastern European Countries

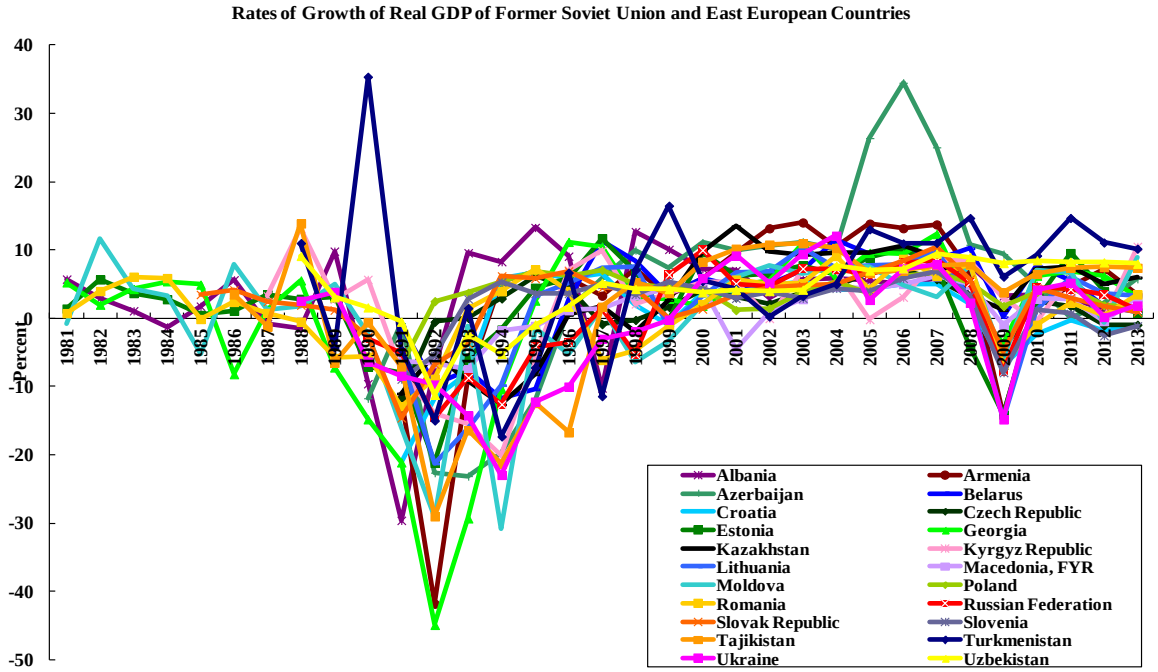


Chart 14: The Rates of Inflation of the Former Soviet Union and Eastern European Countries

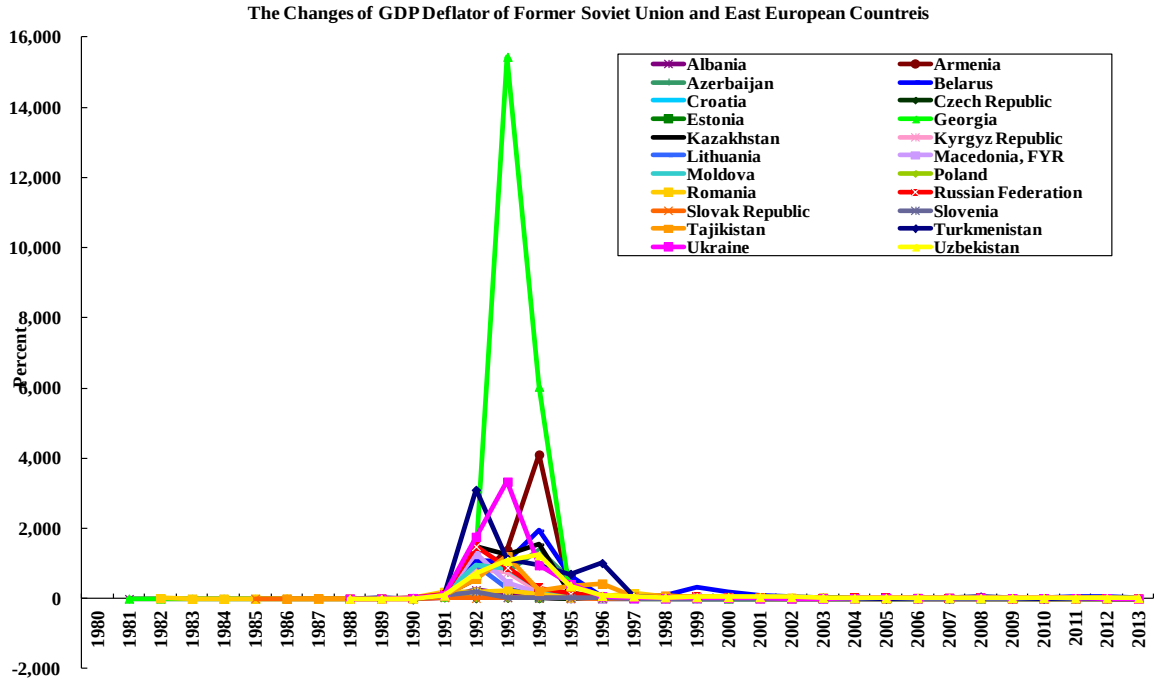
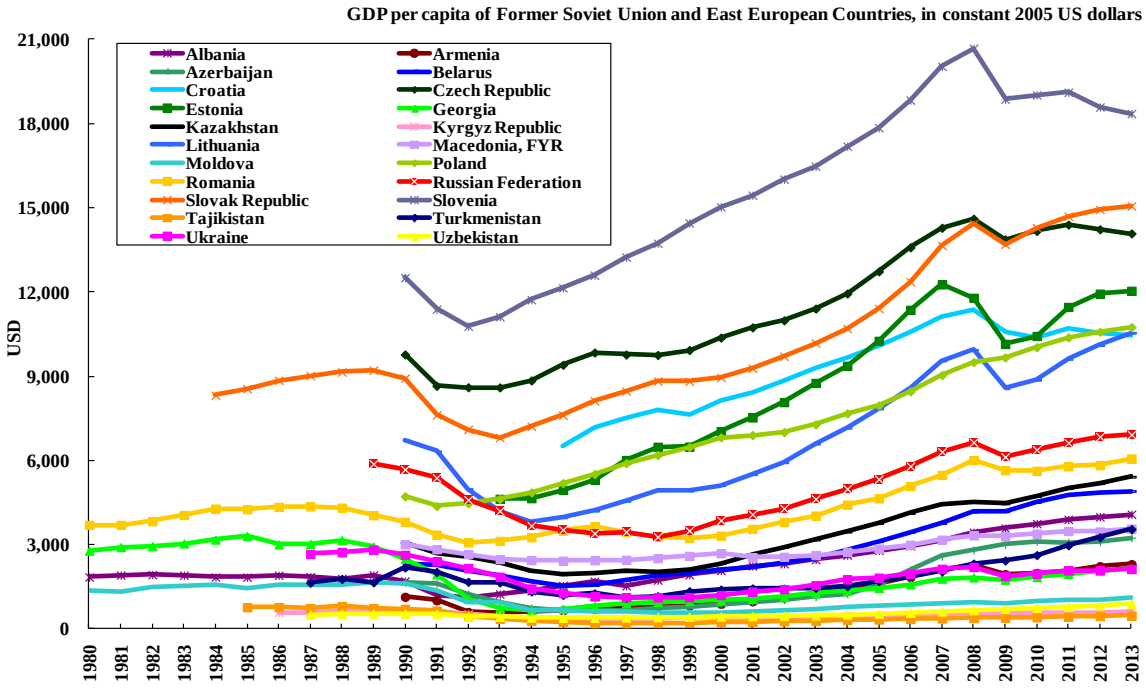


Chart 15: GDP per Capita of the Former Soviet Union and Eastern European Countries (2005 US$)



In contrast, the transition of China from a closed centrally planned economy to an open market economy beginning in 1978 was smooth and highly successful, as Charts 16 and 17 show. Both Chinese real GDP and Chinese real GDP per capita have been growing rapidly and continuously beginning in 1978. There was not even a single year of decline in either aggregate or per capita Chinese real output, notwithstanding the Tiananmen incident on 4th June 1989 (the blue lines in Charts 16 and 17 represent the levels of Chinese real GDP and real GDP per capita; and the red columns, their respective annual rates of growth).

Chart 16: The Chinese Real GDP and Its Annual Rate of Growth (2013 US$), 1978–present

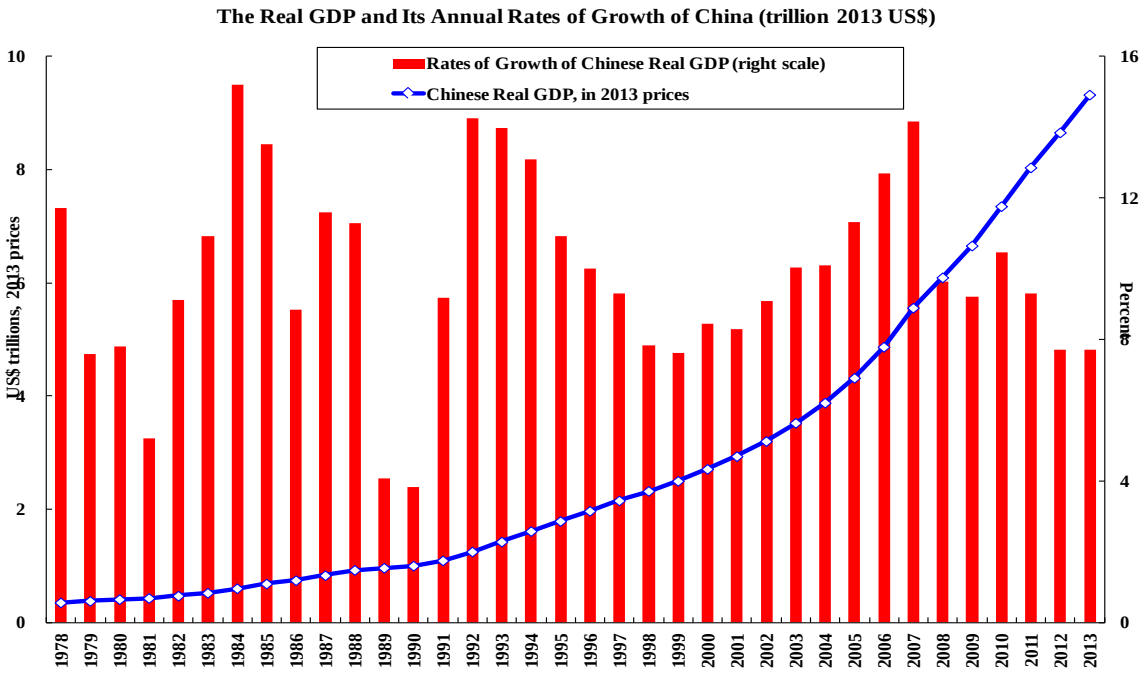
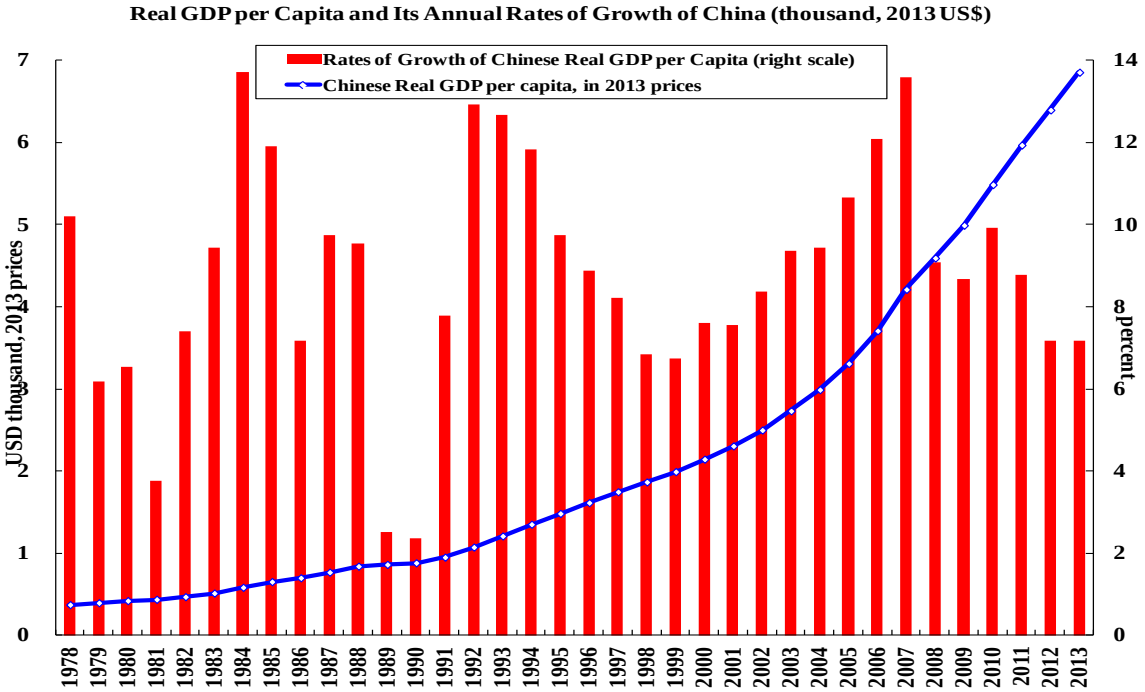


Chart 17: The Chinese Real GDP per Capita and Its Annual Rate of Growth (2013 US$), 1978–present



4. Reform without Losers—The Chinese Strategy for Economic Reform

Why was China able to achieve a smooth and successful transition from a closed centrally planned economy to an open market economy while the former Soviet Union (and East European) countries failed so miserably? It turns out that the choice of strategy for the economic transition matters. In the former Soviet Union and Eastern European countries, the strategy adopted for the transition was the so-called "shock therapy" or "big bang" strategy—that is, a strategy that calls for the immediate and full abolition of the mandatory central plan, relying completely and solely on the newly introduced free markets, which were still relatively primitive, and lacking in the necessary facilitating and supporting institutions. In China, the principle of "reform without losers" was followed—making sure that at every step of the economic reform, no one would be made worse off than before.

Instead of dismantling the mandatory central plan all at once, the Chinese Government adopted the "Dual-Track" approach: introducing enterprise autonomy and free markets on the margin while continuing to enforce the existing central plan. There were thus in the Chinese economy simultaneously a "Plan Track" and a "Market Track", which operated in parallel but separately from each other. This "Dual-Track" approach as implemented in China can be shown to be not only Pareto-improving, that is, making everyone better off, but it also would enable the economy to achieve full economic efficiency (see Lau, Qian and Roland (2000)). By the end of the last century, the market track of the Chinese economy had grown sufficiently that the (mandatory) plan track became no longer important and was thus gradually phased out.

In the meantime, China continued to open up its economy to trade, investment and tourism. Initially, a "dual-track" approach was also adopted. Soon after the beginning of economic reform, foreign exchange certificates (FECs) were introduced as a currency to be used by foreign visitors in China. The purpose of the introduction of the FECs was primarily to avoid an immediate significant devaluation of the Renminbi, which would have been quite disruptive of the economy. The FECs were sold to foreign visitors at the same official exchange rate as the regular Renminbi for foreign currencies. However, they could be used in special stores catering exclusively to foreign visitors and accepting only the FECs for payment, such as the Friendship Stores and stores in hotels accommodating foreign visitors, for the purchase of goods at much lower prices in terms of FECs than outside. De facto, this became a two-tiered price system, with a higher Renminbi price for local Chinese residents,

and a lower FEC price for foreign visitors, for the same good. This was necessary because at that time, the Renminbi was significantly overvalued, and foreign visitors would find goods priced in Renminbi too expensive at the then official exchange rate, but an across-the-board reduction in the Renminbi prices of goods would have created severe losses at many Chinese enterprises, caused havoc in the domestic Chinese economy and resulted in many "losers".

Another illustration of the application of the principle of "reform without losers" is in the regulation of foreign-invested firms engaged in "processing and assembly" operations in China. The earliest foreign direct investments into China were all in the form of "processing and assembly" operations. A foreign direct investor would set up a factory in one of the "Special Economic Zones (SEZs)", say, Shenzhen. It would import all of its equipment and all of its raw materials, parts and components from abroad, using its own resources, and it would export all of its output. Even if some raw materials, parts and components might be better and cheaper in China, it would not be allowed to purchase them in the domestic Chinese market. And even if there was a significant domestic demand for its output, it would be forbidden to sell any of its output into the domestic market. The only input that it could purchase from China is labour, and then only indirectly through a very small number of labour contractors that were able to effectively appropriate most of the premium in the wage rate that the foreign direct investors might offer to the domestic Chinese workers. The purpose of this arrangement is to separate strictly the domestic and the foreign-invested sectors, so that the supply and demand of goods and services in the domestic market were not affected at all, and the mandatory central plan would not be disrupted by the presence of foreign direct investment. The only incremental demand from the foreign direct investors was labour, which was in surplus supply. If the foreign direct investors were allowed to purchase inputs or sell its output domestically, there would be additional demand or supply in the domestic market, and the central plan would no longer be in equilibrium. In that case, losers would emerge and chaos might ensue.

In 1993, a parallel "adjustment" foreign exchange market was established in Shanghai, in which exporters would be free to sell the foreign exchange they earned and importers with approved import permits would be free to buy the foreign exchange they needed, at the "adjustment" exchange rate determined by the equilibration of the spot supply and demand on the market. They no longer needed to sell to or buy from the People's Bank of China, the central bank, directly. The "adjustment" exchange rate could and did differ significantly

from the official exchange rate. This was the first stage of the foreign exchange reform. The "adjustment" exchange rate would provide an indication of what the rate would have been in a foreign exchange market consisting of only exporters and importers.

Then in 1994, the Renminbi was officially devalued, merging the official and the "adjustment" exchange rates into a single exchange rate of 8.7 Yuan per US$. Full current account convertibility of the Renminbi was implemented, and the foreign exchange certificates were abolished. This greatly facilitated the conduct of international trade by both domestic and foreign firms. In this transition to a single exchange rate, an attempt is made to protect the more vulnerable communities and institutions from the effects of the devaluation. For example, Chinese universities that had to purchase foreign books and journals would have their Renminbi budgets for importing publications raised by the same percentage as the Renminbi devaluation, so that they could continue to purchase the same quantities of publications as before and not become losers as a result of the exchange rate reform.

It is important to understand that "Reform without Losers" would not have been possible without a central government with real authority. The prior mandatory central plan must continue to be enforced in full so that the consumption obligations of the government to the people under the central plan can be honoured, ensuring that no one loses. As there were two prices and two markets for every good under the "dual-track" approach, the temptation to buy low and sell high would be difficult to resist if one were allowed to get away with it. But if the central government had failed to purchase sufficient grain at the prescribed price in the countryside as planned, it would have been unable to provide the food supply at the agreed price for the residents in the cities. The result would have been chaos and possibly even starvation in the urban areas. Rigorous enforcement of the mandatory central plan was therefore critical to the success of the "dual-track" approach.

In fact, since most economic reforms are likely to be opposed by the vested interests, a strong enough central government is essential for the success of any reform. More generally, public infrastructural investments as well as public-purpose institutions, such as regulatory agencies and quality assurance organisations, which are essential for the smooth and successful operation of an economy, whether market or centrally planned, cannot be readily undertaken or established without a strong central government ready to bring its full power to bear. Almost all of the East Asian economies—Japan, Hong Kong, Taiwan, Singapore, South Korea, Indonesia, Malaysia and Thailand—were run by governments with

no serious domestic political opposition during their respective phases of most rapid growth, which made it possible for investment decisions to be made, public infrastructure to be built and new institutions to be established as necessary without undue delay.

5. The Sources of Chinese Economic Growth

First, we digress to introduce more formally the concept of a set of production possibilities of an economy. The set of production possibilities of an economy, for given fixed levels of the inputs of the economy (for example, the levels of tangible or physical capital and labour), is the set of all combinations of goods and services that can be produced by the economy. In Chart 18, the two axes measure the quantities of the two goods, X1 and X2, respectively. At time zero, the set of production possibilities is given by the area bounded by the blue line and the two axes—all combinations of the two goods X1 and X2 within the area can be produced by the economy with its given fixed inputs. Note that on the blue line, the boundary of the set of production possibilities, an increase in X1 must be accompanied by a decrease in X2, and vice versa, so that every combination of the quantities of the two goods on the blue line is an efficient production plan. The blue line thus represents the frontier of the set of production possibilities, and all other combinations that can be produced are in the interior of the set of production possibilities and are inefficient production plans.

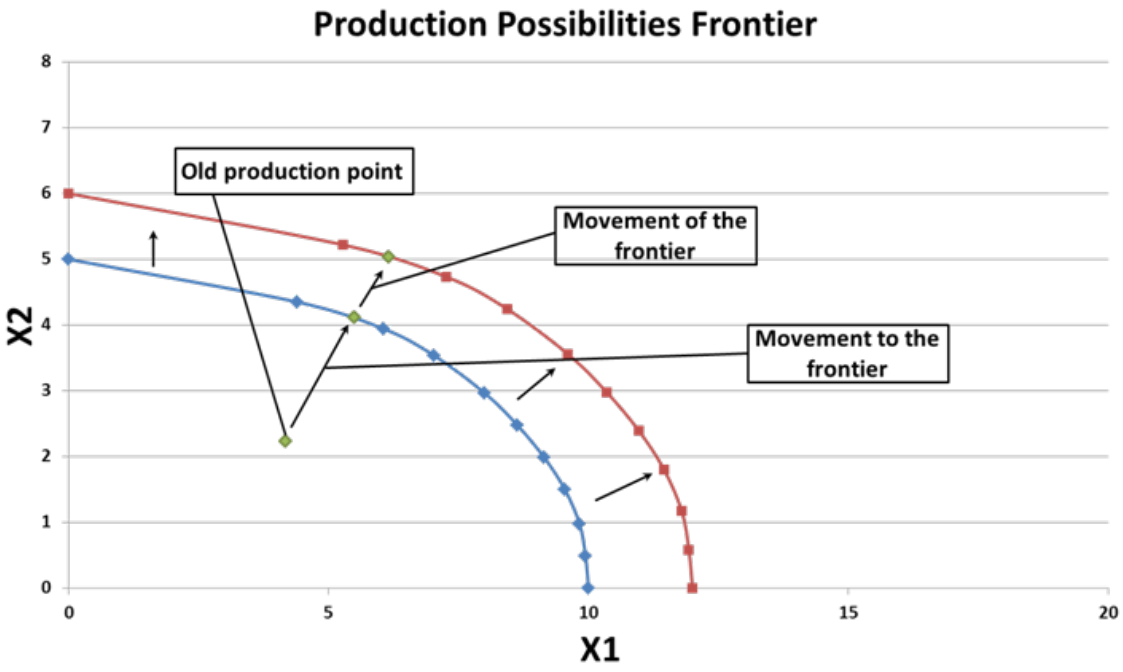
The aggregate real output of an economy can be increased in one of at least two ways. First, the actual production plan implemented in the economy can be moved from the interior of the production possibilities set to the frontier of the production possibilities set. Secondly, the set of production possibilities can expand as a result of an increase in the levels of the inputs or technical progress, causing the entire frontier of the production possibilities set to move outward, that is, from the blue line to the red line. In addition, if the economy operates within a range where there exist significant economies of scale, then doubling the levels of inputs will more than double the maximum levels of outputs attainable. Thus, for example, a constant annual rate of 10% growth in inputs may result in higher and higher (that is, accelerating) annual rates of growth of output of more than 10%.

One should distinguish between these different ways through which economic growth can be achieved. The first way can occur even in the absence of any increase in the inputs or technology transfer and represents a pure increase in domestic economic efficiency, realising

the latent surplus potential output. The second way can occur only through an increase in the inputs, tangible and intangible, or the adoption of a more efficient technology imported from abroad over time. In addition, if the economy is large enough so that the most scale-efficient plants can be built, thus realising the benefits of economies of scale, the rate of growth of such an economy can be significantly higher than that of a small economy with identical rates of growth of inputs. In fact, all these different ways can and do sometimes occur simultaneously, in which case an extraordinarily high rate of economic growth will result.

In the Chinese case, from the beginning of its economic reform in 1978 to the end of the last century, the growth of real output is probably the combined result of a movement from the interior of the production possibilities set to the frontier, the outward movement of the frontier of the production possibilities set itself due to the growth in inputs and technology transfer over time, as well as the realisation of the significant economies of scale made possible by the large size of its economy. Thus, its realised rate of growth can be and in fact has been extraordinarily high.

Chart 18: Movement to the Production Possibilities Frontier versus Movement of the Frontier



The sources of East Asian economic growth between 1965 and 1995 have been analysed by Lau and Park (2007)[5], using a meta-production function approach[6] and distinguishing three measured inputs: tangible capital, labour (in labour days) and human capital (in terms of years of schooling per person in the working-age population). What Lau and Park (2007) have found, for the Chinese economy, is that the economic growth during that period was mainly attributable to the growth of measured inputs and not to technical progress or equivalently to the growth of total factor productivity. In particular, the growth of tangible capital accounted for the bulk, more than 80 percent, of the measured economic growth in China (see Table 3). In other words, China had been "working harder, not working smarter". It is also useful to note that between 1965 and 1973, Chinese tangible capital stock also grew rapidly, at 13.5% per annum, but the Chinese economy, which still operated under mandatory central planning at the time, did not experience a sustained high rate of growth.

Table 3: The Sources of Chinese Economic Growth

The Sources of Chinese Economic Growth							
Sample period	Tangible Capital		Labour		Human Capital		Technical Progress
	% of Growth Accounted by	Rate of Growth of Input (%)	% of Growth Accounted by	Rate of Growth of Input (%)	% of Growth Accounted by	Rate of Growth of Input (%)	% of Growth Accounted by
1965-1973	85.29	(13.51)	10.36	(3.19)	4.35	(7.01)	0
1974-1985	80.46	(9.44)	14.64	(2.53)	4.9	(6.37)	0
1986-1995	86.39	(12.54)	10.34	(1.92)	3.27	(4.54)	0
Source: Lau and Park (2007).							

The growth accounting results presented in Table 3 differ from similar exercises done by other researchers. The differences in the results may be attributed to the maintenance of the conventional assumptions of constant returns to scale, competitive markets, and profit

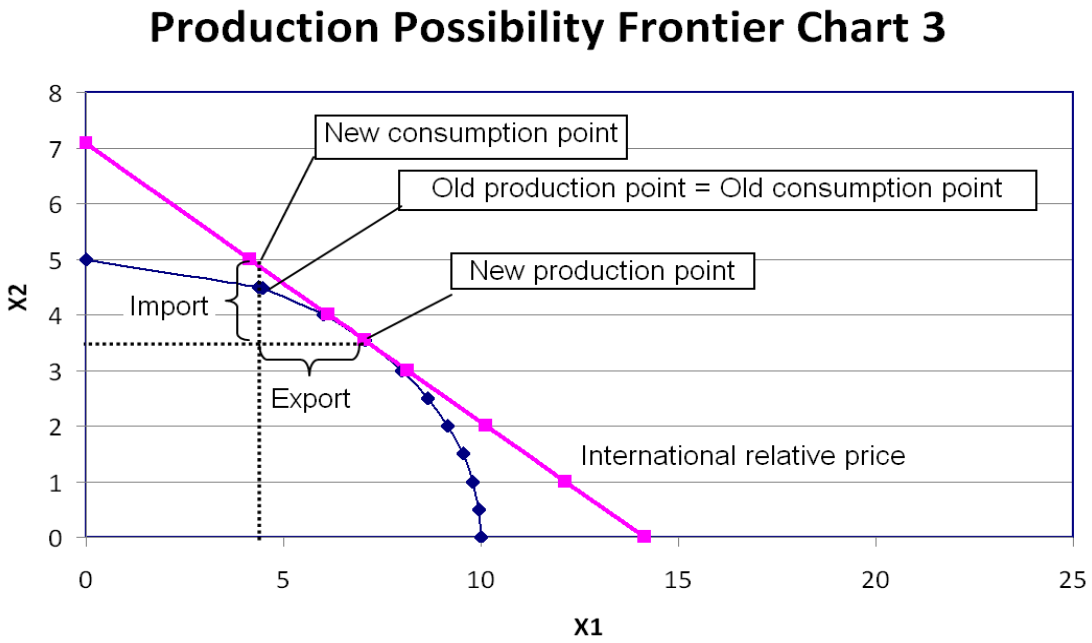
[5] Lau and Park are in the process of updating their study to include data up to 2010.
[6] For discussions of the meta-production function approach, see Lau and Yotopoulos (1989) and Boskin and Lau (1992).

maximisation in these other studies. Our approach to growth accounting, which relies on the direct estimation of a meta-production function from pooled time series data of different countries, is completely free of these assumptions. In general, assuming constant returns to scale when in fact there are increasing returns to scale tends to overestimate the degree of technical progress; and assuming competitive profit maximisation when the labour market is actually monopsonistic also tends to underestimate the true contribution of the growth of the labour input.

6. Opening the Economy Enhances the Set of Domestic Consumption Possibilities

Opening the domestic economy to the rest of the world through international trade and investment can also expand the set of domestic production possibilities through additional imported inputs financed through foreign direct investment, foreign portfolio investment, foreign loans and foreign aid, or technology transfer (import of intangible capital input). However, just opening the economy to the rest of the world through trade alone can enhance the set of domestic consumption possibilities even if the set of domestic production possibilities remains unchanged. This idea is illustrated in Chart 19. In Chart 19, in the absence of international trade, the set of domestic consumption possibilities for the economy is the same as the set of domestic production possibilities, bounded by the blue frontier line and the two axes. With trade, the set of domestic consumption possibilities for the economy becomes the triangle bounded by the pink international relative price line and the two axes. This is because every combination of X1 and X2 on the pink international relative price line can be attained by the economy through appropriate quantities of export of one good and import of the other good at the given international relative price. It is clear that the set of domestic consumption possibilities with trade, no matter what the international price ratio is, will always properly contain the set of domestic production (and consumption) possibilities without trade. Every feasible combination of consumption of the two goods X1 and X2 in the absence of trade is contained in the set of consumption possibilities with trade, but not vice versa. Thus, general social welfare attainable with trade must be at least as high as, and in general higher than, that without trade, even in the absence of any change in the set of domestic production possibilities.

Chart 19: The Set of Domestic Consumption Possibilities is Enhanced with Trade

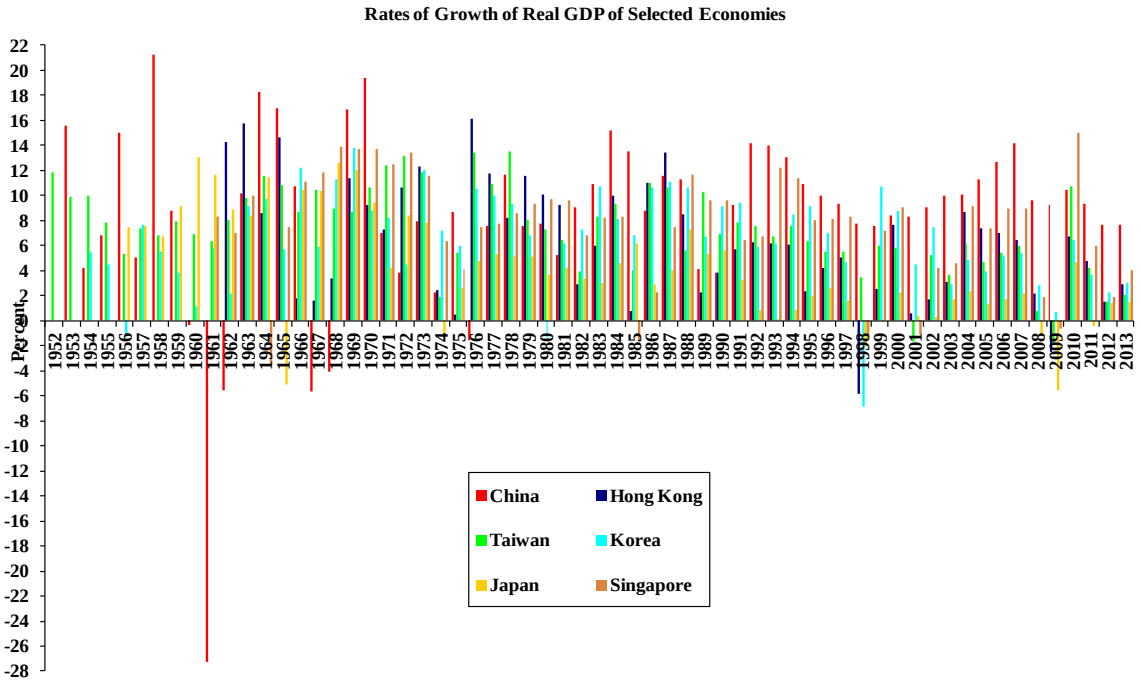


Hence, the opening of the Chinese economy in 1978 brought major benefits to the Chinese consumers by augmenting both the set of domestic production possibilities and the set of domestic consumption possibilities. In 2000, China also acceded to the World Trade Organization (WTO) and began to participate even more actively in the world markets. While China is currently only the second largest trading nation in the world, after the U.S., it has become the largest exporting nation in terms of goods and services (US$2.425 trillion in 2013), followed by the U.S. (US$2.271 trillion). The U.S. is the largest importing nation in terms of goods and services (US$2.75 trillion), followed by China (US$2.19 trillion). China has also become the largest exporting nation in the world in terms of goods alone, followed by the U.S. The U.S. is the largest exporting as well as importing nation in terms of services, followed by respectively the United Kingdom and Germany.

7. The "Wild Geese Flying Pattern"—The Further Advantage of China's Size

The Chinese economy has a further growth advantage because of its size, beyond the simple considerations of the economies of scale in production and in innovation. The well-known metaphor of the "Wild Geese Flying Pattern", first introduced by Kaname Akamatsu (1962), can be used to explain how East Asian industrialisation first started in Japan in the early 1950s and then spread successively to the rest of East Asia: first to Hong Kong in the mid-1950s, and then to Taiwan in the late 1950s, and then to South Korea and Singapore in the mid-1960s, and then to Southeast Asia (Thailand, Malaysia, Indonesia) in the 1970s, and then to Guangdong, Shanghai, Jiangsu and Zhejiang in China as China undertook economic reform and opened to the world beginning in 1978. In Chart 20, the annual rates of growth of selected East Asian economies from 1952 to 2013 are presented. Note that Japan was the initial high-growth economy, followed by Hong Kong, and then Taiwan, and then Singapore and South Korea and finally the Mainland of China.

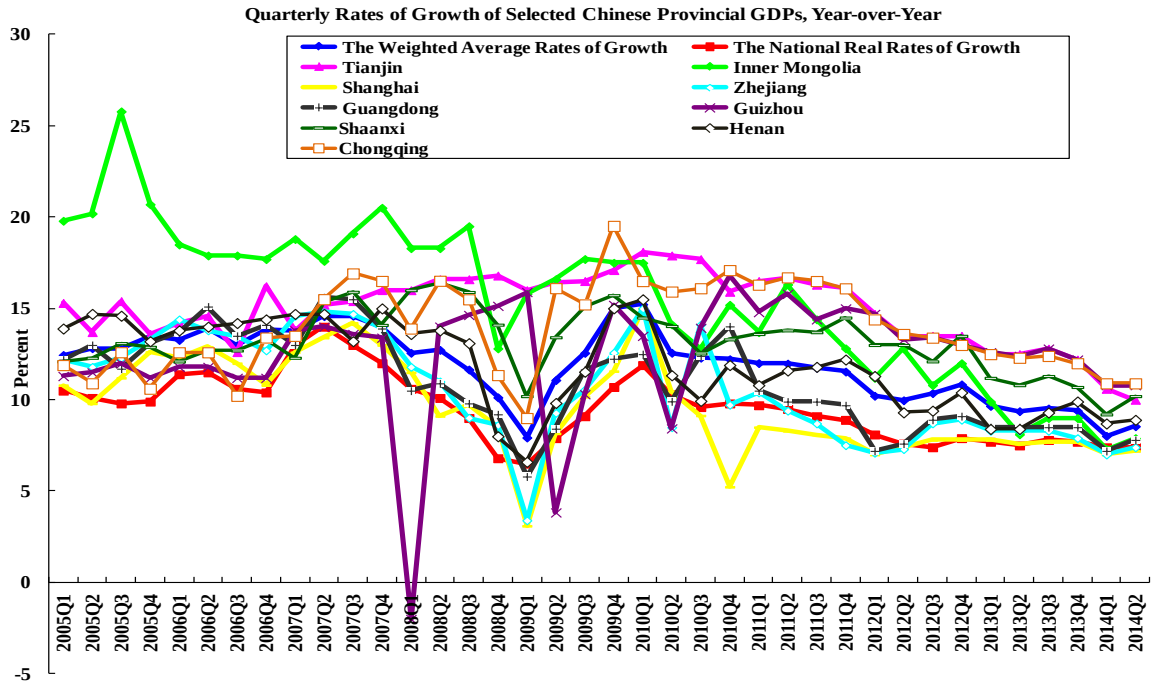
Chart 20: Annual Rates of Growth of Real GDP: Selected East Asian Economies since 1952



This “wild geese flying pattern” metaphor can actually be applied not only to East Asia but also to China itself because of its large size. Within China, industrialisation first started in the coastal provinces and municipalities—Guangdong (including Shenzhen), Shanghai, Jiangsu and Zhejiang, and then migrated and spread to other provinces, autonomous regions and municipalities in the interior—to Chongqing, Hebei, Henan, Hunan, Jiangxi, Shaanxi and Sichuan—as real wage rates rose on the coast. The economies of the Chinese coastal areas such as the Pearl River Delta (Guangdong Province) and the Yangzi River Delta (Jiangsu and Zhejiang Provinces and Shanghai Municipality) would have slowed down a long time ago had it not been for the couple of hundreds of millions of migrant labourers that flocked to these areas from the interior, constantly replenishing the supply of surplus labour there. As economic growth in the coastal provinces, autonomous regions and municipalities began to slow, the other provinces, autonomous regions and municipalities in the central and western areas of China would take their turns as the fastest growing areas and thus help to maintain a relatively high rate of growth for the Chinese economy as a whole for many more years to come.

In Chart 21, the quarterly rates of growth of the real GDPs of selected Chinese provinces, autonomous regions and municipalities from 2005 to the present are presented. While a general slowdown is clearly evident, the rates of growth seem to have stabilised. Note that Inner Mongolia, Henan and Guangdong have recently fallen into the group of the slowest growing provinces and regions from the group of the fastest growing provinces and regions. In contrast, provinces and municipalities like Chongqing and Guizhou have become the fastest growing areas even though they were among the slowest in the mid-2000s.

Chart 21: Quarterly Rates of Growth of Real GDP of Selected Chinese Provinces, Y-o-Y



8. Towards a Surplus Economy

In the early 2000s, the Chinese national saving rate rose to 50% of the Chinese GDP and sometimes even exceeded 50%. At the same time, the Chinese national investment rate also began to rise gradually from 40% to almost 50% of the Chinese GDP. (See Chart 4.) However, despite a national saving rate that is the highest among major economies in the world, the domestic supply of saving still does not appear to be sufficient to meet the voracious domestic demand for investment, which is mostly financed through bank credit. The huge excess demand for credit for the purpose of financing investment may be evidenced by not only the chronically high rate of interest on loans but also the prevalence of the use of loan quotas and credit rationing by banking regulators. The level of the rate of interest by itself is not an effective enough rationing device or deterrent to borrowers who do not plan to repay when their investment projects do not work out as hoped. Unfortunately, many borrowers or potential borrowers in China, including both state-owned enterprises (SOEs) and private enterprises, have no plans to repay their loans if their investment projects fail. When borrowers do not plan to repay their loans when things turn sour, they tend to borrow too much and invest in high risk projects (these are typical outcomes of moral hazard). This

has resulted in a chronically excess demand for credit in China, as evidenced by a chronically high rate of interest in China since the early 2000s.

While small and medium enterprises in China have found it almost impossible to obtain bank loans, huge excess capacities in manufacturing industries such as steel, cement, glass, aluminium smelting, shipbuilding and solar panels were developed in China by state-owned as well as private enterprises affiliated or allied with local governments, taking advantage of their preferential access to bank credit. There is far too much capital invested in the manufacturing industries mentioned above as well as in high-end residential housing in China, resulting in excess supply almost everywhere. The average rate of capacity utilisation in these manufacturing industries is currently around 70%. The average rate of vacancy in urban residential housing is at least 25%. Thus, China has become not only a surplus labour economy but also a surplus capital economy.

How did the surplus capital come about? It came about because of massive fixed investment in many of the manufacturing industries, undertaken by both state-owned and private enterprises, often without regard to its potential rate of return, supported by local governments under pressure to increase both local GDP and employment in the near term, and financed through bank credit. Since the performance of Chinese local government officials is judged by key performance indicators, which include the rates of growth of the local real GDP and employment, these officials have a strong incentive to do whatever possible during their term of office, typically five years, to increase both local real GDP and employment. In the early 2000s, the local government officials discovered that they could make use of the land resources under their control to help finance directly or indirectly local development of manufacturing industries such as steel, cement and glass as well as residential housing, by simply exercising their power to change land use or to grant mining rights. Overnight, huge wealth could be and was in fact created. The local officials were often allied with local state-owned or privately owned enterprises and helped to arrange financing for them through loans from local branches of state-owned banks, facilitated by a loose credit culture. In order to protect these local manufacturing industries, many local officials also imposed, illegally, effective bans on the use of competitive manufactured products of non-local origin within their respective jurisdictions. It is through this local protectionism that many of these manufacturing enterprises have managed to survive, but only barely so. They operate at very low rates of capacity utilisation that produce not only no profit but often not

even enough revenue to service the debts. Moreover, a local government official usually expects to be promoted to a different locality at the end of his or her term and so is not too overly concerned with the longer-term viability of the fixed investment in manufacturing in his or her jurisdiction or the repayment of the related bank loans, leaving these problems for the successor to deal with.

The interest rate parity theory suggests that the rate of interest in a currency devaluing with respect to another should be higher than that of the other currency by the expected percentage devaluation. This is because in equilibrium, an investor should be indifferent between holding either currency, and hence the returns from holding either currency, including both interest and appreciation/devaluation, should be equal. However, empirically, precisely the opposite has been observed. Even though the Renminbi has been appreciating intermittently with respect to the US$ in both nominal and real terms since 1994, but particularly since 2005 (see Chart 22), both the Renminbi deposit and lending interest rates have since early 2008 (and before the Global Financial Crisis) been much higher than the respective US$ interest rates (see Charts 23 and 24). While it is true that China still has both inbound and outbound capital controls, so that the interest rate parity theory may not apply fully, such controls are well known to be in fact quite leaky. The chronically higher Renminbi interest rate relative to the US$ interest rate thus lends credence to the idea of a chronically excess demand for credit in China, which has kept the Chinese interest rate abnormally high, contrary to the prediction of the interest rate parity theory.

Chart 22: The Nominal and Real Yuan/US$ Exchange Rates

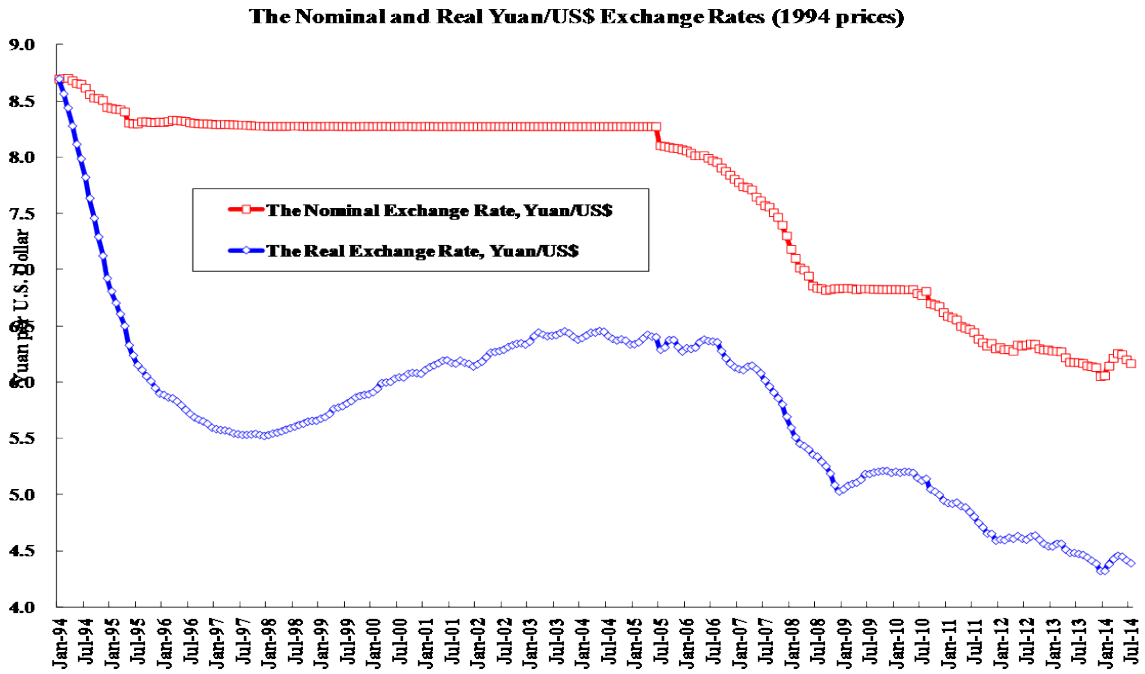


Chart 23: China-U.S. Lending Interest Rate Differential

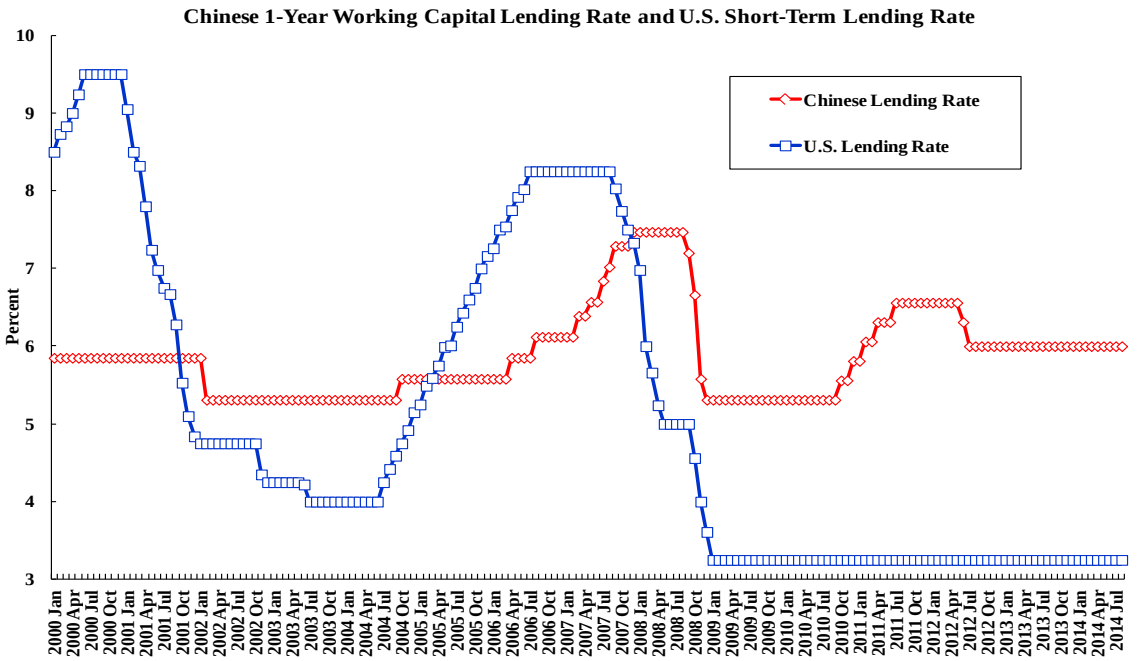
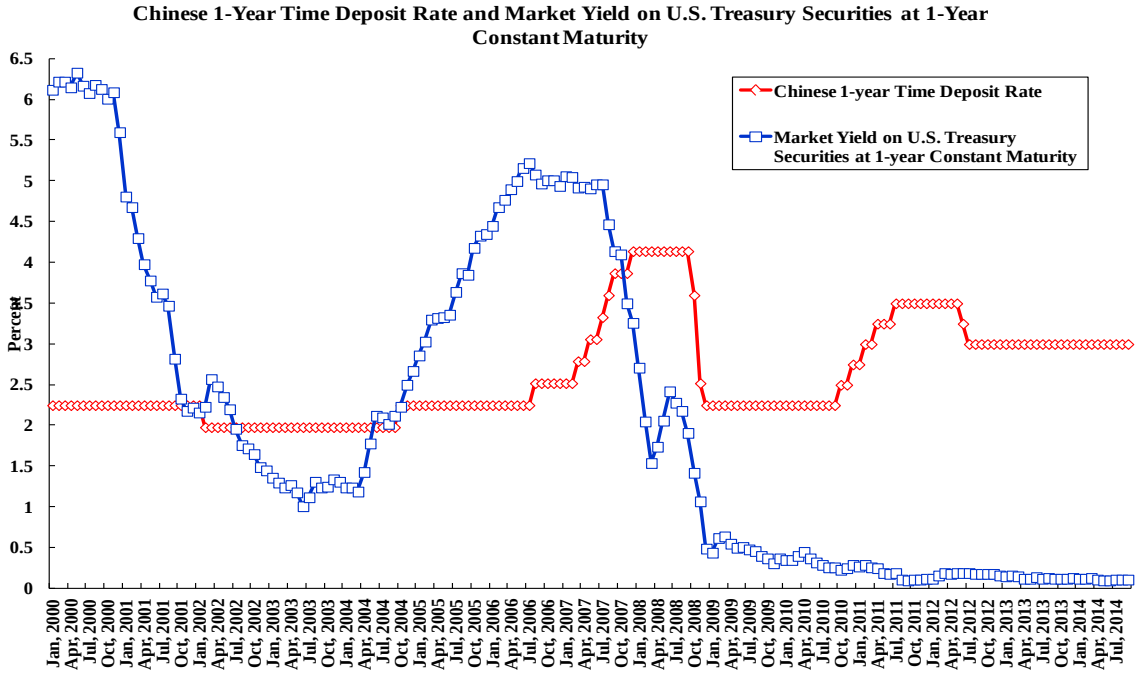


Chart 24: China-U.S. Deposit Interest Rate Differential



Of course, all of these excess manufacturing capacities and vacant residential housing units in China represent wasted investment. However, one important implication of these excess manufacturing capacities is that the Chinese real GDP at the present time is not constrained by supply but instead is primarily determined by aggregate demand. As long as there is aggregate demand, the supply will be there to meet the demand without causing inflation. With both capital and labour in surplus, all the Chinese economy needs to do to increase real output is to maintain and increase the level of aggregate demand. As the Chinese Government can exercise a decisive influence on the level of domestic aggregate demand through both fiscal and monetary policies, the Chinese economy should be able to continue to grow at a respectable rate.

However, going forward, the growth in Chinese aggregate demand will not be driven by exports or by fixed investment in manufacturing or residential housing, but instead will be coming mainly from three components of internal demand: firstly, public infrastructural investment such as high-speed railroads, urban mass transit systems, facilities for the support of universal free or low-cost internet access in urban areas and affordable housing through urban renewal; secondly, public goods consumption (including necessary related investments)

such as education, health care, care for the elderly, and environment control, preservation and restoration—securing cleaner air, water and soil; and thirdly, household consumption, especially from the expanding and rising middle class. Urbanisation will help if it goes hand in hand with the creation of employment in the secondary or tertiary sectors in the cities. While expenditures on public goods consumption, including the necessary related investments, will count as GDP, some of the benefits of these expenditures may not be pecuniary (for example, cleaner air, water and soil, better education and better national health) and may not be fully reflected in the conventional measurement of GDP. However, the increase in general welfare as a result of these expenditures is definitely real. Moreover, increasing public goods consumption is an effective method of redistribution in kind. For example, since everyone breathes the same air, if the air is cleaner, both the wealthy and the poor benefit equally; and better access to health care may benefit the lower-income households more.

Household consumption will, in time, become a major driver of the growth in Chinese aggregate demand. Already, household consumption, as measured by real retail sales, has been growing at one and a half times the rate of growth of real GDP. However, since Chinese household income currently constitutes only less than 50 percent of Chinese GDP, it will take a long time for household consumption to become the dominant part of GDP, as in other developed economies such as the U.S. If the household share (or labour's share) of GDP is to grow more quickly, the Chinese Government will have to modify its wage policy to allow faster increases (which it has already started to do). In China, the government, including the central government, the local governments, the state-owned enterprises, as well as all their affiliated business units, is, directly and indirectly, the largest single employer in the economy. Thus, it has monopsony power in the labour market, and in fact has exercised it, keeping the market wage rates lower than otherwise. This has resulted in a lower share of labour (less than 50 percent)[7] and a correspondingly higher share of capital in the Chinese GDP, which in turn have led to a higher national saving rate because the owners of capital save more than labourers. The high Chinese national saving rate and its correspondingly low ratio of consumption to GDP have in turn made possible its high national investment rate.

We refer to China today as a surplus economy not in the sense that the final stage of communism has arrived—the Chinese economy is still very far from the ideal of "to each

[7] In a typical developed economy, the share of labour in GDP is between 60 and 70 percent.

according to his needs". What we mean by a surplus economy is simply that the real output of the Chinese economy will not be supply-constrained but instead will be primarily determined by the level of its aggregate demand.

9. The Short-Term Economic Outlook

Will the Chinese economy be able to continue to grow at a high rate in the future? The rate of growth has already declined significantly, from almost 10 percent per annum down to around 7 percent per annum at the present time (see Chart 25). However, it appears to have stabilised (see the monthly rates of growth of value-added in industry in Chart 26, comparing like colours with like colours). In addition, the monthly rates of growth of fixed investment, as presented in Chart 27, also seem to have stabilised at a new and slightly lower rate. This reduction in the rate of growth of fixed investment is actually desirable in view of the massive excess capacities in many of the manufacturing industries and the excess supply of residential housing. Moreover, since the service sector, which requires less fixed investment per unit output, has been growing faster than the industrial sector recently, the reduction in the rate of growth of fixed investment for the economy as a whole is not unexpected. The rate of growth of real household consumption, as measured by real retail sales, continues to stay above 10%, at approximately one and a half times the rate of growth of real GDP, testifying to continuing robust growth of household consumption demand (see Chart 28). Some would argue that the slowdown has been due, in part, to the "anti-corruption" campaign, which started in late 2012 and is still going strong. The campaign has certainly discouraged conspicuous consumption and entertainment, reduced lavish gift-giving, and perhaps caused some bureaucrats to go into a "do-nothing" mode. However, the success of the "anti-corruption" campaign will bring real benefits to the Chinese economy in the long run.

Chart 25: Quarterly Rates of Growth of Chinese Real GDP, Y-o-Y and Seasonally Adjusted

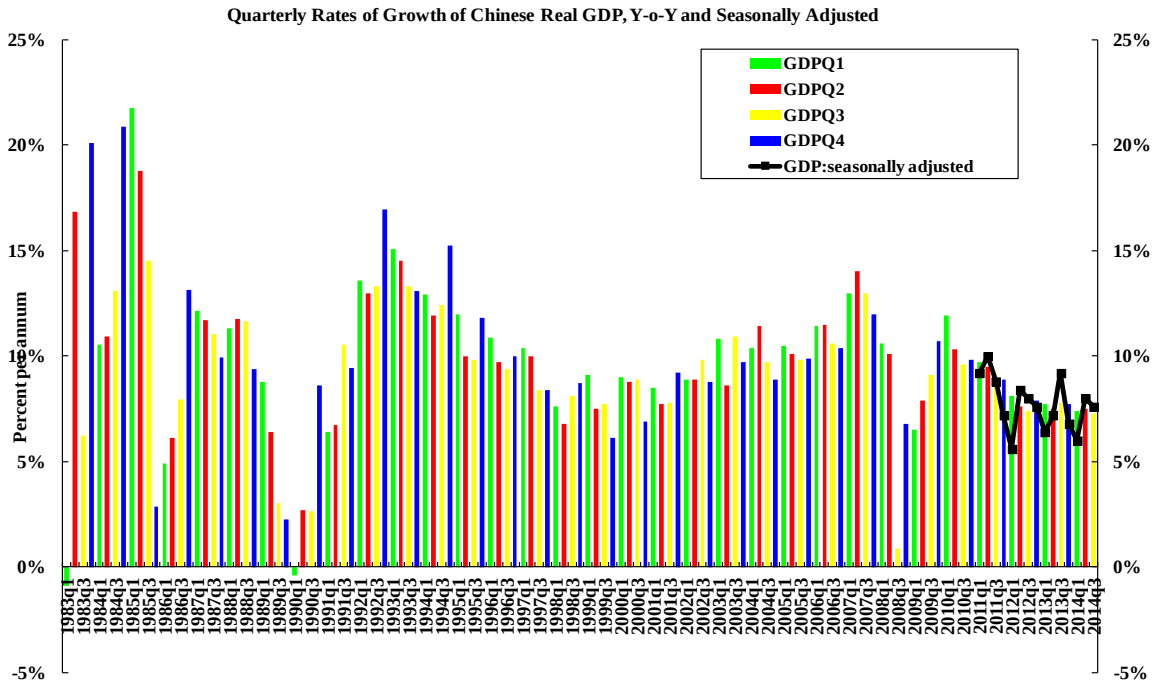


Chart 26: Monthly Rates of Growth of the Real Value-Added of Chinese Industry, Y-o-Y

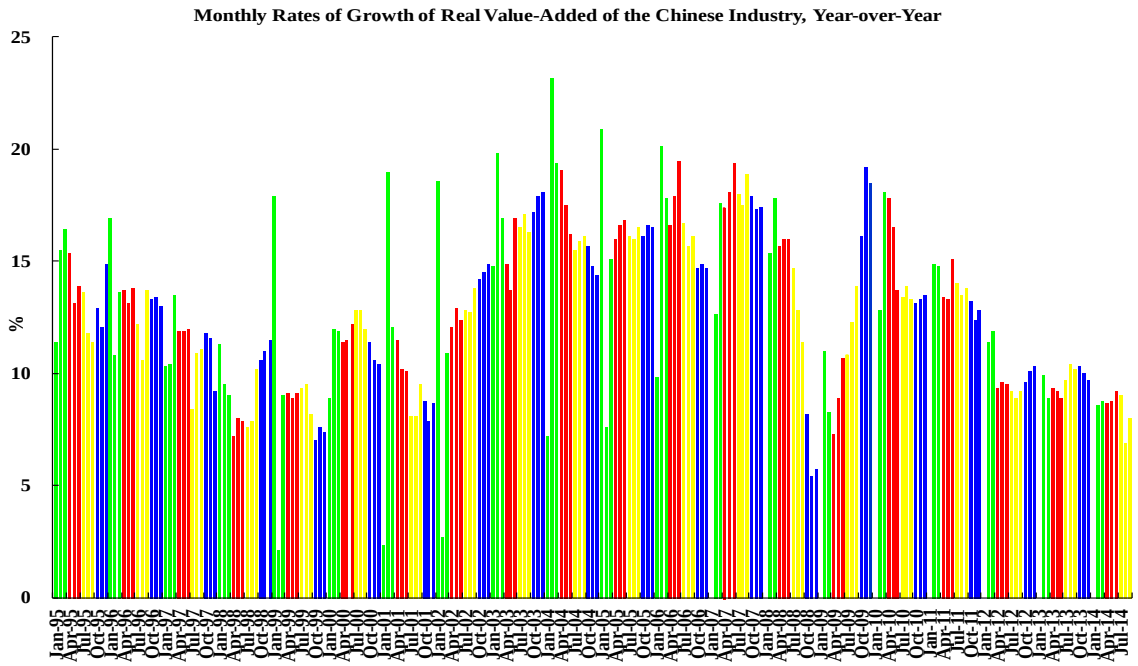


Chart 27: Monthly Rates of Growth of Chinese Fixed Assets Investment, Y-o-Y

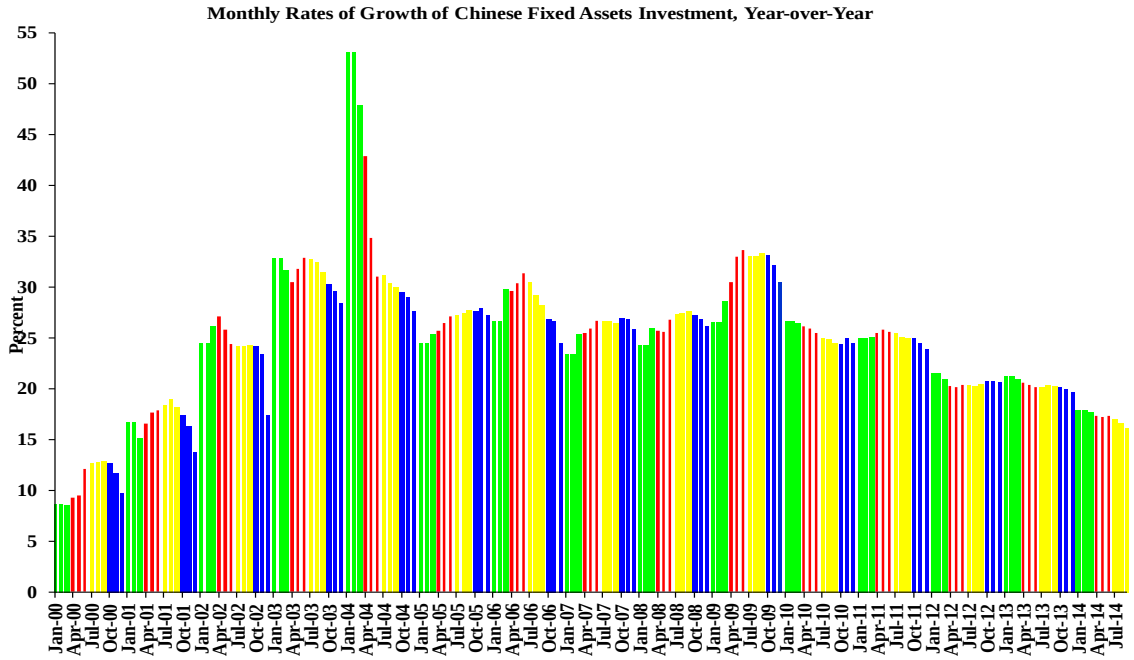
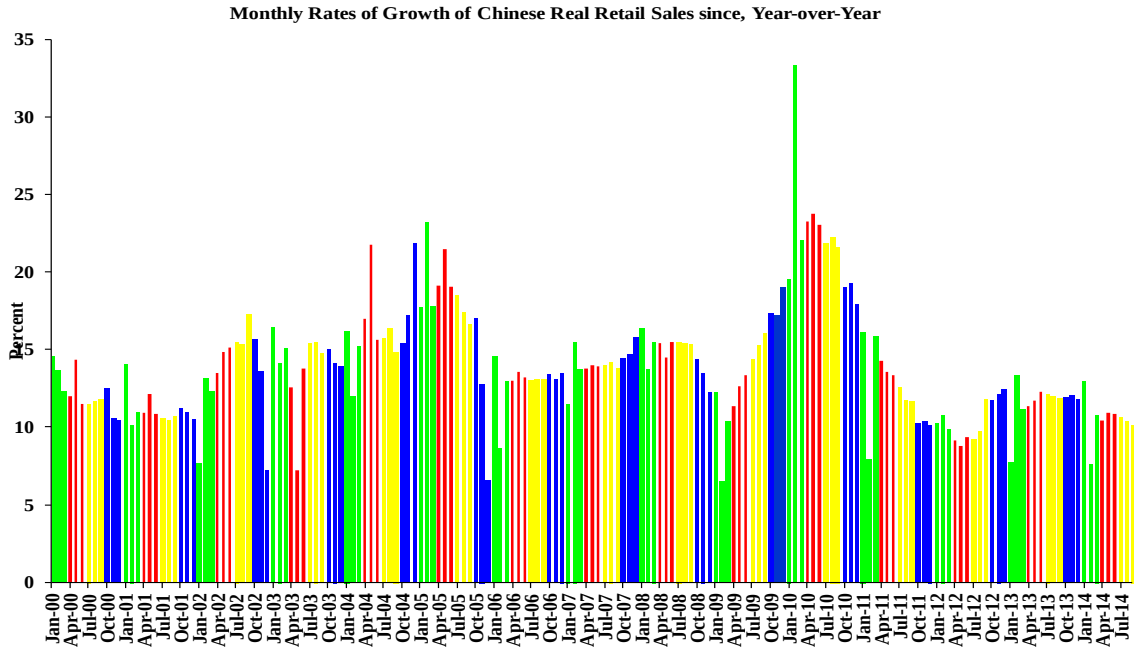


Chart 28: Monthly Rates of Growth of Chinese Real Retail Sales, Y-o-Y

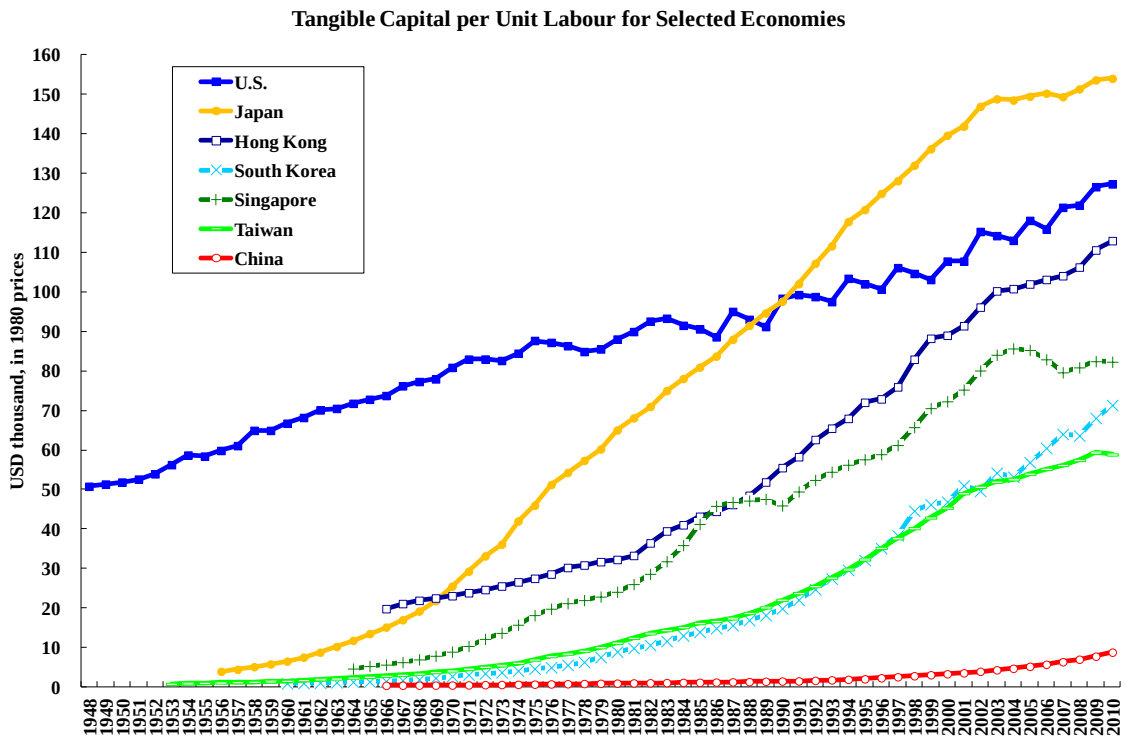


Overall, the slowdown of the rate of growth to around 7% is actually a healthy and welcome development, as a close to 10% rate of growth is unlikely to be sustainable, not only financially, but also environmentally and is likely to cause overheating of the economy once again. The slowdown has also allowed the overall rate of inflation to fall, providing room for some downward adjustment of the interest rate. (What is more needed, however, is the reduction of the mandatory interest rate spread between deposits and loans, which is still among the highest in the world.) There will, however, have to be some difficult adjustments in some of the manufacturing industries with excess capacities and in the residential real estate sector.

The Chinese national saving rate will remain high in the foreseeable future because the household or labour share of GDP is still relatively low, below 50 percent, and because the Chinese enterprises, especially the state-owned enterprises, distribute little or no cash dividends, reinvesting almost all of their profits. However, the national saving rate is expected to decline gradually, as wages rise and the state-owned enterprises are increasingly required to distribute more cash dividends to their shareholders, including both the government and the households, which are expected to spend most of the proceeds in the form of public goods and household consumption respectively.

The high national saving rate will ensure that the Chinese tangible capital stock will continue to grow at a rapid rate in the foreseeable future, increasing Chinese potential real output. Surplus labour will continue to exist for a couple of decades, as will the advantages of a huge domestic market. The Chinese capital intensity, that is, tangible capital per unit labour, has remained low for the country as a whole, especially when compared to the U.S., Japan and the four East Asian newly industrialised economies (see Chart 29), despite its high rate of investment. There is therefore still a great deal of room for tangible capital-driven economic growth in China and eventually for intangible-capital driven growth as Chinese investments in human capital and R&D capital continue to increase.

Chart 29: Tangible Capital per Unit Labour, 1980 US$, Selected Economies



Even though the Chinese "working-age population" is supposed to have reached a peak, it is unlikely that there will be a "real" labour shortage. The existing mandatory retirement ages of 55 for women and 60 for men, set in the 1950s, are too low given the significantly lengthened life expectancy of the Chinese population. One ready solution for the problem of potential labour shortage is to provide individual workers with the option of continuing to work until age 65 or even 70. (One may need to impose some age limits on administrative leadership positions.) Thus, the labour supply should not be a problem for the Chinese economy for the next couple of decades. The "one-child policy" is already in the process of being modified. Married couples with one spouse being a single child will be allowed to have two children. Since almost all people born after 1978, especially those in the urban areas, are single children, this is effectively a "two-child policy", but without saying so explicitly. Of course, this change in the population policy will take at least a generation to begin to have any significant effect on the size of the labour force.

Expectations are important determinants of whether an economy grows or stagnates. The Chinese central government has the necessary credibility to change expectations through

its plans and actions, as it did in 1992 through Mr. Deng Xiaoping's famous southern tour, in 1997 by holding the Renminbi/US$ exchange rate steady, and again in 2008 through its 4 trillion Yuan economic stimulus programme. In all of these cases, the Chinese government was able to turn around the very negative expectations about the future of the Chinese economy into positive ones, and in so doing greatly reduced the uncertainty pertaining to the future and increased general business confidence. These changes in turn fuelled investment booms that resulted in the subsequent economic growth. Expectations will continue to play an important role in the Chinese economy. A strong central government with the power to mobilise aggregate demand can change expectations credibly to keep the economy growing.

It is interesting to compare the other available near-term forecasts of the rates of growth of the Chinese economy. In Table 4, the forecasts of several other organisations are presented. They broadly confirm that an average annual rate of growth of around 7% is likely to be attainable in the next couple of years.

Table 4: Near-Term Forecasts of Annual Rates of Growth of Chinese Real GDP

Forecasts of Annual Rates of Growth of Chinese Real GDP			
Forecasting Organisation	2014	2015	2016
Asian Development Bank	7.50%	7.40%	NA
The International Monetary Fund	7.50%	7.30%	NA
The Organisation for Economic Cooperation and Development	7.30%	7.10%	6.90%
The World Bank	7.60%	7.50%	7.40%
The Conference Board (U.S.)	7%	NA	NA

10. The Long-Term Economic Outlook

If current economic trends continue between now and 2030, it may be projected that the Chinese economy will grow at an average annual rate of around 7%, and that the U.S. economy will grow at an average annual rate of around 3.5%. It will then take another 15 years or so for Chinese real GDP to catch up to the level of the U.S. real GDP (see Chart 30—as before, the lines represent levels and the columns represent the annual rates of growth). In the meantime, the U.S. economy will still be the largest in the world. Chart 31 shows the projections of the Chinese and the U.S. real GDP per capita up until 2030. By that time, the Chinese real GDP per capita is projected to exceed US$21,000 (in 2013 prices), and thus above the so-called "middle-income trap," but which would still be just a quarter of the projected then U.S. real GDP per capita of US$83,600. It will take a further 30 years, until around 2060, for China to reach the same level of real GDP per capita as the United States. Bear in mind that in the meantime, the U.S. economy will also continue to grow, albeit at rates significantly lower than those of the Chinese economy, and that the Chinese population is likely to reach a plateau around 2045.

Chart 30: Actual and Projected Chinese and U.S. Real GDPs and Their Rates of Growth

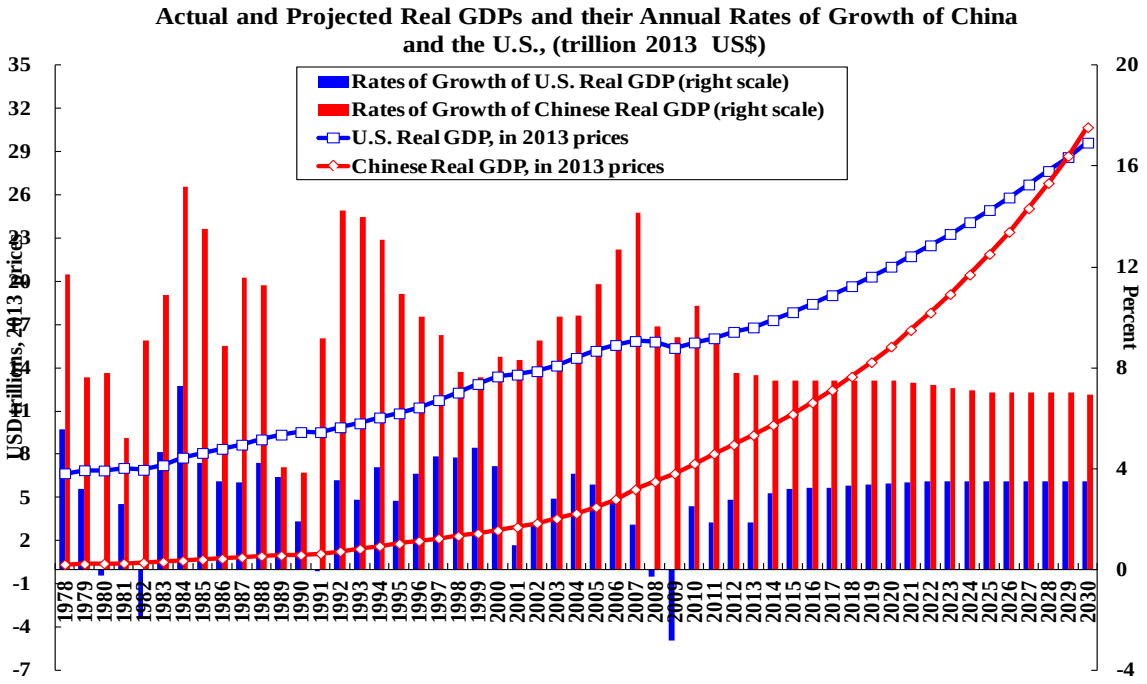
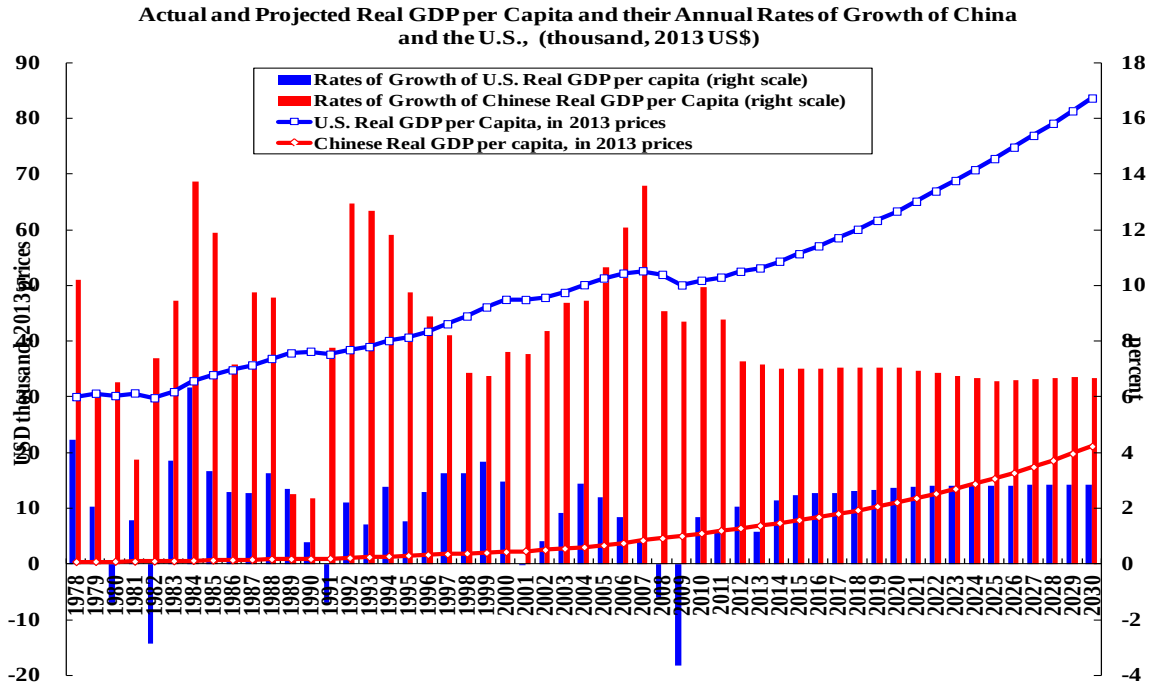


Chart 31: Actual and Projected Chinese and U.S. Real GDP per Capita and Rates of Growth



There are few published forecasts of long-term rates of Chinese economic growth. The U.S. Conference Board has forecast an average annual rate of growth for the Chinese economy of 5.9% between 2014 and 2020 and 3.5% between 2020 and 2025. These forecasts appear to be on the low side compared to our forecasts presented in Charts 30 and 31 above, especially given the continuing favourable Chinese economic fundamentals.

11. Concluding Remarks

China is a large continental country like the United States and will develop similarly into a largely internal-demand driven economy. International trade and investment are unlikely to have a decisive impact on the Chinese economy in the future as they did in the past. Eventually, Chinese exports and imports as percents of its GDP should be relatively low, in the tens, just like the U.S. and Japan. Going forward, Chinese aggregate demand will depend mostly on the growth of internal demand—public infrastructural investment, investment in the provision of public goods, public goods consumption (education, health care, elderly care and environmental control, preservation and restoration), and household

consumption—and not on exports, not on capacity expansion in the existing manufacturing industries, and not on residential housing (except possibly for slum clearance).

Given the huge excess capacities in manufacturing in China today, Chinese GDP will not be supply-constrained but will be primarily determined by aggregate demand in the next five to ten years. The Chinese central government can have a decisive influence on the level of internally generated aggregate demand and is expected to ensure that it continues to be adequate. The Chinese economy should therefore have no difficulty achieving an average annual rate of growth of around 7%, more or less independently of what happens in the rest of the world. Beyond that, on the basis of its favourable economic fundamentals, the rising investment in intangible capital such as human capital and R&D capital, and the expectation that the labour (household) share of GDP is likely to rise in the future, China should also be able to continue growing at an average annual rate of around 7% for the decade following, also more or less independently of what happens in the rest of the world.

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