

# China in the Global Economy

---

Lawrence J. Lau, Ph. D.

Ralph and Claire Landau Professor of Economics, The Chinese Univ. of Hong Kong  
and

Kwoh-Ting Li Professor in Economic Development, Emeritus, Stanford University

**A Conference in Honour of Dr. Nicholas Hope**

**Stanford Center for International Development, Stanford University**

Stanford, 26th September, 2014

Tel: +852 3943 1611; Fax: +852 2603 5230

Email: [lawrence@lawrencejlau.hk](mailto:lawrence@lawrencejlau.hk); WebPages: [www.igef.cuhk.edu.hk/ljl](http://www.igef.cuhk.edu.hk/ljl)

\*All opinions expressed herein are the author's own and do not necessarily reflect the views of any of the organizations with which the author is affiliated.

# Outline

---

- ◆ Introduction
- ◆ The Shifting Centre of Gravity of the Global Economy
- ◆ The Partial De-Coupling Hypothesis
- ◆ The Rising Importance of Intangible Capital
- ◆ The Long-Term Economic Outlook
- ◆ Concluding Remarks

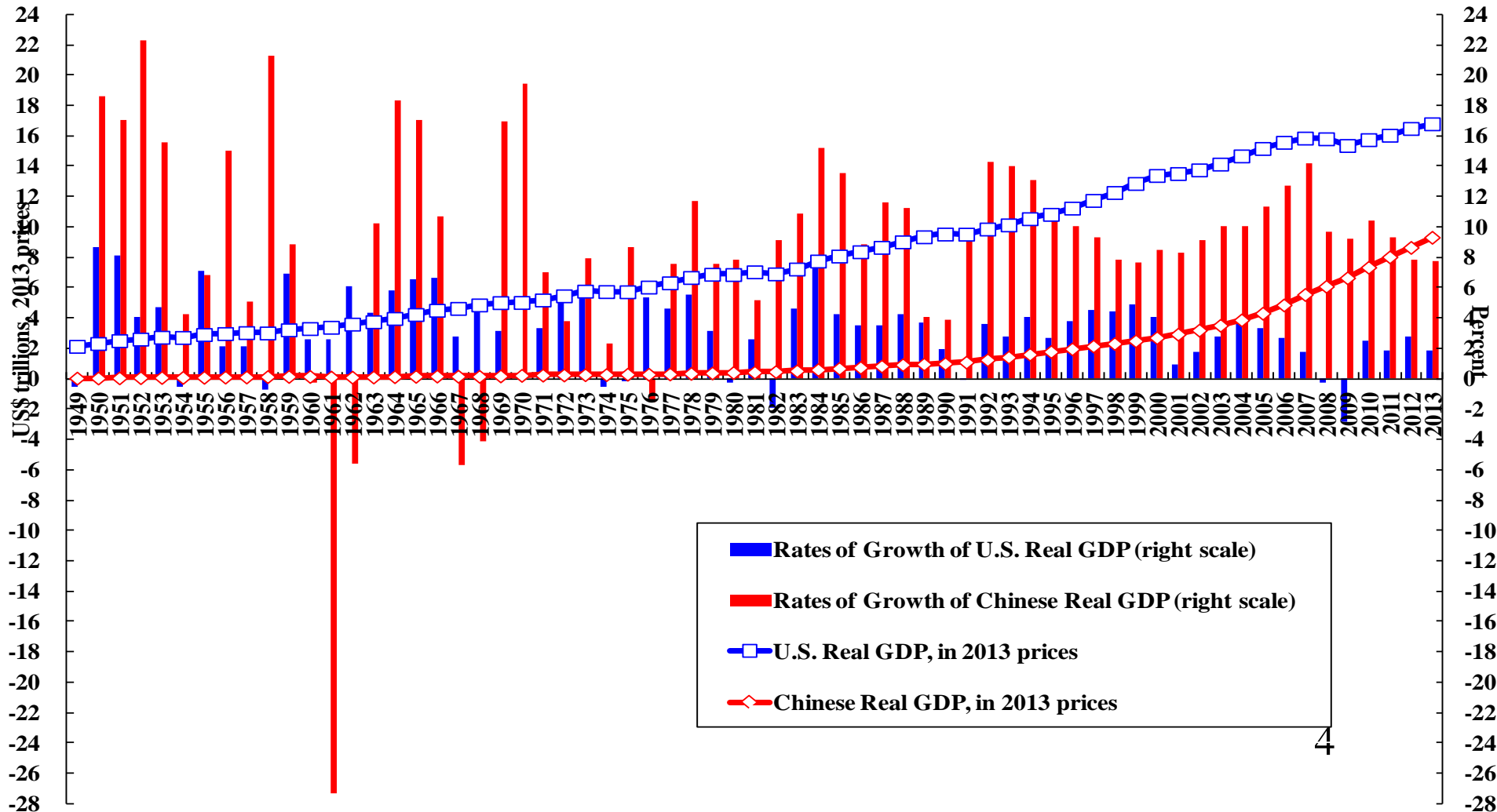
# Introduction

---

- ◆ China has made tremendous progress in its economic development since it began its economic reform and opened to the World in 1978. China is currently the fastest growing economy in the World—averaging 9.8% per annum over the past 36 years. It is historically unprecedented for an economy to grow at such a high rate over such a long period of time.
- ◆ Between 1978 and 2013, Chinese real GDP grew more than 26 times, from US\$356.5 billion 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 (approximately US\$16.8 trillion) was less than 2 times Chinese GDP in 2013.

# Real GDPs and Their Annual Rates of Growth: China & the U.S. (2013 US\$): 1949-present

The Real GDP and Its Annual Rates of Growth of China and the U.S.  
(trillion 2013 US\$)



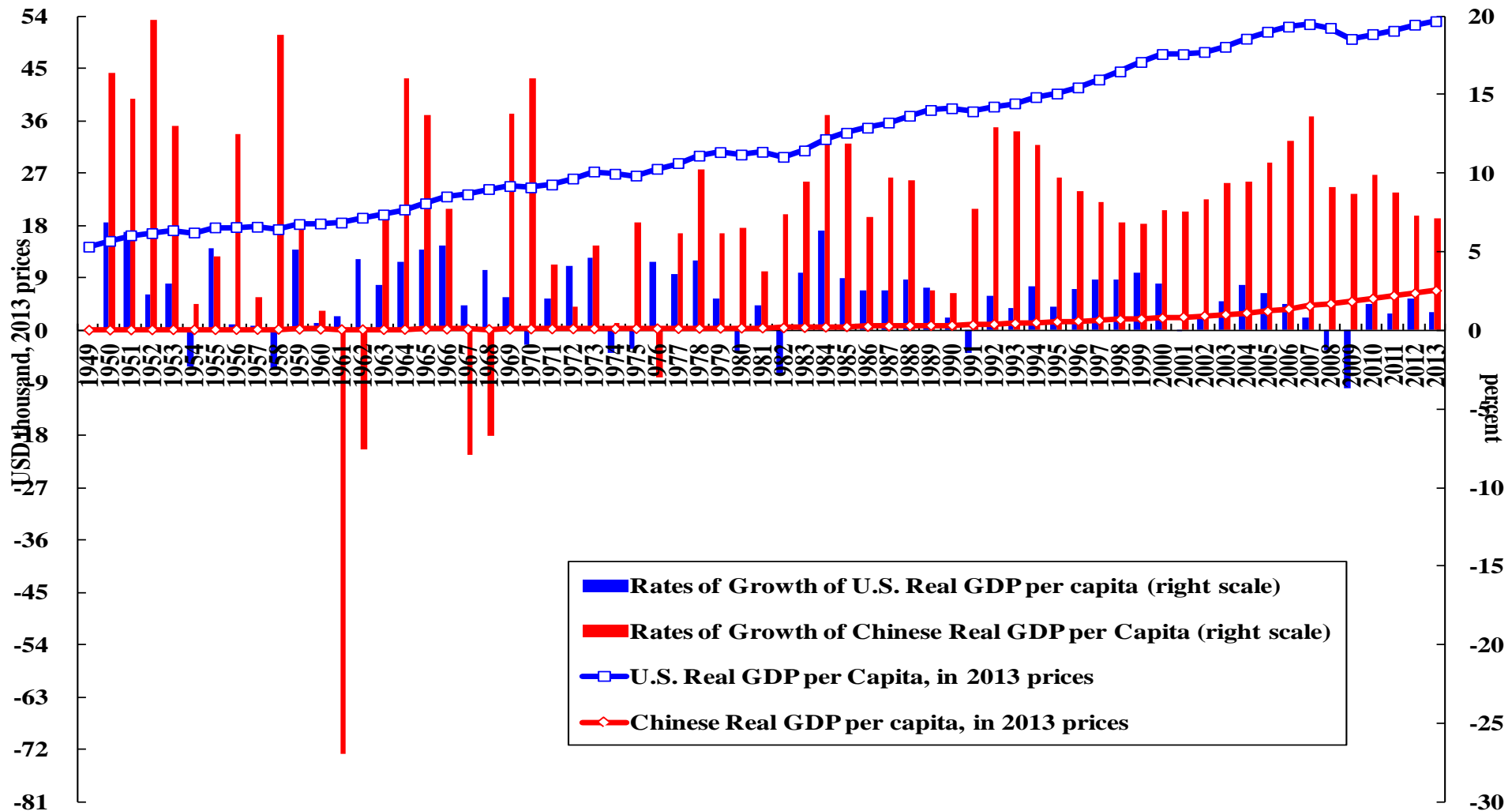
# Introduction

---

- ◆ Despite its rapid economic growth in the aggregate, in terms of its real GDP per capita, China is still very much a developing economy.
- ◆ Between 1978 and 2013, Chinese real GDP per capita grew 18.5 times, from US\$370 to US\$6,850.5 (in 2013 prices).
- ◆ By comparison, the U.S. GDP per capita of approximately US\$53,086, was 7.7 times Chinese GDP per capita in 2013.

# Real Chinese and U.S. GDP per Capita in US\$ Since 1949 (2013 Prices)

Real GDP per Capita and their Annual Rates of Growth of China and the U.S.,  
(thousand, 2013 US\$)



# Introduction

---

- ◆ Chinese international trade has grown very rapidly, especially after China acceded to the World Trade Organisation (WTO) in 2001. It has become the second largest trading nation in the World in terms of the total value of international trade in goods and services (US\$4.61 trillion in 2013), just after the U.S. (US\$5.02 trillion).
- ◆ While China is 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 is also the largest exporting nation 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.

# International Trade & Its Rate of Growth: A Comparison of China and the U.S. since 1970

The Value of International Trade and Its Rate of Growth:  
A Comparison of China and the U.S.





# The Shifting Centre of Gravity of the Global Economy

---

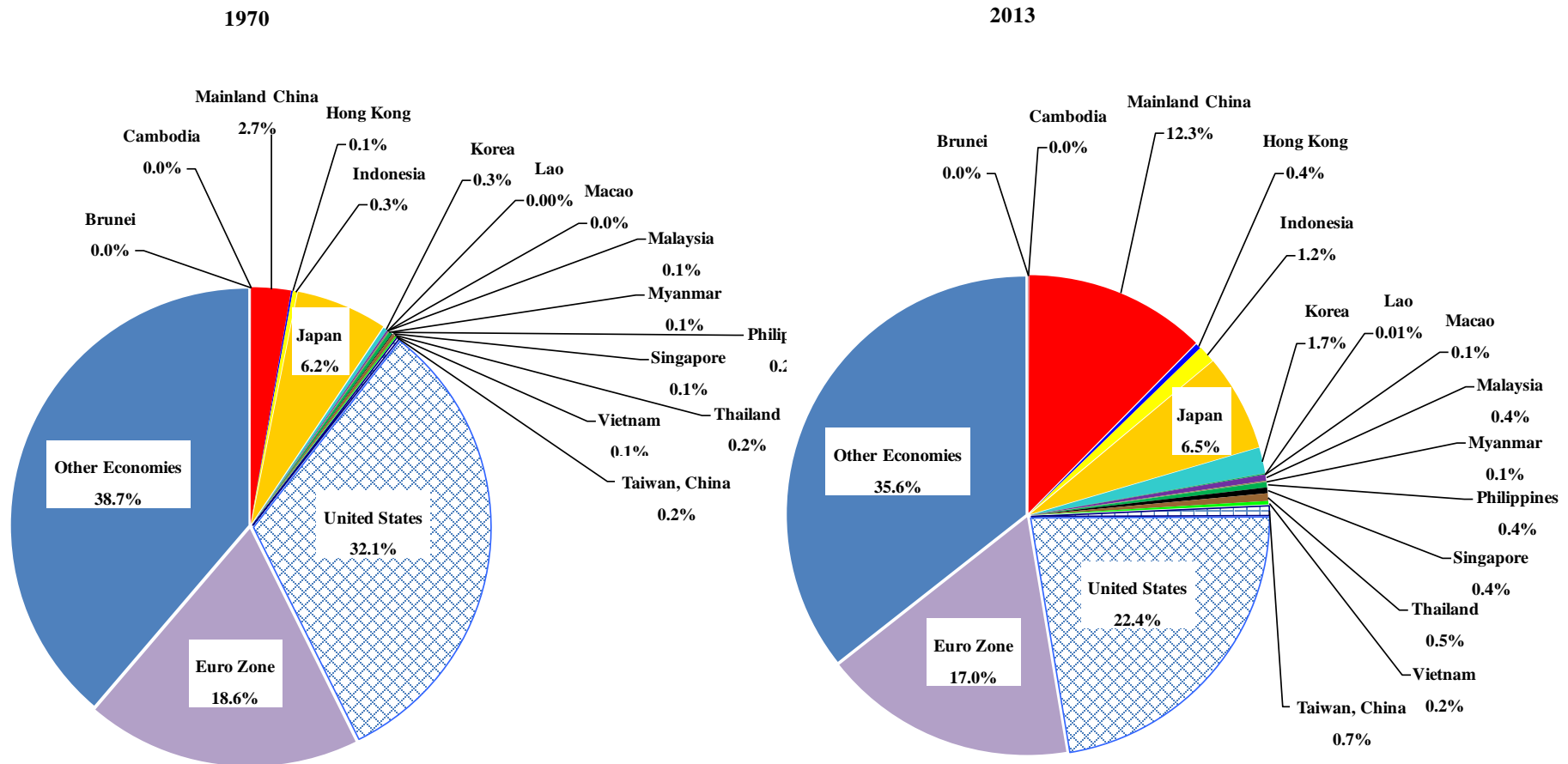
- ◆ The most important development in the global economy during the last three and a half decades is the reform and opening of the Chinese economy and its participation in the World.
- ◆ As a result, the centre of gravity of the global economy, in terms of both GDP and international trade, has been gradually shifting from North America and Western Europe to East Asia, and within East Asia from Japan to China.
- ◆ The break-up of the former Soviet Union and the former Eastern European bloc of socialist economies in 1990, the relative decline of the Japanese economy since the early 1990s, the introduction of the Euro in 1999, and the rise in the World price of oil in the late 1990s all had significant impacts on the global economy, but not of a comparable order of magnitude as the reform and opening of the Chinese economy.

# The Shifting Centre of Gravity of the Global Economy: GDP

---

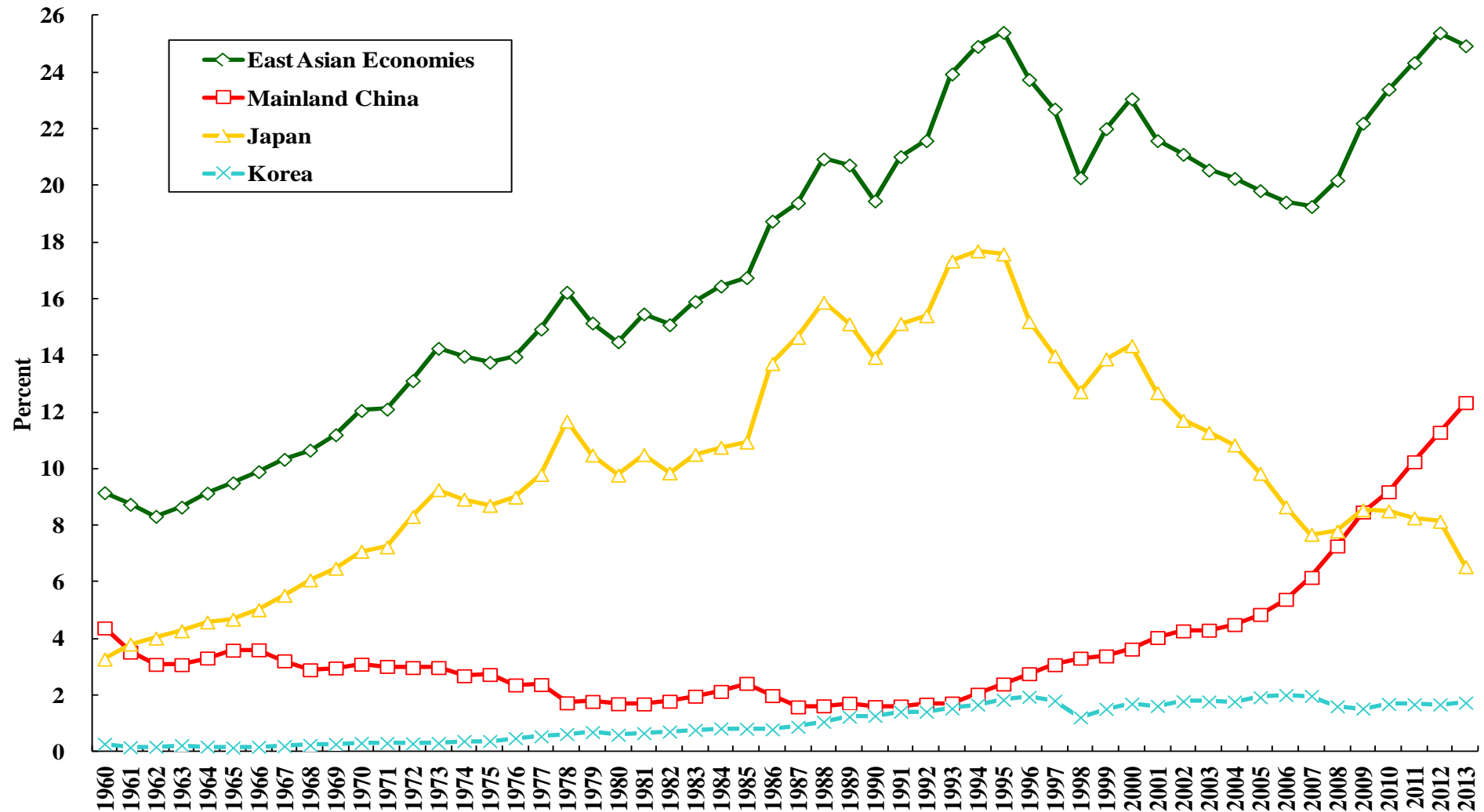
- ◆ In 1970, the United States and Western Europe (including countries such as West Germany and the U.K.) together accounted for almost 60% of World GDP. By comparison, East Asia (defined as the 10 Association of Southeast Asian Nations (ASEAN)--Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam--+ 3 (China, Japan and the Republic of Korea)) accounted for approximately 10% of World GDP.
- ◆ By 2013, the share of United States and Western Europe in World GDP has declined to approximately 45% whereas the share of East Asia has risen to around 25%.
- ◆ The Japanese share of World GDP declined from a peak of almost 18% in the mid-1990s to 6.5% in 2013 while the Mainland Chinese share of World GDP rose from 2.7% in 1970 and less than 4% in 2000 to over 12.3% in 2013.

# The Distribution of World GDP, 1970 and 2013, US\$



# The Shares of East Asia, China, Japan and South Korea in World GDP, 1960-present

The Shares of East Asia, China, Japan and South Korea in World GDP, 1960-present



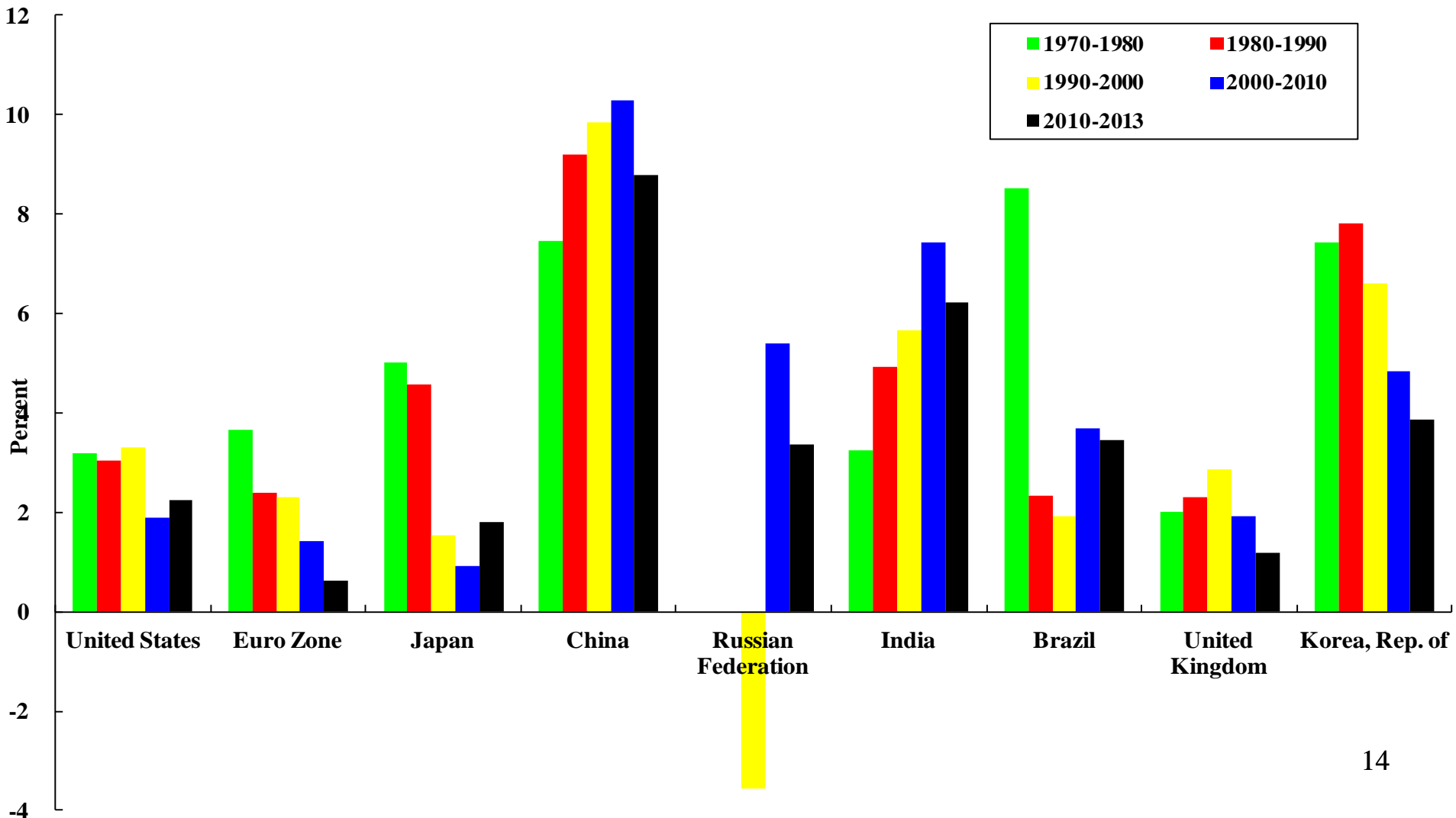
# The Shifting Centre of Gravity of the Global Economy: Economic Growth

---

- ◆ In the following chart, we present the average annual rates of growth of real GDP of selected economies in different decades.
- ◆ China, India and South Korea are among the fastest growing economies during the past four decades.
- ◆ Russia has also grown at a very high rate during the past decade because of its significant oil production and high oil prices.
- ◆ Brazil has also grown very fast during the past decade because of the world natural resource boom but has begun to slow down recently.
- ◆ However, all the developed economies—the U.S., Euro Zone, Japan, and the U.K.—had relatively low and declining growth rates during the past decades. Even though there are now early signs of a steady economic recovery, the rates of growth have remained low by the historical standards of these economies.

# Decade Average Annual Rates of Growth of Real GDP of Selected Economies

Decade Average Annual Rates of Growth of Real GDP of Selected Economies



# The Shifting Centre of Gravity of the Global Economy: International Trade

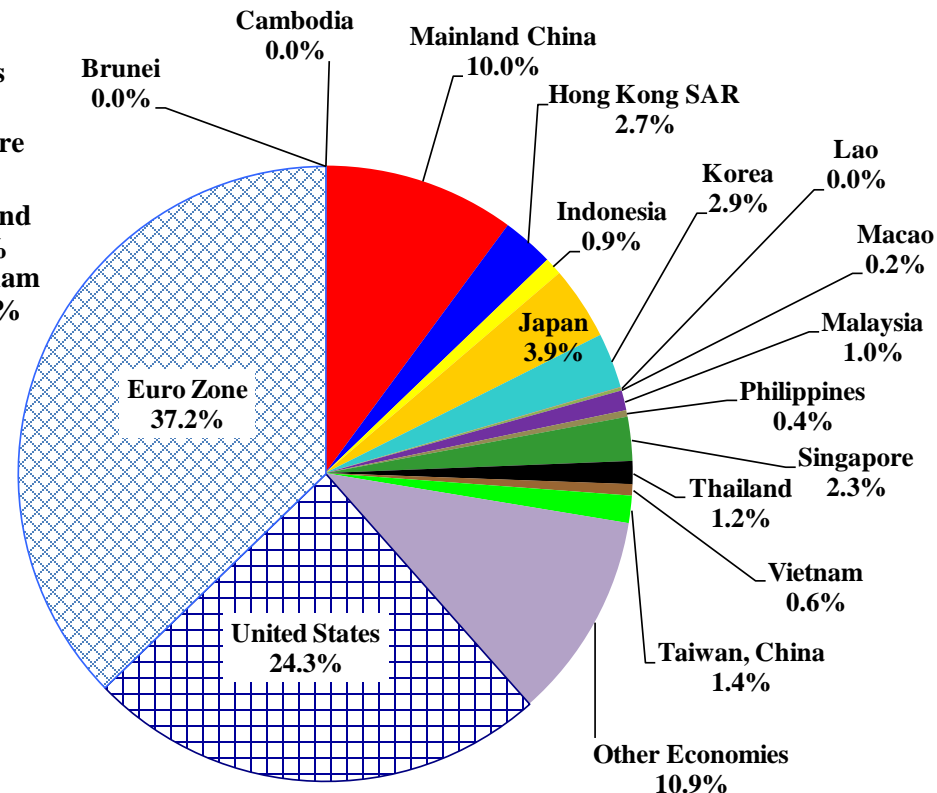
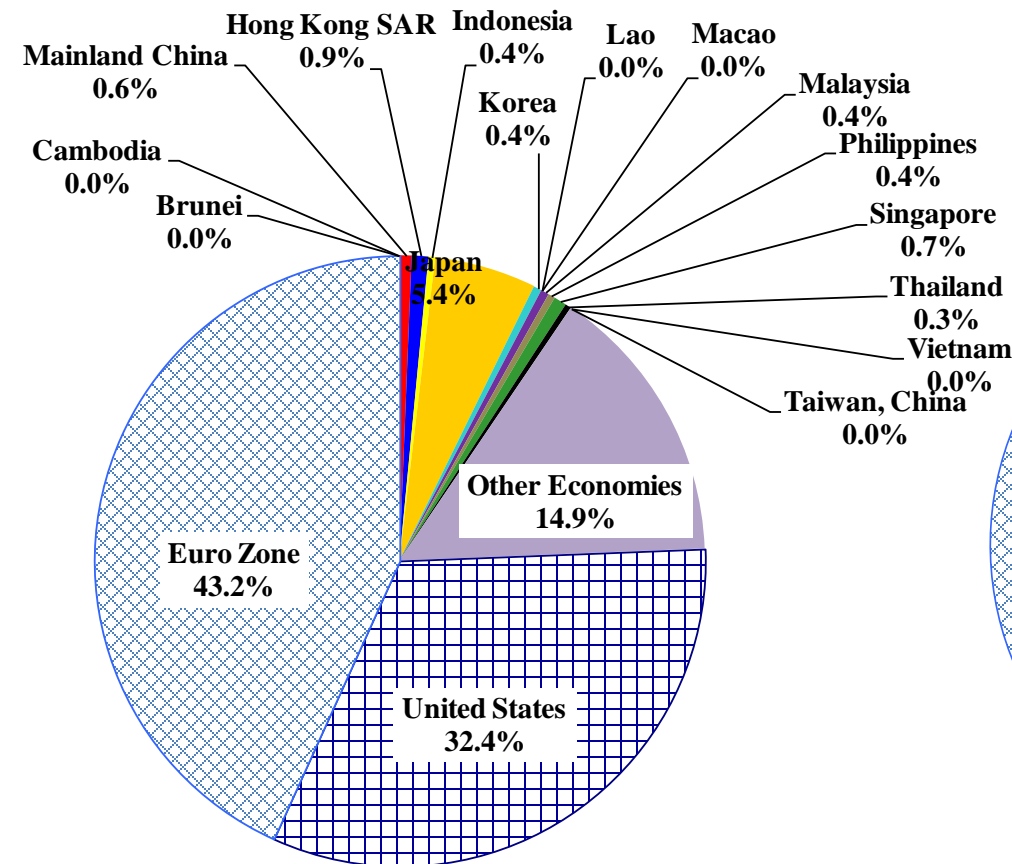
---

- ◆ In 1970, the United States and Western Europe together accounted for almost 60% of World trade in goods and services. By comparison, East Asia accounted for 9.5% of World trade.
- ◆ By 2013, the share of United States and Western Europe in World trade has declined to 41.4% whereas the share of East Asia has risen to almost 27.6%.
- ◆ The Chinese share of World trade rose from 0.63% in 1970 to 10.0% in 2013.
- ◆ Chinese international trade also accounted for 40% of East Asian international trade in 2013. China runs a trade deficit with almost every other East Asian economy.

# The Distribution of Total International Trade in Goods and Services, 1970 and 2013

1970

2013





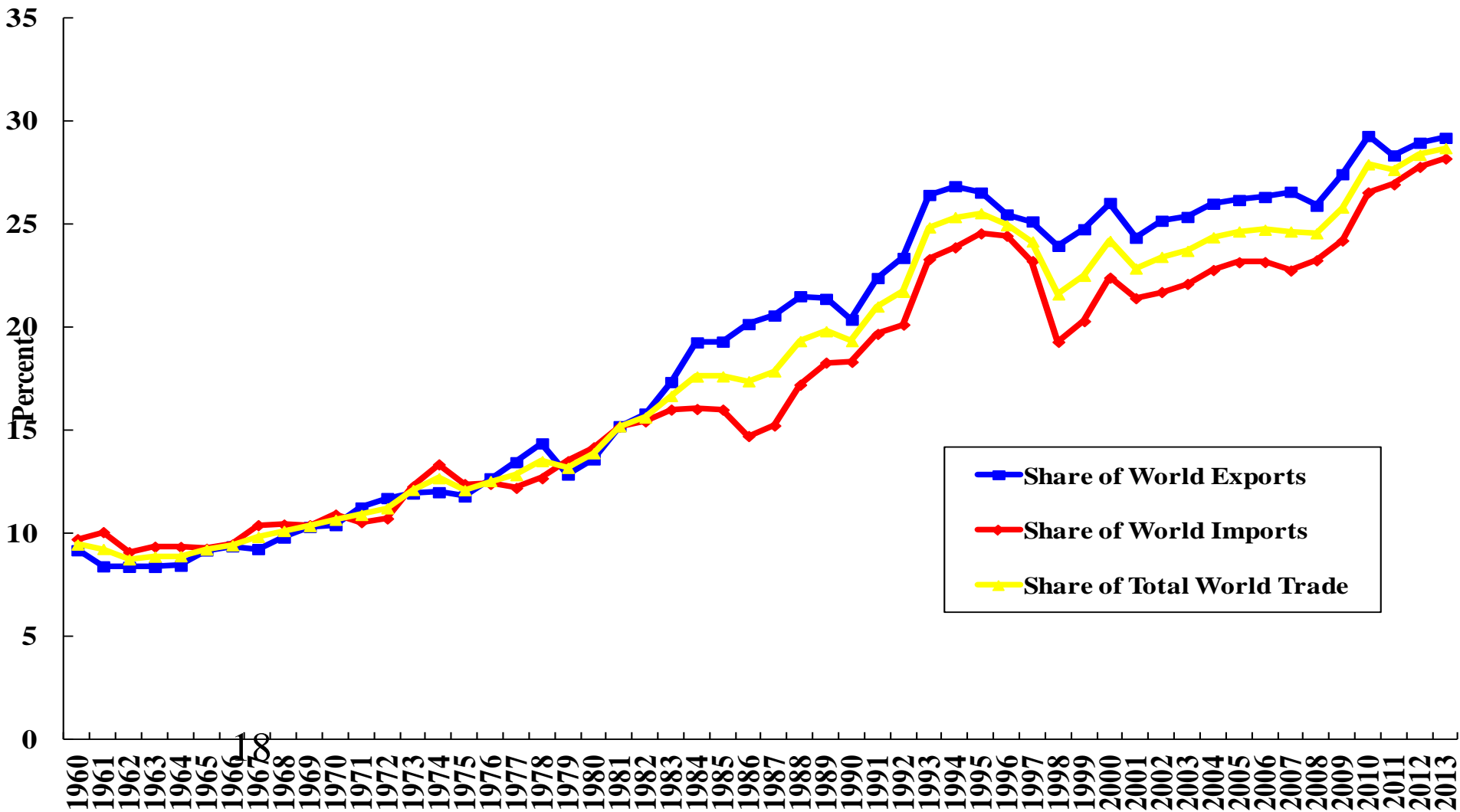
# China in the Global Economy— International Trade

---

- ◆ The East Asian share of World trade rose from 10% in 1970 to just below 25% in 2011.
- ◆ The Chinese share of World trade rose from 1% in 1970 to 10% in 2011.
- ◆ Chinese international trade accounted for more than 40% of East Asian international trade in 2011.

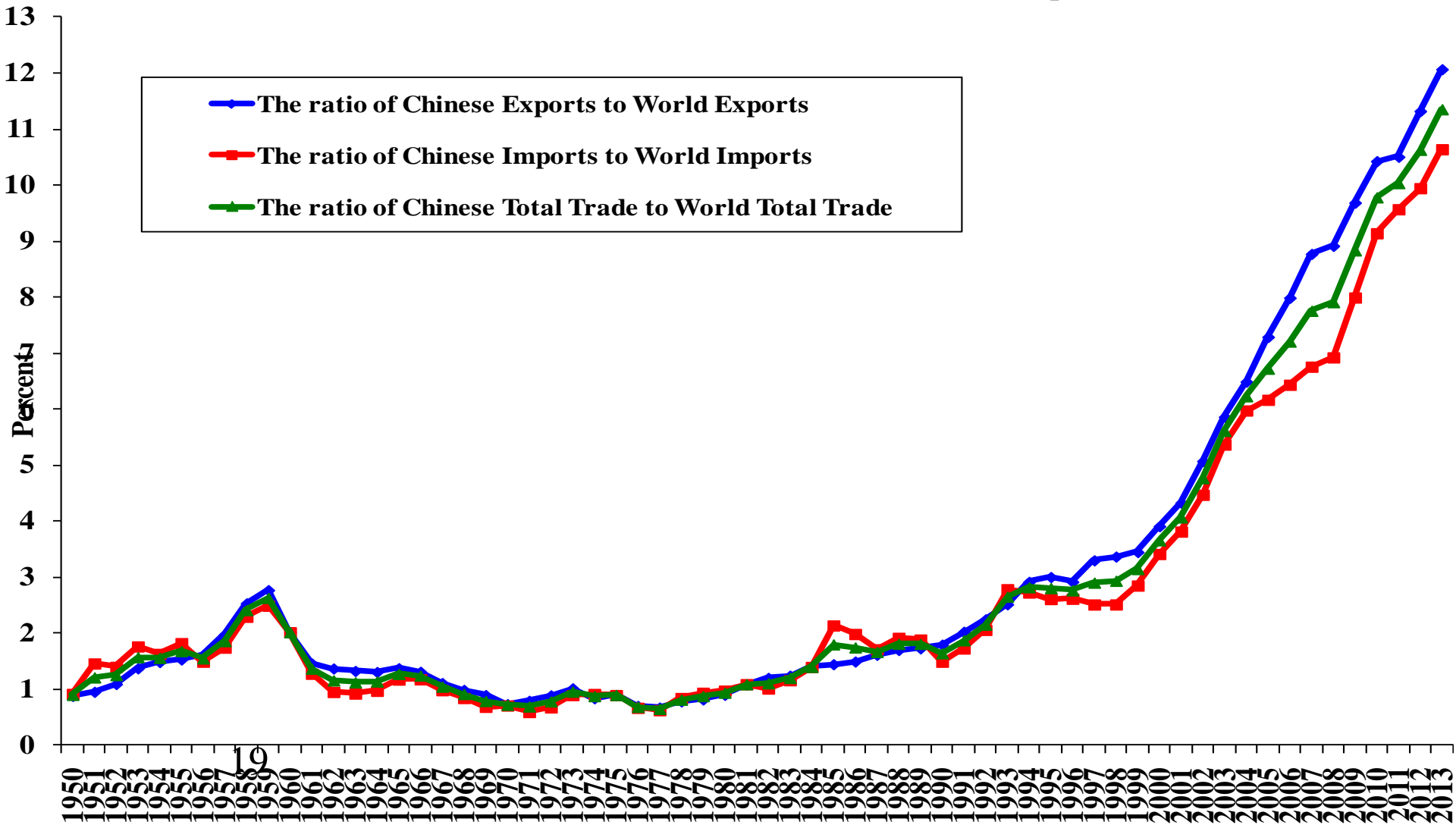
# The Rising Share of East Asian Trade in Total World Trade, 1960-present

The Rising Share of East Asian Trade in Total World Trade, 1960-present



# The Chinese Share of Total World Trade, 1950-present

The Share of Chinese Trade in Total World Trade, 1950-present



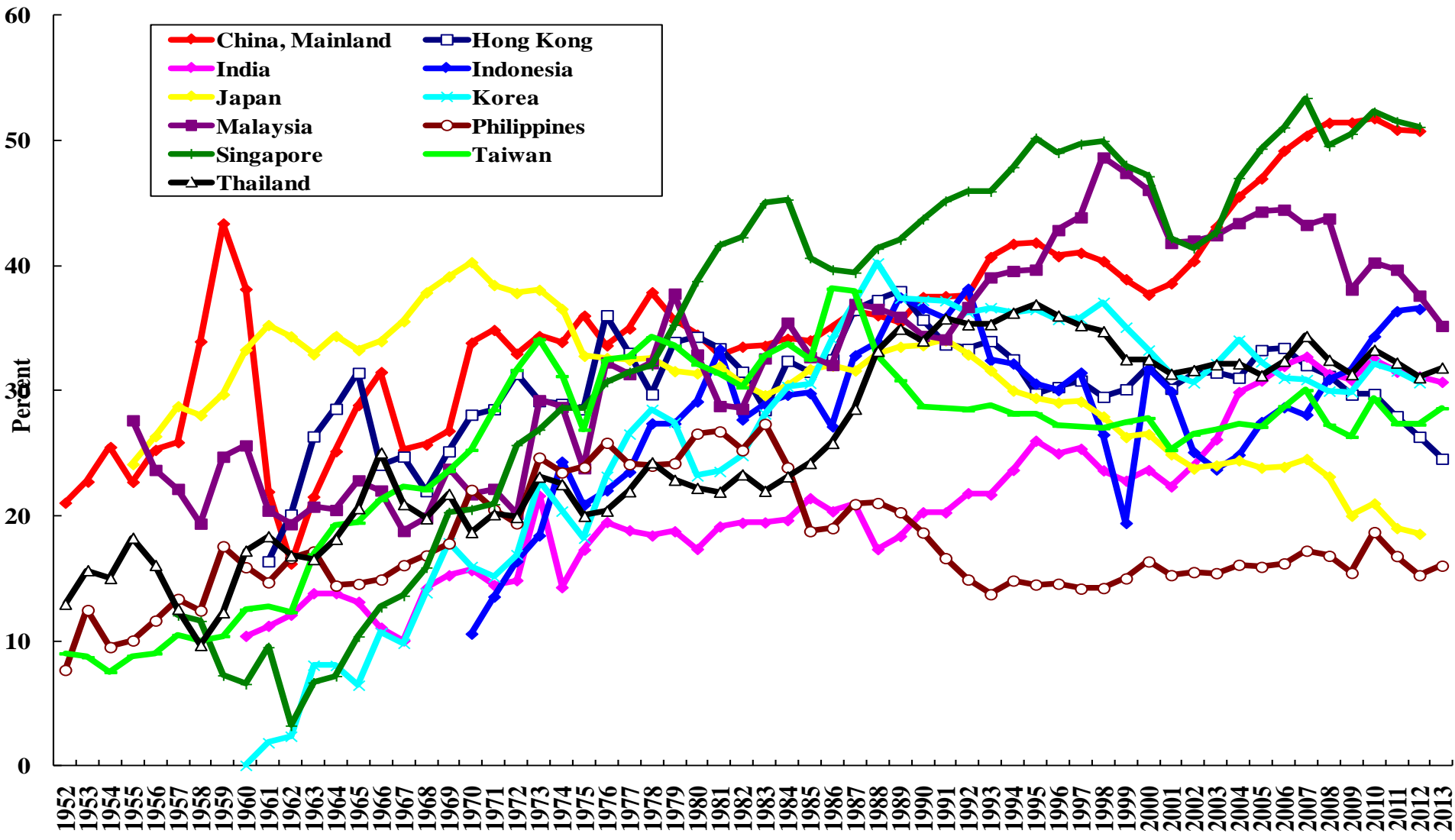
# The Shifting Centre of Gravity of the Global Economy: The Sources of Savings

---

- ◆ Chinese economic growth since 1978 has been underpinned by a high domestic savings rate, on the order of 30% and above, except for a brief start-up period in the early 1950s, enabling a consistently high domestic investment rate. The saving rate has stayed around 40% since the early 1990s and has at times approached or even exceeded 50% in more recent years.
- ◆ This means, among other things, that the Chinese economy can finance all of its domestic investment needs from its own domestic savings alone, thus assuring a high rate of growth of the tangible capital stock without having to depend on the more fickle foreign capital inflows (including foreign portfolio investment, foreign direct investment or foreign loans). Hence the Chinese economy is also more immune from external disturbances.

# Saving Rates of Selected Asian Economies (1952-present)

Savings Rates of Selected East Asian Economies

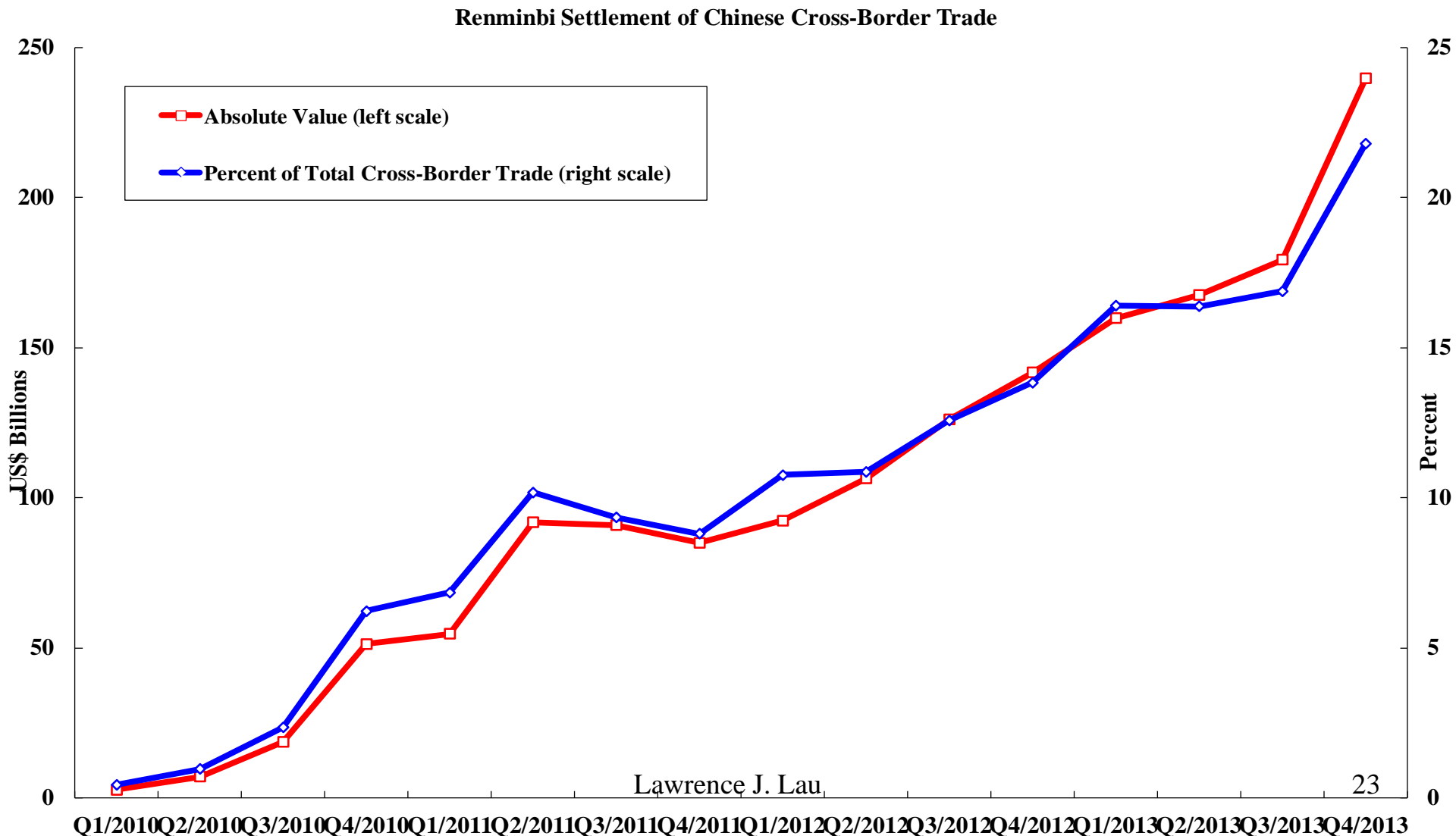


# The Shifting Centre of Gravity of the Global Economy: The Use of the Renminbi

---

- ◆ The Renminbi is increasingly used as an invoicing and settlement currency for cross-border transactions, especially those involving Chinese enterprises as transacting parties.
- ◆ The proportion of Mainland Chinese international trade settled in Renminbi has grown rapidly, from almost nothing in 2010Q1 to US\$240 billion in 2013Q4 or 21.8% of the total value of trade in goods and services. In absolute value, some US\$960 billion of Chinese international trade is now settled in Renminbi annually.

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



# The Shifting Centre of Gravity of the Global Economy: The Use of the Renminbi

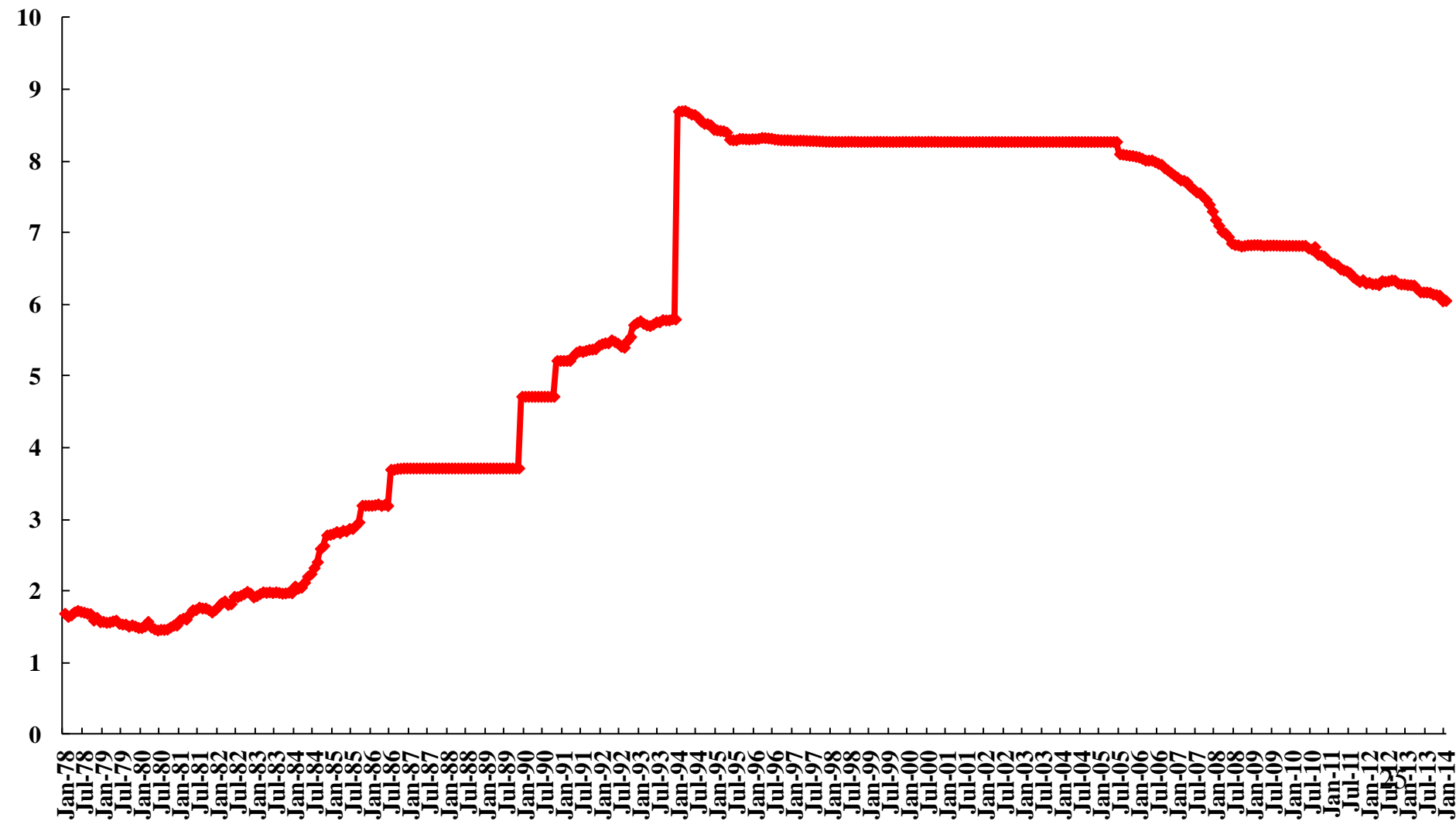
---

- ◆ The Renminbi/U.S.\$ exchange rate has undergone huge changes during the past 36 years (see the following chart).
- ◆ In 1978, US\$1 is worth less than 2 Yuan.
- ◆ The Yuan was steadily devalued with respect to the US\$ and for a while in the early 1990s there were dual exchange rates: an official rate and an “adjustment” rate determined in a market restricted to Chinese exporters and importers with import licenses (and for those who can remember, foreign exchange certificates (FECs)).



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

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



# The Partial De-Coupling Hypothesis

---

- ◆ The Chinese and East Asian economies have been steadily coming into their own and becoming less dependent on the developed economies, enabling their “partial de-coupling” from the developed economies of North America and Europe.
- ◆ Throughout the 2007-2009 global financial crises, as well as the subsequent European sovereign debt crisis, the East Asian economies and the economies of the BRICS countries (Brazil, Russia, India, China and South Africa) continued to do reasonably well. China, in particular, has been able to maintain its real rate of growth above 7.5% since 2007, lending credence to the “Partial De-Coupling Hypothesis”, that is, the Chinese and East Asian economies can continue to grow, albeit at lower rates, even as the U.S. and European economies go into economic recession.

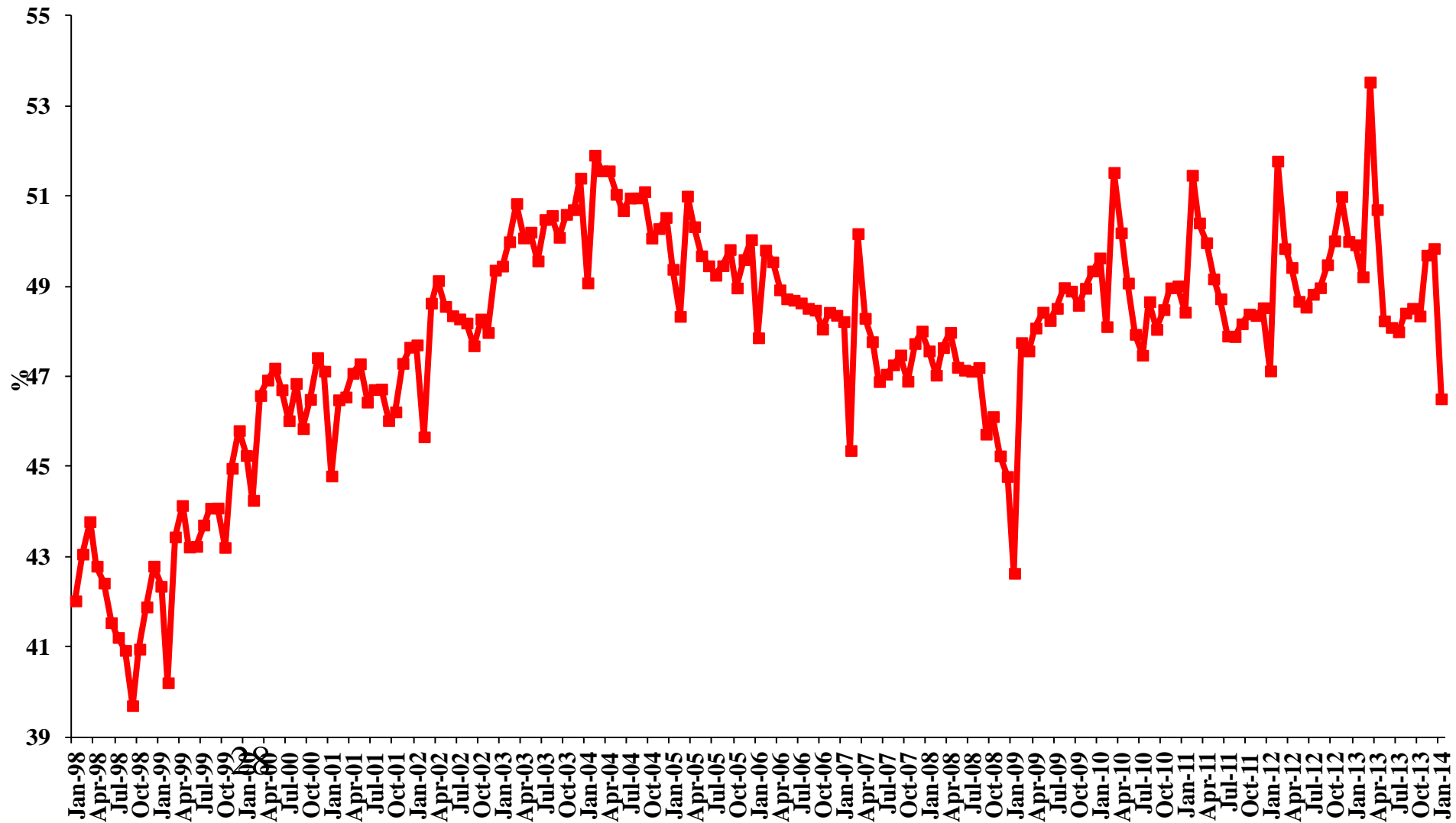
# The Partial De-Coupling Hypothesis

---

- ◆ A particularly interesting development is the growth of intra-East Asian international trade. The share of East Asian exports destined for East Asia has risen to over 50% in the past decade. This is a sea-change compared to 30 years ago when most of the East Asian exports was destined for either the United States or Western Europe.
- ◆ Similarly, the share of East Asian imports originated from East Asia has remained around 45%.
- ◆ China has become the most important trading partner of almost all countries/regions in East Asia.

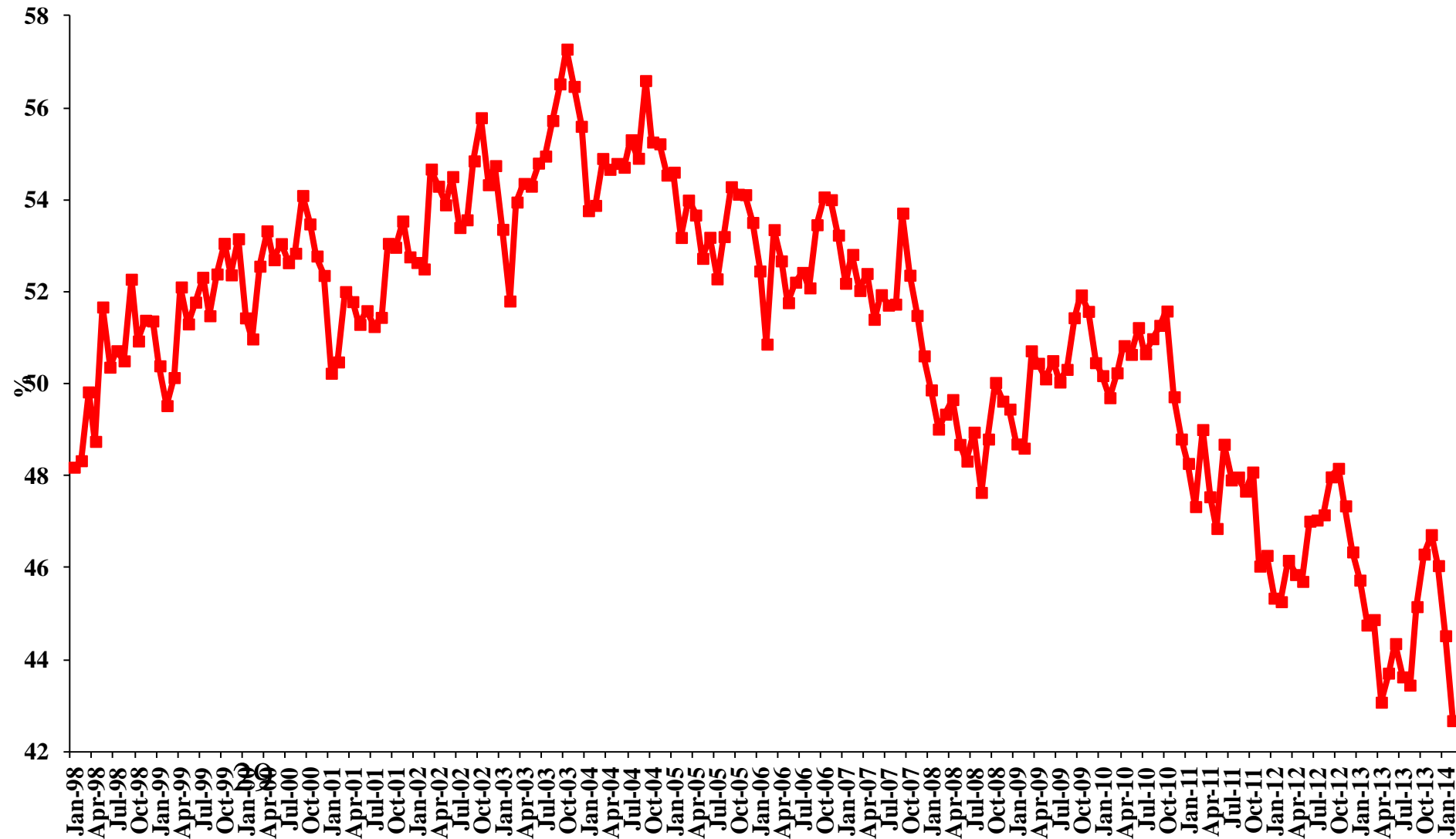
# The Share of East Asian Exports Destined for East Asia

The Share of East Asian Exports Destined for East Asia



# The Share of East Asian Imports Originated from East Asia

The Share of East Asian Imports Originated from East Asia



# The Ranks of China as Trading Partner of East Asian Countries/Regions and Vice Versa

<b>Country/Region</b>	<b>Chinese Rank as Trading Partner of Country/Region</b>	<b>Rank of Country/Region as Trading Partner of China</b>
<b>Brunei</b>	<b>3</b>	<b>104</b>
<b>Cambodia</b>	<b>16</b>	<b>78</b>
<b>Indonesia</b>	<b>1</b>	<b>16</b>
<b>Laos</b>	<b>2</b>	<b>90</b>
<b>Malaysia</b>	<b>1</b>	<b>8</b>
<b>Myanmar</b>	<b>1</b>	<b>51</b>
<b>Philippines</b>	<b>2</b>	<b>27</b>
<b>Singapore</b>	<b>1</b>	<b>11</b>
<b>Thailand</b>	<b>1</b>	<b>13</b>
<b>Vietnam</b>	<b>1</b>	<b>18</b>
<b>Japan</b>	<b>1</b>	<b>3</b>
<b>Republic of Korea</b>	<b>1</b>	<b>4</b>
<b>Hong Kong</b>	<b>1</b>	<b>2</b>
<b>Macau</b> 30	<b>1</b>	<b>85</b>
<b>Taiwan</b>	<b>1</b>	<b>5</b>

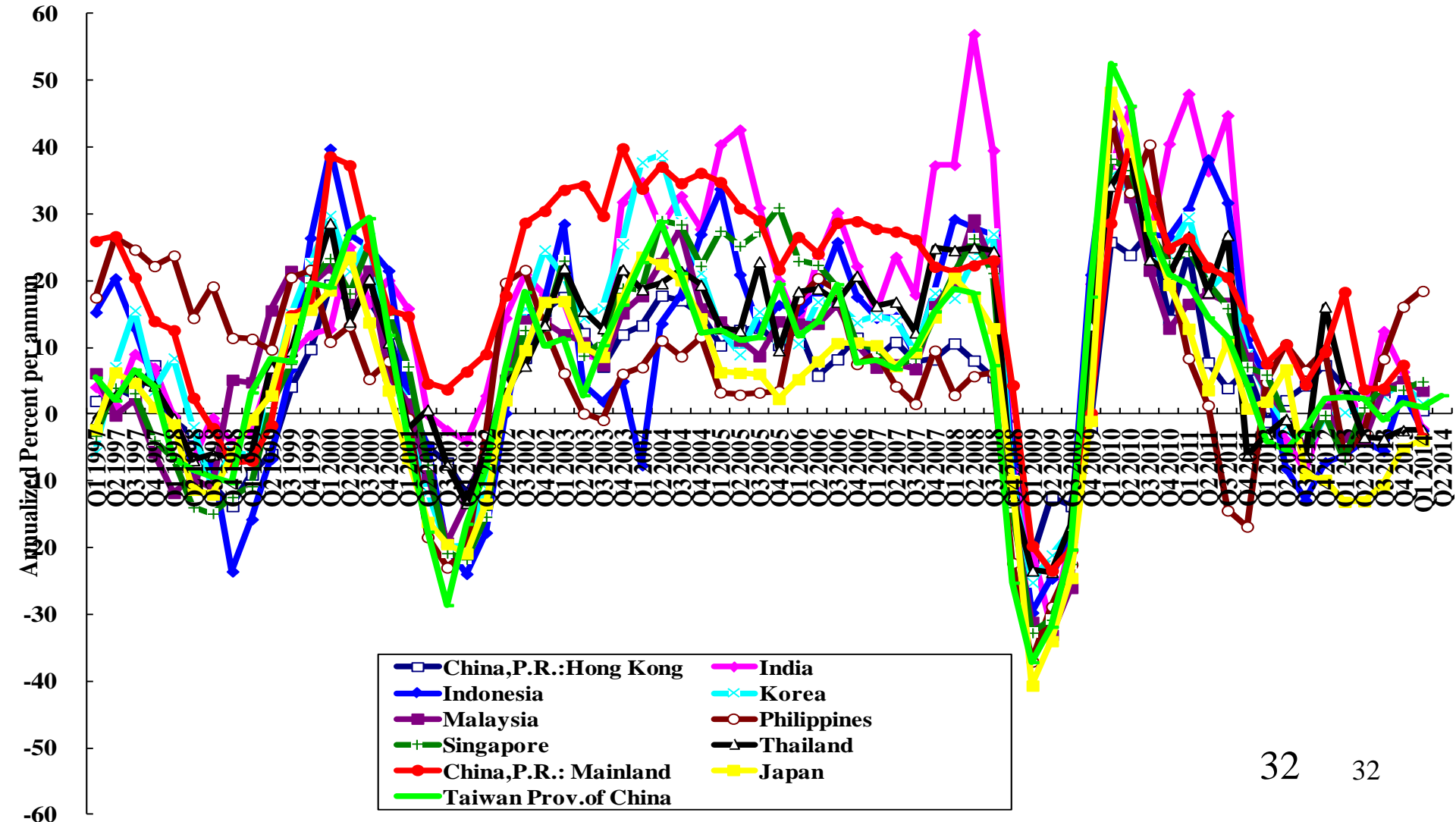
# The Partial De-Coupling Hypothesis

---

- ◆ Any doubt that the Chinese economy can be partially de-coupled from the World economy should be dispelled by an examination of the following three charts on the rates of growth of exports, imports and real GDP of East Asian economies. Even though Chinese exports and imports fluctuate like those of all the other East Asian economies, the rate of growth of real GDP of the Chinese economy has been relatively stable compared to those of the other East Asian economies.

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

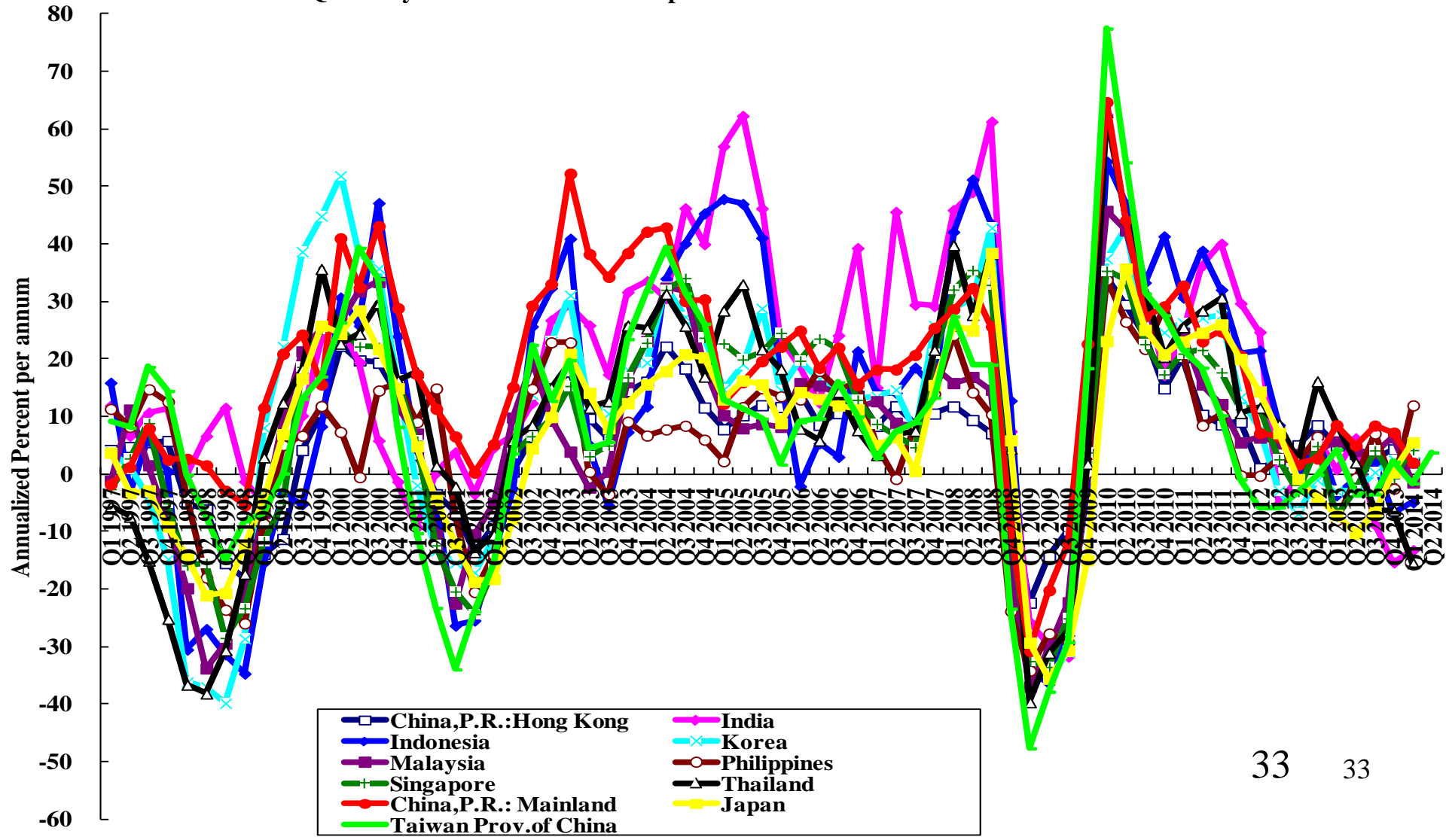
Quarterly Rates of Growth of Exports of Goods: Selected East Asian Economies





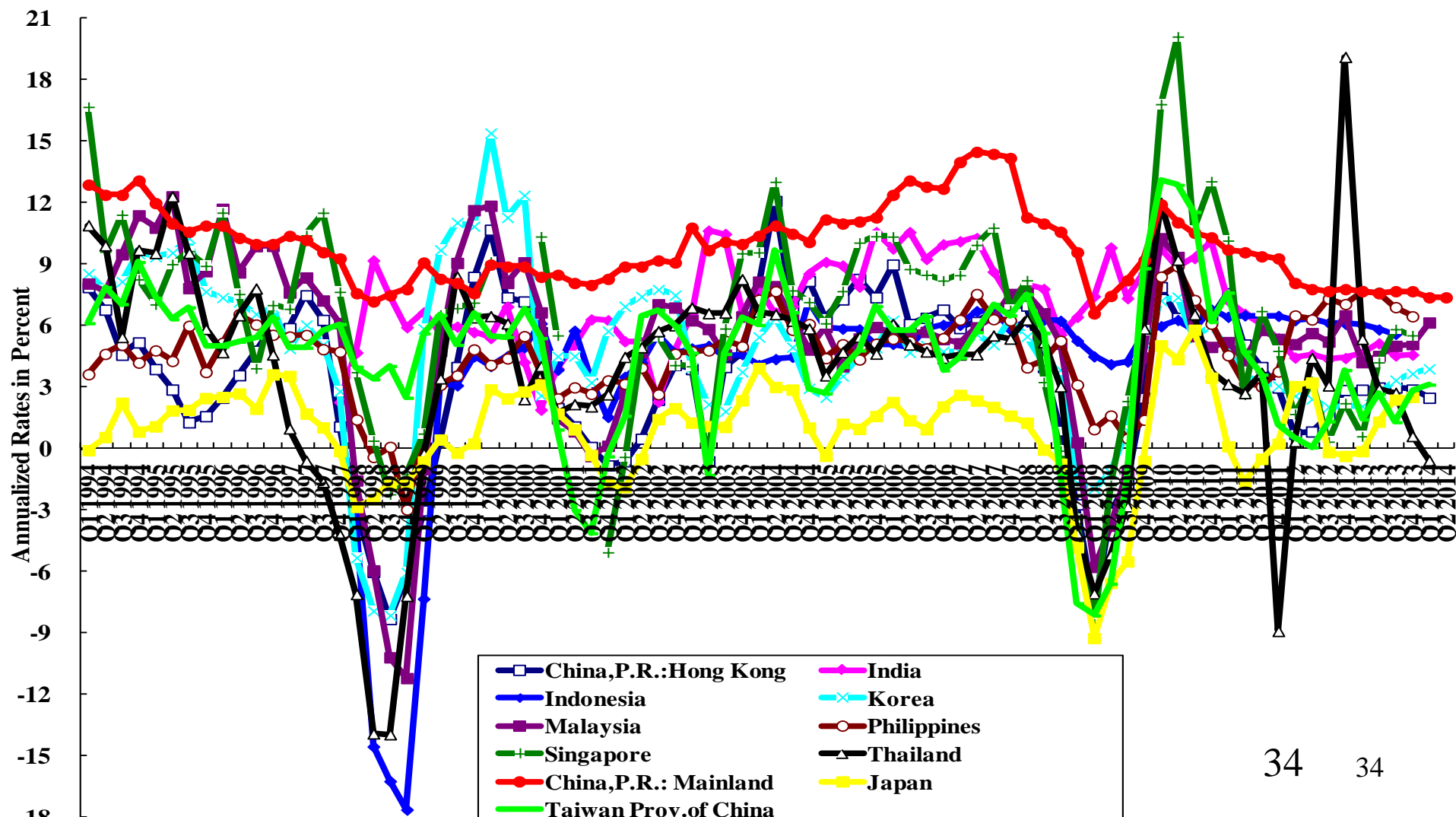
# Quarterly Rates of Growth of Imports of Goods: Selected East Asian Economies

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



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

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



# The Rising Importance of Intangible Capital

---

- ◆ The principal sources of Chinese economic growth have been the growth of tangible inputs such as physical capital (structure and equipment) and labour. However, they will gradually evolve into the growth of intangible inputs such as human capital, R&D capital, and reputational capital (branding and goodwill). This is true of the past experience of developed economies such as the U.S.
- ◆ Sustained investment in human capital and research and development (R&D) is essential for the occurrence of technical progress or equivalently growth in total factor productivity in an economy. They are also essential for taking full advantage of the internet.

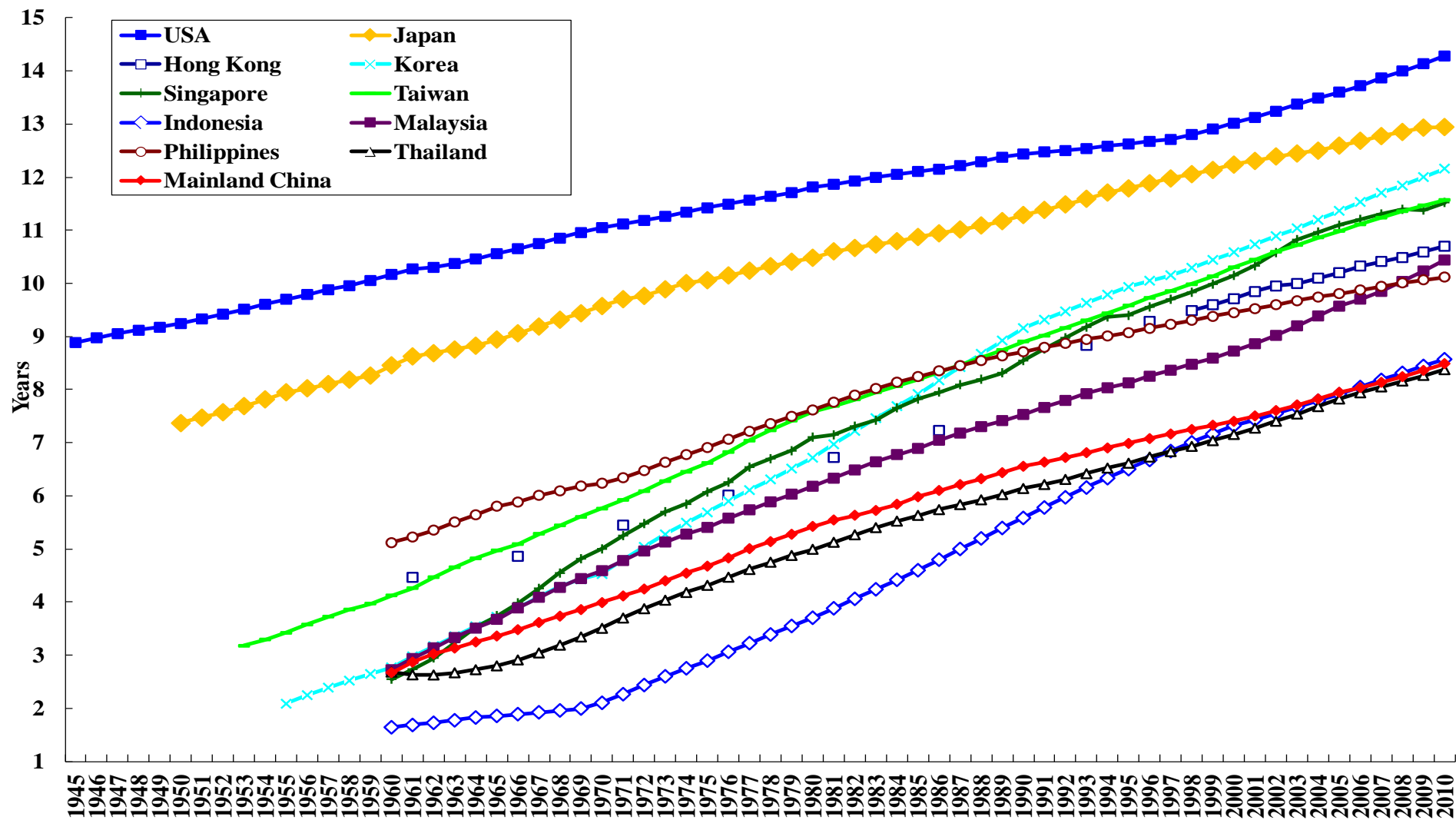
# The Rising Importance of Intangible Capital: Human Capital

---

- ◆ 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 the clear global leaders. South Korea has 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.

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

Average Years of Schooling of Selected Economies



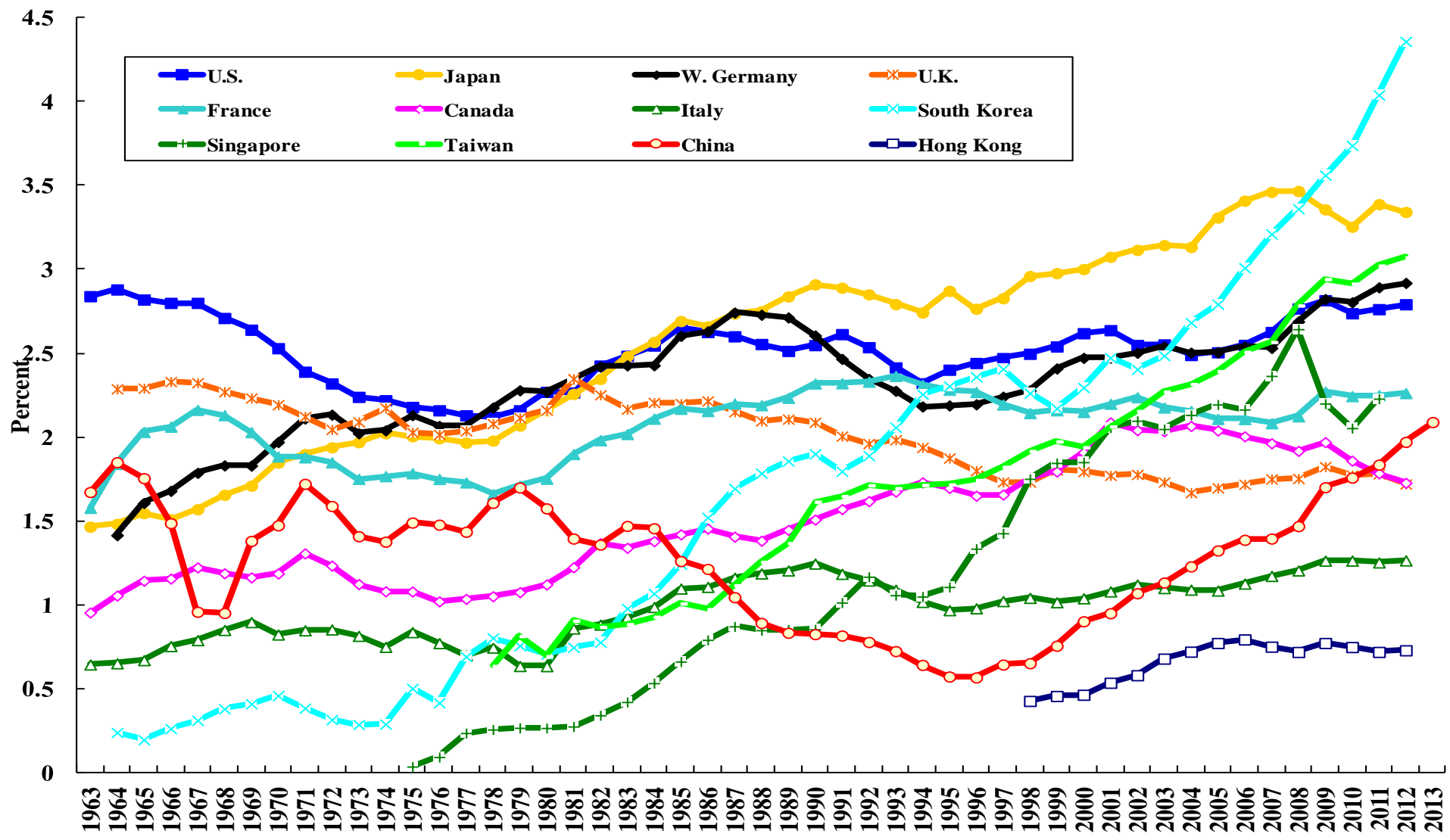
# The Rising Importance of Intangible Capital: R&D Capital

---

- ◆ Investment in R&D capital is also important for promoting innovation (technical progress or equivalently growth in total factor productivity).
- ◆ China has also begun to invest more heavily in R&D in recent years—its R&D expenditure has been rising rapidly, both in absolute value, and as a percentage of GDP; but it still lags behind the developed economies as well as the newly industrialised economies of East Asia. (The Chinese R&D Expenditure/GDP ratio is targeted to reach 2.2% in 2015, still below the historical average of 2.5% for the U.S.)
- ◆ The Republic of Korea currently leads the World with the percentage of its GDP expended on R&D exceeding 4%, followed by Japan, with an average ratio of 3% over the past quarter of a century.

# R&D Expenditures as a Ratio of GDP: G-7 Countries, 4 East Asian NIES & China

R&D Expenditures as a Percentage of GDP: G-7 Countries, 4 East Asian NIEs and China



# The Rising Importance of Intangible Capital: R&D Capital

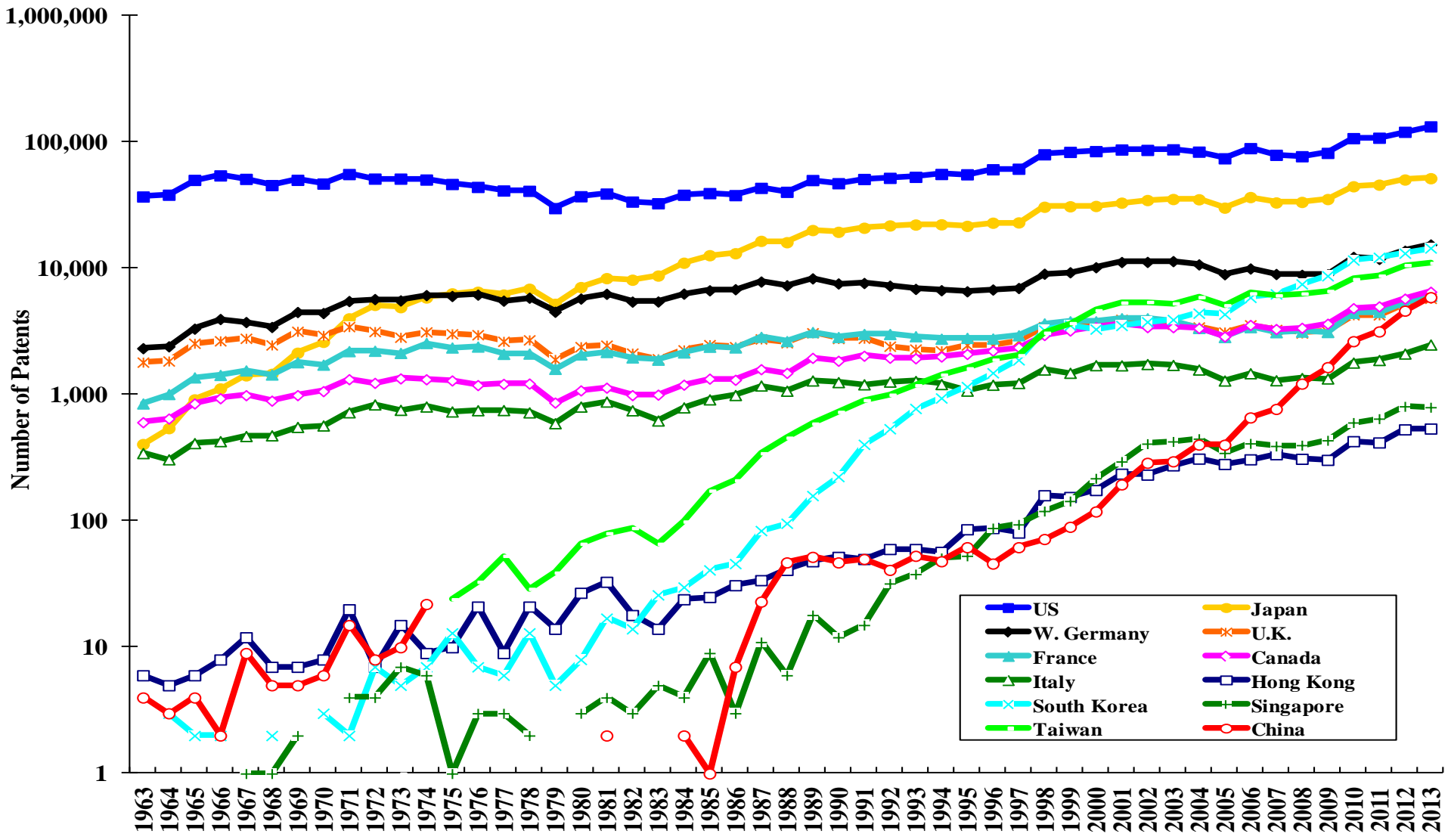
---

- ◆ One indicator of the potential for innovation (national innovative capacity) is the number of patents created each year. In the following chart, the number of patents granted in the United States each year to the nationals of different countries, including the U.S. itself, over time is presented.
- ◆ The U.S. is the undisputed champion over the past forty years, with 133,593 patents granted in 2013, followed by Japan, with 51,919. (Since these are patents granted in the U.S., the U.S. may have a home advantage; however, for all the other countries and regions, the comparison across them should be fair.)



# Patents Granted in the United States: G-7 Countries, 4 East Asian NIEs & China

Patents Granted Annually in the United States: G7 Countries, 4 East Asian NIEs and China



# The Rising Importance of Intangible Capital: R&D Capital

---

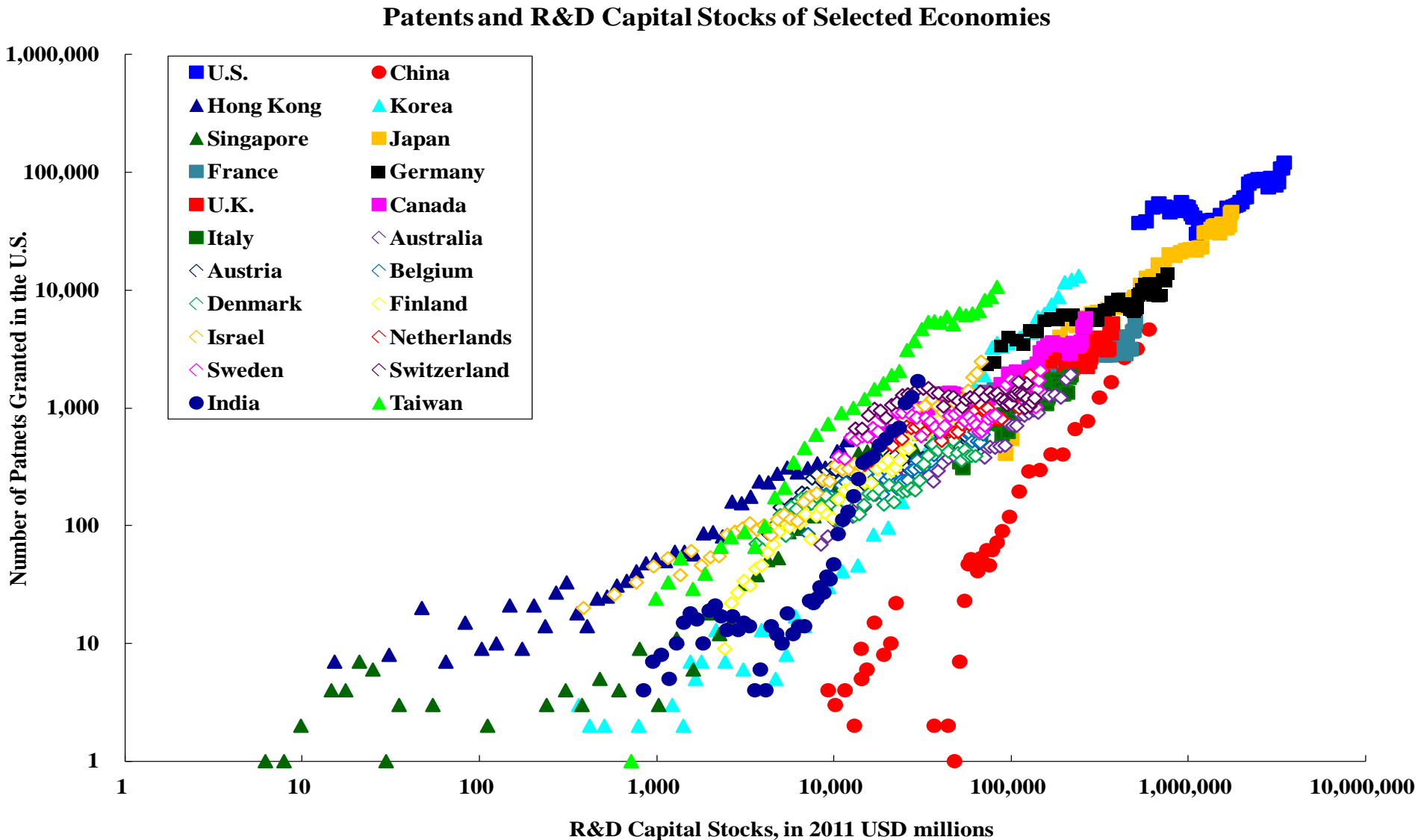
- ◆ The stock of R&D capital may be defined as the cumulative past real expenditure on R&D less depreciation of 10% per year. It should quite properly be treated as capital since R&D efforts generally take years to yield any results.
- ◆ Since China has had both a much lower R&D expenditure to GDP ratio and a much lower GDP than the United States and other developed economies in the past, it will take more than a couple of decades before the Chinese R&D capital stock can catch up to the level of U.S. R&D capital stock.

# The Rising Importance of Intangible Capital: R&D Capital

---

- ◆ The stock of R&D capital can be shown to have a direct causal relationship to the number of patents granted. (See the following chart, in which the annual number of U.S. patents granted is plotted against the R&D capital stock of that year for each economy).
- ◆ The chart shows clearly that the higher the stock of R&D capital of an economy, the higher is the number of patents granted to it by the U.S.
- ◆ It will take at least a couple of decades before the level of Chinese R&D capital stock can catch up to that of the U.S. and hence to the number of U.S. patents granted each year.

# Patents Granted in the United States and R&D Capital Stocks, Selected Economies



# The Importance of Investment in Intangible Capital: R&D Capital

---

- ◆ However, successful innovation also depends on the existence of competition and free entry to markets. Monopolies are generally not very good in innovation and not very good in making full use of their own discoveries and inventions. China must create and maintain a competitive market environment with free entry and exit so as to encourage innovation in addition to investing in human capital and R&D capital.
- ◆ Moreover, in order to encourage innovation, China also needs to protect intellectual property rights vigorously, a direction in which it has been moving gradually.

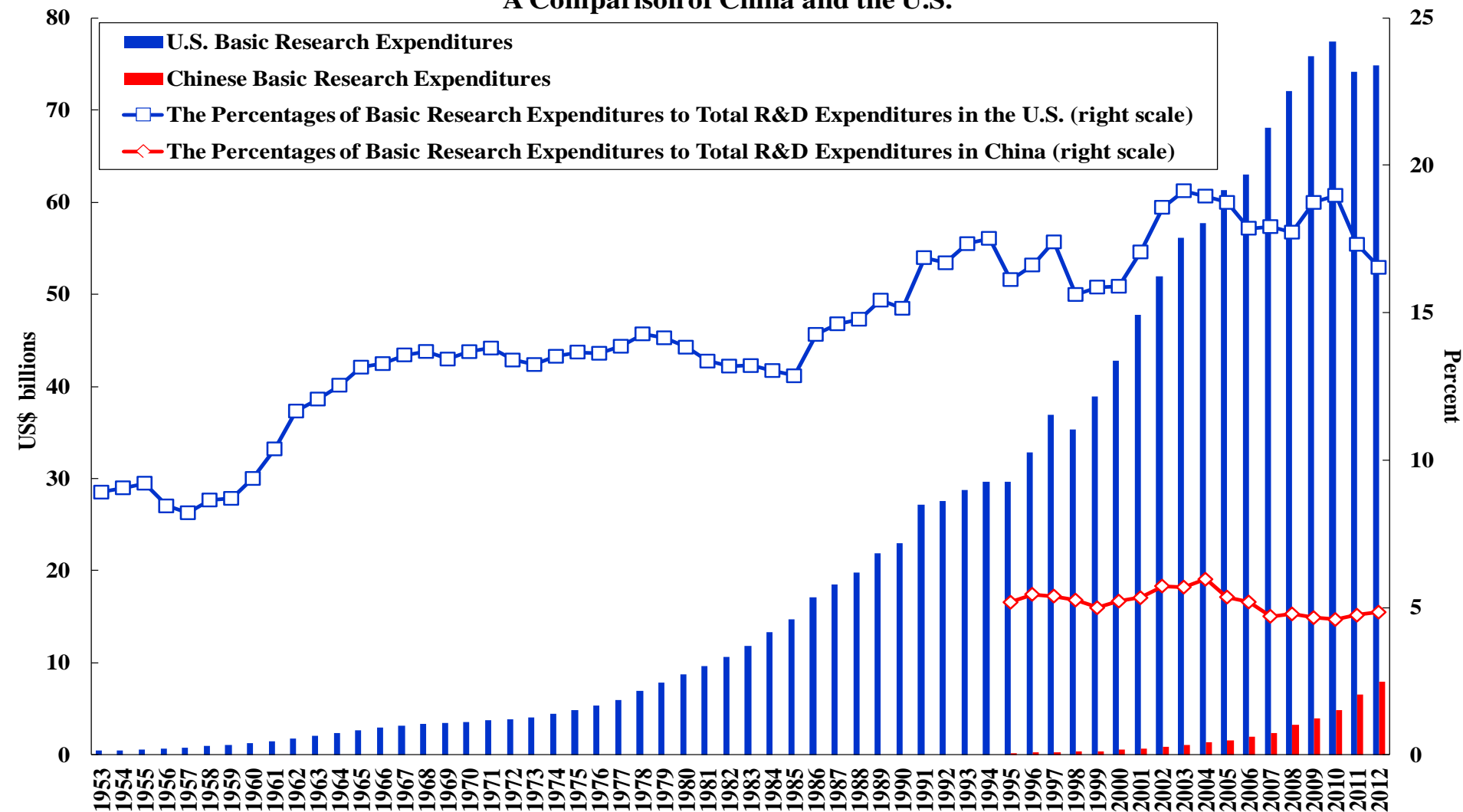
# The Importance of Investment in Intangible Capital: R&D Capital

---

- ◆ Finally, in order that “break-through” innovation can occur, China must commit a much greater share of its R&D expenditure to the support of basic research, currently averaging 5%, as the share in the United States, which has averaged almost 20% over the past ten years. (See the following chart comparing the basic research expenditures between China and the U.S. in both absolute terms and as a percentage of total R&D expenditures).

# Basic Research Expenditure and Its Share in Total R&D Expenditure: China & U.S.

Basic Research Expenditure and its Share in Total R&D Expenditure:  
A Comparison of China and the U.S.



# The Rising Importance of Intangible Capital: Internet as Social Infrastructure

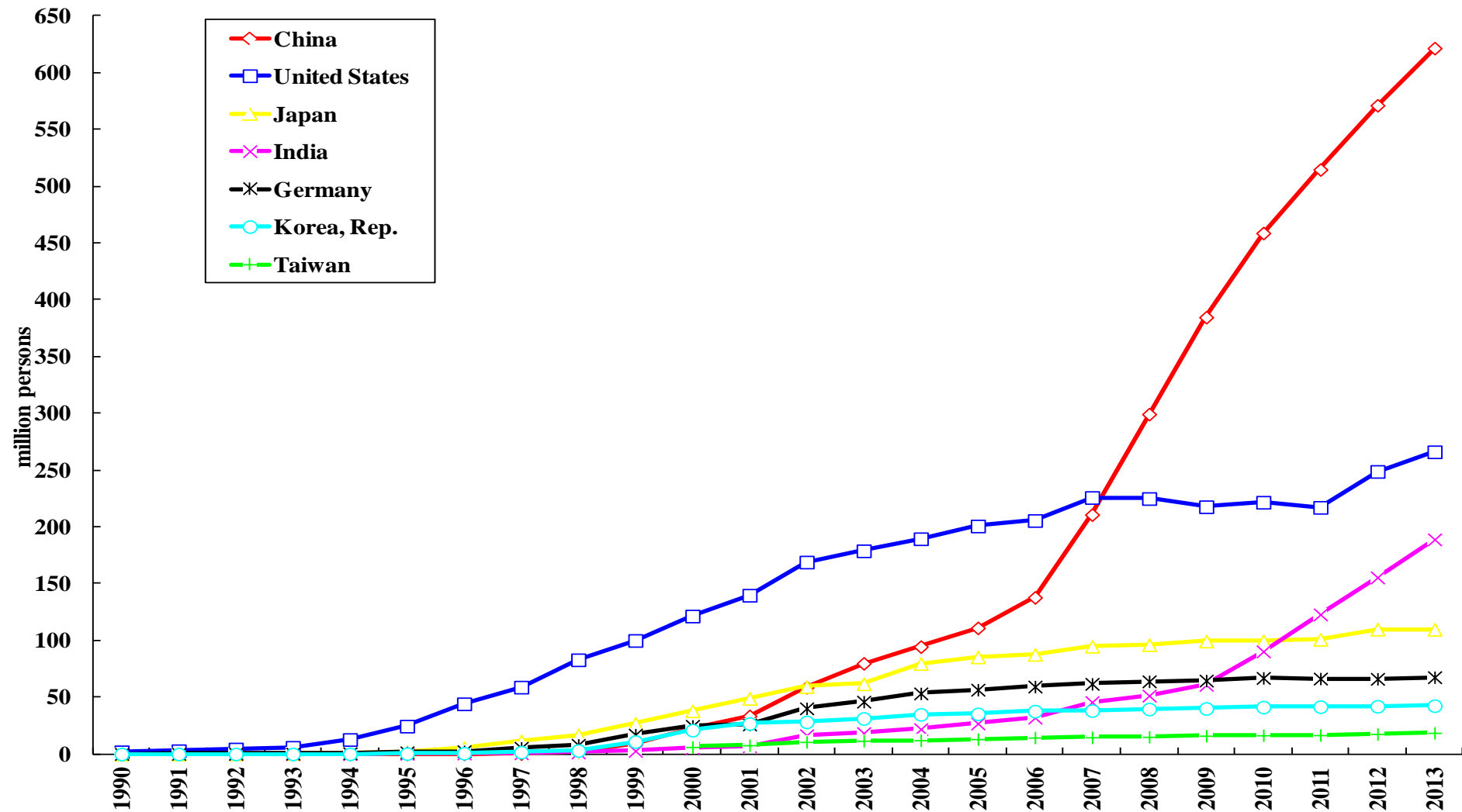
---

- ◆ The number of internet users has increased rapidly worldwide. This has also been facilitated by the introduction of smart phones and other devices such as the i-phone and tablets, and 4G (4th generation) telecommunication services.
- ◆ In the following charts we present the number of internet users in selected economies over time, in terms of both absolute values and as percentages of the total population.
- ◆ China at the present time has the largest number of users, followed by the U.S. and India.
- ◆ However, in terms of the proportion of the population who are internet users, China at approximately 50% and India at approximately 20% still lag far behind the developed economies of the U.S. and Germany and of the newly industrialised economies of South Korea and Taiwan, where the usage rates are around 80%.



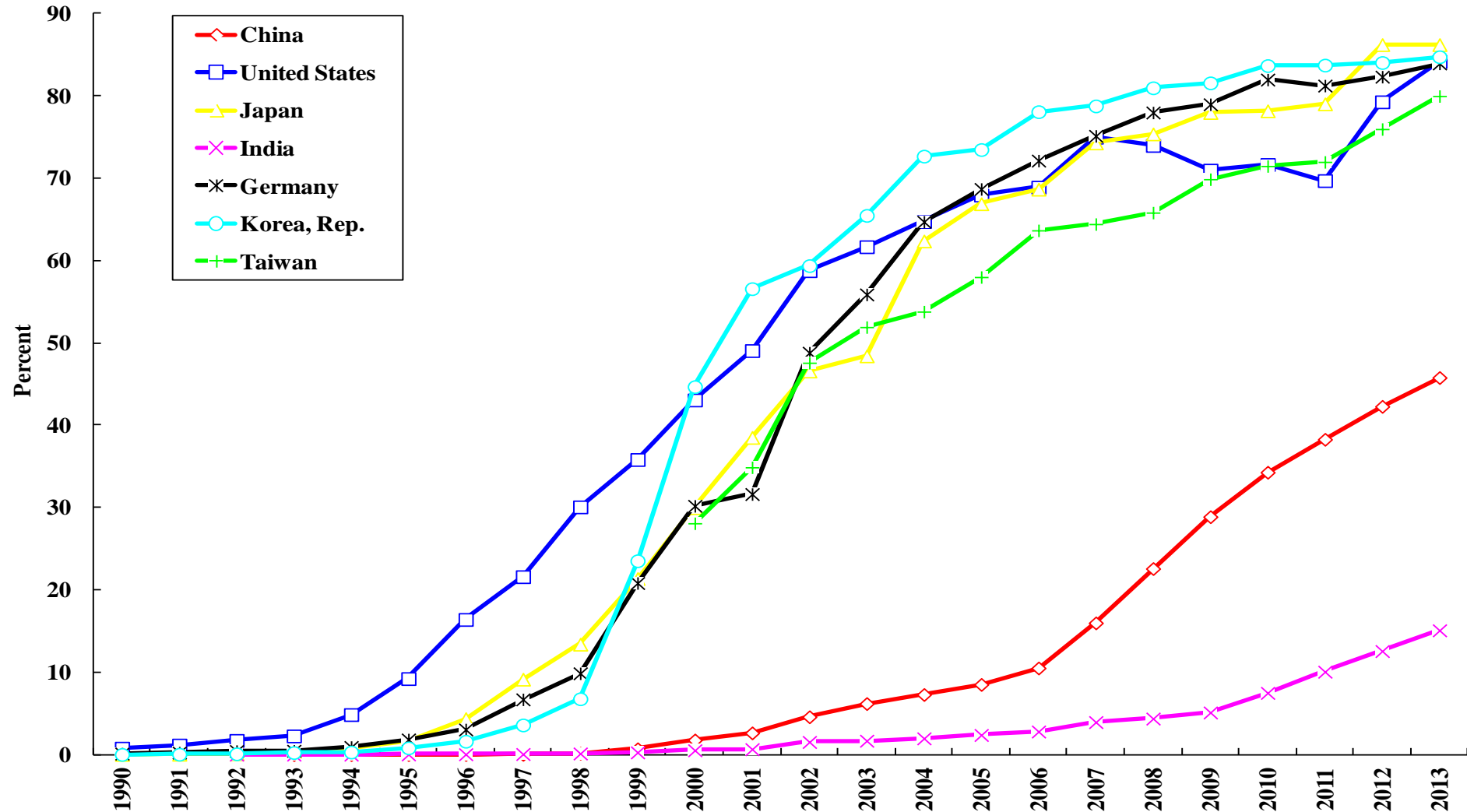
# The Number of Internet Users in Selected Economies

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 Long-Term Economic Outlook: The Chinese Economy

---

- ◆ Going forward, on the supply side, the Chinese economy has strong economic fundamentals: a high domestic saving rate, abundant labour, and a huge internal market. In time, Chinese economic growth will also be driven by innovation and technical progress in addition to the growth in tangible inputs.
- ◆ On the demand side, Chinese economic growth will be driven by the growth of its own internal demand, consisting of infrastructural investment, public consumption (education, health care and environmental control, preservation and restoration) and household consumption, rather than the growth of exports or fixed investment in the manufacturing sector.

# The Long-Term Economic Outlook: The Chinese Economy

---

- ◆ China has also been gradually changing from its role as the World's factory to the World's new growth market. It is already the World's largest exporting country and is on its way to becoming the largest importing country in a couple of years.
- ◆ The Chinese trade surplus vis-a-vis the World has been declining and will continue to decline until Chinese international trade is approximately balanced.

# The Long-Term Economic Outlook for the Chinese Economy

---

- ◆ There are at present huge excess manufacturing capacities in China in industries such as steel, cement, glass, aluminum, ship-building, solar panels, residential housing, etc.
- ◆ One important implication of the excess capacities in the manufacturing industries is that its output or GDP is not supply-constrained but demand-constrained—as long as there is aggregate demand, the supply will be there to meet the demand. The Chinese GDP is primarily determined by aggregate demand and the Government exercises a decisive influence on the level of aggregate demand.
- ◆ Thus, China should be able to continue to grow at an average annual rate of 7% for the next five to ten years, more or less independently of what happens in the rest of the World.

# Concluding Remarks

---

- ◆ The centre of gravity of the global economy has been gradually shifting to East and South Asia from North America and Europe. The centre of gravity of the East Asian economy has been gradually shifting to China from Japan.
- ◆ The Chinese and East Asian economies have been partially decoupled from the developed economies of North America and Europe.
- ◆ The partial de-coupling of East Asia from the U.S. and Europe is likely to accelerate the integration of the East Asian economies themselves as well as other multilateral initiatives such as the ASEAN Free Trade Area (+3—China, Japan and Korea, +6—Australia, New Zealand and the U.S.), Regional Comprehensive Economic Partnership (RCEP—ASEAN + 3 + Australia, New Zealand and India), the Chiang-Mai Initiative, as well as other regional initiatives.

# Concluding Remarks

---

- ◆ China is a large continental country like the United States and will similarly develop into a largely internal-demand driven economy. International trade and international investment will not have a decisive impact on the Chinese economy in the future. Eventually, Chinese exports as a percent of its GDP should be relatively low, in the teens.
- ◆ Chinese economic growth will be marginally, but not critically, affected by a large decline in its exports, as demonstrated by its experience in the past several years as well as during the 1997-1998 East Asian currency crisis. Thus, it will be able to survive even prolonged economic recessions in the European and U.S. economies.

# Concluding Remarks

---

- ◆ On the basis of its strong economic fundamentals, China should be able to continue to grow at an average annual rate of at least 7% for the next couple of decades, more or less independently of what happens in the rest of the World.
- ◆ While the growth of tangible capital, supported by a high domestic saving rate, has been the principal source of past Chinese and East Asian economic growth, the growth of intangible capital (human capital and R&D capital) will have to become a much more important source of Chinese economic growth, as it has already become in the more developed East Asian economies such as Japan, South Korea, Singapore and Taiwan.



# Concluding Remarks

---

- ◆ If current trends continue, it will probably take 15 years or so for Chinese real GDP to catch up to the level of the United States real GDP. In the meantime, the U.S. economy will still be the largest in the World.
- ◆ It will take another 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 in 2045).