

# The Sky is Not Falling V

## 天塌不下来 (五)

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\*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.

# Outline

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- ◆ The Internationalization of the Renminbi
- ◆ The Chinese Debt Burden
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# Introduction

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- ◆ Chinese economic growth has been slowing down from double-digit rates of growth to around 6.5% in a process of transition to a “New Normal”. The rate of growth of exports has also been declining. There is significant excess capacity in almost all major manufacturing industries and in residential real estate in almost all cities with the exception of the few first-tier cities such as Beijing, Shanghai, Guangzhou and Shenzhen.
- ◆ The stock market has been doing poorly since the burst of the bubble in July 2015. The abrupt devaluation of the Renminbi against the U.S. Dollar in August 2015 and in January 2016 has also shaken domestic as well as international confidence in the Chinese economy. However, the Renminbi exchange rate has stabilized recently after assurances by Premier Li Keqiang and Governor of the People’s Bank of China Zhou Xiaochuan.

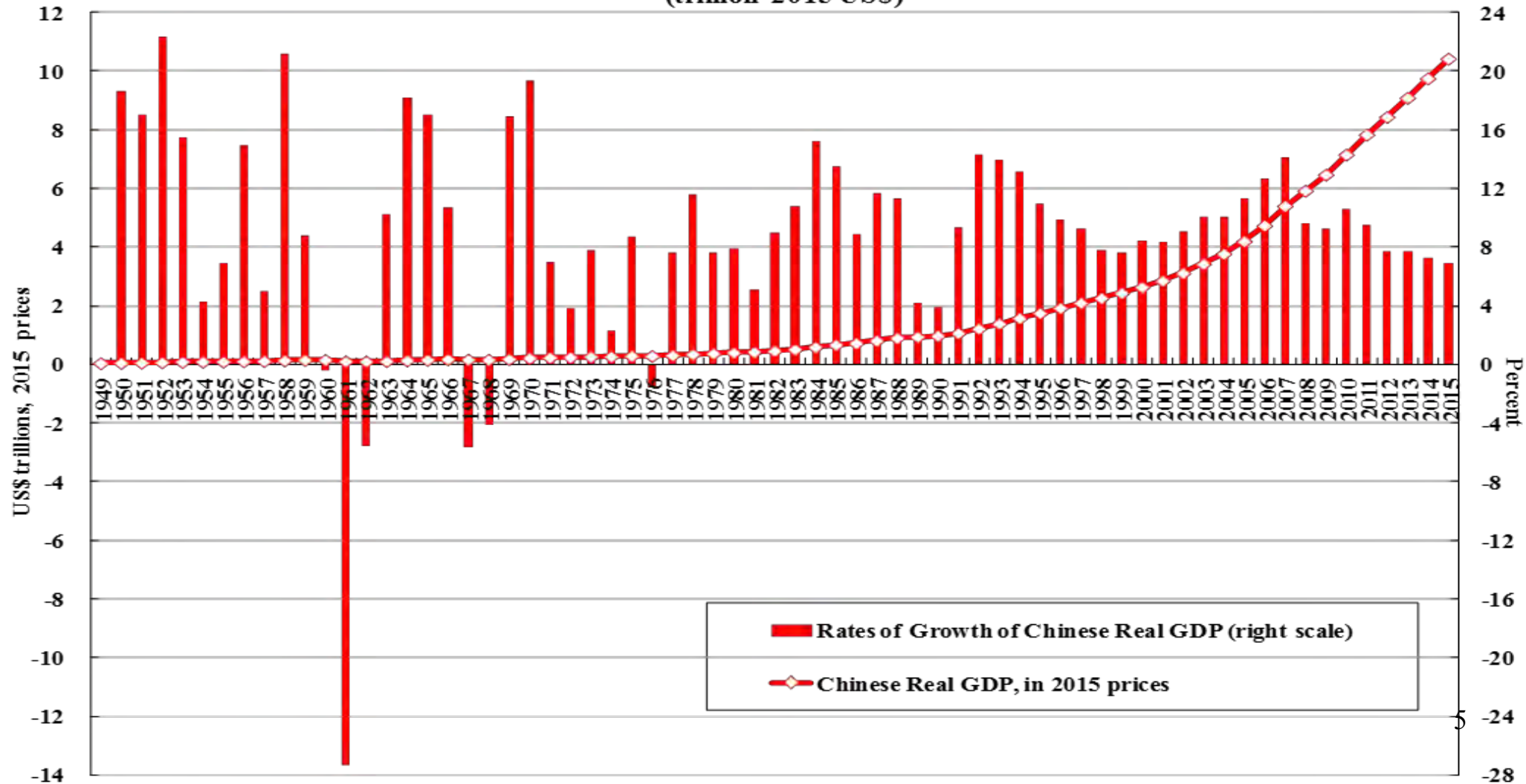
# Introduction

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- ◆ The official foreign exchange reserves have fallen by almost US\$800 billion, or 20 percent, since mid-2014, from almost US\$4 trillion to US\$3.21 trillion at the end of March 2016.
- ◆ The economic analysts in the West are almost uniformly negative on the economic outlook of China. And foreign hedge funds have been selling short the Renminbi. Is the sky really falling on the Chinese economy?
- ◆ My answer, as I similarly argued in 1997, 2008, 2012 and 2015, is “No!”. That is why I am presenting my paper once again.
- ◆ This is because the Chinese Government, unlike other governments such as the U.S., still has many instruments at its disposal to ensure that there is sufficient aggregate demand to keep the Chinese economy growing.

# The Level and Annual Rate of Growth of Chinese Real GDP (trillion 2015 US\$)

Chinese Real GDP and Its Rates of Growth since 1949  
(trillion 2015 US\$)



# The History of “The Sky is Not Falling!”

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- ◆ In 1997, at the height of the East Asian currency crisis, I wrote an article, “The Sky is not Falling (天塌不下来),” basically saying that the Chinese economy would be able to emerge from the crisis more or less unscathed.
- ◆ The Chinese Government at the time decided not to devalue its currency, the Renminbi, even though every other East Asian economy, except Hong Kong, had done so. The policy of holding the exchange rate of the Renminbi steady at the time was opposed by many people in China, especially the exporters, but ultimately it proved helpful not only to China itself, but also enabled the relatively fast recovery of the other East Asian economies from the crisis.
- ◆ China emerged from the 1997-1998 East Asian currency crisis relatively unscathed and also earned the gratitude and respect of the East Asian countries and regions.

# The History of “The Sky is Not Falling!”

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- ◆ In September, 2008, the external environment facing the Chinese economy was similarly negative, though in a totally different way. The failure of Lehman Brothers in the United States caused a major financial crisis, the magnitude of which had not been seen since the Great Depression of 1929. And the crisis of confidence was spreading to Europe and the rest of the world.
- ◆ Overnight, credit and liquidity dried up completely in the U.S. and Europe. There was panic almost everywhere. With the United States and European economies falling into recession, the Chinese and East Asian economies faced abruptly reduced demands for their exports by more than 50 percent, as witnessed by the declines in orders received.

# The History of “The Sky is Not Falling!”

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- ◆ At that time, I wrote a second article, “The Sky is not Falling II (天塌不下来 (二)),” arguing once again that the Chinese economy would be able to not only survive but also continue to grow through the global financial crisis, based on the possibility of the partial decoupling of the Chinese and East Asian economies from the U.S. and European economies.
- ◆ And, sure enough, despite the financial turmoil and economic slowdown and recession in the U.S. and some of the Western European countries, the Chinese economy was able to manage to continue to grow, based mostly on its domestic demand alone, supported by the 4 trillion Yuan economic stimulus program rolled out a bare six weeks after the collapse of the Lehman Brothers. This helped to maintain the domestic confidence.



# The History of “The Sky is Not Falling!”

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- ◆ China was able to achieve real rates of growth of GDP of 9.1% in 2009 and 10.3% in 2010. Any doubts concerning the validity of the partial de-coupling hypothesis should have been dispelled by the actual performance of the Chinese and East Asian economies (except Japan) during this period.

## The History of “The Sky is Not Falling!”

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- ◆ At the beginning of 2012, at the height of the European sovereign debt crisis, I wrote a third article, “The Sky is not Falling III (天塌不下来 (三)),” explaining why the Chinese economy should be able to achieve a “soft landing” and continue to grow at around 8% per annum amidst the European sovereign debt crisis, based on its own domestic demand. The actual real rates of growth achieved by the Chinese economy in 2011 and 2012 were 9.3 % and 7.7% respectively.

# The History of “The Sky is Not Falling!”

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- ◆ Since 2013, the Chinese economy has been in the process of adjusting to a “New Normal”--a lower rate of growth, more environmentally conscious, less export-oriented, more service-sector focused, less tangible inputs-driven and more innovation-driven.
- ◆ The rate of growth of the Chinese economy has since been slowing down gradually from double-digit rates to 7.7% in 2013 and 7.3% in 2014. The slowdown in the rate of growth is actually consistent with the Chinese economic plan.

# The History of “The Sky is Not Falling!”

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- ◆ However, with the bursting of the Chinese stock market bubble in July and the slight but unexpected devaluation of the Renminbi of approximately 4% in August, the world markets panicked and doomsayers began coming out in droves, predicting a hard landing for the Chinese economy.
- ◆ I wrote a fourth article, “The Sky is not Falling IV (天塌不下来 (四)),” explaining why the Chinese economy should be able to make a smooth transition to a “New Normal”, with an average annual rate of growth of around 7% over the next few years, based once again on its own domestic demand. In fact, the rate of growth in 2015 turned out to be 6.9%.

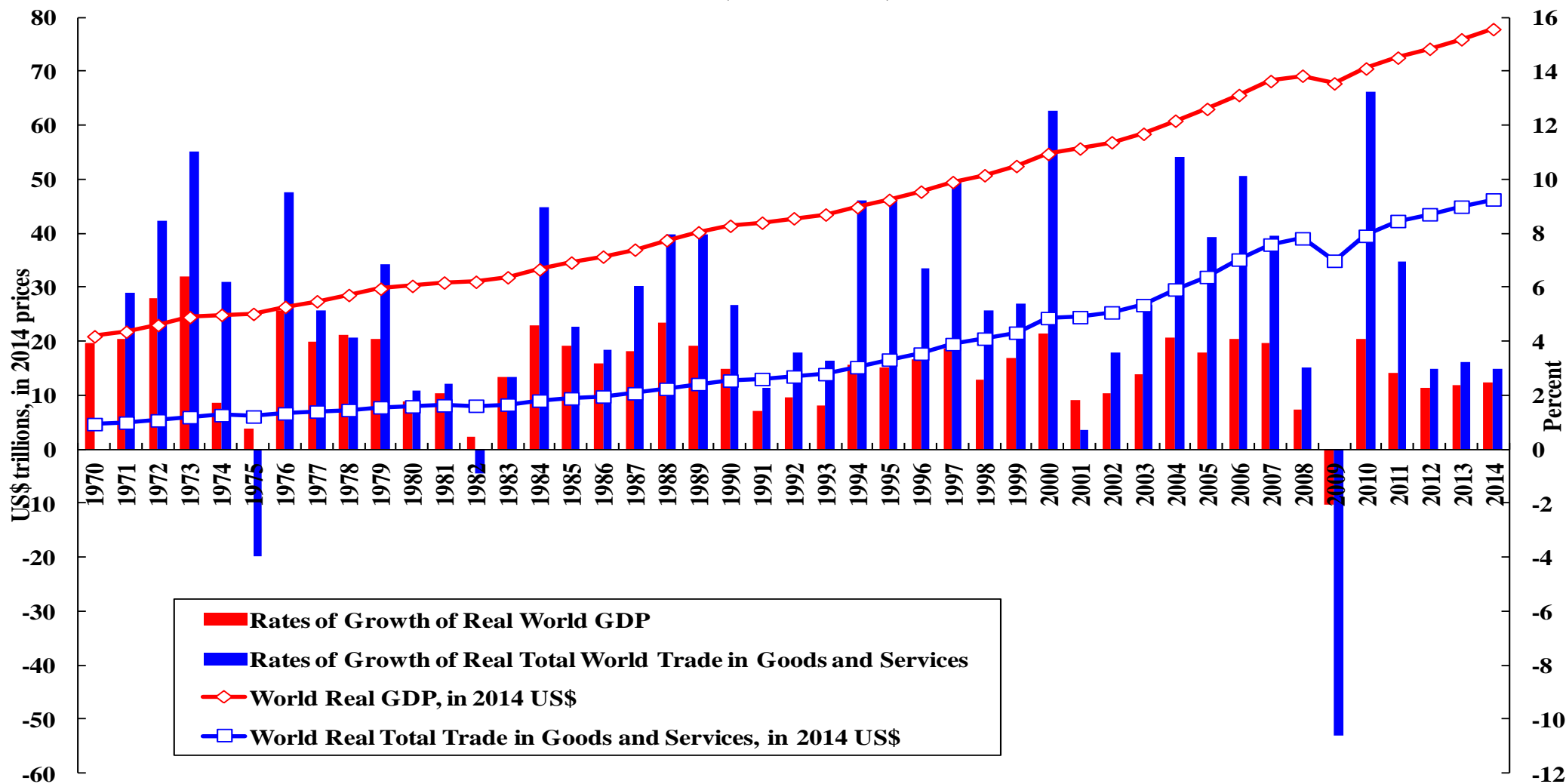
# The State of the World Economy

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- ◆ The rates of growth of both World real GDP and World real trade have slowed down significantly over the past several years to just over 3% per annum.
- ◆ World trade in nominal terms as a percent of nominal GDP has also been falling since 2008.
- ◆ The rates of growth of both the developed and the developing economies have also declined over time. Even China and India are not immune.
- ◆ The ratio of World trade to World GDP is no longer growing, as it did since the early 1970s.

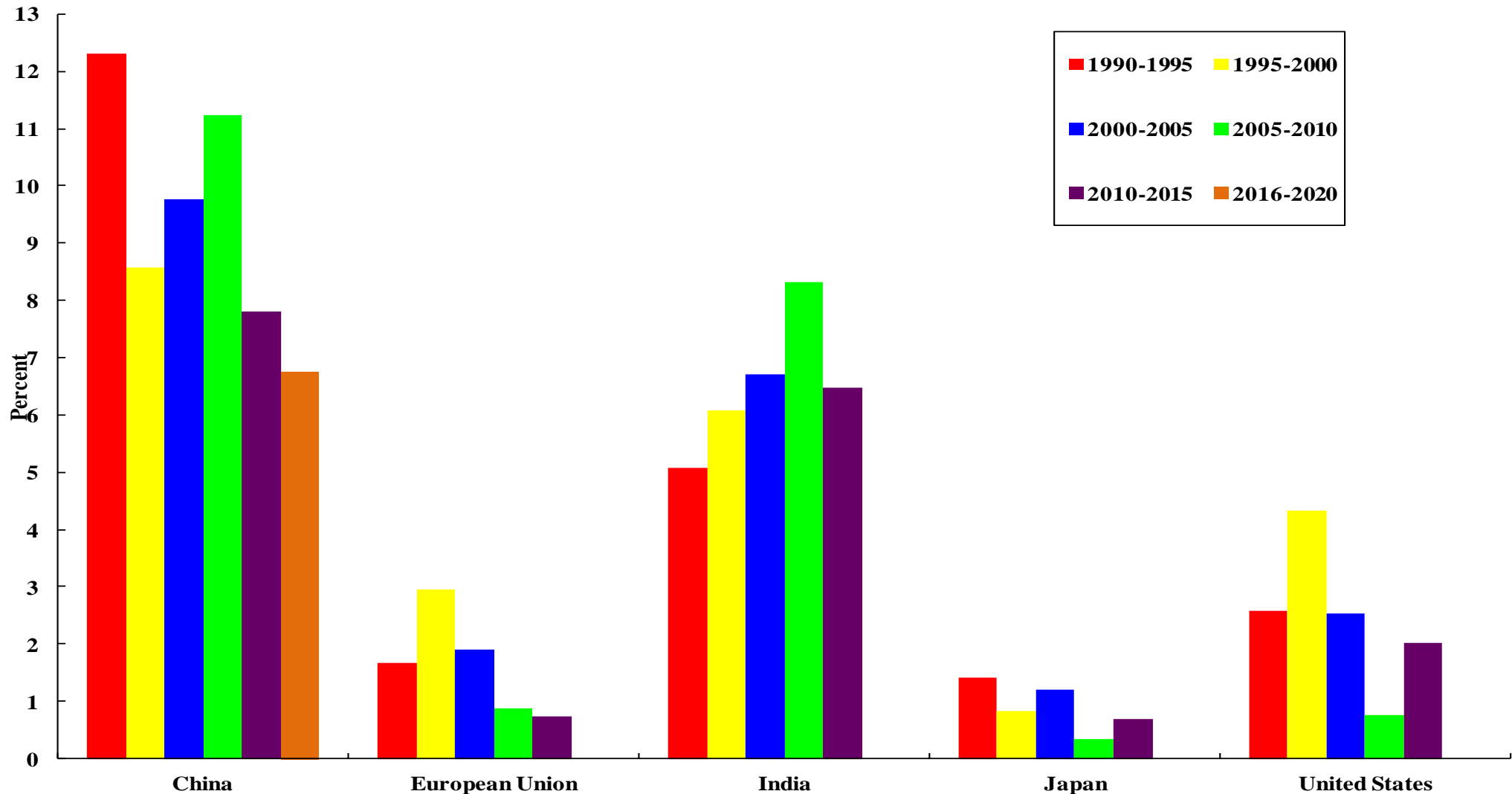
# World Real GDP and Real Total Trade in Goods and Services and Their Growth Rates

World Real GDP and Real Total Trade in Goods and Services and their Growth Rates  
(in 2014 US\$)



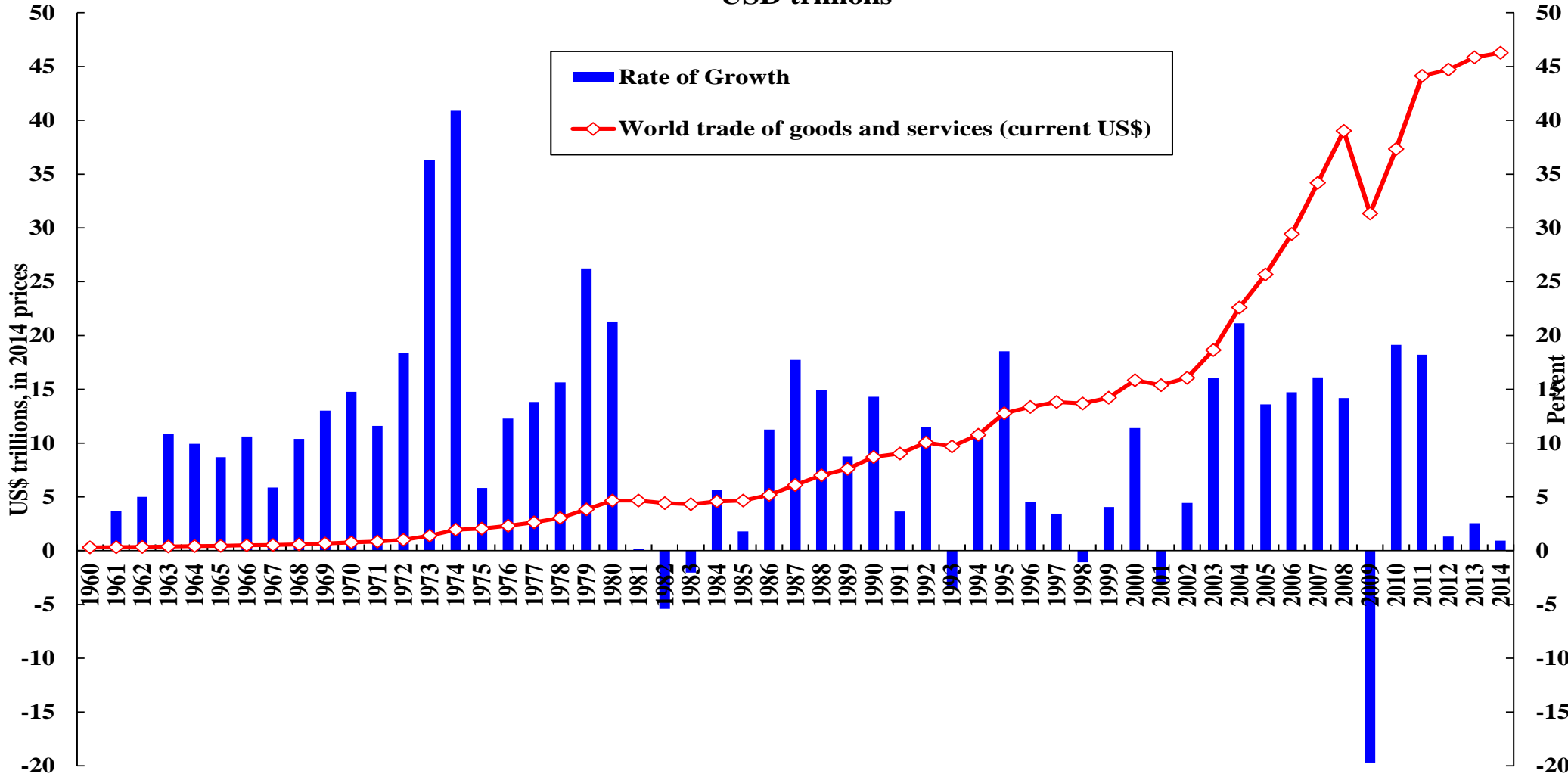
# Average Annual Rates of Growth of Selected Economies in Five-Year Intervals since 1990

Average Annual Rates of Growth of Selected Economies in Five-Year Intervals since 1990



# Total World Trade in Goods and Services and Its Growth Rates since 1960, US\$ tril. & % pa

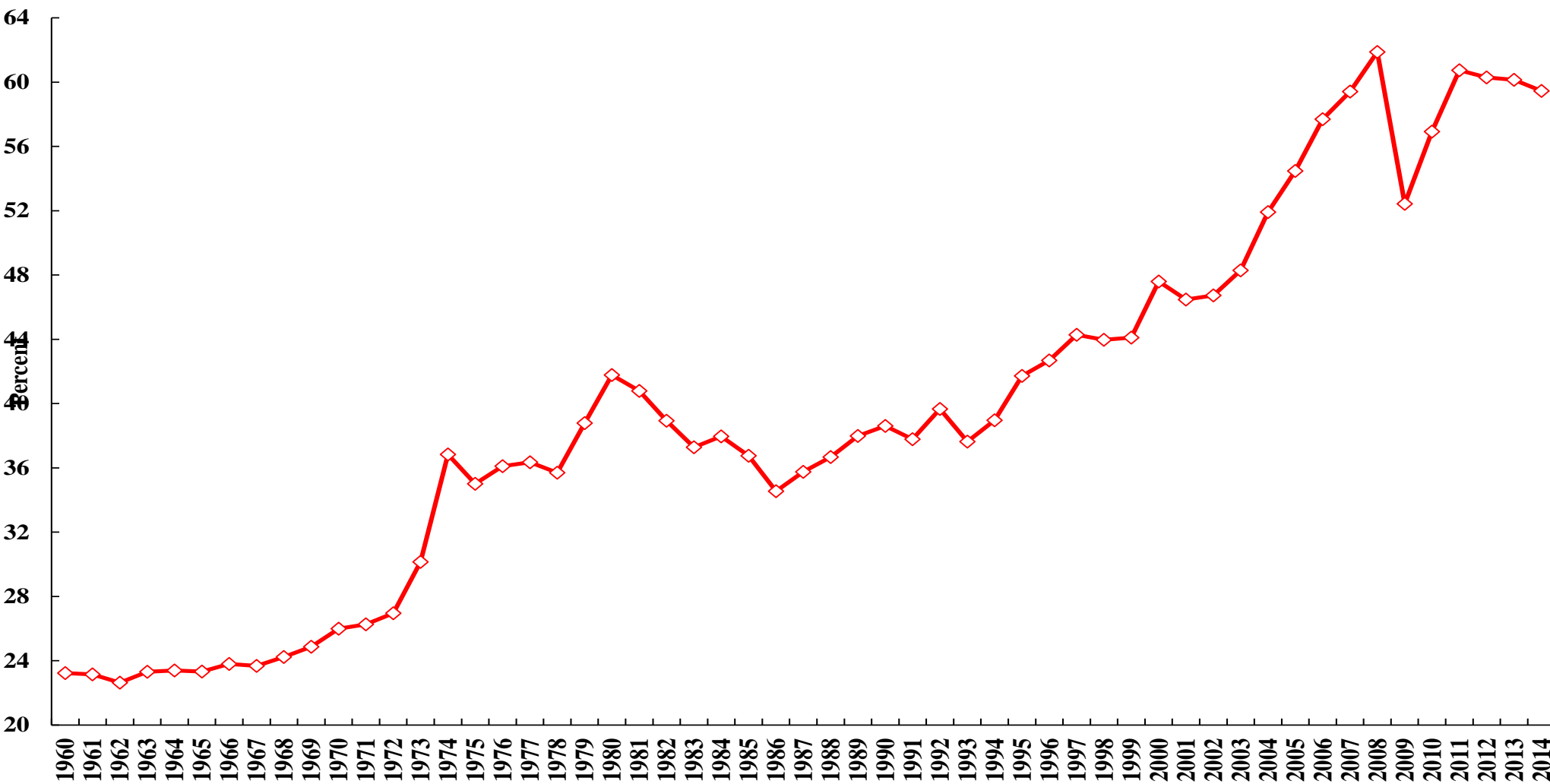
Total World Trade in Goods and Services and Its Growth Rates since 1960, USD trillions





# Total World Trade in Goods and Services as a Percentage of World GDP since 1960

Total World Trade in Goods and Services as a Percentage of World GDP since 1960



# The State of the Chinese Economy

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- ◆ 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 still the fastest growing economy in the World—averaging 9.64% per annum over the past 37 years. It is historically unprecedented for an economy to grow at such a high rate over such a long period of time.
- ◆ However, the Chinese economy has begun to slow down from double-digit annual rates of growth to an average annual rate of around 6.5%, in a process of transition to a “New Normal”.

# The State of the Chinese Economy

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- ◆ It is useful to compare the growth of Chinese and U.S. real GDP in both aggregate and per capita terms (see the following charts). The red and blue lines represent the levels of real GDP and real GDP per capita of China and the U.S. respectively. The red and blue columns represent the annual rates of growth of China and the U.S. respectively.
- ◆ Between 1978 and 2015, Chinese real GDP grew from US\$346 billion to US\$10.86 trillion (in 2015 prices), to become the second largest economy in the World, after the U.S. In 2015, Chinese GDP was just a hair more than 60% of the U.S. GDP of US\$17.9 trillion.

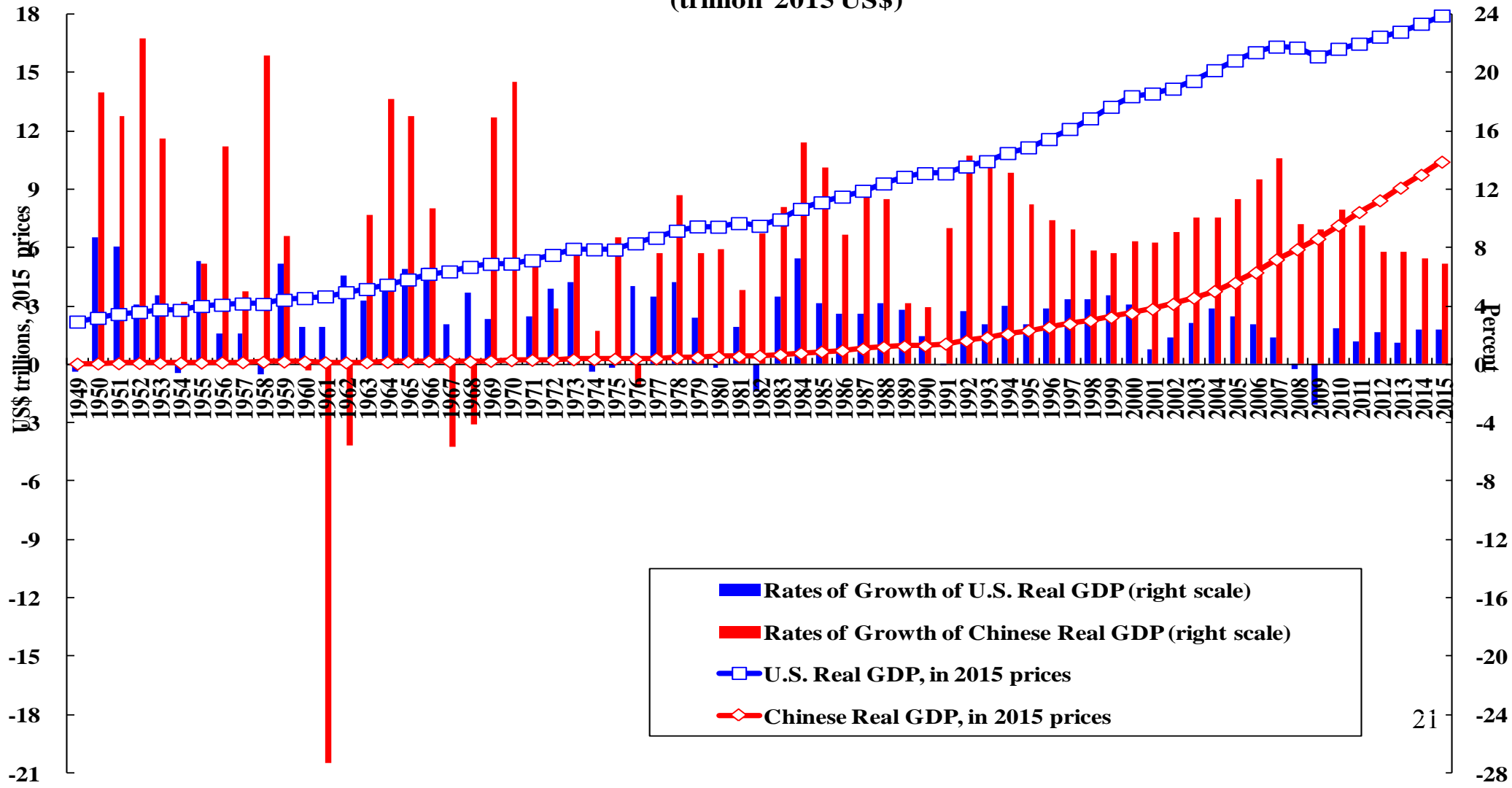
# The State of the Chinese Economy

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- ◆ However, despite its rapid economic growth in the aggregate, in terms of its real GDP per capita, China is still very much a developing economy.
- ◆ In 1978, the Chinese real GDP per capita was US\$360 (in 2015 prices) compared to the then US\$30,886 of the U.S. By 2015, the Chinese real GDP per capita had grown to US\$7,924, still only 14.2% of the U.S. GDP per capita of US\$55,759.
- ◆ The average exchange rate of the Renminbi over 2015, 6.2284 Yuan/US\$, is used for converting the Yuan figures into US\$ figures.

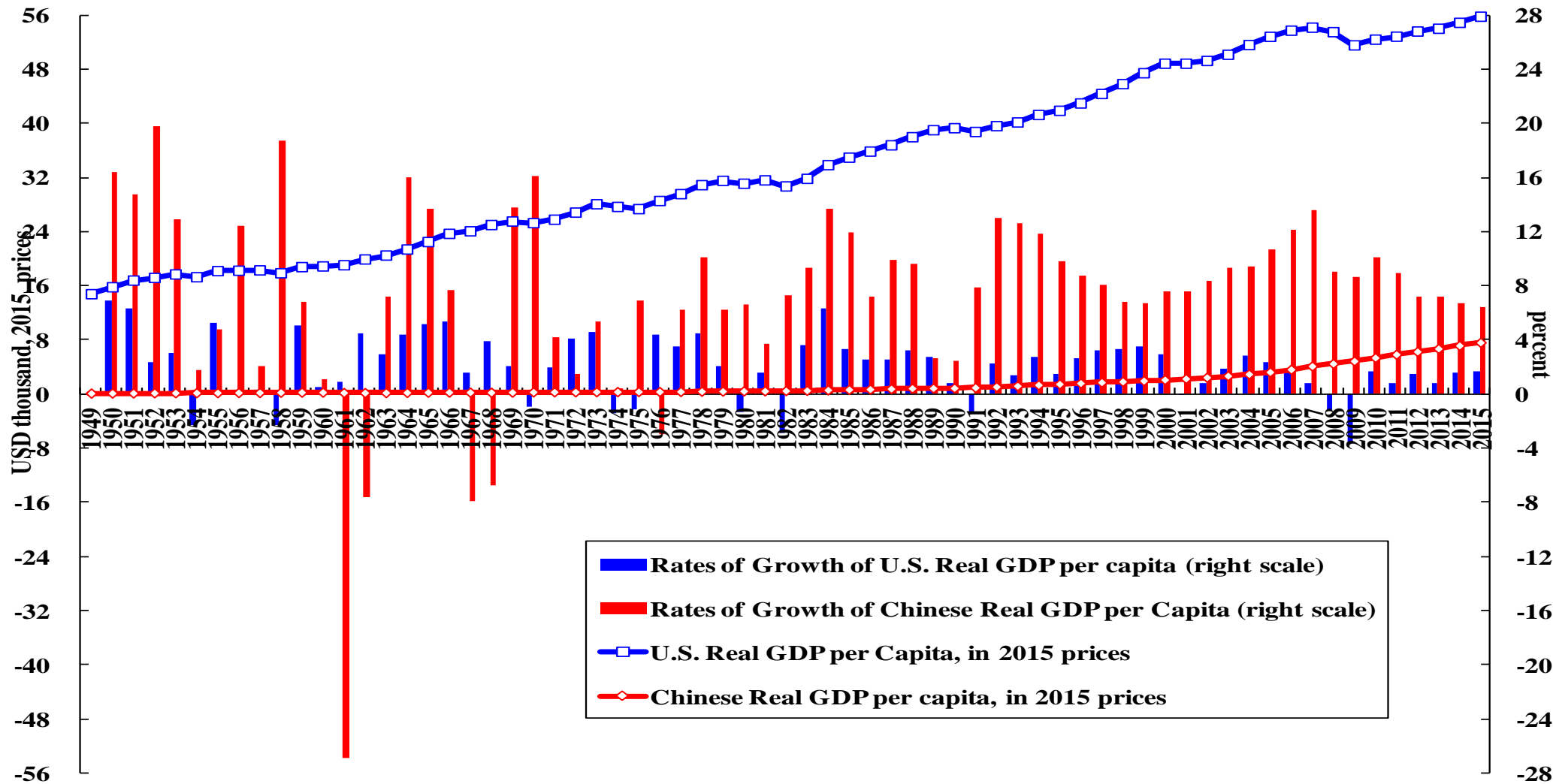
# Chinese and U.S. Real GDPs and Their Rates of Growth since 1949 (2015 US\$)

Chinese and U.S. Real GDPs and Their Rates of Growth since 1949  
(trillion 2015 US\$)



# Chinese and U.S. Real GDPs per Capita and Their Rates of Growth since 1949 (2015 US\$)

Chinese and U.S. Real GDP per Capita and Their Rates of Growth since 1949  
(thousand, 2015 US\$)

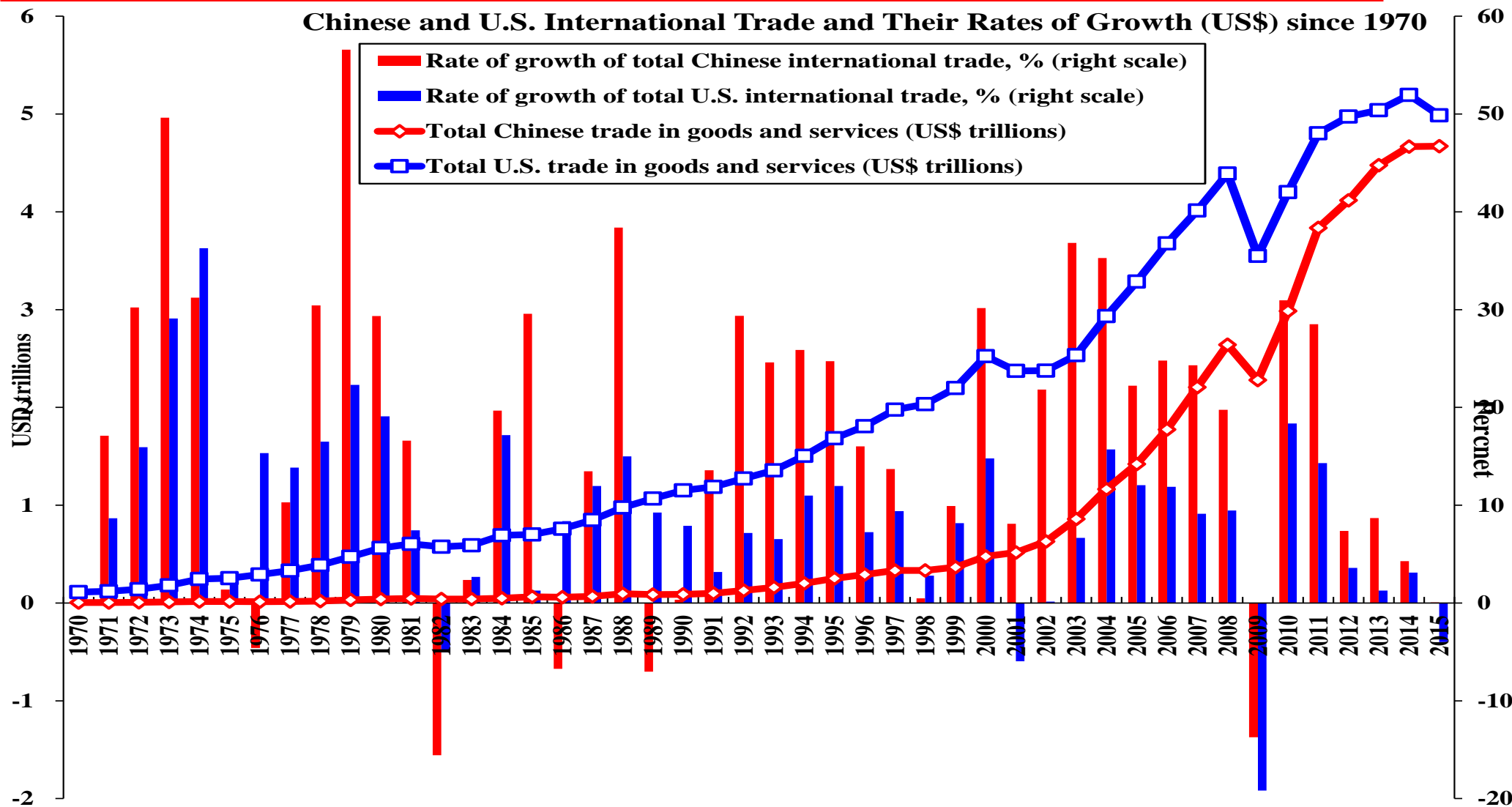


# The State of the Chinese Economy

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- ◆ 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 Organisation (WTO) in 2001.
- ◆ Chinese total international trade in goods and services combined grew from US\$20.3 billion in 1978 to US\$4.67 trillion in 2015, making China the second largest trading nation in the World, just after the U.S. with its total international trade of US\$4.99 trillion.
- ◆ China has also become the second largest trading nation in services alone, with US\$713 billion in 2015, just after the U.S.

# The Values of Chinese and U.S. International Trade and Their Rates of Growth, 1970- (US\$)





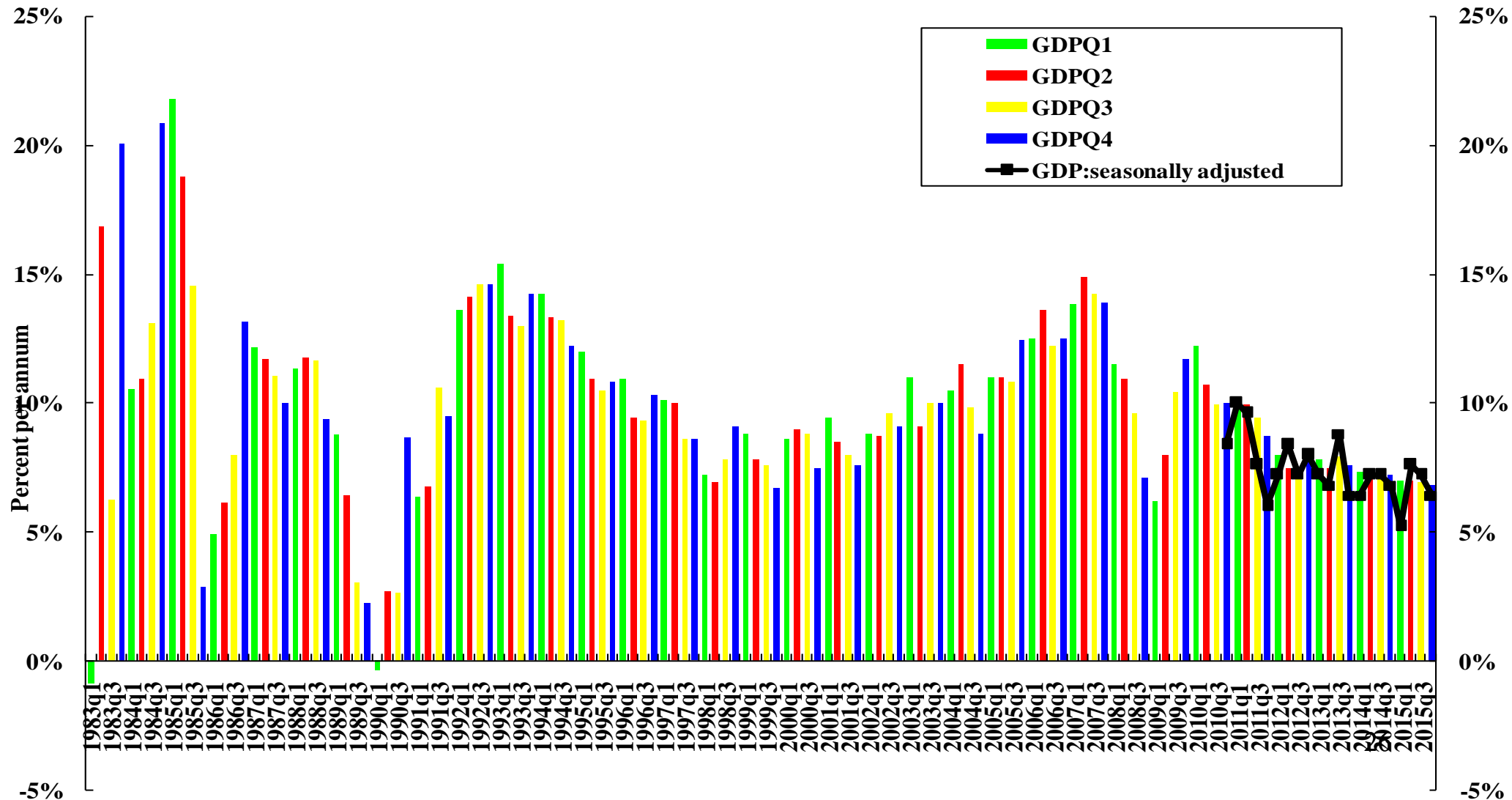
# The Transition to a “New Normal” and the Thirteenth Five-Year (2016-2020) Plan

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- ◆ Going forward, the Chinese economy will not continue to grow at close to 10 percent per annum. The target average annual rate of growth under the “New Normal” is 6.5 percent per annum, as indicated in the Thirteenth Five-Year (2016-2020) Plan.
- ◆ Since 2013, the Chinese economy has been in the process of transitioning to a “New Normal”. The rate of growth of the Chinese economy has since been slowing down gradually from double-digit rates to 7.7% in 2013, 7.3% in 2014 and 6.9% in 2015, which is in accord with the Chinese plan.
- ◆ In 2015Q1, 2015Q2, 2015Q3 and 2015Q4, the annualized rates of growth were respectively 7.0%, 7.0%, 6.9% and 6.8%, Y-o-Y. Seasonally adjusted, they were 5.2%, 7.6%, 7.2% and 6.4% respectively.
- ◆ The target rate of growth of Chinese GDP in 2016 is between 6.5%<sub>25</sub> and 7%.

# Quarterly Rates of Growth of Chinese Real GDP, Y-o-Y and Seasonally Adjusted

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



# The Transition to a “New Normal” and the Thirteenth Five-Year (2016-2020) Plan

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- ◆ The rate of growth of fixed asset investment has been declining, reflecting, in part, the expectation that the rate of growth of real GDP will decline from almost 10% to around 6.5% going forward, and in part, the changing composition of GDP with the service sector, which requires much less fixed asset investment per unit GDP, becoming the largest sector of the economy (50.5% in 2015).
- ◆ However, the expectations of the consumers appear to have remained positive. The rate of growth of real retail sales has continued to be approximately one and a half times the rate of growth of real GDP.
- ◆ The target average annual growth rate of the Chinese economy for the Thirteenth Five-Year (2016-2020) Plan period is around 6.5%.

# The Transition to a “New Normal”: Trading Quantity for Quality

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- ◆ What does the “New Normal” imply?
- ◆ First, there will be a reduction of the average annual rate of growth of the measured real GDP, from almost 10% to perhaps just around 6.5%, which is likely to be the target average annual rate of growth of the Thirteenth Five-Year Plan, which began in 2016.
- ◆ There will be a greater emphasis on the “quality” of the economic growth, including the preservation, protection, restoration and enhancement of the environment and improvement of access to education, health care and elderly care, which are not necessarily reflected in the GDP as conventionally measured.
- ◆ Under the Thirteenth Five-Year Plan, economic development will be “innovative, coordinated, green, open and shared”. Elimination of poverty is one of the two mandatory sets of targets (the other applies to the environment), implying that the 55 million or so of Chinese people still living under the poverty line will be lifted out of poverty by 2020.

# The Transition to a “New Normal”: Trading Quantity for Quality

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- ◆ The key performance indicators for the local government officials will be changed so that long-term economic viability and sustainability are also taken into account in addition to short-term growth in real GDP and employment.
- ◆ Moreover, other key performance indicators, such as those on the environment, both globally and locally, for example, air and water quality, have also been included as mandatory targets. The improvement of energy efficiency and the reduction of carbon emission are also important areas of focus.
- ◆ In the light of the recently successfully concluded COP 21 (a conference of the parties), which is the governing body for the United Nations Framework Convention on Climate Change, at Paris, with the joint support of both China and the United States, China will pursue these targets seriously.

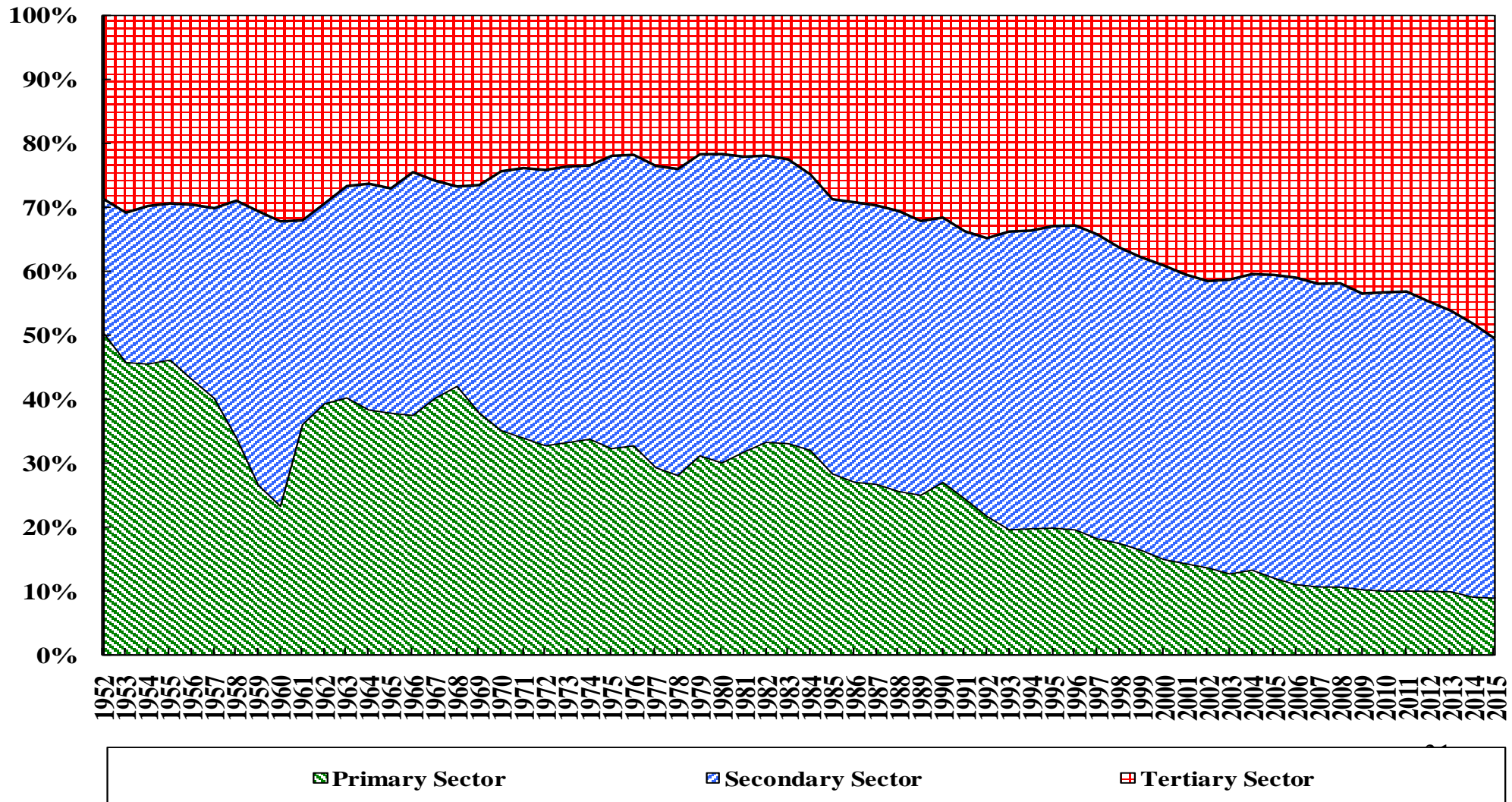
# The Transition to a “New Normal”: Transformation of Supply Composition

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- ◆ Second, there will be a transformation in the composition of GDP by production sectors.
- ◆ The tertiary sector has already overtaken the secondary sector as the most important sector by GDP originating. It accounted for 50.5% of GDP in 2015. The GDP originating from the primary (agricultural) sector fell to 9% in 2015.
- ◆ The shift in the sectoral composition has led to changes in the demands for energy, including electricity, transportation, and fixed investment. Thus, while the so-called “Keqiang Index”, which consists of the weighted sum of the rates of growth of electricity consumption, railroad freight volume and bank credit, may have been a good indicator of the rate of growth of the industrial sector, it will be an increasingly downward-biased indicator of the rate of growth of real GDP because of the continuing shift in the sectoral composition of output towards the tertiary or service sector.

# The Distribution of Chinese GDP by Sector Since 1952

The Distribution of GDP by Sector



# The Transition to a “New Normal”: Transformation of Supply Composition

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- ◆ The principal challenge facing the Chinese economic policy makers is not so much the growth of real GDP but employment.
- ◆ The service sector (48.2% by GDP and 40.6% by employment in 2014) is now larger and growing faster than the industrial sector (42.6% by GDP and 29.9% by employment in 2014).
- ◆ In 2013, 2014 and 2015 respectively, 13 million, 10 million and 13 million new jobs were created. An expansion of the service-sector GDP creates 30% more employment than an expansion of industrial sector GDP of the same magnitude and requires much less fixed investment as well as energy. Thus, the shift in sectoral composition in favor of the service sector will raise the employment/GDP ratio and lower the energy/GDP ratio.
- ◆ It will also lead to reductions in the rates of growth of Chinese demands for imports of natural resources from around the World.
- ◆ The growth of the service sector has been and will continue to be driven by rising urbanization in China.



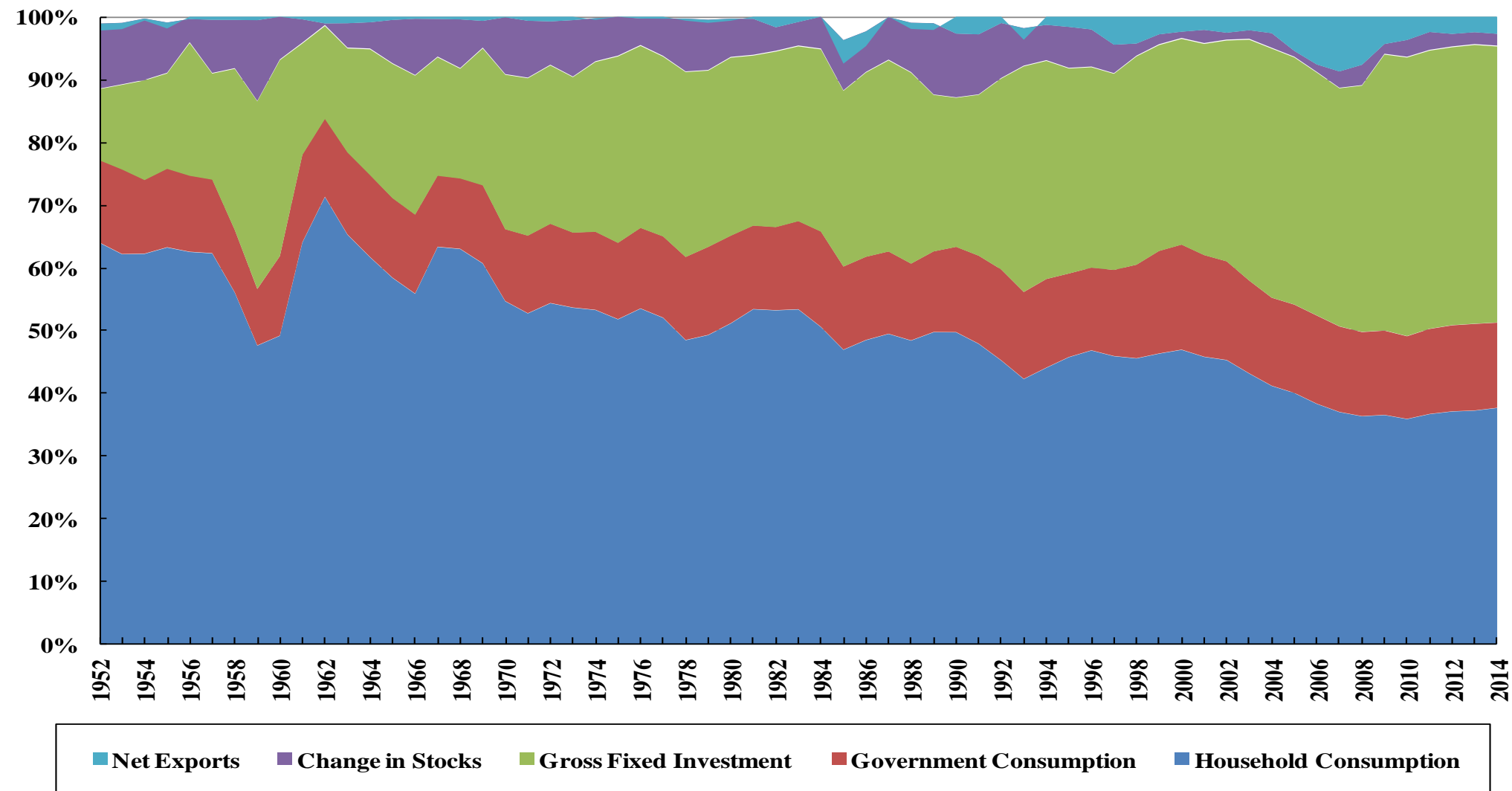
# The Transition to a “New Normal”:

## Transformation of Final Demand Composition

- ◆ Third, there will also be a transformation in the composition of final demand. On the demand side, Chinese economic growth will be principally driven by the growth of its own internal demand, consisting of public infrastructural investment (for example, high-speed railroads, urban mass transit systems and other urban public works, public wifi towers, affordable housing and clean energy), public goods consumption (education, health care, elderly care, and environmental protection, preservation and restoration—clean air, water and soil) as well as household consumption. It will no longer be driven by the growth of exports, or fixed investment in the manufacturing sector, or residential real estate.
- ◆ However, it should be noted that while the gross value of exports may not grow very fast any more, and will be a declining share of GDP, the value-added of exports may actually grow faster than the gross value itself. After all, it is the value-added that counts, not the gross value<sup>33</sup>.

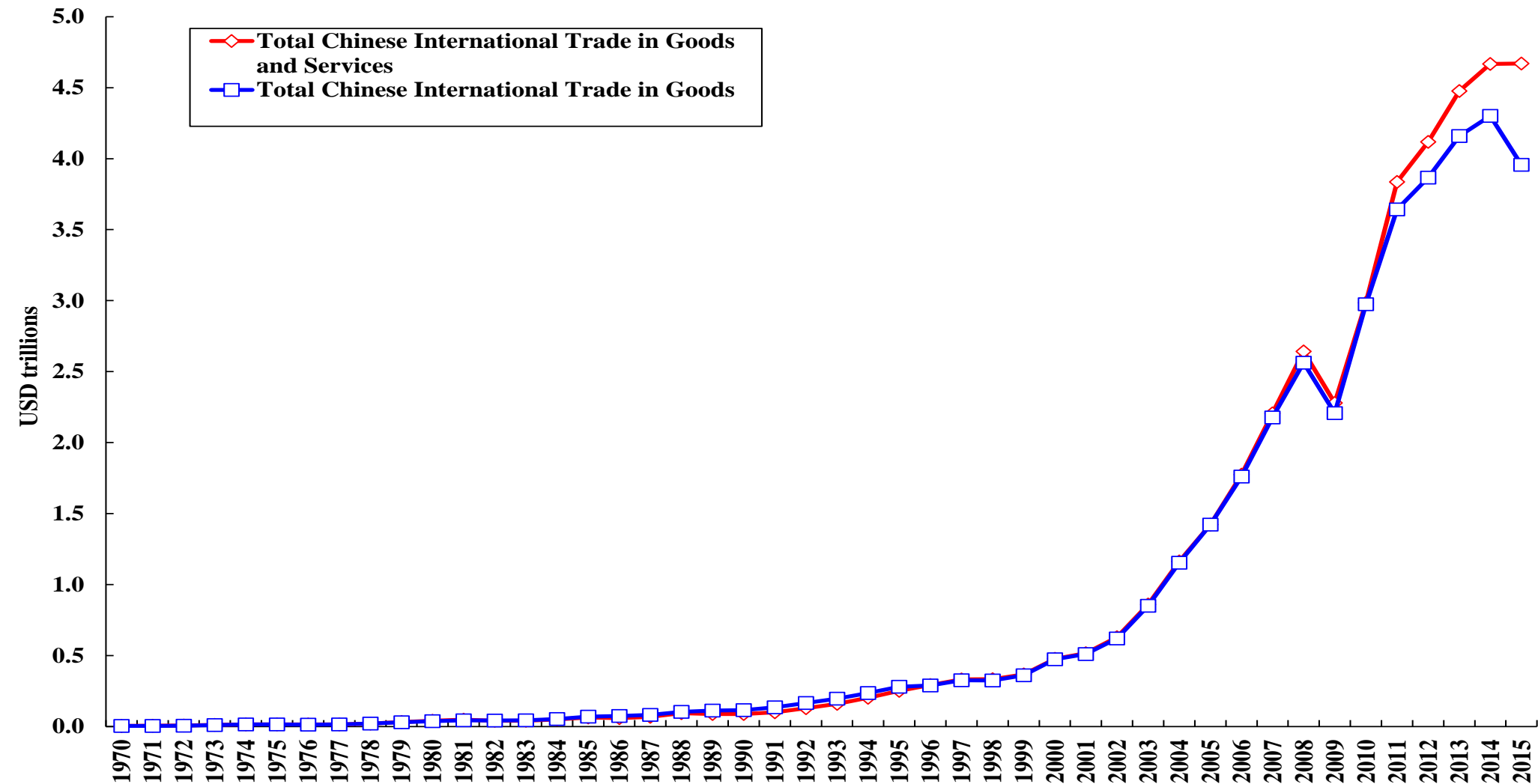
# The Composition of Chinese GDP by Expenditure

The Composition of Chinese GDP by Expenditure



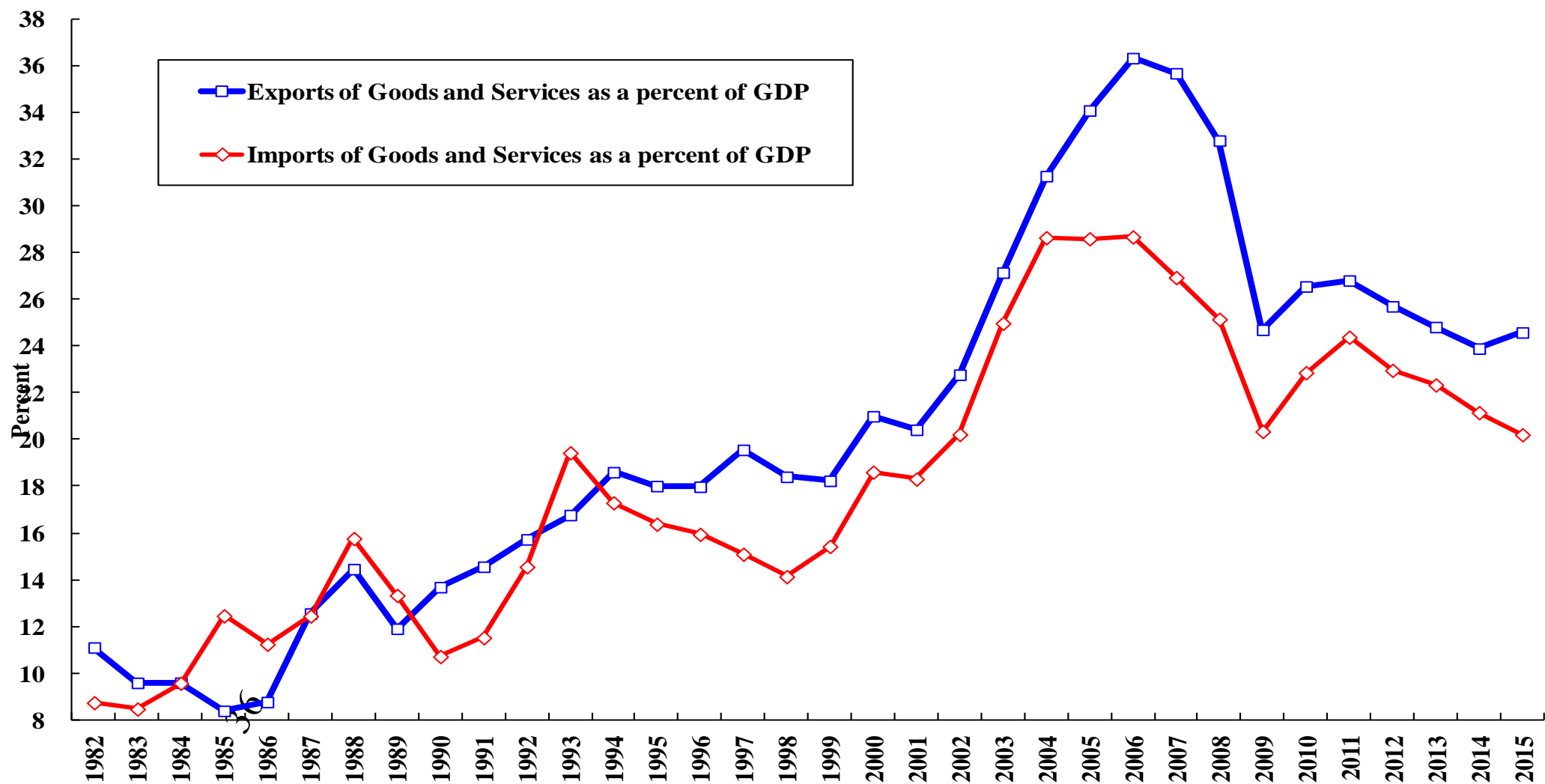
# Total Chinese International Trade in Goods and Services and in Goods Alone, US\$ trillions

Total Chinese Trade in Goods and Services and in Goods Only, US\$ trillions



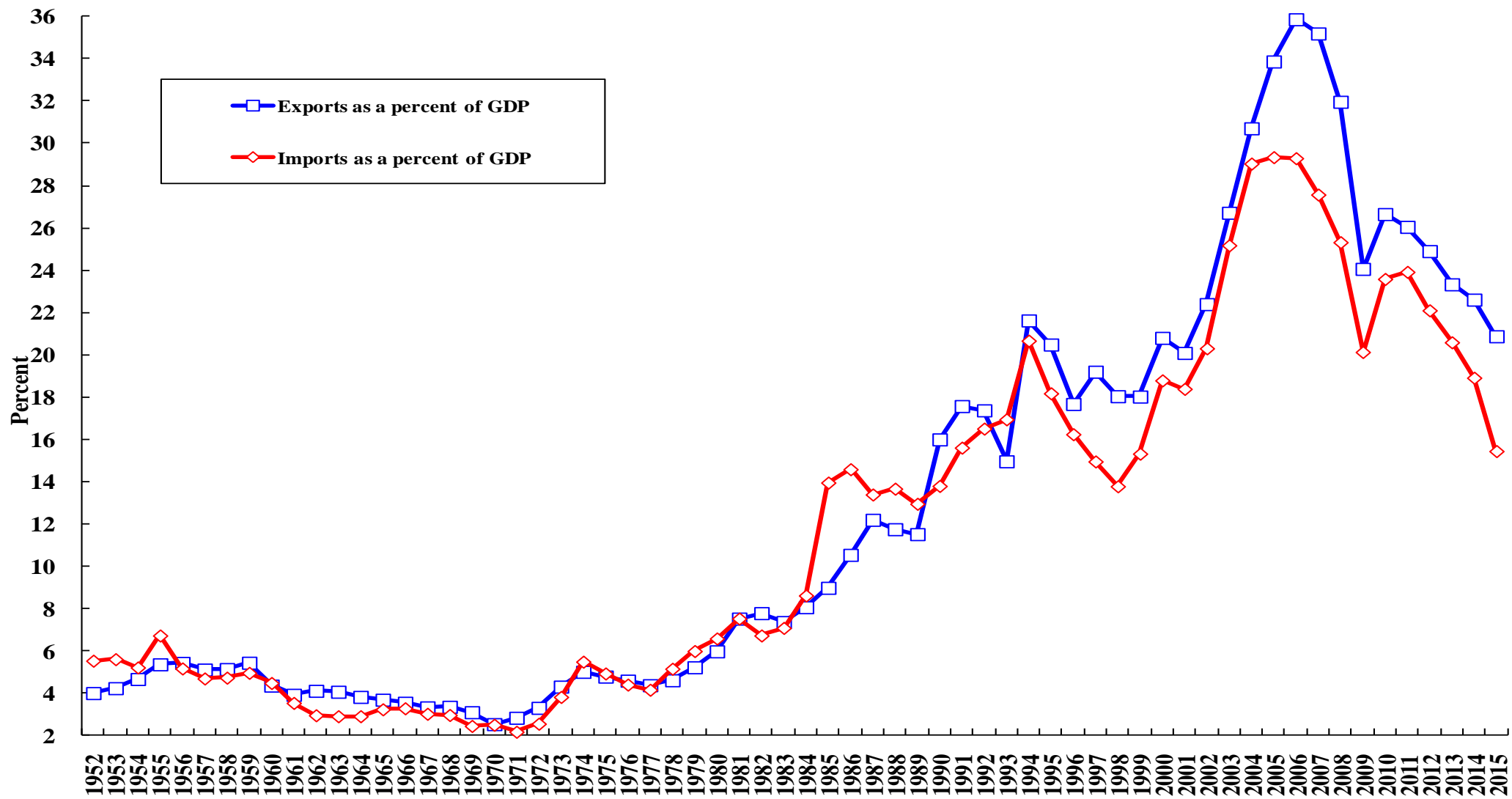
# Exports and Imports of Goods and Services as a Percent of Chinese GDP, 1982-present

Exports and Imports of Goods and Services as a Percent of Chinese GDP, 1982-present



# Exports and Imports of Goods as a Percent of Chinese GDP, 1952-present

Exports and Imports of Goods as a Percent of Chinese GDP, 1952-present



# The Transition to a “New Normal”:

## Transformation of Final Demand Composition

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- ◆ Urbanization can not only increase the demand for public infrastructure and housing, but also promote the growth of the service sector, on both the supply and the demand sides.
- ◆ The growth in public goods consumption (including the necessary related investments) such as education, health care, elderly care, and environmental protection, preservation and restoration--securing cleaner air, water and soil can and should be an important component of the growth of aggregate demand going forward.
- ◆ Increasing public goods consumption is an effective method of redistribution of income 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. Expansion of public goods consumption can thus reduce significantly the real income disparity.

# The Transition to a “New Normal”:

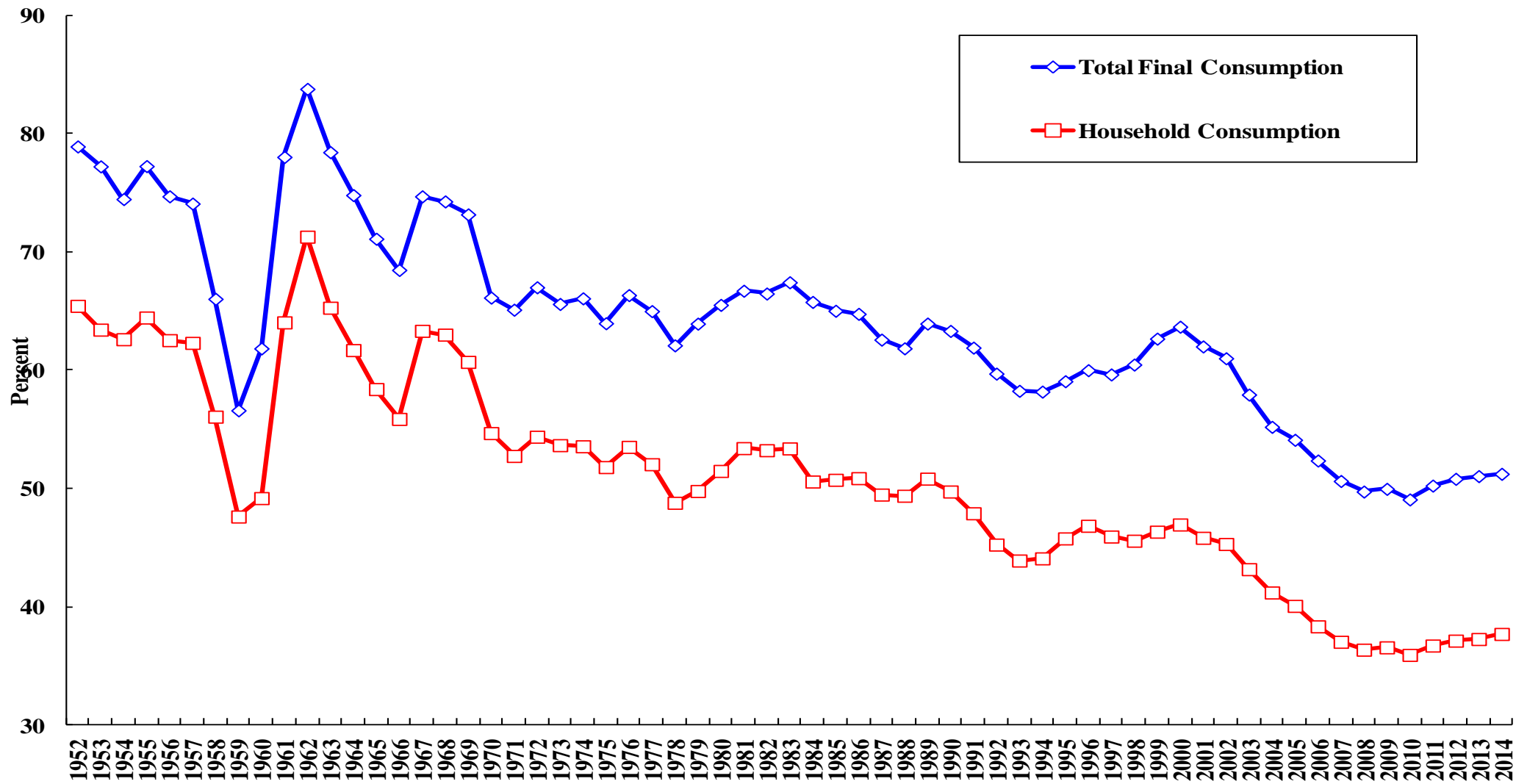
## Transformation of Final Demand Composition

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- ◆ The share of household consumption in Chinese GDP was approximately 38% in 2014. It will be a while before Chinese household consumption can become the major driver of Chinese economic growth. The share of disposable household income in Chinese GDP may be estimated to be no more than 50% in 2014. Even if the households consume its entire disposable income, household consumption cannot exceed 50% of GDP, compared to between 65% and 70% for developed economies.
- ◆ Delinking of the salaries between the government sector and the enterprise (including state-owned enterprises) sector as well as increasing cash dividend payments by publicly listed enterprises may be helpful in increasing household income and hence household consumption.
- ◆ Changing the wage-years of service profile so that the wage increases are more rapid in the early years of a worker’s career will also increase household consumption through its effect on household permanent income (or equivalently household wealth).

# Total Chinese Final and Household Consumption as a Percent of Its GDP

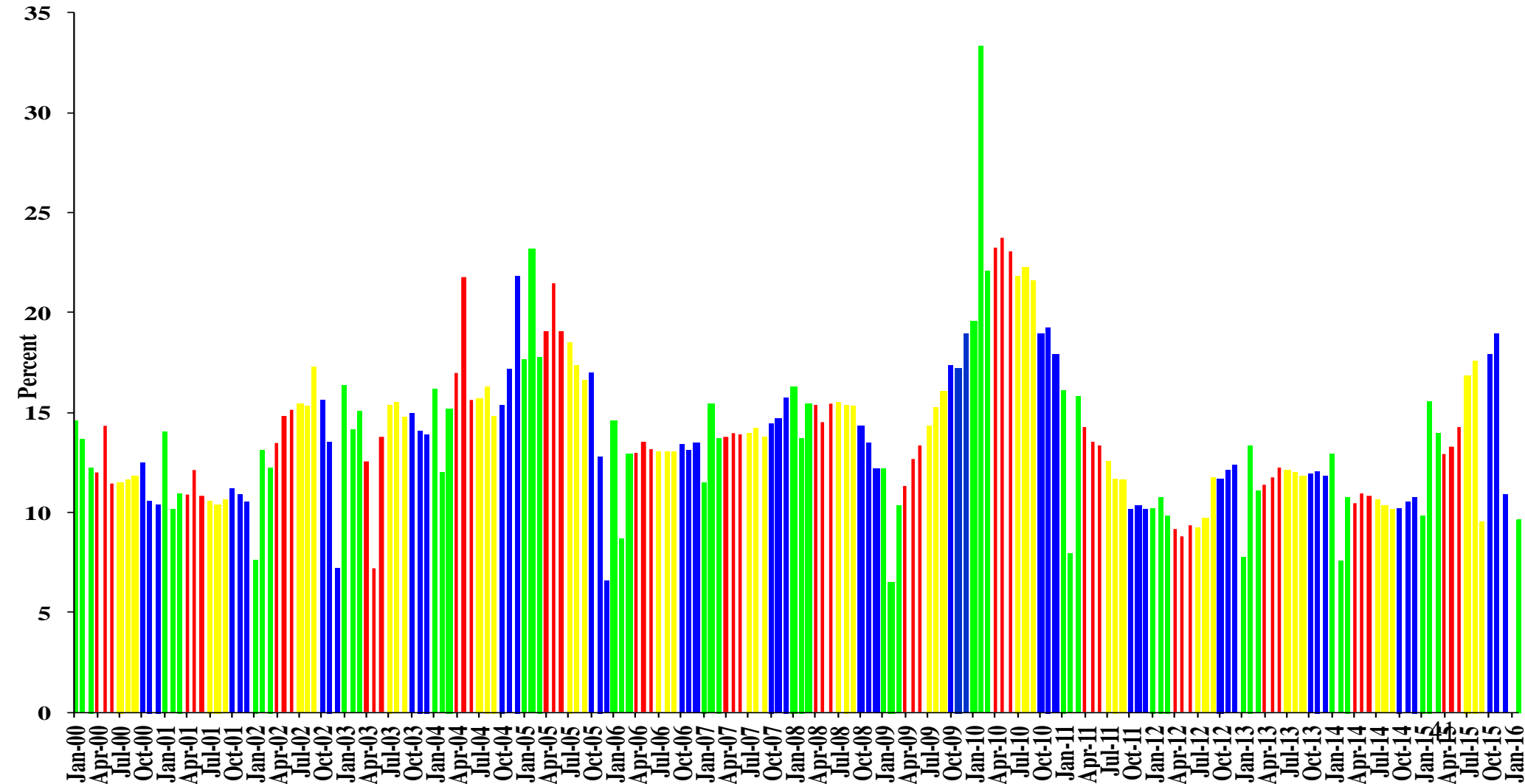
Total Final Consumption and Household Consumption as a Percent of GDP





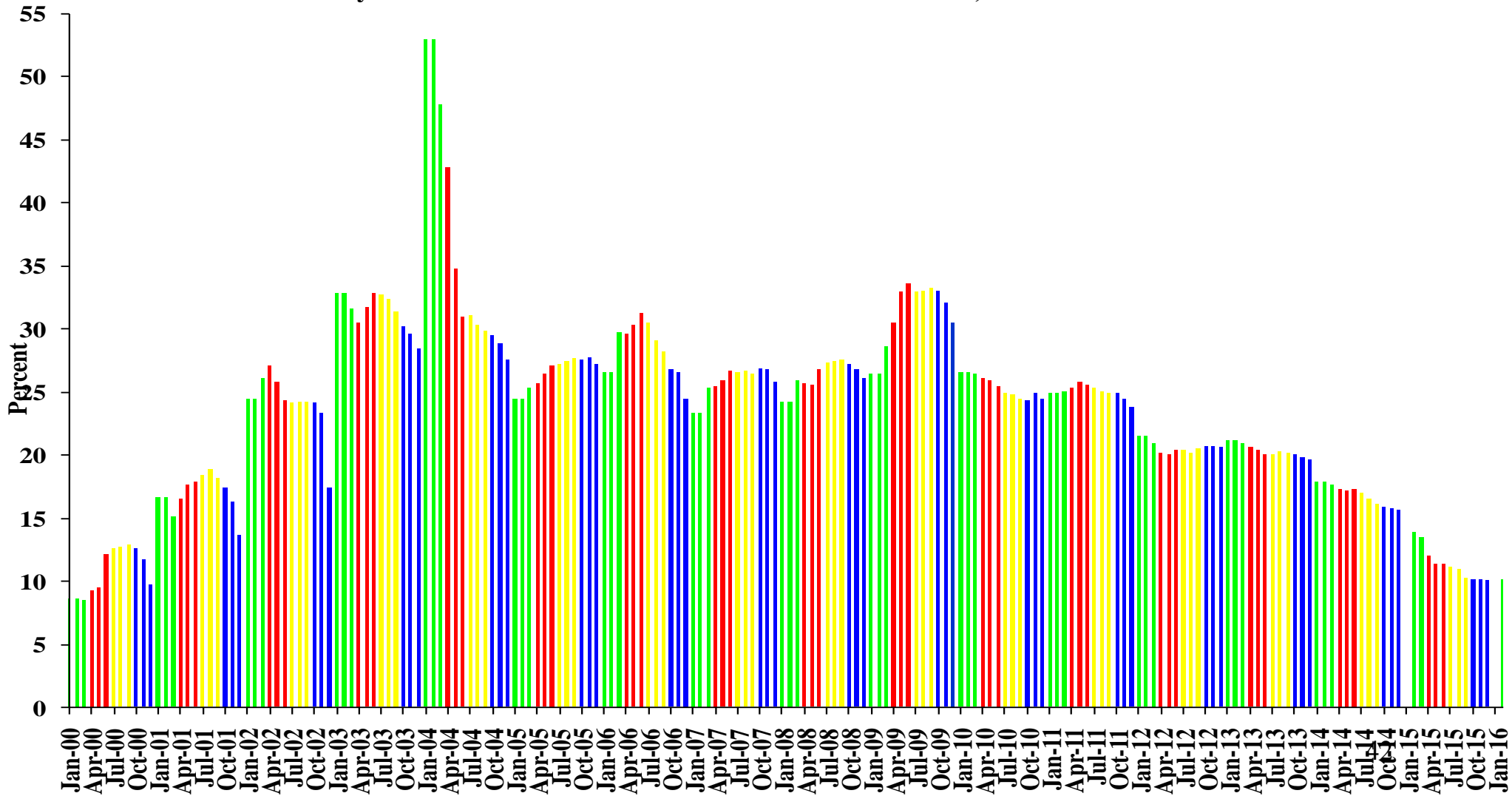
# Monthly Rates of Growth of Chinese Real Retail Sales, Y-o-Y

Monthly Rates of Growth of Chinese Real Retail Sales since, Year-over-Year



# Monthly Rates of Growth of Chinese Fixed Assets Investment, Y-o-Y

Monthly Rates of Growth of Chinese Fixed Assets Investment, Year-over-Year



# The Transition to a “New Normal”: Transformation of the Sources of Growth

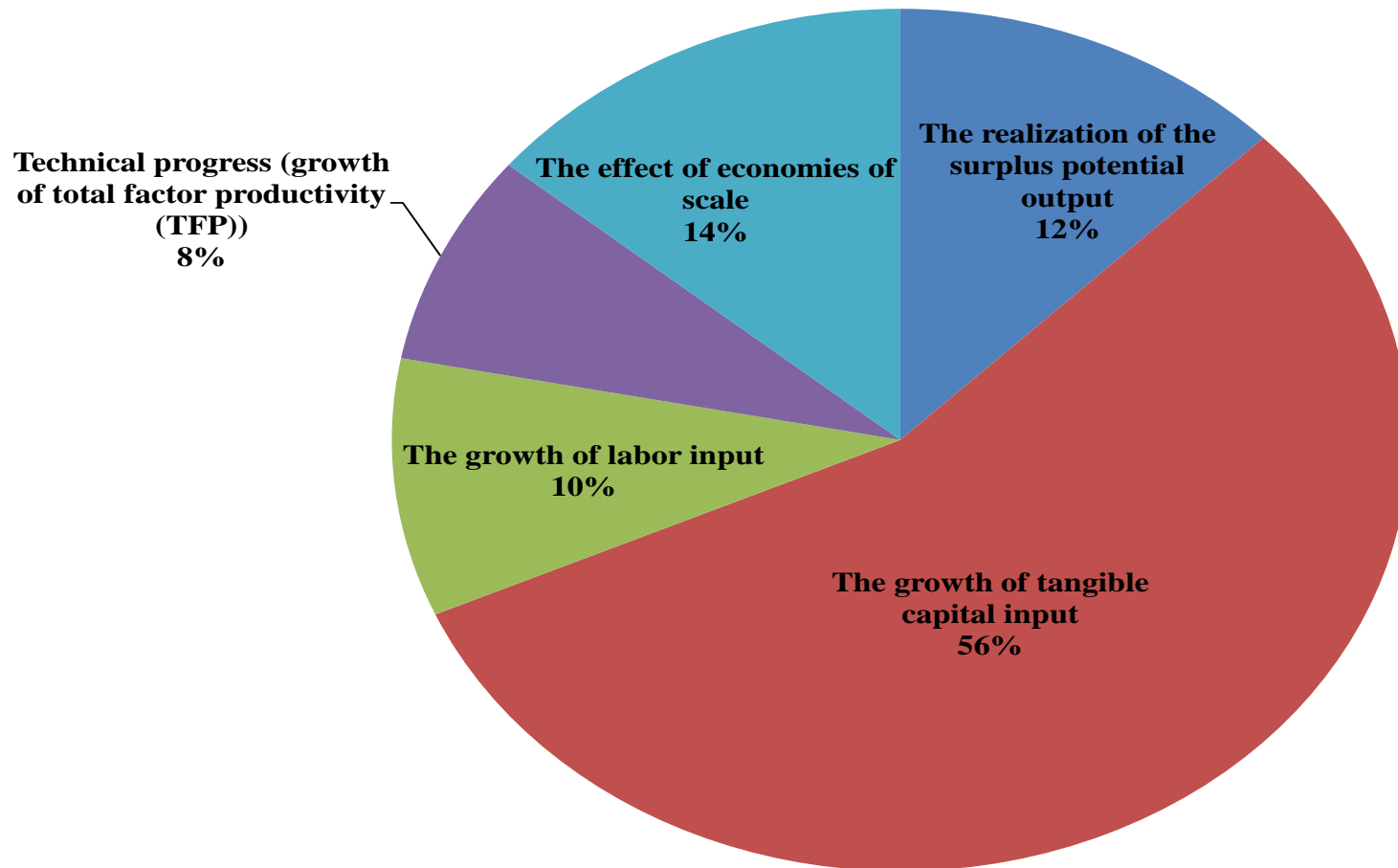
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- ◆ Fourth, there will be a gradual transformation of the sources of growth, from the growth of tangible inputs such as tangible capital (structures, equipment and basic infrastructure) and labor to the growth of intangible inputs such as human capital and R&D capital.
- ◆ Past Chinese economic growth has been mostly driven by the growth of tangible capital. Technical progress or growth of total factor productivity accounts for less than 10 percent of Chinese economic growth since 1978.
- ◆ According to Lau (2015), Chinese economic growth since 1978 may be attributed to the following sources: (1) The realization of the surplus potential output from the initial economic slack that resulted from the mandatory central planning prior to 1978 (12.65%); (2) The growth of tangible capital (55.71%) and labor (9.67%) inputs; (3) Technical progress (growth of total factor productivity (TFP)) (7.97%); and (4) The effect of economies of scale (13.99%).

# The Sources of Chinese Economic Growth Since 1978 from Lau (2015)

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The Sources of Chinese Economic Growth Since 1978



# The Transition to a “New Normal”: Transformation of the Sources of Growth

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- ◆ The Chinese economy will still have strong economic fundamentals--a high domestic saving rate, abundant labor, and a huge domestic market that enables the realization of economies of scale—for a couple of decades. Moreover, advances in the information and communication technology have enhanced the positive effects of economies of scale even further.
- ◆ Investment in human capital and R&D has been increasing rapidly, even though the stocks of both human capital and R&D capital still lag significantly behind those of the U.S. and Japan, especially on a per capita basis.
- ◆ In time, Chinese economic growth will also be driven by innovation and technical progress in addition to the growth in tangible inputs.

# Intangible Capital: Education

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- ◆ China is trying to transition from input-driven economic growth to innovation driven economic growth.
- ◆ Innovation requires investment in both education and research and development (R&D). Both education and R&D have a substantial public goods element and the government needs to play an important role in their provision.
- ◆ China has a long tradition of emphasis on education and learning (human capital) and will continue to increase its investment in human capital.
- ◆ The Chinese enrollment rate of tertiary education has been rising rapidly during the past decade and stands at over 30 percent today. It is expected to rise further over the next decades as private tertiary educational institutions become more numerous in response to demand and facilitated by government policy.

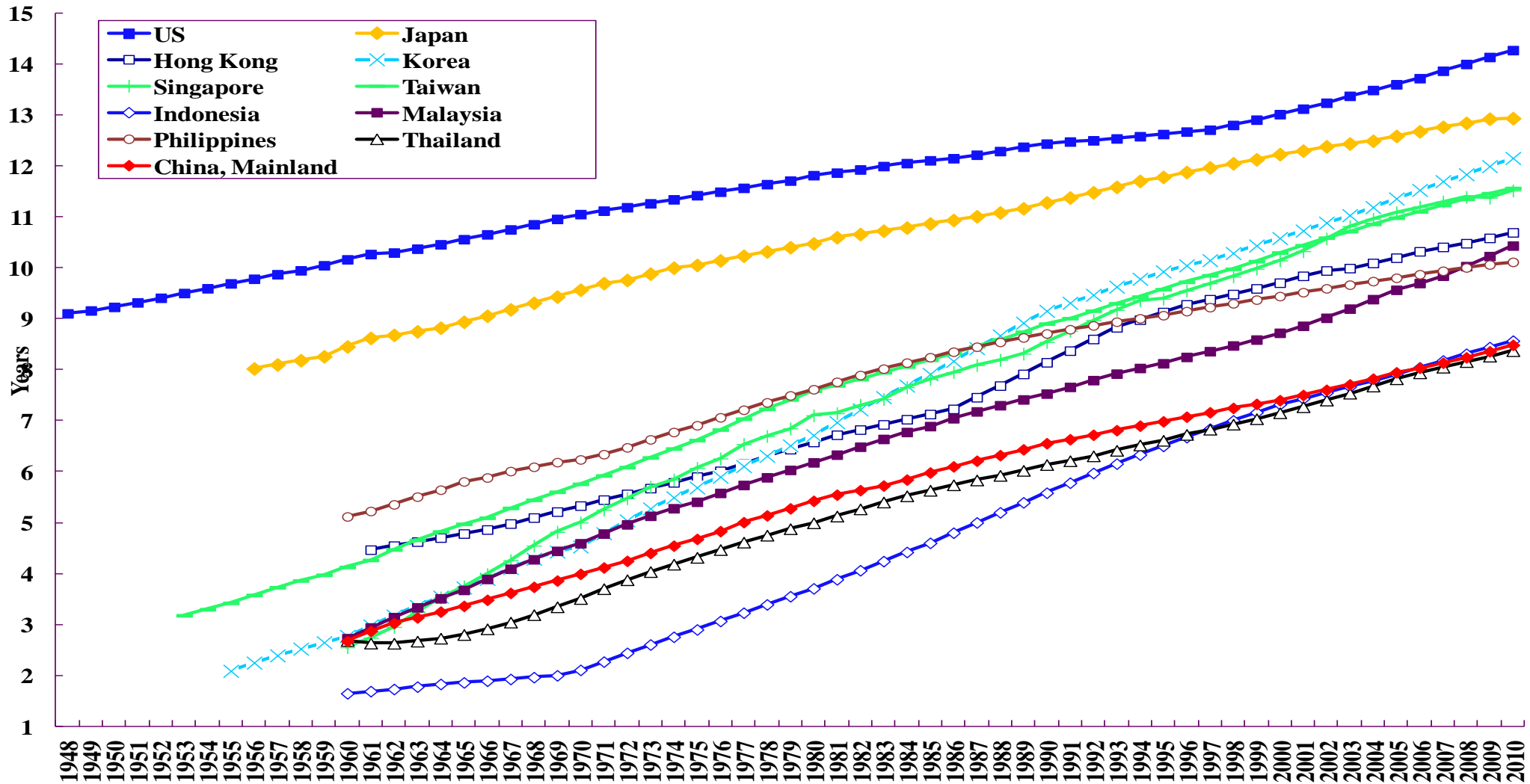
# Intangible Capital: Education

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- ◆ One indicator of the level of human capital in an economy is the average number of years of schooling per person in the working-age population. In the following chart, the average number of years of schooling is compared across selected economies.
- ◆ By this measure, the United States and Japan are clearly the global leaders. South Korea has also been catching up fast. Most of the other East Asian economies also have quite rapidly increasing levels of human capital but it will take a while before they can catch up with the levels of human capital in the developed economies. China, Indonesia and Thailand have lagged behind in terms of investment in human capital.
- ◆ China has a different definition of working-age population—with a terminal age of 60--and so the number of school years per person in the customary working-age population, that is, up to 65, may well have been lower, given the lower enrolment rates at all levels of education 60 years ago.
- ◆ The average number of years of schooling of the working-age population (defined to be 18-60) may be estimated at between 10.23 in 2015.

# Average Number of Years of Schooling of Adults: Selected Economies (1948-2010)

Average Number of Years of Schooling of Selected Economies (1945-present)



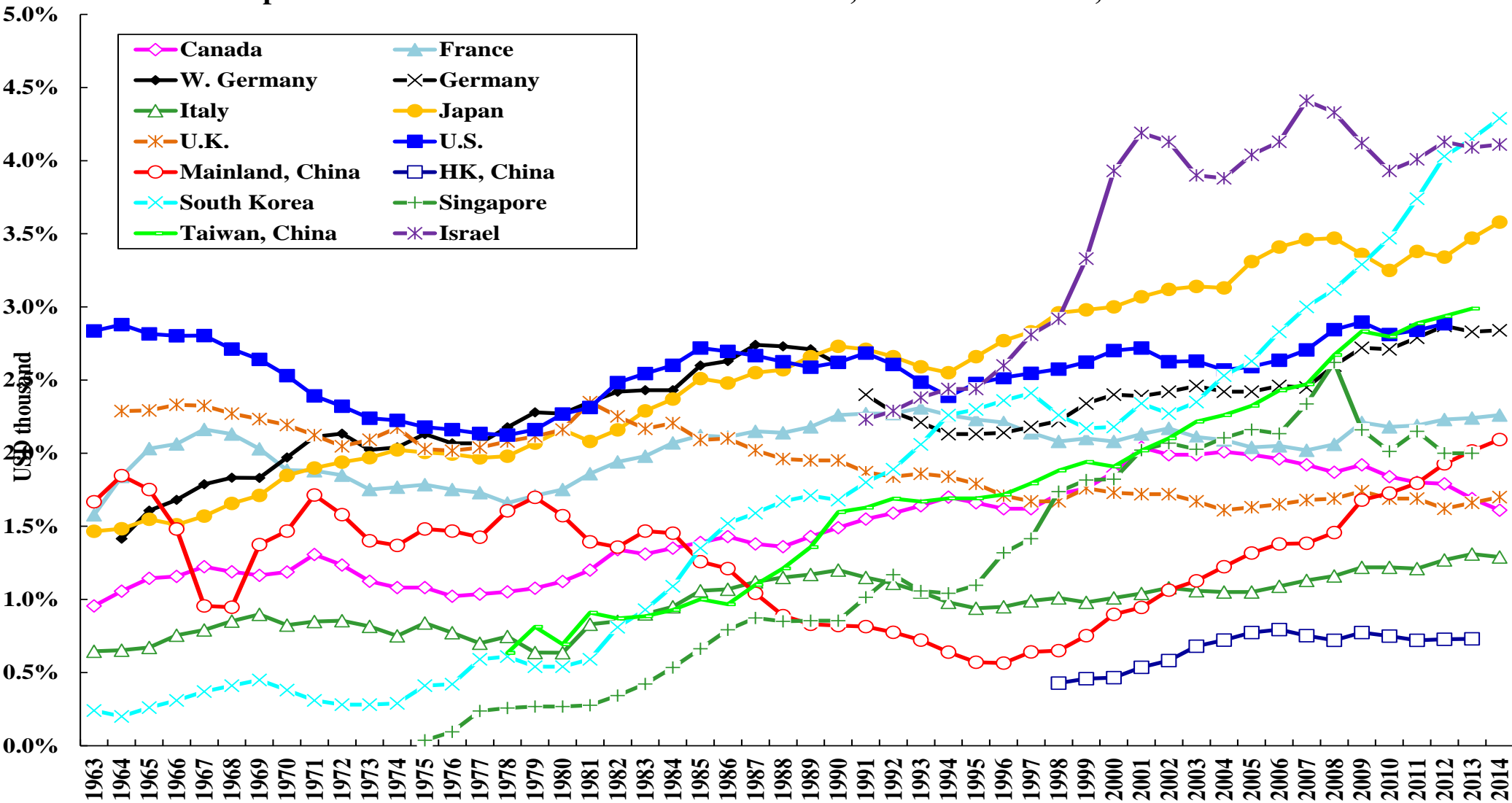


# Intangible Capital: Research and Development

- ◆ China has also begun to increase its expenditure on Research and Development (R&D), which reached of 2.1 percent of GDP in 2015, short of its target of 2.2 percent. However, it still lags behind some of the other major economies.
- ◆ R&D expenditure is targeted to reach 2.5% of GDP by the end of the Thirteen Five-Year Plan in 2020.
- ◆ However, relative to many other economies, China lags behind on investment in both human capital and R&D capital, especially on a per capita basis.

# R&D Expenditure as a Percent of GDP: G-7, 4 East Asian NIEs, China & Israel

R&D Expenditure as a Percent of GDP: G-7 Countries, 4 East Asian NIEs, China and Israel



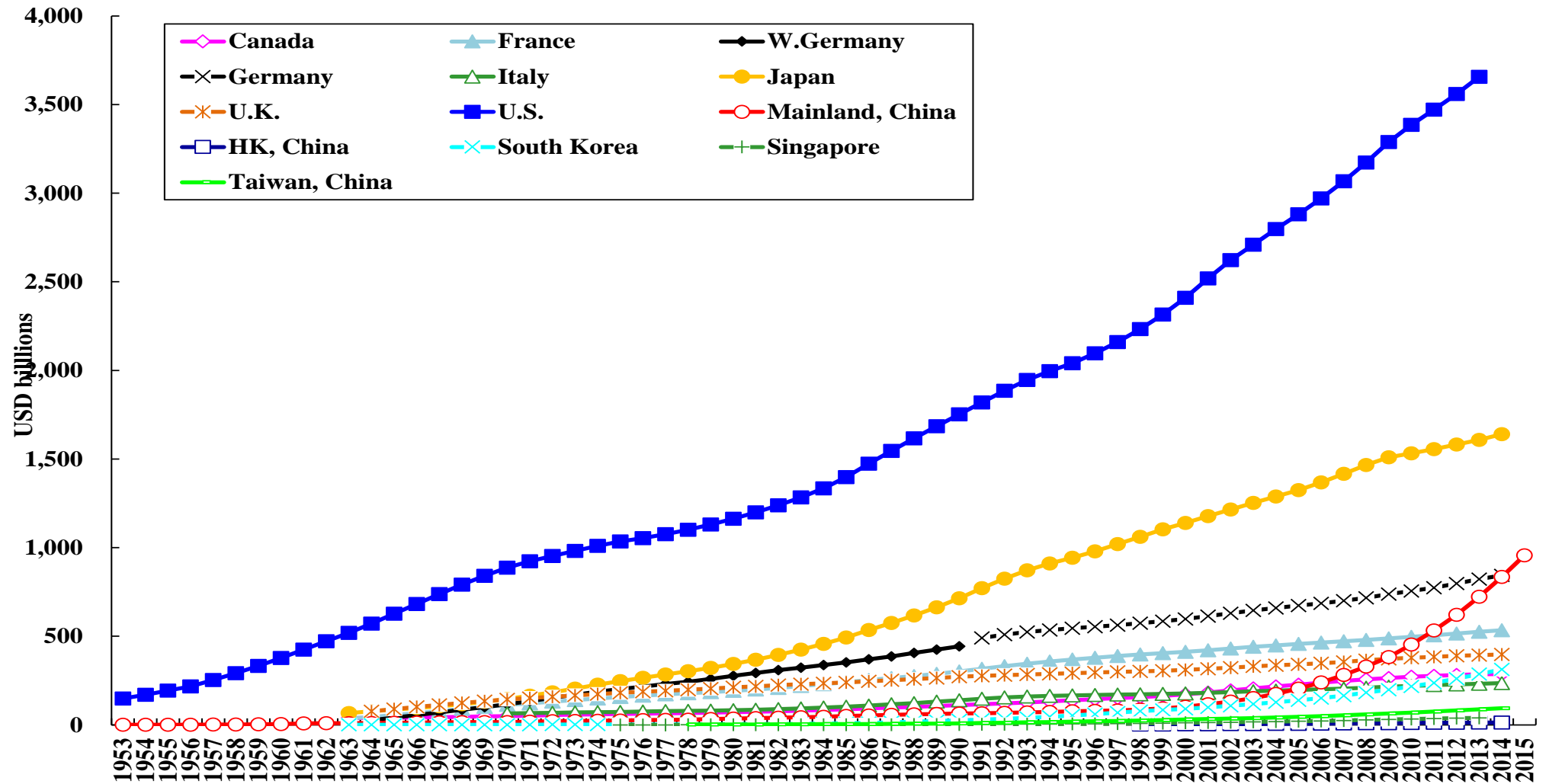
# Intangible Capital: Research and Development

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- ◆ The R&D capital stock, defined as the cumulative past real expenditure on R&D less the depreciation of 10% per year, is an useful indicator of innovative capacity. It should quite properly be treated as capital since R&D efforts generally take years to yield any results.
- ◆ Lawrence J. Lau and Yanyan Xiong (2015), in their Working Paper, “Are There Laws of Innovation? Part I: Introduction”, have constructed R&D capital stocks for the Group-of-Seven (G-7) countries, the East Asian Newly Industrialized Economies (NIEs) and China. The R&D capital stocks of selected economies are presented in the following charts.
- ◆ At US\$3.656 trillion in 2013 (in 2012 prices), the U.S. is the World leader in R&D capital stock. The Chinese R&D capital stock, at not quite US\$1 trillion in 2015, has caught up with those of most countries and regions with the exceptions of the U.S. and Japan.

# Real R&D Capital Stocks: G-7, 4 East Asian NIEs and China (Billion 2012 US\$)

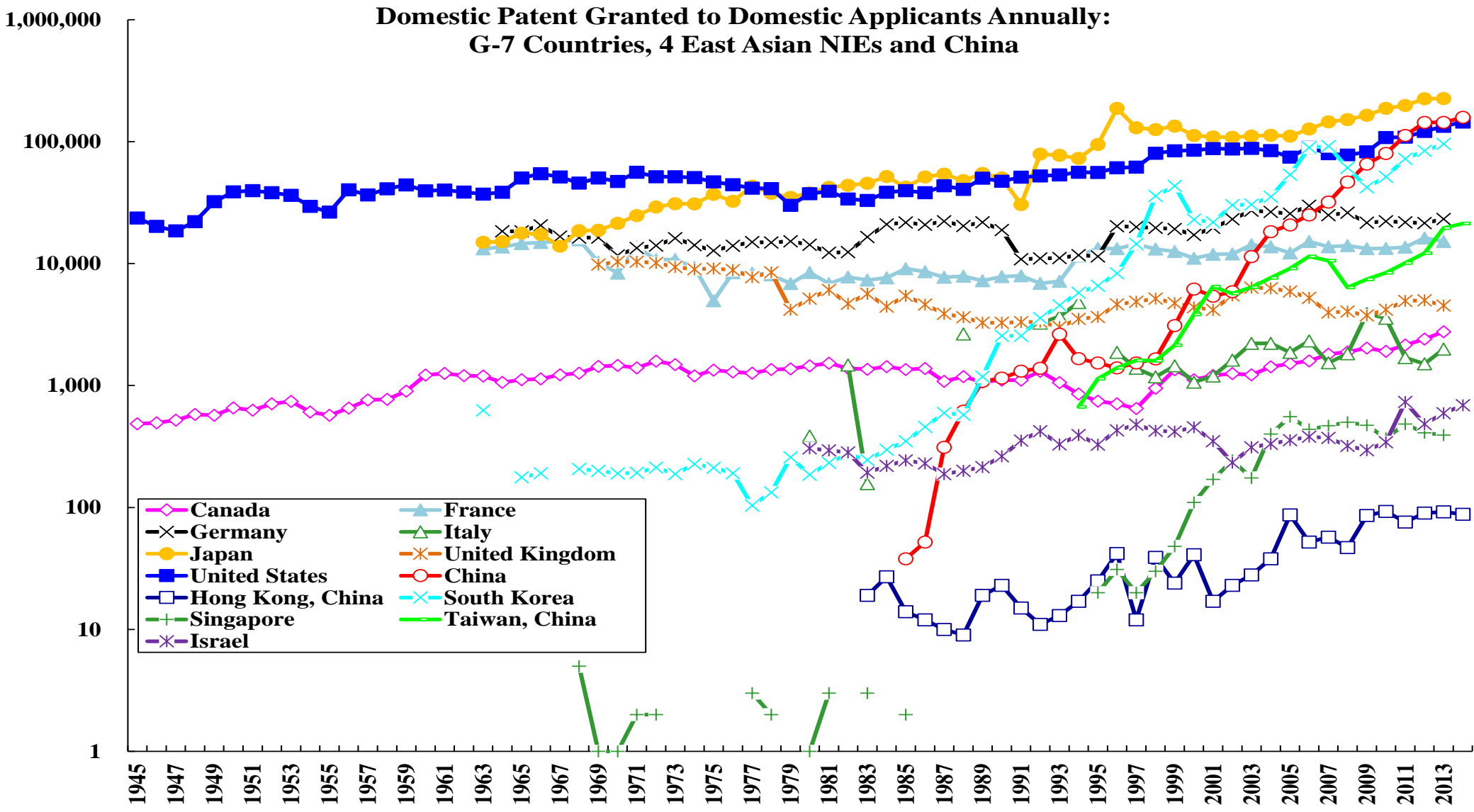
Real R&D Capital Stocks: G-7 Countries, 4 East Asian NIEs and China  
(Billion US\$, 2012 Prices)



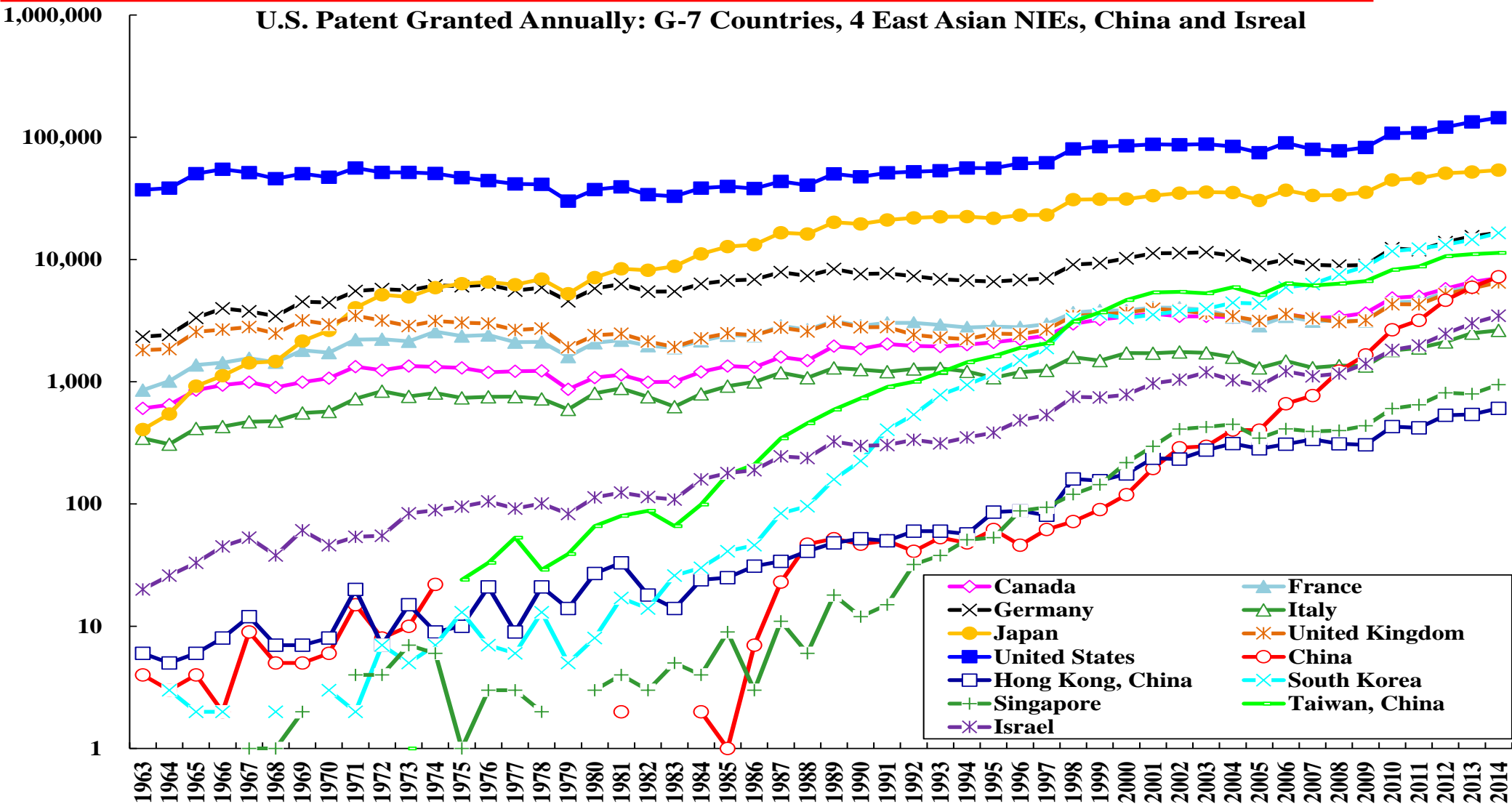
# Intangible Capital: Research and Development

- ◆ In 2014, the Mainland granted 158,000 patents for invention to applicants within the Mainland, compared to the 144,621 domestic patents granted by the U.S. In 2015, the number of Mainland domestic patents increased by more than 60 percent to 256,000, the highest number of domestic patents granted in the World.
- ◆ China probably produces the highest number of published journal articles in the World today. However, it still has a long way to go in terms of citations.

# Annual Number of Domestic Patents Granted: Selected Economies

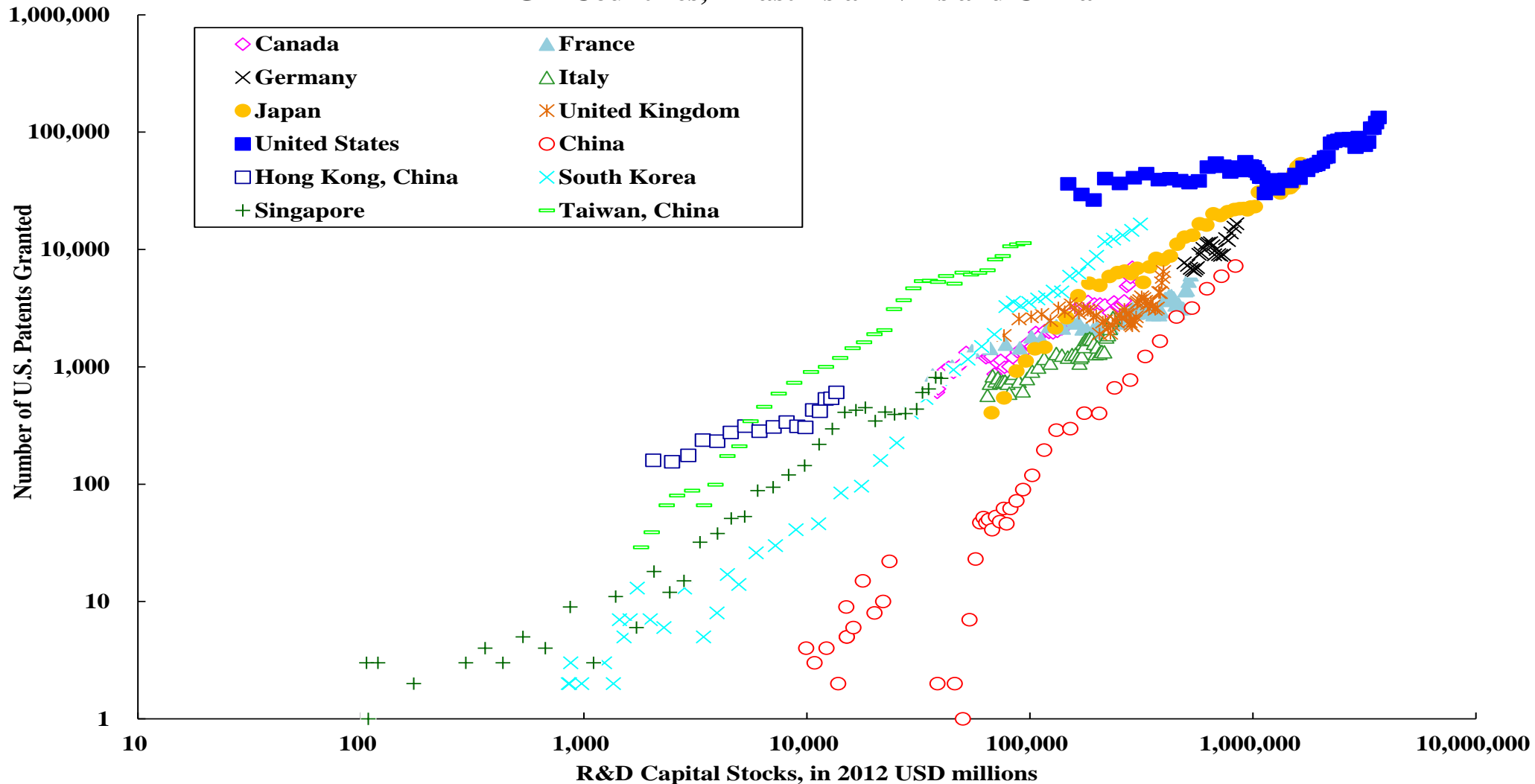


# Annual Number of U.S. Patents Granted: Selected Economies



# U.S. Patents Granted and R&D Capital Stocks: Selected Economies

U.S. Patents Granted and R&D Capital Stocks:  
G-7 Countries, 4 East Asian NIEs and China





# Intangible Capital: Research and Development

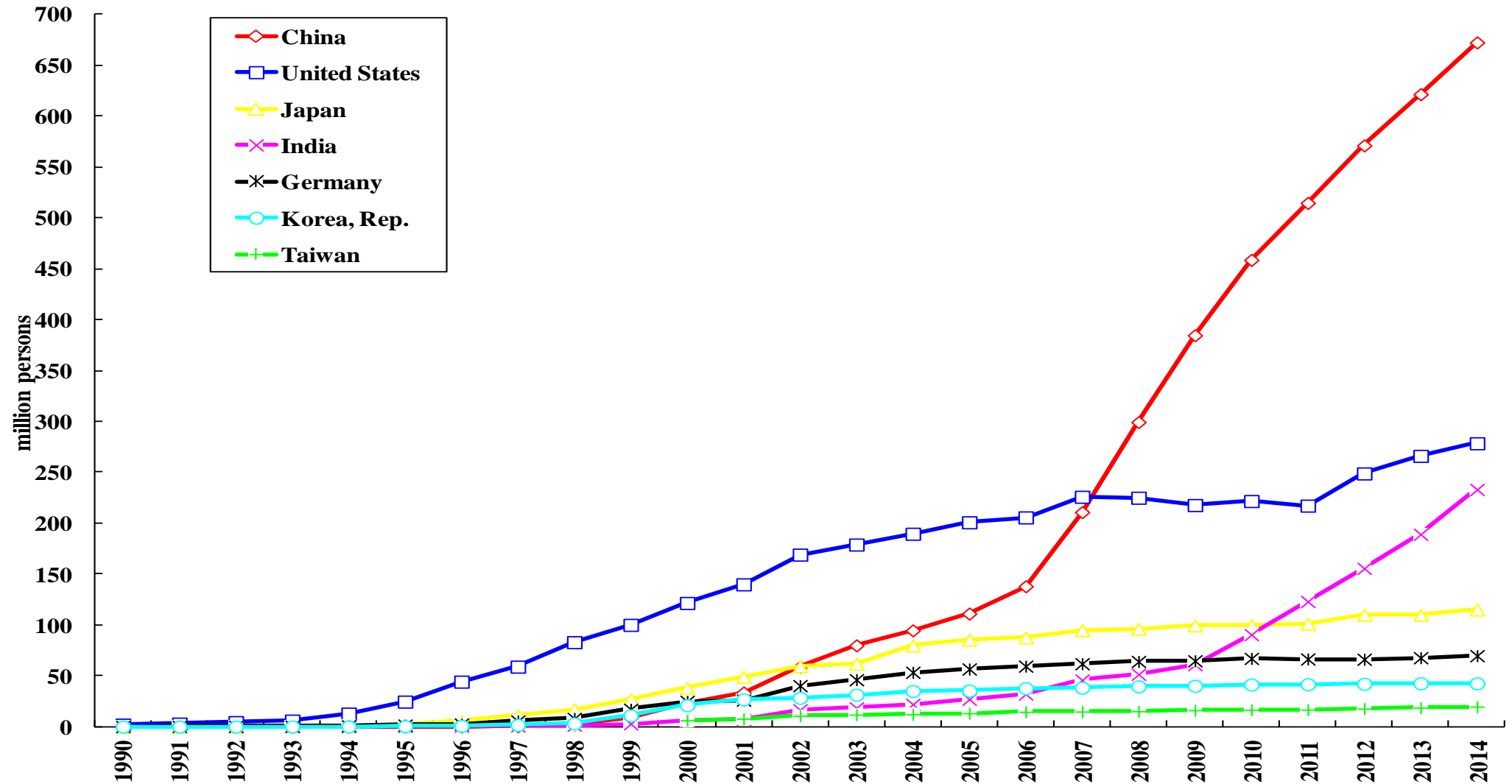
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- ◆ China can exploit the economies of scale in innovation. The huge domestic market of 1.37 billion consumers in China greatly enhances the productivity of intangible capital (e.g., R&D capital and goodwill including brand building) by allowing the fixed costs of the R&D for a new product or process or advertising and promotion in brand building to be more easily amortized and recovered.
- ◆ Intellectual property protection has been receiving a great deal of attention from the Chinese Government. China has now established special national intellectual property courts in Beijing, Shanghai and Guangzhou to deal exclusively with such cases.
- ◆ Chinese investment in basic research has continued to be low. The Chinese are too practical to invest in activities that have only an uncertain return in the distant future. This reduces the possibility of break-through innovations originating in China.
- ◆ There may also be a cultural handicap. The Chinese scientists and engineers have too much respect for established scholarly authority to challenge it.



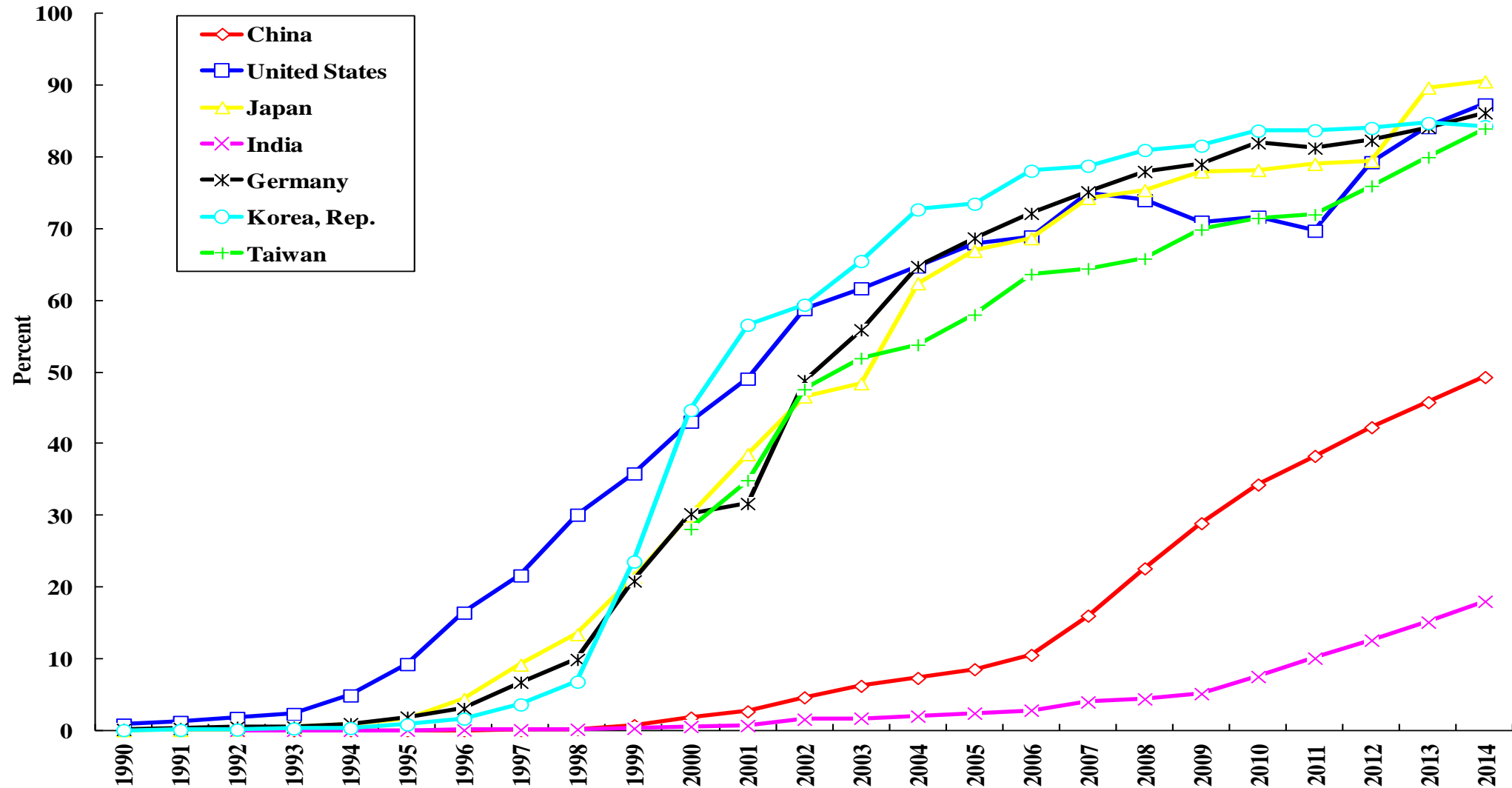
# The Number of Internet Users in Selected Economies

The Number of Internet Users in Selected Economies, million persons



# The Number of Internet Users as a Percent of the Population in Selected Economies

The Number of Internet Users as a Percent of the Population in Selected Economies



# The Transition to a “New Normal”: Transformation of the Sources of Growth

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- ◆ The “Made in China 2025“ plan recently announced by the State Council is designed to transform China into a world manufacturing power comparable to Germany and Japan today.
- ◆ The 10 key sectors that are the foci of “Made in China 2025“ plan are new information technology, numerical control tools and robotics, aerospace equipment, ocean engineering equipment and high-tech ships, railway equipment, energy saving and new energy vehicles, power equipment, new materials, biological medicine and medical devices, and agricultural machinery.

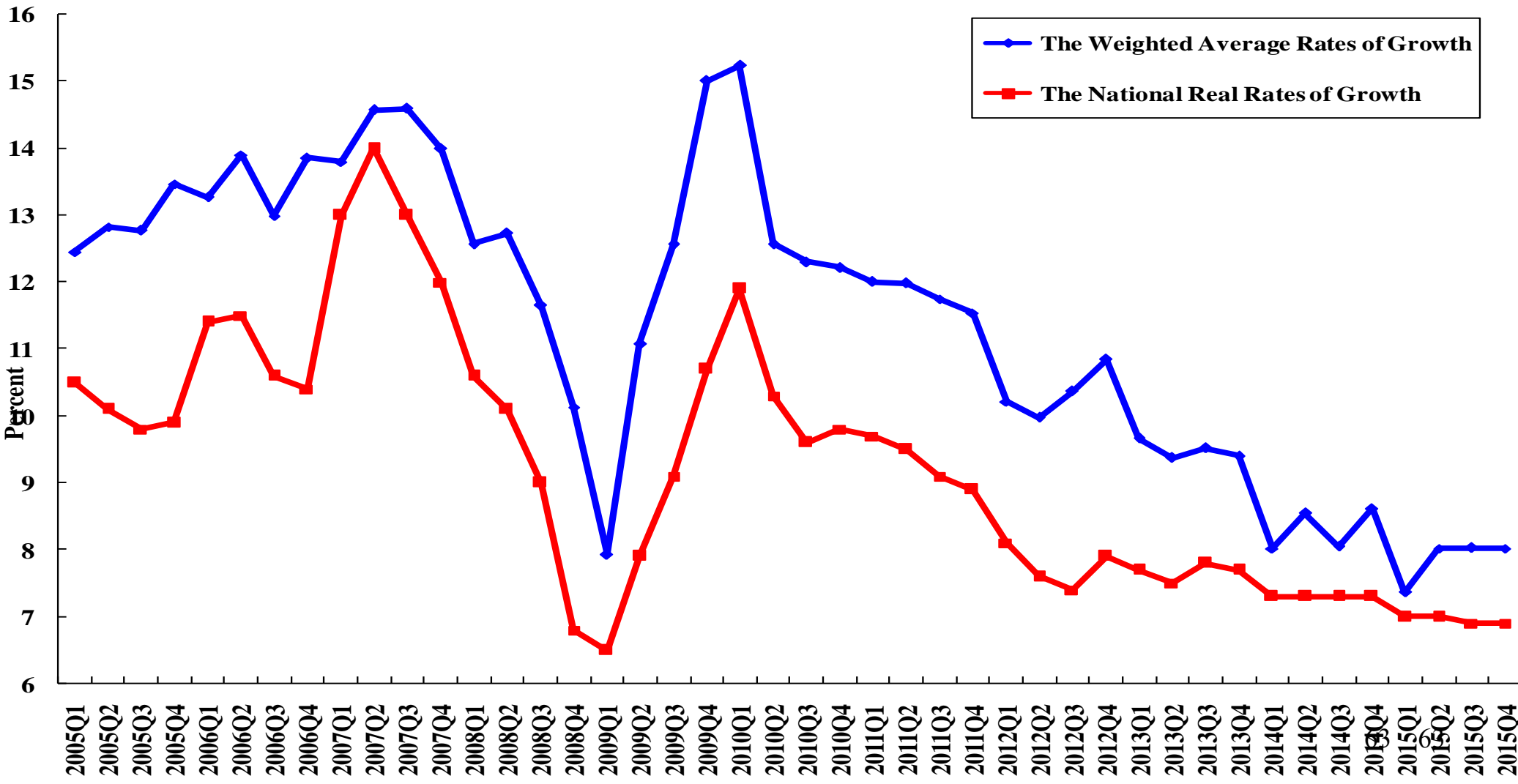
# The Reliability of Chinese Economic Statistics

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- ◆ On the whole, the economic statistics are quite reliable. There is certainly no evidence that the numbers have been made up. In fact, the National Bureau of Statistics has its own methodology for adjusting the provincial figures.
- ◆ The Keqiang index, which consists of a weighted average of the rates of increase of electricity consumption, railroad freight, and credit volume, cannot be applied to the entire Chinese economy, especially given that China is in the midst of transitioning to a “New Normal” with emphasis on the service sector and also has been engaged in improving energy efficiency. For example, the new plants tend to be larger and more efficient than the old plants.

# A Comparison of the Weighted Average Provincial and National Rates of Growth

A Comparison of the Weighted Average Provincial and National Rates of Growth



# The Unimportance of the Stock Market

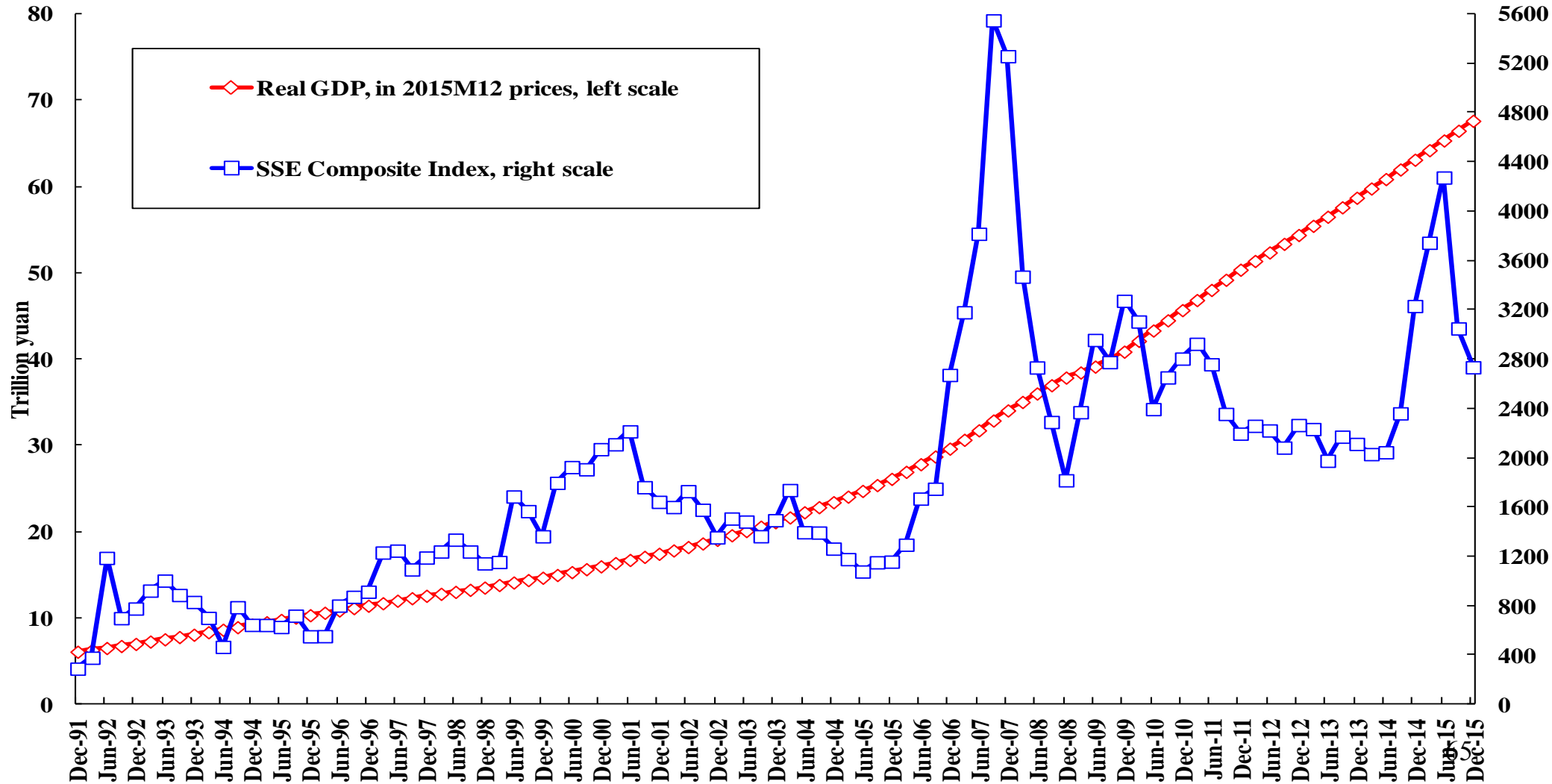
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- ◆ What is the impact of the bursting of the Chinese stock market bubble in July 2015 on the Chinese economy itself?
- ◆ It should be realized that this is not the first time that a Chinese stock market price bubble burst. It happened once before, in 2007, when the peak of the bubble was higher and the trough was lower than the current one (see the following chart). However, neither the run-up of the stock price bubble, or its subsequent burst, appeared to have had much effect on the Chinese real economy.



# The Chinese Quarterly Real GDP and the Shanghai Stock Exchange Composite Index

Chinese Quarterly Real GDP and Shanghai Stock Exchange Composite Index



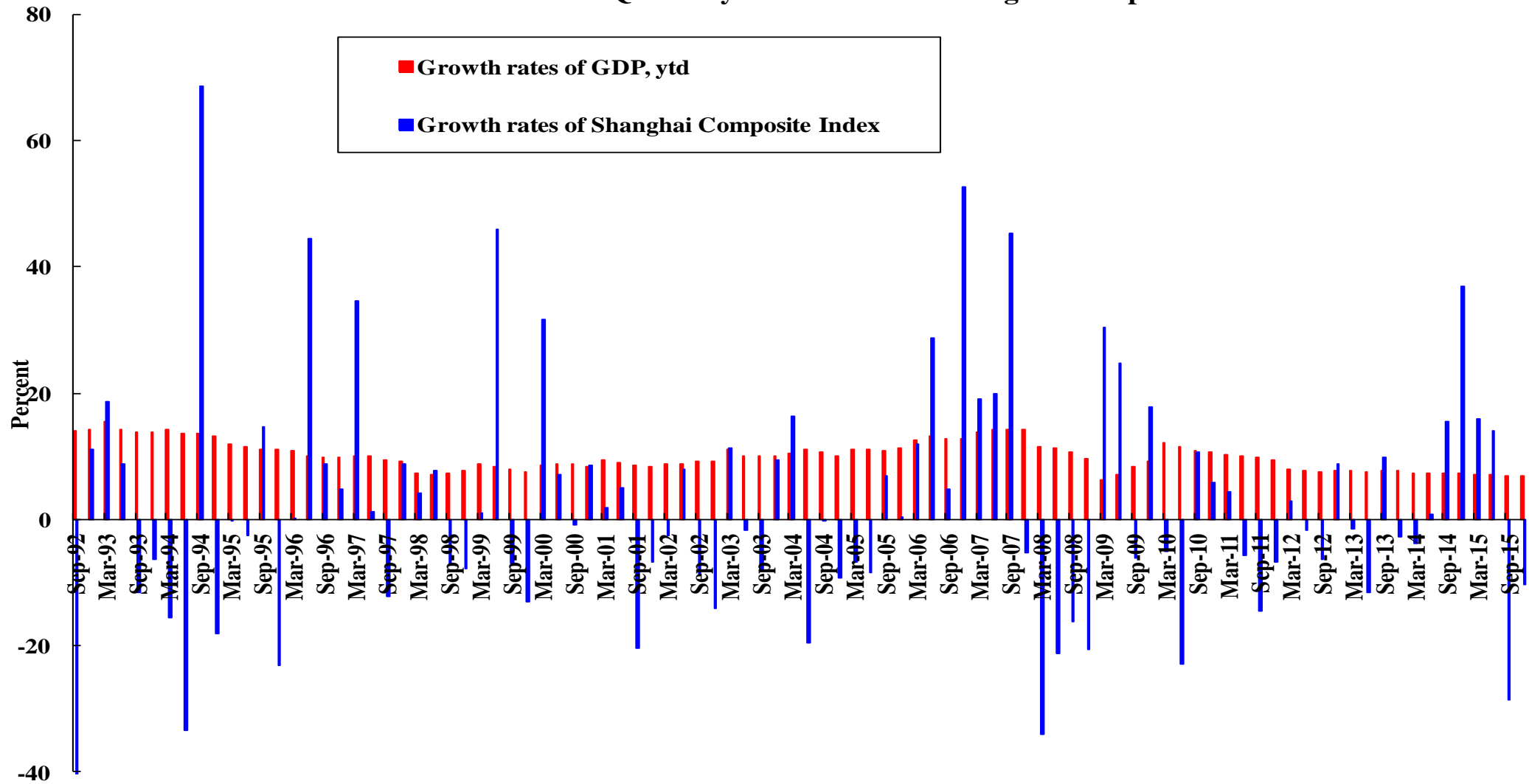
# The Unimportance of the Stock Market

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- ◆ Why is this the case? One reason is that approximately 90 percent of the Chinese stock investors are individual retail investors, who tend to hold their shares for only brief periods, and trade very often. It is probably more accurate to describe their behavior as “gambling” rather than “investing”.
- ◆ Moreover, for the longest time, “Initial Public Offerings (IPOs)” were suspended on Chinese stock markets. Thus, the developments in the real economy and the stock market are uncorrelated. The next chart also shows that the real rates of growth of the Chinese economy are basically uncorrelated with the rates of growth of the Shanghai Composite Stock Price Index.

# The Rates of Growth of Chinese Quarterly Real GDP and the Shanghai Stock Index (1993-)

Rates of Growth of Chinese Quarterly Real GDP and Shanghai Composite Index



# The Unimportance of the Stock Market

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- ◆ In mid-November 2015, margin finance for stock purchase was tightened up in China. New margin loans must be fully backed by collateral, doubled the previous 50%. This should help to prevent another stock price bubble from developing.

# The Chinese Economic Fundamentals

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- ◆ Long-term economic growth of a country depends on the rates of growth of its primary inputs—capital (tangible or physical) and labor—and on technical progress (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 on structure, equipment and basic infrastructure, which in turn depends on the availability of national savings and foreign investment and loans as well as foreign aid.
- ◆ The rate of technical progress depends on the cumulative past investment in intangible capital (including human capital and Research and Development (R&D) capital).

# The Chinese Economic Fundamentals:

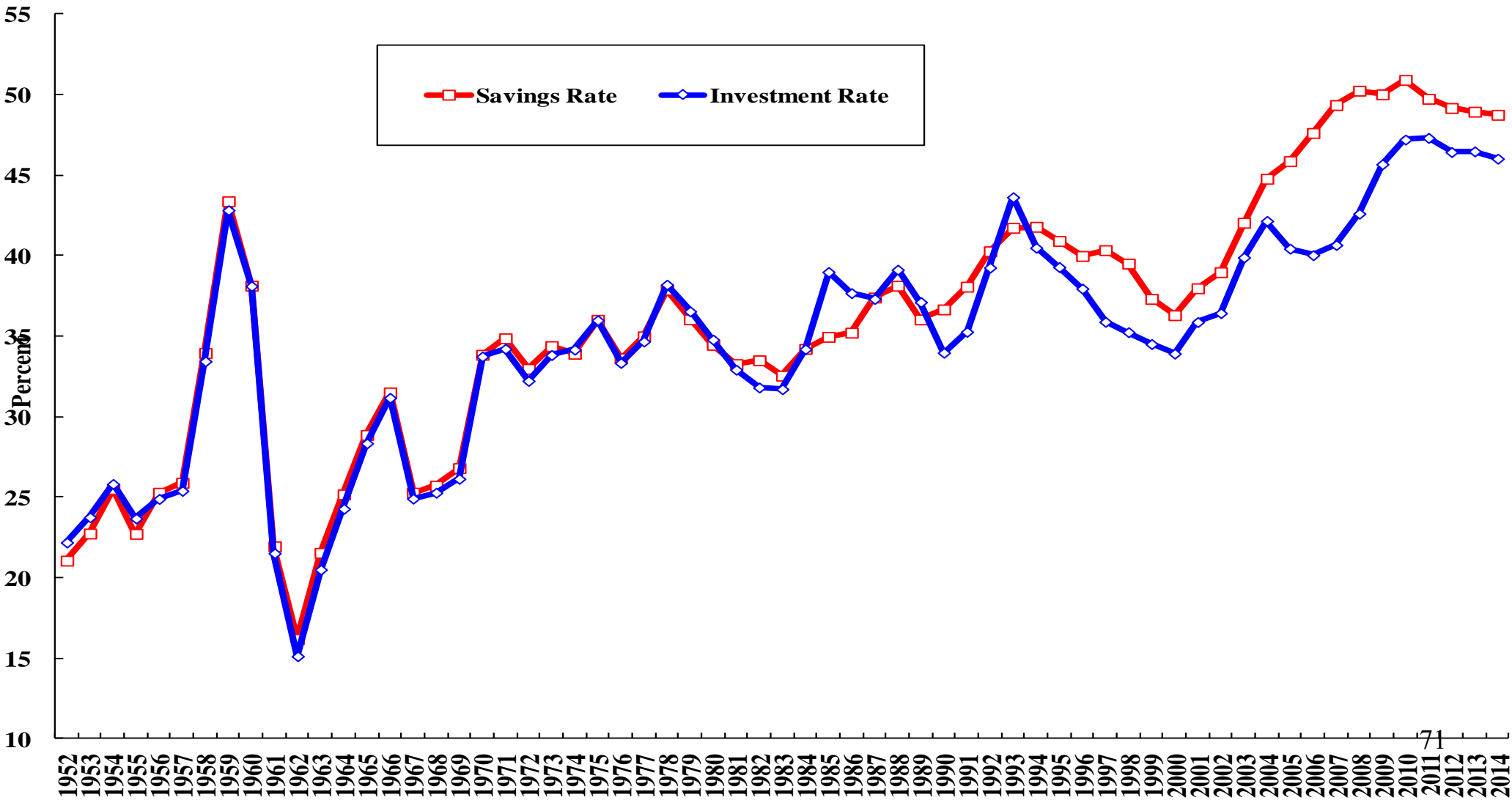
## Capital

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- ◆ Chinese economic growth since 1978 has been underpinned by a consistently high domestic investment rate, enabled by a national savings rate above 35% except for a brief start-up period in the early 1950s. The Chinese saving rate rose to around 40% in the early 1990s and has at times approached or even exceeded 50% in more recent years.
- ◆ The high Chinese saving rate means that the Chinese economy can finance all of its domestic investment needs from its own domestic savings alone, without having to depend on the more fickle foreign capital inflows (including foreign direct investment, foreign portfolio investment, foreign aid, or foreign loans).
- ◆ In particular, it does not need to borrow abroad and bear the potential risks of a large, short-term and often interruptible, foreign-currency denominated debt. The Chinese economy is therefore also more immune from external disturbances than other economies.
- ◆ Thus, the Chinese economy is assured of a high rate of investment and hence a high rate of growth of its tangible capital stock.

# Chinese National Saving and Gross Domestic Investment as Percents of GDP

Chinese National Savings and Gross Domestic Investment as a Percent of GDP since 1952



# The Chinese Economic Fundamentals:

## Capital

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- ◆ In addition, since new resources are forthcoming each year from new savings, enabling new investments to be made, the necessity of restructuring, redeploying or privatising existing fixed assets is greatly diminished. Thus, the potentially politically divisive issues such as factory closings and lay-offs of redundant workers and the creation of “losers” can be avoided.
- ◆ A high national savings rate also allows the normally more efficient non-state sector greater room and greater scope for development and expansion (there is less “crowding out” by the investment of the government as well as the state-owned firms).
- ◆ However, tangible capital input-driven economic growth has its limitations, because as the stock of tangible capital relative to labor increases, the marginal productivity of tangible capital will begin to decline and will eventually reach a point when additional tangible capital is no longer productive. This is a point made by Prof. Paul Krugman in his influential article in Foreign Affairs.



# The Chinese Economic Fundamentals:

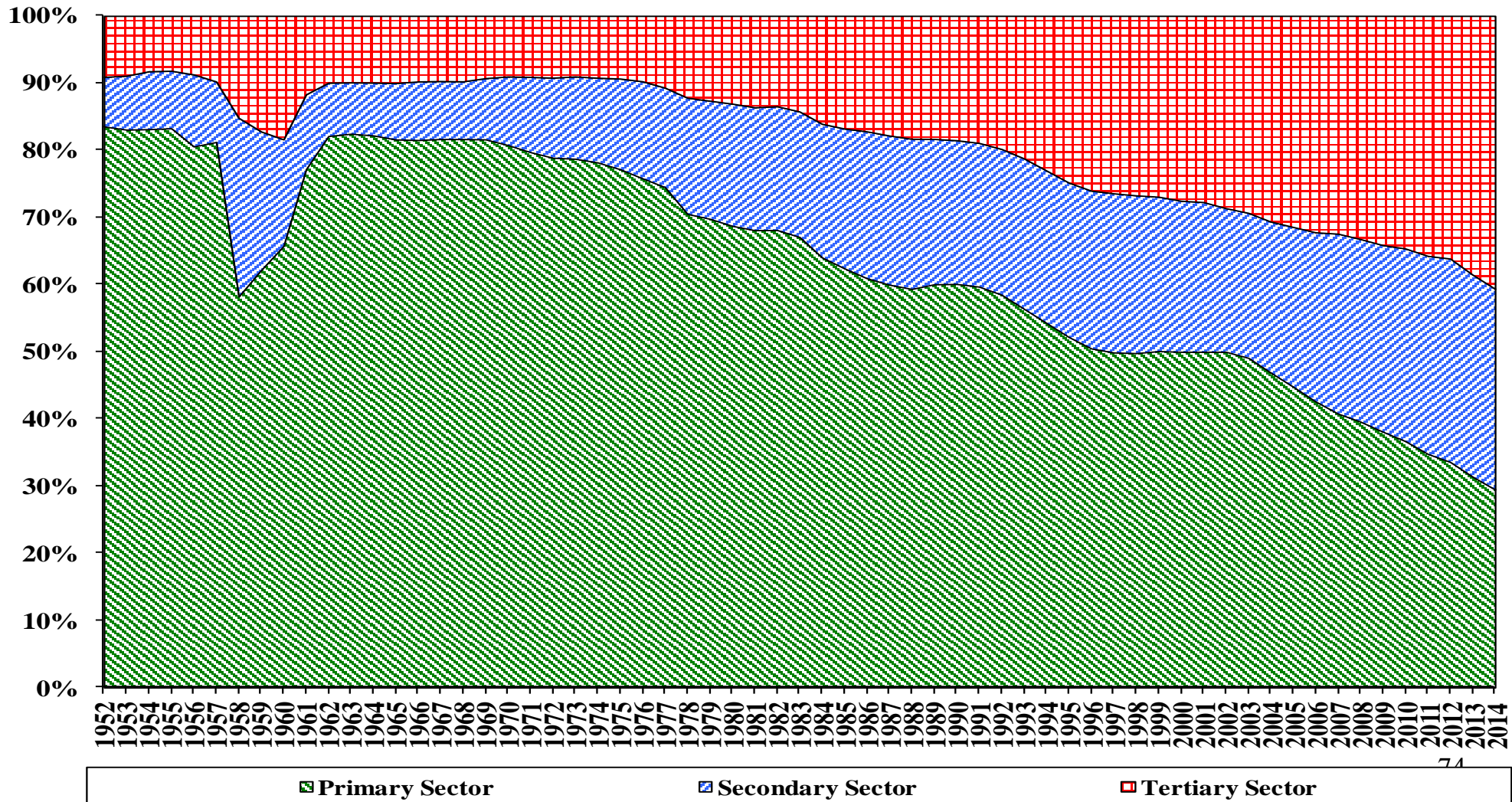
## Labor

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- ◆ China, like Japan, Taiwan, and South Korea in their respective early stages of economic development, has an unlimited supply of surplus labor—there is therefore no shortage of and no upward pressure on the real wage rate of unskilled, entry-level labor over an extended period of time.
- ◆ The distribution of Chinese GDP by production-originating sectors in 2015 was approximately: Primary (agriculture), 9.0%; Secondary (manufacturing, mining and construction), 40.5%; and Tertiary (services), 50.5%. (Note that mining is normally included in the primary sector in most other economies.)
- ◆ The distribution of employment by sector in 2014 was: Primary, 29.5%; Secondary, 29.9%; and Tertiary, 40.6%.
- ◆ The agricultural sector employed 29.5% of the Chinese labor force but produced only 9.2% of the Chinese GDP in 2014. Thus labor can be productively transferred to the other two sectors where labor productivities and wage rates are higher as long as complementary capital and demand are available.

# The Distribution of Chinese Employment by Sector Since 1952

The Distribution of Employment by Sector since 1952



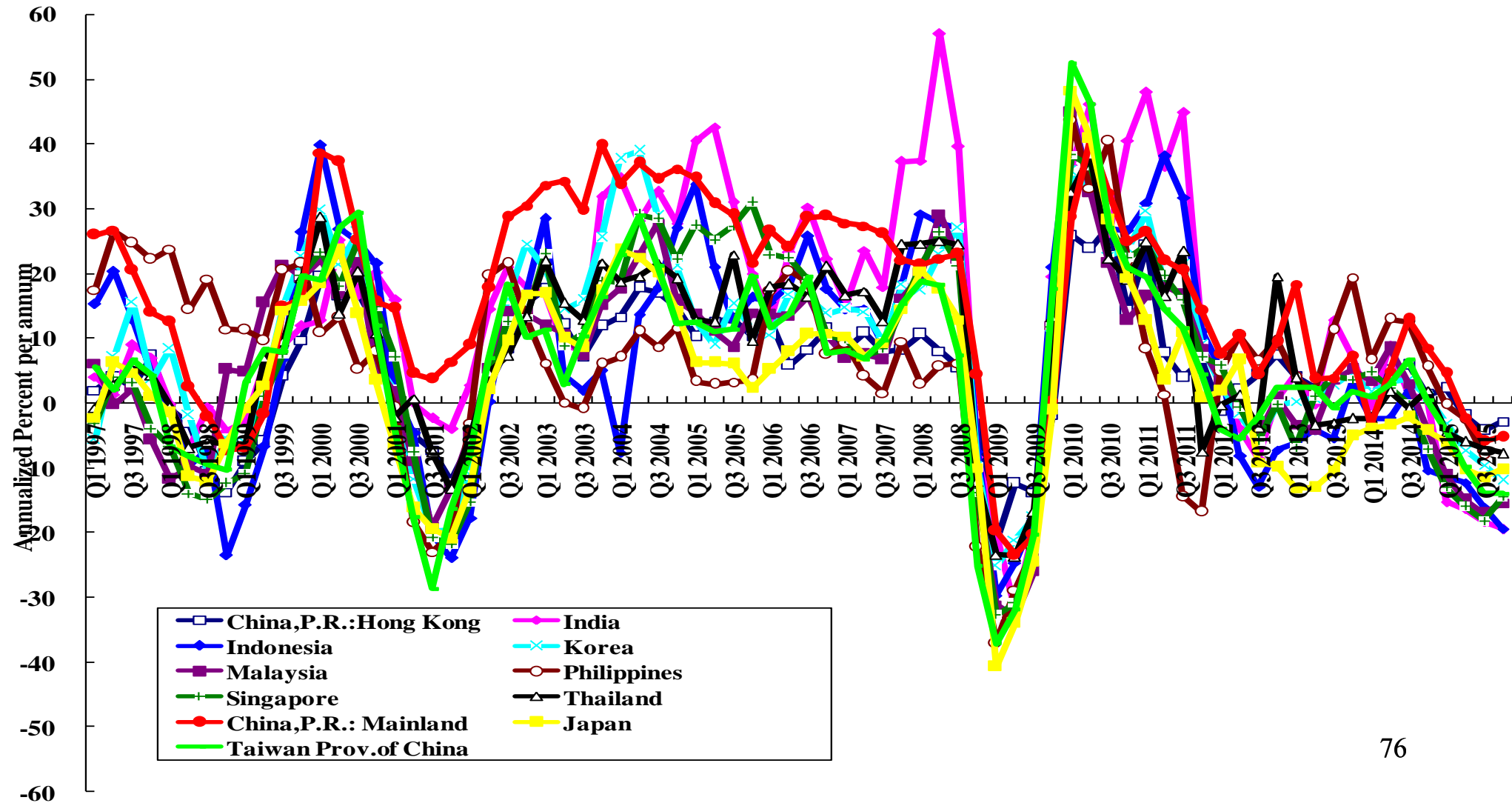
# The Chinese Economic Fundamentals:

## The Size of the Domestic Economy

- ◆ The huge domestic market of 1.37 billion consumers with pent-up demand for housing and transportation and other consumer goods and services (e.g., education, health care, and more recently, elderly care), enables the realization of significant economies of scale in production in many manufacturing industries, based entirely on the domestic market in China.
- ◆ The huge domestic market also 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 amortized and recovered.
- ◆ Another important implication of the size of the domestic economy is the relatively low external dependence. Thus, while the rates of growth of Chinese exports and imports fluctuate like other economies, the rate of growth of Chinese real GDP has been relatively much more stable. (China is represented by a red line in the following charts.)

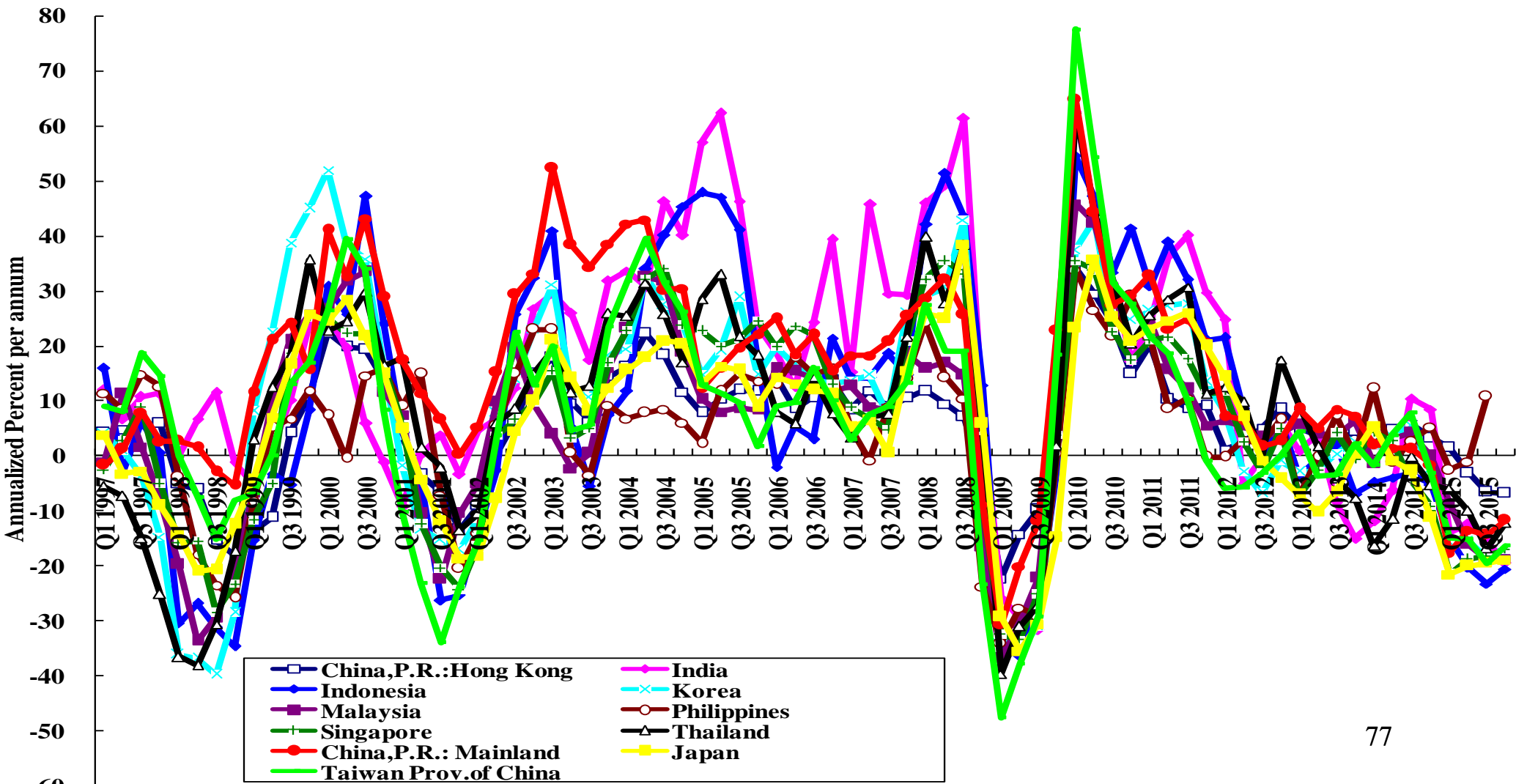
# Quarterly Rates of Growth of Exports of Goods: Selected Asian Economies

Quarterly Rates of Growth of Exports of Goods: Selected East Asian Economies



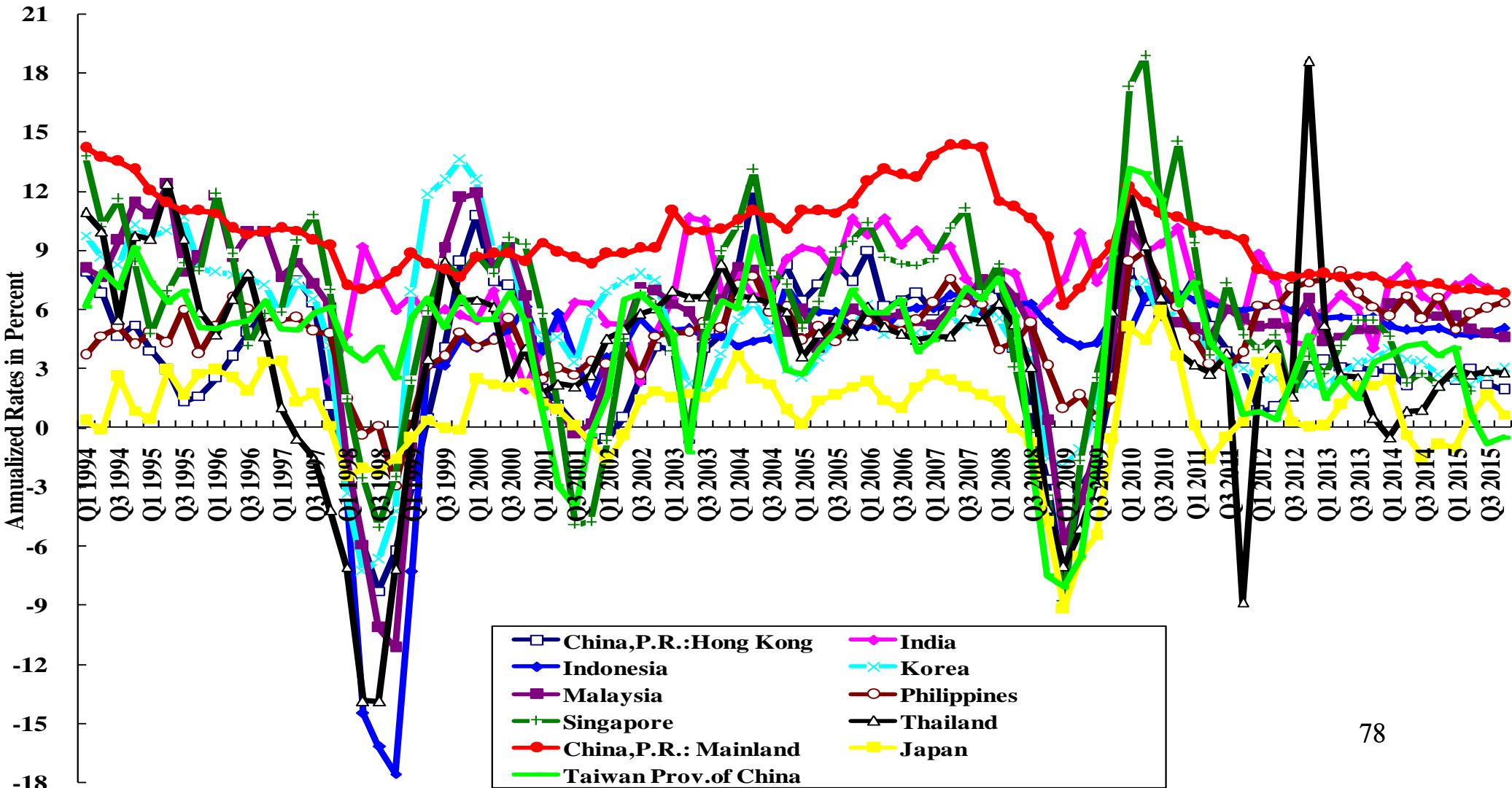
# Quarterly Rates of Growth of Imports of Goods: Selected Asian Economies

Quarterly Rates of Growth of Imports of Goods : Selected East Asian Economies



# Quarterly Rates of Growth of Real GDP, Y-o-Y: Selected Asian Economies

Quarterly Rates of Growth of Real GDP, Year-over-Year: Selected East Asian Economies



# The Chinese Economic Fundamentals: Relative Backwardness

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- ◆ In addition to a high national savings rate, a large pool of surplus labor, rising investment in intangible capital (human capital and R&D capital), and the large size of its economy, China also has the advantage of relative backwardness.
- ◆ Thus, the Chinese economy has:
  - ◆ The ability to learn from the experiences of successes and failures of other economies, e.g., by adopting an export-oriented rather than an import-substitution development strategy;
  - ◆ The ability to leap-frog and by-pass stages of development (e.g., the telex machine, the VHS video players, the fixed landline phones and the personal computer); and
  - ◆ The possibility of creation without destruction (e.g., online virtual bookstores like Amazon.com do not have to destroy brick and mortar bookstores which do not exist in the first place; internet shopping versus brick and mortar malls).



# The Reduction of Excess Capacities in Manufacturing

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- ◆ There is excess capacity in steel coal, cement, flat glass, aluminum, ship-building, solar panels in almost every manufacturing industry.
- ◆ What are the difficulties in achieving a reduction of the excess capacities?
- ◆ There is a lack of bankruptcy laws for reorganization such as the U.S. Chapter 7 and Chapter 11 bankruptcy. There should be bankruptcy without liquidation, which protects everyone's interests, including the workers and the lenders.
- ◆ If the market is allowed to be more decisive, then perhaps some of the excess capacities will be eliminated. However, that is not the case.
- ◆ There is likely to be a debt-equity swap with the creditors (banks) and the establishment of resolution companies.
- ◆ Mergers and acquisitions are also likely.



# The Reduction of Excess Capacities in Manufacturing

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- ◆ Unemployment allowance and retraining and re-employment of the displaced workers is absolutely essential. 100 billion Yuan has been made available for this purpose.
- ◆ Tax reform (abolition of the headquarters tax system) with interim arrangements to compensate local governments for the loss of tax revenue is needed.
- ◆ The Central Government and the National Development and Reform Commission must make political decisions as to which enterprises to close on the basis of efficiency, quality, unit cost and long-term viability. There is no decentralized way of solving the problem.

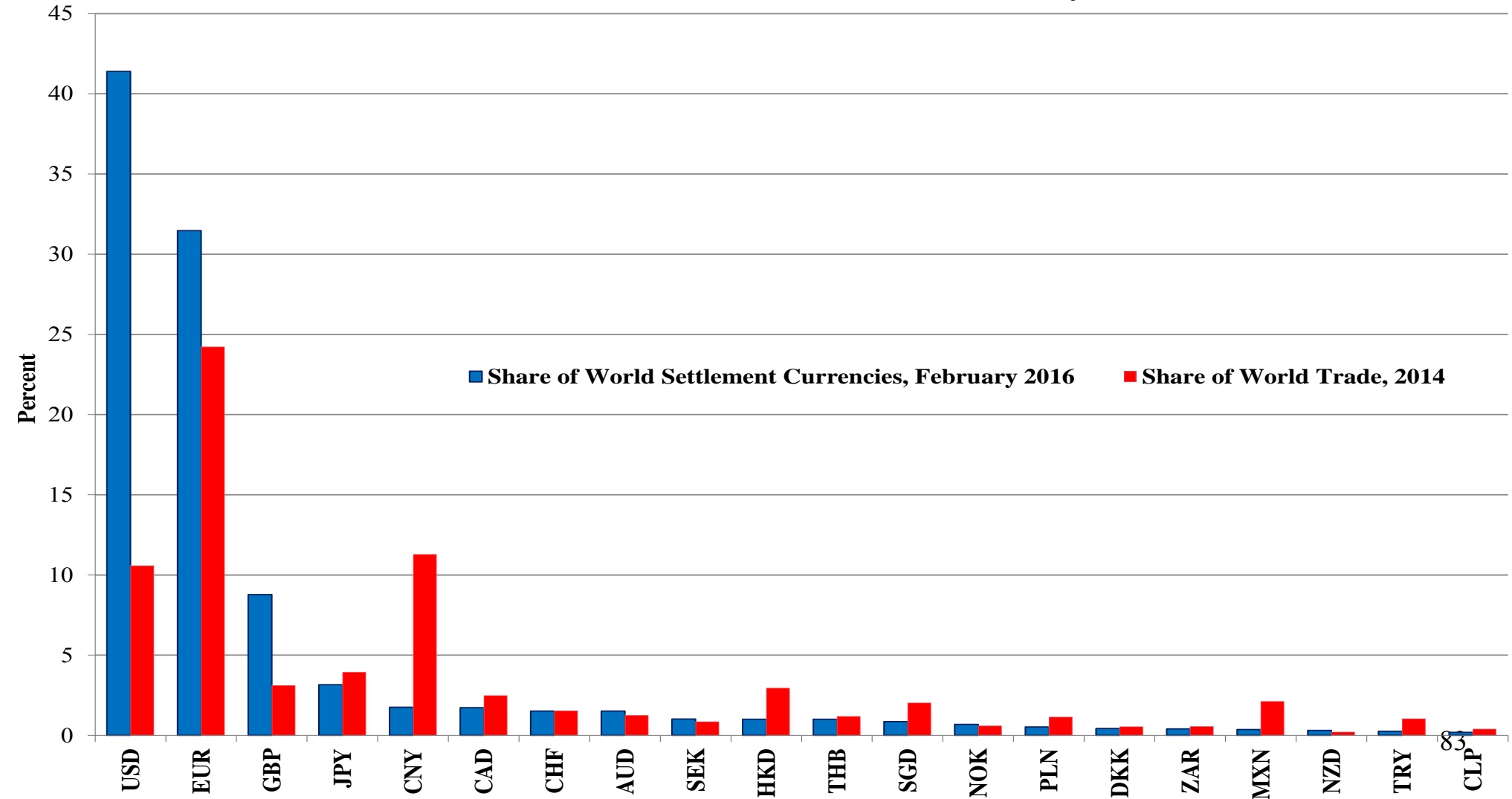
# The Internationalization of the Renminbi

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- ◆ The Renminbi, the Chinese currency, is increasingly used as an invoicing, clearing and settlement currency for cross-border transactions, especially those involving Chinese enterprises as transacting parties.
- ◆ In the fourth quarter of 2015, Chinese cross-border trade settled in Renminbi amounted to an annualized rate of US\$1.1 trillion, or 26.4% of total Chinese cross-border trade, compared to virtually zero in the first quarter of 2010. (Actually, the proportion of Chinese trade settled in Renminbi already reached 32.4% in the third quarter of 2015 and would have grown higher were it not for the unexpected Renminbi devaluation of 4% last August.)
- ◆ If the same proportion of Chinese trade is settled in its own currency as Japan (approximately 50%), then more than US\$2 trillion of Chinese trade will be settled in Renminbi annually, greatly diminishing the necessity for China to have a large foreign exchange reserve.

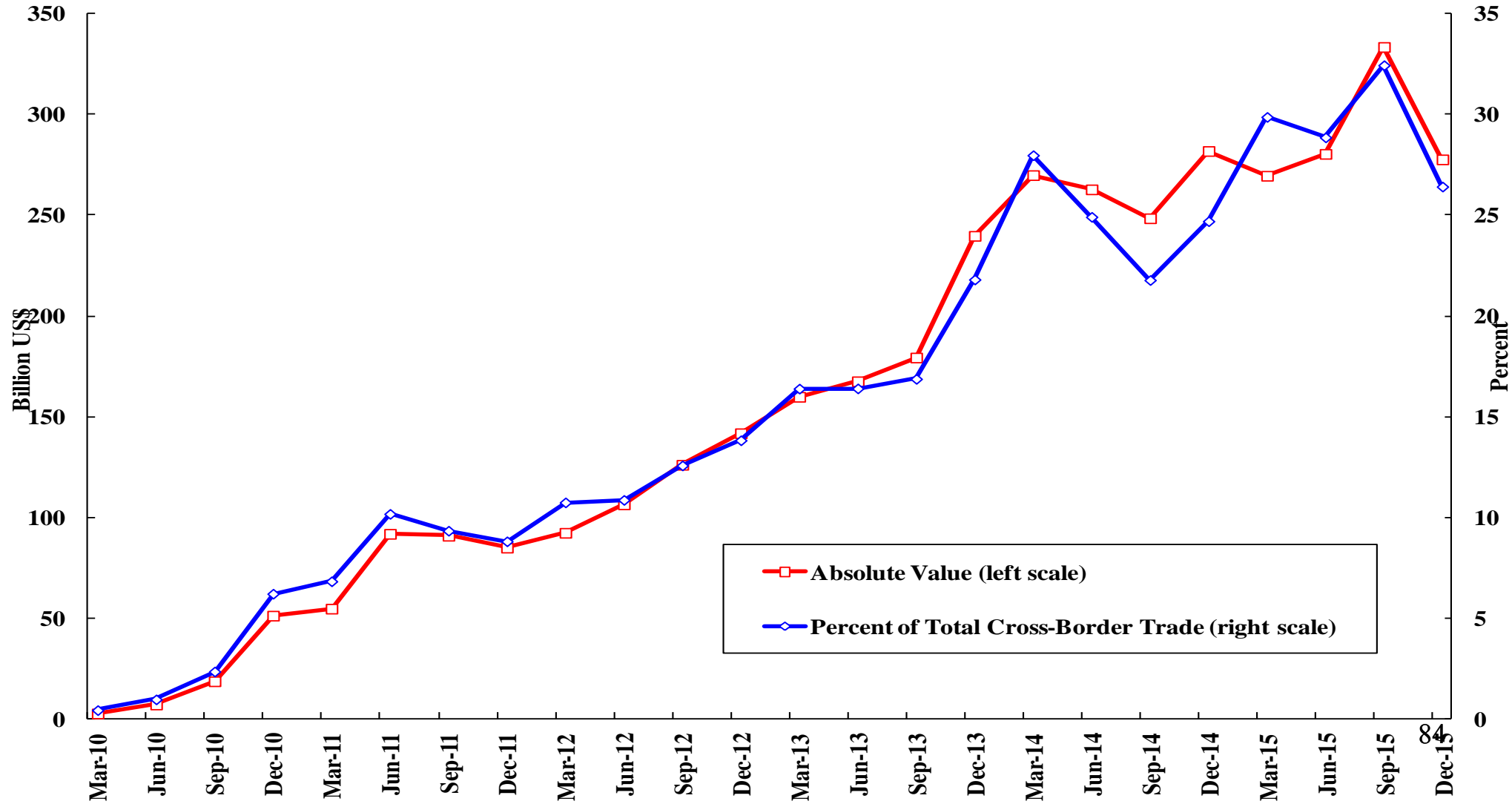
# Distribution of World Trade Settlement Currencies versus World Trade, Feb. 2016

Share of World Settlement Currencies, February 2016



# Renminbi Settlement of Chinese Cross-Border Trade, Billion US\$ and Percent

Renminbi Settlement of Cross-Border Trade, Billion US\$ and Percent



# The Internationalization of the Renminbi

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- ◆ The Renminbi exchange rate is likely to hold relatively steady vis-a-vis the US\$ going forward.
- ◆ It is in China's interests to promote the use of its own currency, the Renminbi, as a medium of international exchange, certainly in international transactions in which its national is one of the transacting parties. This requires a relatively stable exchange rate vis-a-vis the US\$.
- ◆ The Renminbi, being regarded as “freely usable”, has been included as part of the basket of major currencies (which includes the US\$, the Euro, the British pound and the Japanese Yen) constituting the “Special Drawing Rights (SDR)” basket, with a weight of 10.92%, which is higher than the British pound and the Japanese Yen. However, this will become effective on 1 October 2016.
- ◆ This should marginally increase the holdings of Renminbi as part of the foreign exchange reserves of foreign central banks and monetary authorities.

# The Internationalization of the Renminbi

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- ◆ China will continue to face a net capital outflow, which is natural and expected as its enterprises (and in time its households) diversify their investment to overseas.
- ◆ However, this does not diminish its ability to stabilize the Renminbi exchange rate. It has large foreign exchange reserves of US\$3.21 trillion as of the end of March 2016, which is more than one and a half years of worth of Chinese imports. It still runs a significant trade surplus in goods and services combined amounting to approximately US\$450 billion a year.
- ◆ China will over time become a large net capital exporter, especially as its enterprises and households attempt to re-balance their portfolios if and when capital controls are fully lifted. There will be a significant one-time stock adjustment when capital control is finally completely lifted.

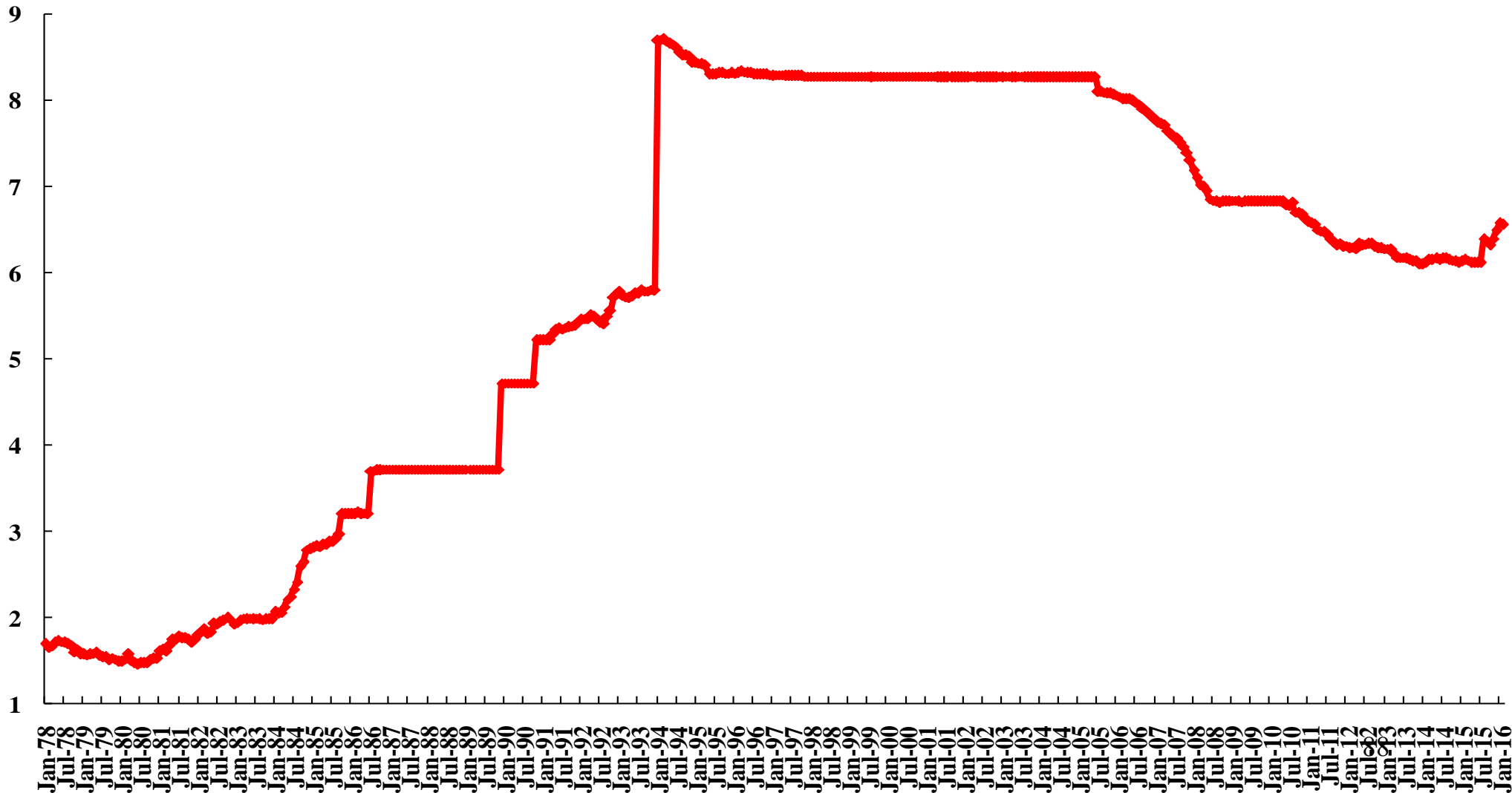
# The Internationalization of the Renminbi

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- ◆ A devaluation is unlikely to be helpful to the Chinese economy. China does not want to return to making garments, shoes and stuffed toys with the lower standard of living that it implies. The Chinese economy has also become too large to be sustained by exports alone.
- ◆ It is also not in the best interests for China to compete with the other East Asian developing economies through competitive devaluation. China should be moving up the value chain, as Japan, Hong Kong, South Korea and Taiwan did before.
- ◆ The Renminbi has actually been appreciating relative to the U.S. Dollar in real terms, that is, taking into accounting that the rate of inflation has been higher in China than in the U.S., in the past few years.
- ◆ It has also been appreciating relative to all the other major reserve currencies—the Euro, the pound sterling, and the Japanese Yen—as the U.S. Dollar.

# Nominal Exchange Rate of the Renminbi, Yuan/US\$, 1978-present

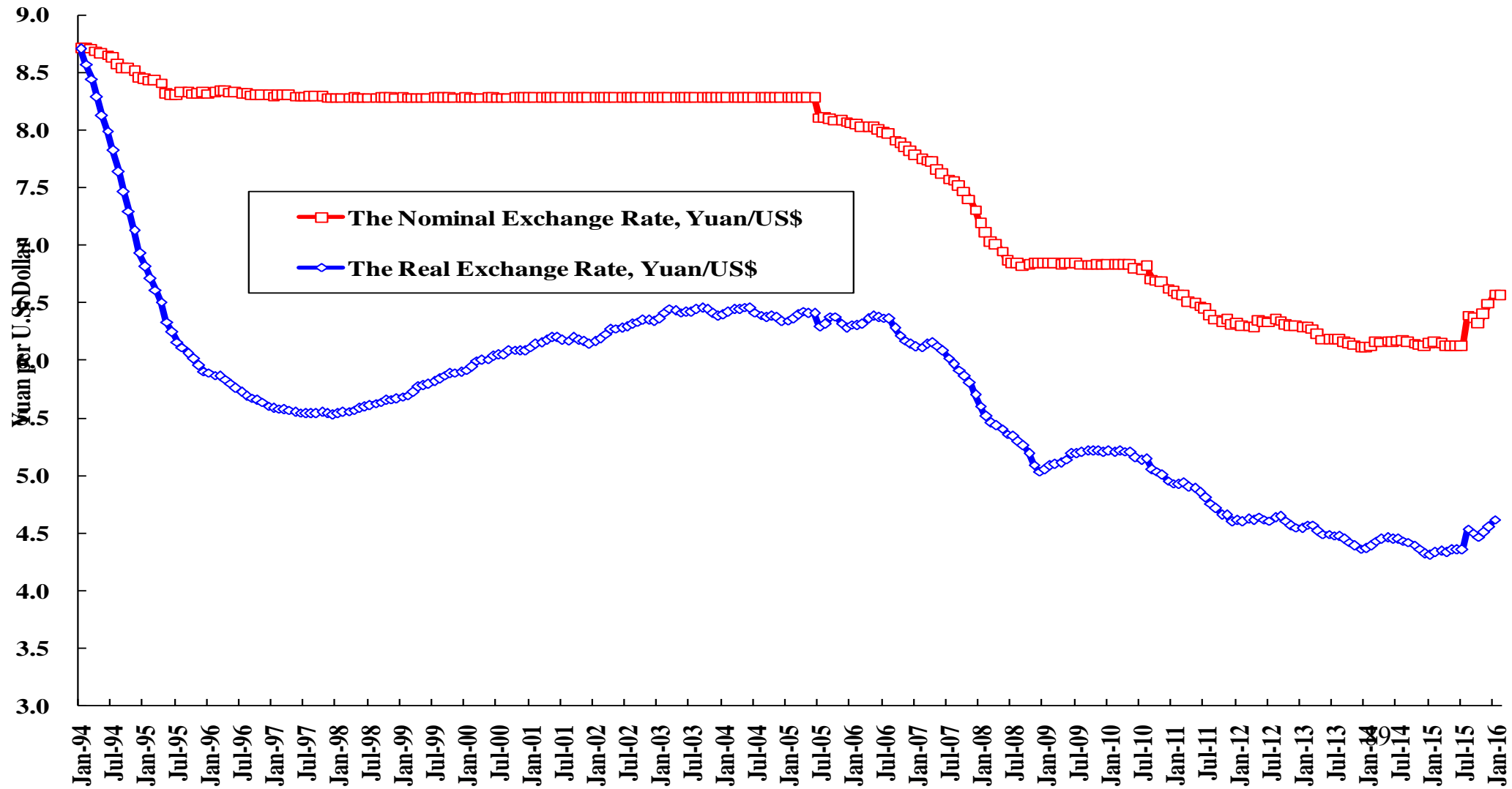
Nominal Exchange Rate of the Renminbi, Yuan/US\$, 1978-present





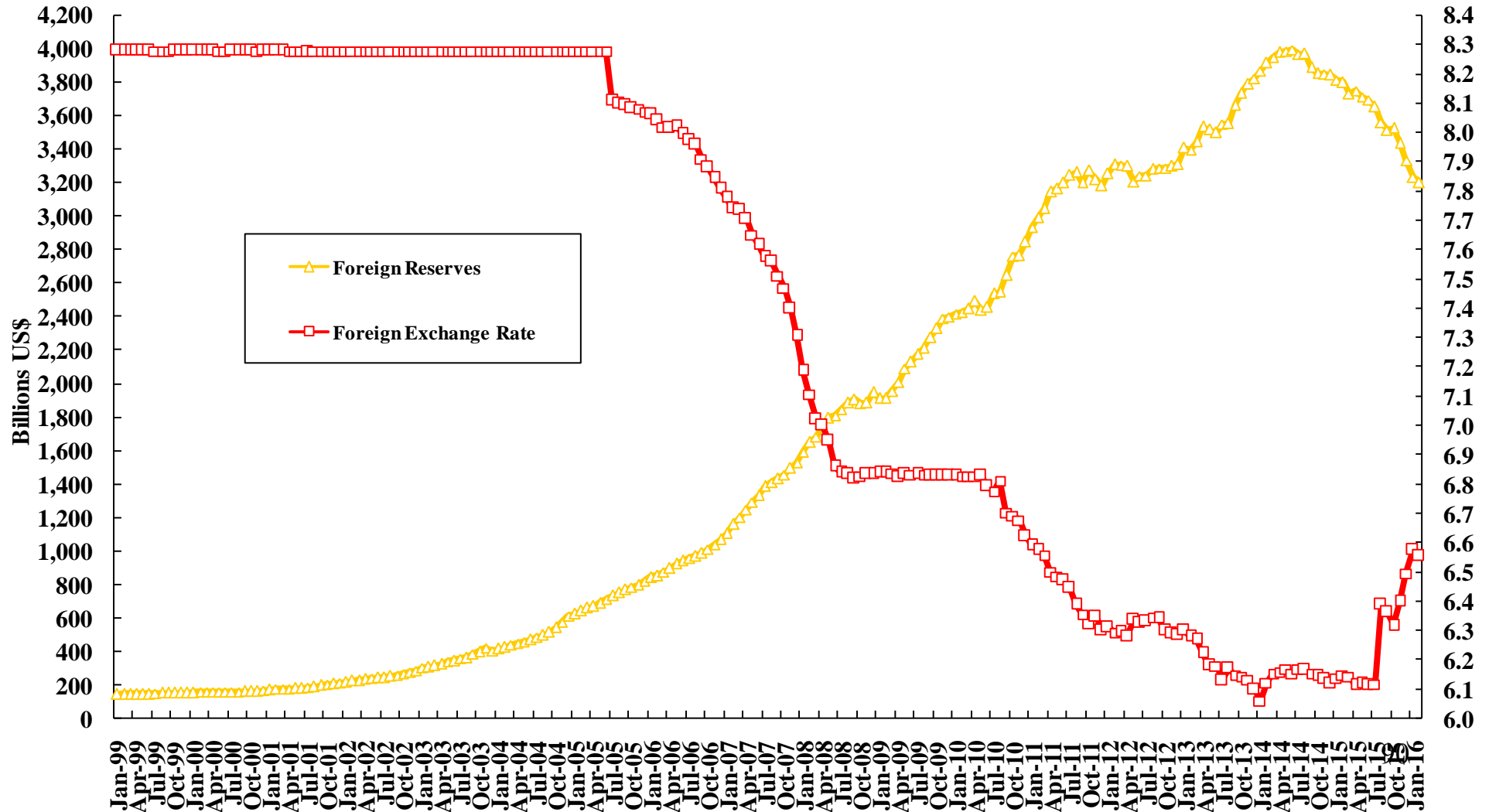
# The Nominal and Real Yuan/US\$ Exchange Rates

The Nominal and Real Yuan/US\$ Exchange Rates (1994 prices)



# Chinese Foreign Exchange Reserves and the Yuan/US\$ Exchange Rate

Chinese Foreign Exchange Reserves and the Yuan/US\$ Exchange Rate at the End of the Month



# The Internationalization of the Renminbi

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- ◆ However, with the rising U.S. rate of interest, the U.S. Dollar may be expected to continue to appreciate relative to all the other major international reserve currencies within the next year or two.
- ◆ In order to maintain the long-term relative stability of the Renminbi exchange rate, it is not unreasonable for the Yuan to appreciate less relative to these other currencies going forward (and thus to devalue slightly relative to the U.S. Dollar) so as to avoid a sharp devaluation relative to the other currencies when the U.S. Dollar eventually weakens.

# The Internationalization of the Renminbi: The Introduction of the Tobin Tax

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- ◆ The Tobin tax was proposed by the late Prof. James Tobin, Nobel Laureate in Economic Sciences. It is supposed to be levied every time there is a capital account flow into or out of a country. It can be used to discourage and deter out short-term capital flows in both directions.
- ◆ There has never been a full implementation of the Tobin tax in the past. However, there is always a first time. And even if something has worked elsewhere, it does not mean it will work in China. A recent example is the circuit breaker. Thus, a pilot trial is needed.

# The Internationalization of the Renminbi: The Introduction of the Tobin Tax

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- ◆ However, china has the best chance of making the Tobin tax work. First of all, it has the most up-to-date real time digital fund transfer system which applies to all the banks so that it is straightforward to impose the Tobin tax on all currency conversion transactions. Second, Chinese commercial banks are more likely to comply with regulations enforcing the payment of such a tax. Third, it is entirely possible, given the convenience of computerized record-keeping, to continue to allow an US\$50,000 annual exemption per person from such a tax. It is also possible to retroactively penalize those who camouflage capital account flows as current account flows.

# The Chinese Debt Burden

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- ◆ National Public debt was approximately 44% of GDP in 2015.
- ◆ Outstanding borrowing by local governments and state-owned enterprises (SOEs) probably amounted to between 50 and 70 percent of GDP in 2015. Household borrowing was probably around 40%.
- ◆ However, it should be noted that the SOE debt and the household debt are probably backed up with positive net worth and collateral and should not be equated with public debt.
- ◆ Moreover, almost all of the Chinese public debt is denominated in Renminbi and held by Chinese nationals. There is almost no default risk and its servicing and repayment should not present a problem.
- ◆ Furthermore, since almost all of the public debt is held by Chinese nationals, it is very much like intra-family debt.

# Concluding Remarks

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- ◆ Chinese economic growth since economic reform and opening to the World began in 1978 can be mostly attributed to the growth of tangible inputs—tangible capital and labor, and in particular, tangible capital—rather than the growth in intangible capital or technical progress, just as the past economic growth of other East Asian economies at a similar stage of economic development.
- ◆ The successful Chinese experience strongly reaffirms the fundamental importance of having and maintaining a high investment rate, enabled by a high national savings rate, and surplus labor.
- ◆ In addition, the size of the Chinese domestic economy is a favorable factor allowing the ready realization of economies of scale and reducing vulnerability to external disturbances.
- ◆ The Chinese experience also reaffirms the importance of basic infrastructure and the maintenance of economic openness to the successful development of an economy.

# Concluding Remarks

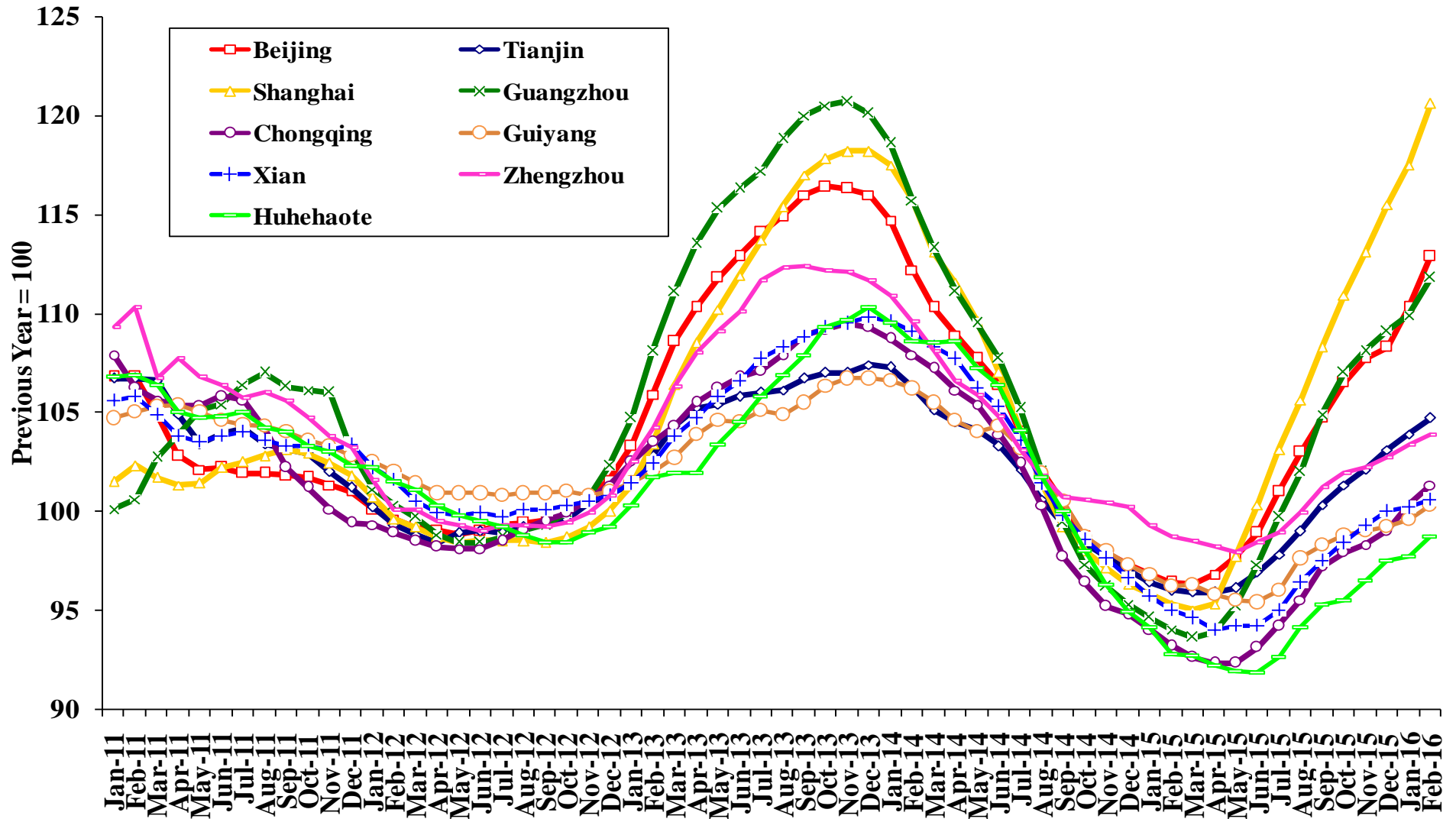
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- ◆ The Chinese economy has begun to stabilize around a rate of growth of 6.5% per annum. The following charts on the rates of growth of housing prices of selected cities and the rates of growth of selected provinces provide evidentiary support to the gradual stabilization.



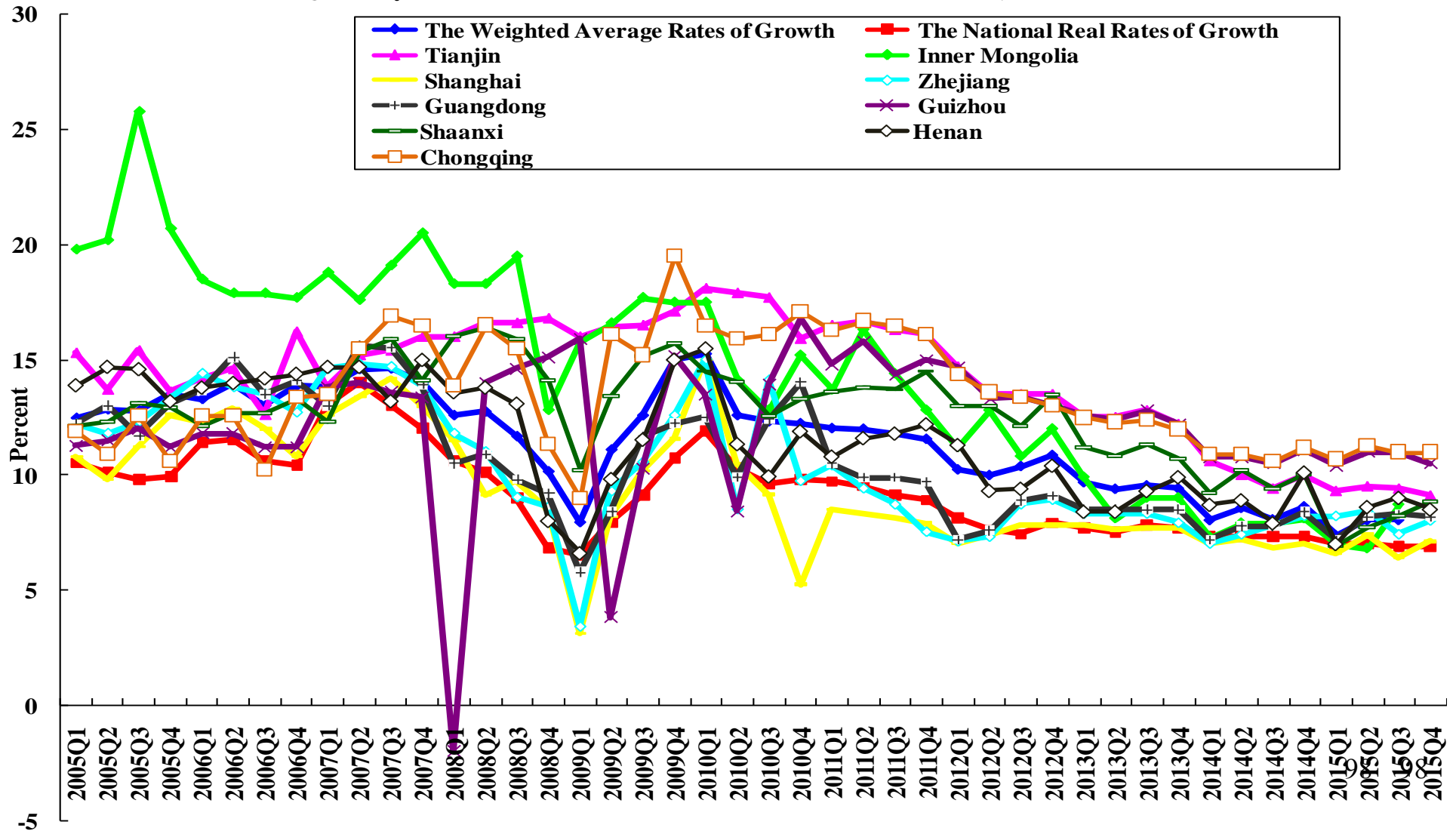
# Price Index of New Residential Units, Selected Cities, Year-over-Year

Price Index of New Residential Units, Selected Cities, Year-over-Year



# Quarterly Rates of Growth of Selected Chinese Provincial GDPs, Year-over-Year

Quarterly Rates of Growth of Selected Chinese Provincial GDPs, Year-over-Year



# Concluding Remarks

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- ◆ In the short to medium term, continuing Chinese economic growth going forward will depend mostly on the growth of internal demand (public infrastructural investment, public goods consumption (education, health care and environmental control, preservation and restoration) and household consumption) and not on exports and not on manufacturing capacity expansion in the existing industries.
- ◆ The growth in household consumption will do its part, especially in the demand for services. The expanding and rising middle class will play a crucial role.
- ◆ In the longer run, Chinese economic growth will make a transition from tangible-inputs-driven to intangible-inputs- or innovation-driven.
- ◆ The “New Normal” is thus neither a “boom” of close to double-digit rates of growth, nor a “bust” of negative or low single-digit real rates of growth. There will be both sufficient supply and demand in the Chinese economy to support an average annual real rate of growth of around 6.5%.

# Concluding Remarks

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- ◆ If current trends continue, it is also projected that the Chinese economy will surpass the U.S. economy to become the World's largest economy around 2030.
- ◆ The Sky is Not Falling!

# The Actual and Projected Level and Annual Rate of Growth of Chinese and U. S. Real GDP

**Actual and Projected Chinese and U.S. Real GDPs and Their Rates of Growth**  
(trillion 2015 US\$)

