The Future of the Taiwan Economy amidst Global Economic Transformation

全球經濟變遷下之臺灣經濟發展

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Outline

- Introduction
- An Overview of the Historical Experience of the Growth of the Taiwan Economy
- Global Economic Trends
- Evolution of the Comparative Advantages of the Taiwan Economy
- Challenges and Opportunities for the Taiwan Economy
- Concluding Remarks

Introduction

- Taiwan has over the past sixty odd years grown into a developed economy. Even though it is currently faced with many problems, looking back over this long period of time, it has had a most successful and enviable record.
- Between 1951 and 2011, the annual real GDP of Taiwan grew almost 73 times, from US$6.4 billion to US$466 billion (in 2011 prices), at an average annual compound rate of 7 percent. This is a most impressive achievement by any standard!
- The industrialisation of Taiwan has followed that of Japan and Hong Kong, and has preceded South Korea and Southeast Asian countries such as Malaysia and Thailand as well as Mainland China.

Introduction

- In 1950, the Philippines had the highest GDP per capita of any country in Asia, higher than even Japan. Today, the GDP per capita of the Philippines is among the lowest in Asia. The Philippines was, at the time, tipped to be the Asian economy most likely to develop by development economists in the West.
- Taiwan's successful economic development was indeed regarded as a "miracle", and its economic policies were widely emulated elsewhere.

Introduction

- By comparison, during the same period, Mainland Chinese annual real GDP grew more than 106 times, from US$70.6 billion in 1952 to more than US$7.5 trillion (2011 prices), at an average annual compound rate of 7.8 percent, to become the second largest economy in the World, after the United States.
- The long-term rates of growth of Mainland China and Taiwan are actually not that different, 7.8 percent compared to 7 percent.

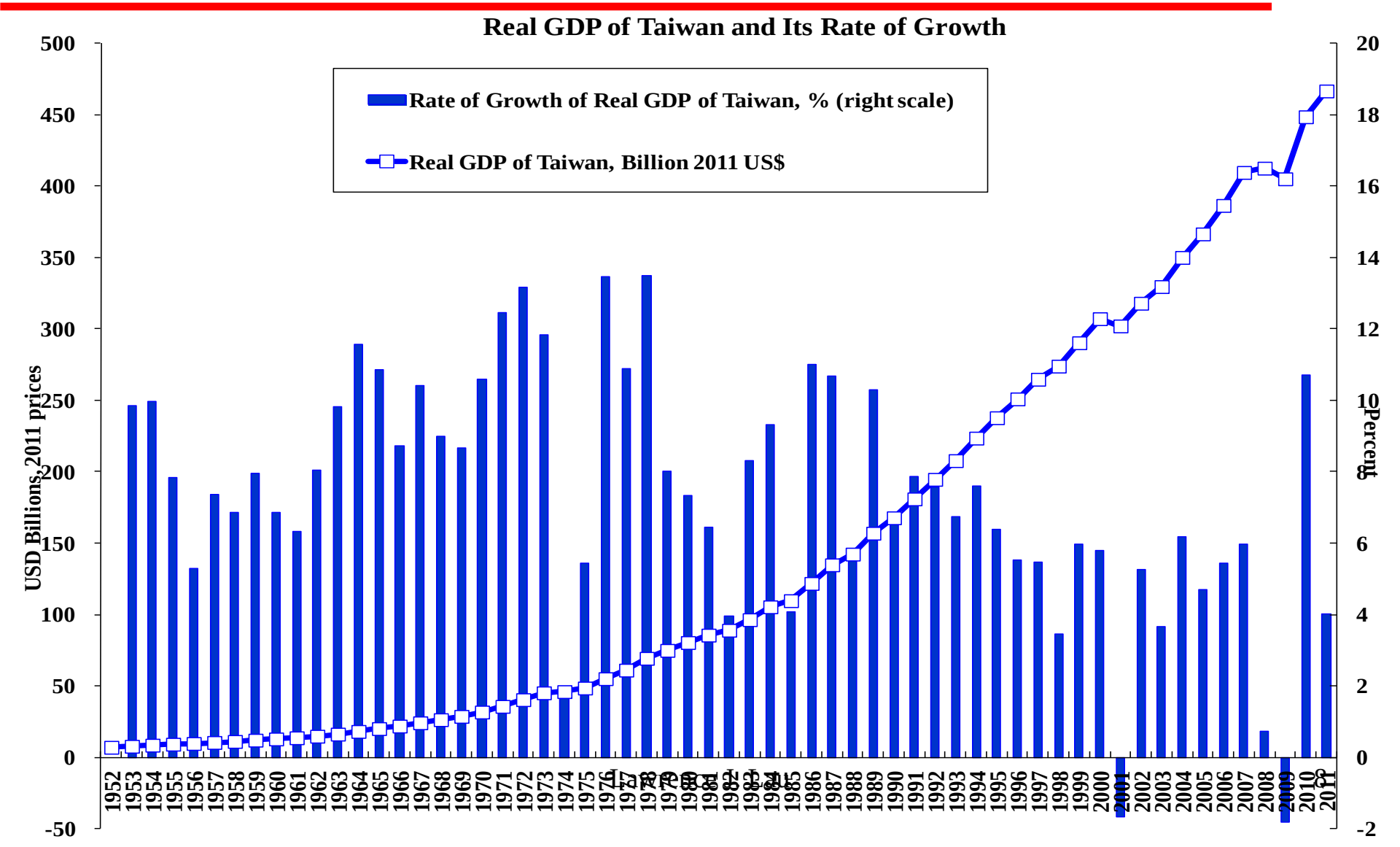
Introduction

- We begin by reviewing the historical experience of Taiwan's economic growth.
- We shall then identify several global economic trends.
- We shall examine the evolution of the comparative advantages of the Taiwan economy.
- Finally, we shall consider the challenges and opportunities for the Taiwan economy going forward.

An Overview of the Historical Experience of the Growth of the Taiwan Economy

- In the following Chart, the real GDP of Taiwan and its annual rate of growth from 1951 to 2011 are presented. Despite some occasional setbacks, on the whole, the record has been a most successful one.

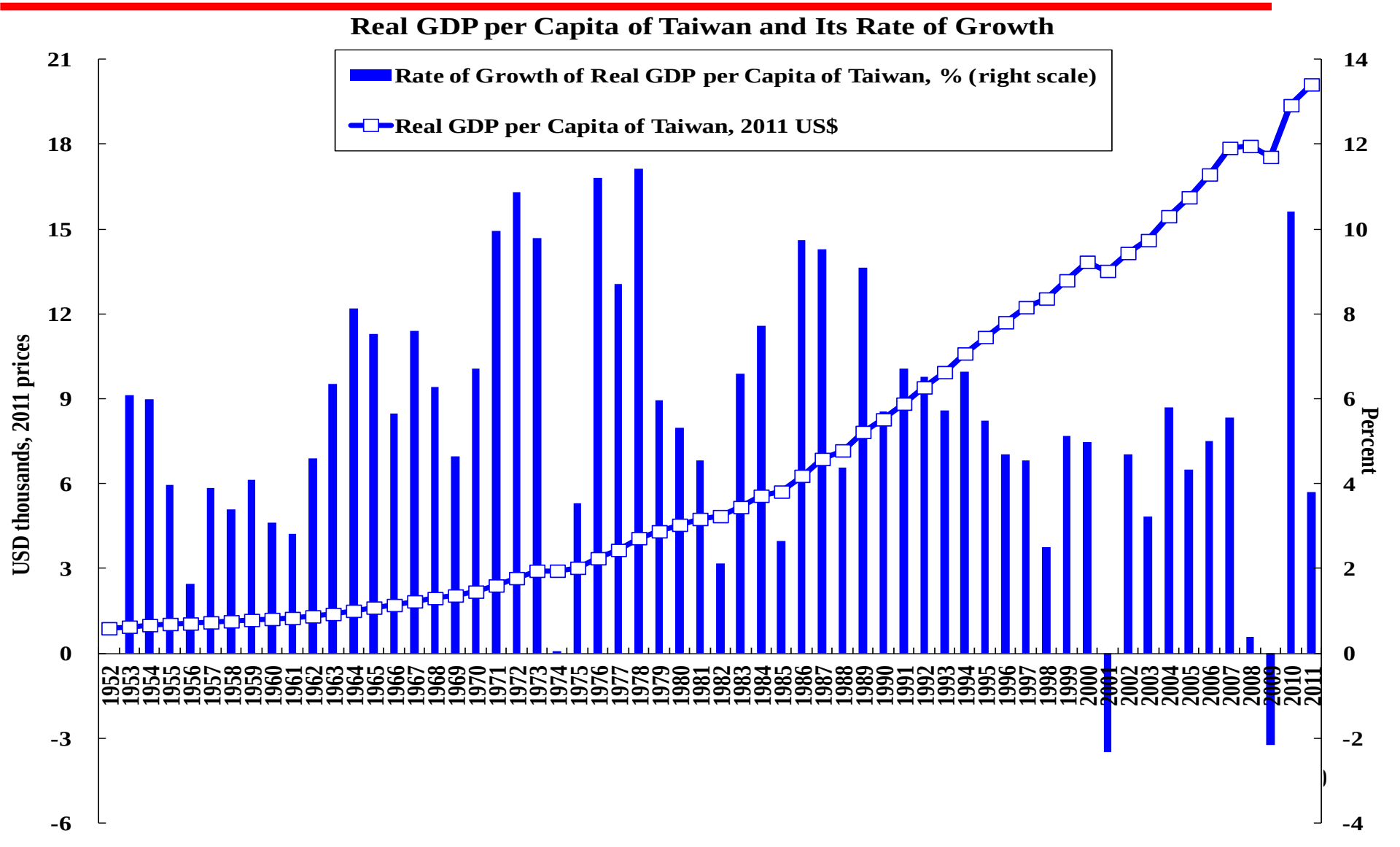
Real GDP of Taiwan and Its Rate of Growth (2011US$)



An Overview of the Historical Experience of the Growth of the Taiwan Economy

- Between 1952 and 2011, Taiwan's real GDP per capita grew 22.6 times, from US$890 to US$20,110, in 2011 prices, at an average annual compound rate of 5.2%.
- In terms of its real GDP per capita, US$20,110, Taiwan is considered a developed economy, but it lags behind Hong Kong, Japan and South Korea.
- By comparison, the Mainland's GDP per capita in 2011, US$5,555, was 45.2 times Mainland's GDP per capita of US$122.8 in 1952, with an average annual compound rate of growth of 6.4% (bear in mind that the rate of growth of population has been lower on the Mainland).
- Taiwan's real GDP per capita was almost four times the Mainland's real GDP per capita in 2011.

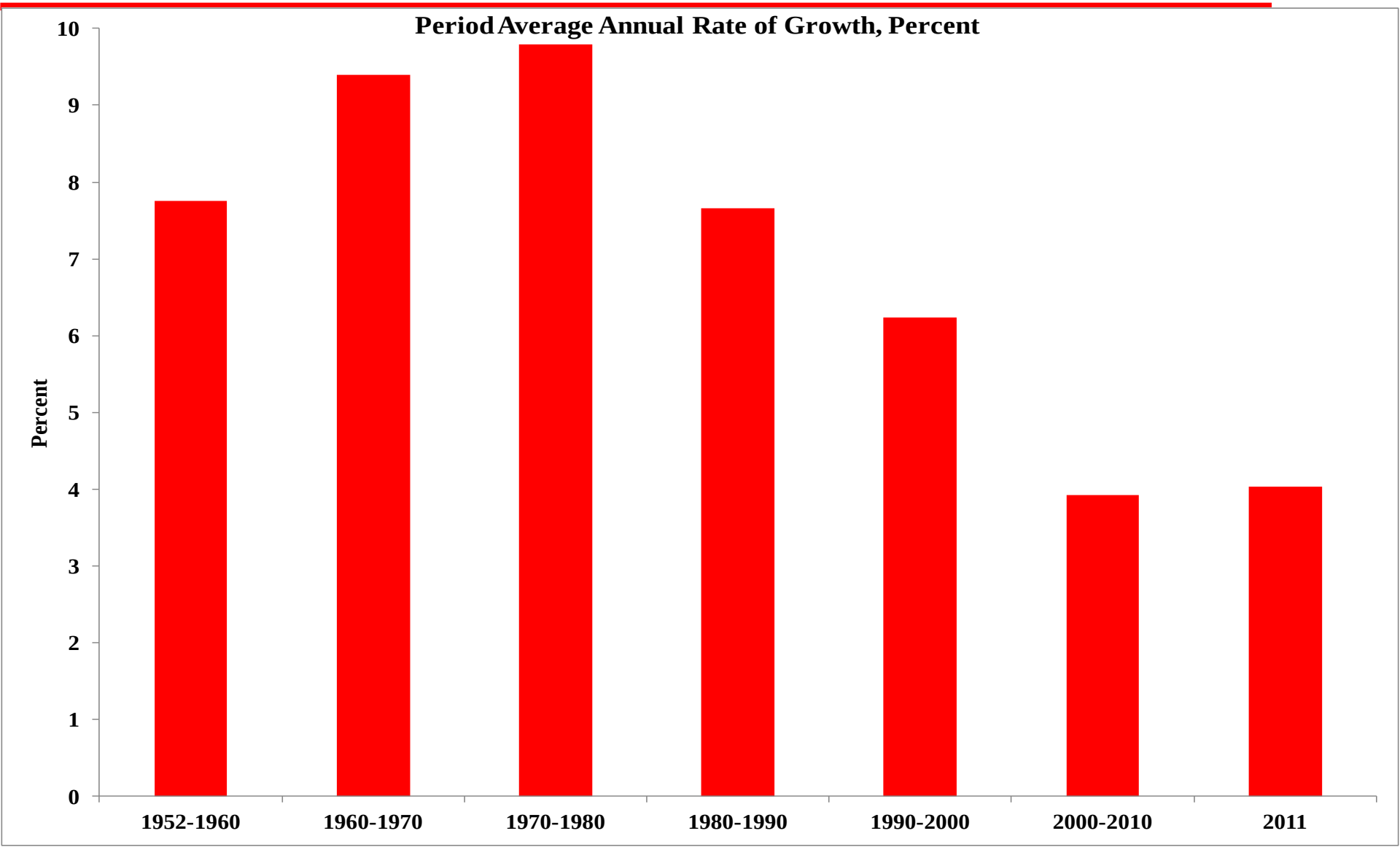
Real GDP per Capita of Taiwan and Its Rate of Growth (2011US$)



An Overview of the Historical Experience of the Growth of the Taiwan Economy

- It is instructive to examine the average annual rate of growth of the Taiwan economy decade by decade. It is quite clear that the rate of growth of measured real GDP has been declining over time since it peaked in the decade of the 1970s. The highest rate of growth occurred between the 1960s and the 1980s. The first decade of the 21st Century had the lowest rate of growth.
- There are many reasons for the slow down. Part of it is due to the fact that the real GDP as measured is not able to include the non-pecuniary improvements in aggregate social welfare, such as the increase in leisure voluntarily taken and the improvement in the environment. Part of it is due to external factors such as relative stagnation of the developed economies. But part of it may also be attributed to the lack of a more pro-growth economic policy.

Period Average of the Annual Rate of Growth of the Real GDP of Taiwan



Global Economic Trends

- Information, Communication, and Transportation Technology Revolution
- Globalisation and Division and Sub-Division of Labour
- The Shifting Centre of Gravity of the World Economy
- The Increases in Automation and Use of Robots in Manufacturing and Services
- The Increase in Life Expectancy and Decrease in Birth Rate

Information, Communication, and Transportation Technology Revolution

- The Flat Earth
- The Flat Organisation
- The Rapid Mobility of Capital

The Flat Earth

- Information is instantaneously available in real time everywhere.
- Communication is direct and immediate and not limited by either space or time.
- Communication and transportation costs around the World have declined significantly.
- All of the above have resulted in significant reductions in the transactions costs of doing business across national boundaries and long distances.
- With the information and communication technology revolution, even very complex production processes can be profitably fragmented—subdivided into many sub-processes each to be done in different locations where the costs are the lowest.
- The entire World market becomes one which enhances greatly the returns to intangible capital such as new inventions and brands.

The Flat Organisation

- The information and communication technology revolution enables the expansion of the span of control of individual managers.
- This causes the middle management to be largely redundant. For examples, commercial banks used to have many vice-presidents, but not any more.
- The flat organisation increases the inequality in the distribution of labour compensation within the organisation.
- This is one of the principal causes of the increases in the degree of income inequality in developed economies. It affects not only the United States and Western Europe, but also Taiwan and Hong Kong.

The Rapid Mobility of Capital

- Today, unlike the old days, capital can be moved in and out of an economy at the speed of light.
- These capital movements, if they are short-term, can be extremely disruptive to the financial sector, affecting the exchange rate and the interest rate as well as the level of asset prices.
- For a small, open economy such as Taiwan, capital flows, especially short-term capital flows, must be monitored carefully and the exchange rate must be managed to maintain financial stability and economic competitiveness.

Globalisation and Division and Sub-Division of Labour

- The information, communication and transportation technology revolution, coupled with globalisation, enable the finer division and sub-division of labour, resulting in the fragmentation of production and the rise of multi-national supply chains.
- Each link in a supply chain can be out-sourced to the lowest cost location.
- In turn, the specialisation of this link further lowers its cost.
- The net result is that any job that can be moved away to a lower-cost location will be moved away, and hence the disappearance of unskilled and low-skilled jobs from relatively high-wage economies.
- The flat earth, flat organisation and the global division of labour combined together to cause the income distribution to become more unequal within individual developed and newly-industrialised economies.

Globalisation and Division and Sub-Division of Labour

- The finer division and sub-division of labour around the World also implies that the World economy is more integrated and more interdependent than ever before. No economy can be by itself and remain prosperous.

The Shifting Centre of Gravity of the World Economy

- Changes in the Distribution of World GDP and Trade
- Economic Slowdown in the Developed World
- The Stability of Mainland Chinese Economic Growth

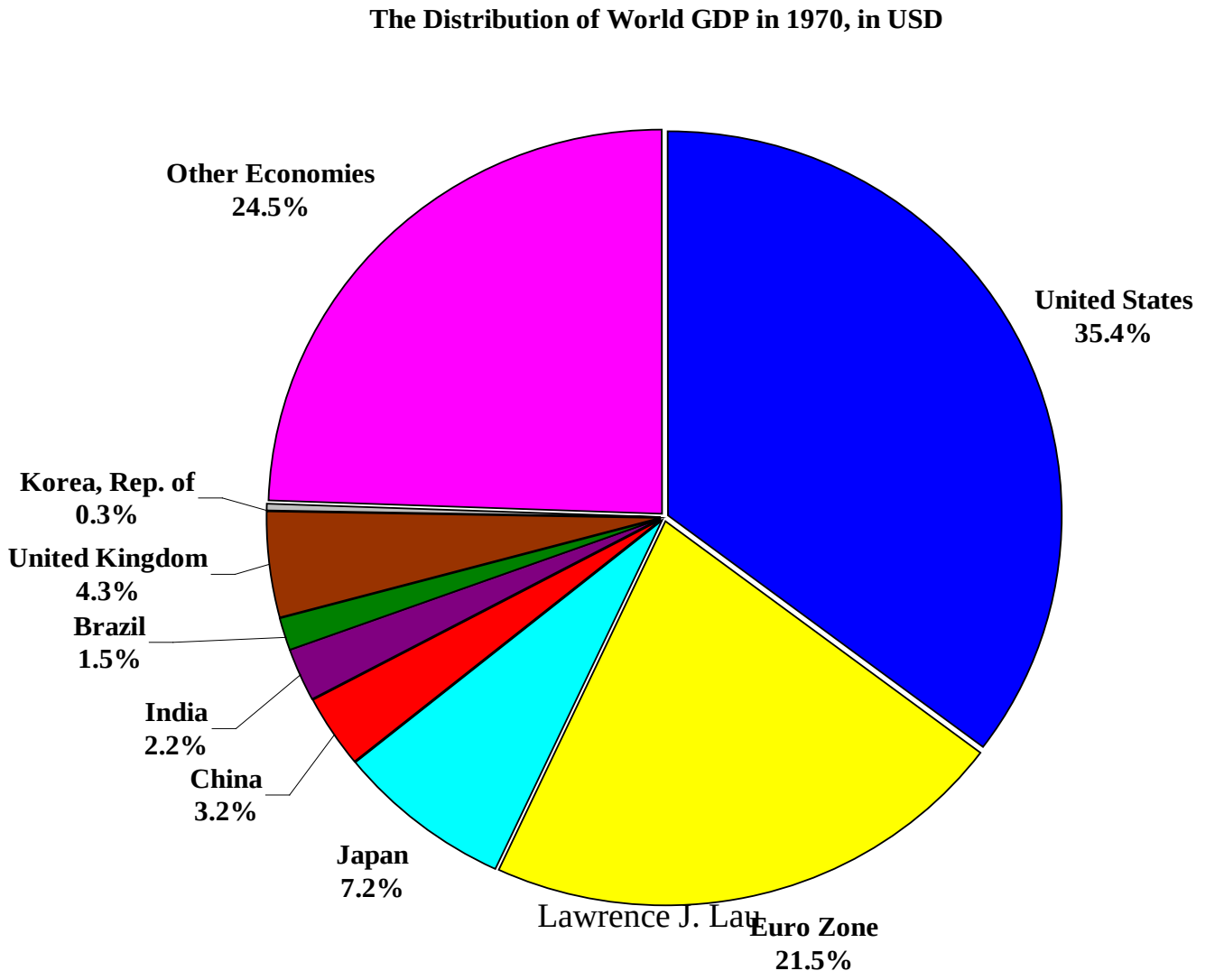
The Shifting Centre of Gravity of the World Economy

- The rise of the Mainland Chinese economy is probably the single most important development in the World economy in the past three decades.
- The strong performance of the Chinese, Indian and other East Asian economies except the Japanese during the 2007-2009 global financial crisis and the subsequent European sovereign debt crisis provided convincing evidence of the "Partial De-Coupling Hypothesis".
- There is relative economic stagnation of varying degrees in the developed economies of Europe, Japan and the United States.
- However, the Mainland Chinese economy alone is not large enough to turn the World economy around. The idea of a G-2 group of countries consisting of China and the United States leading the World economy is simply premature.

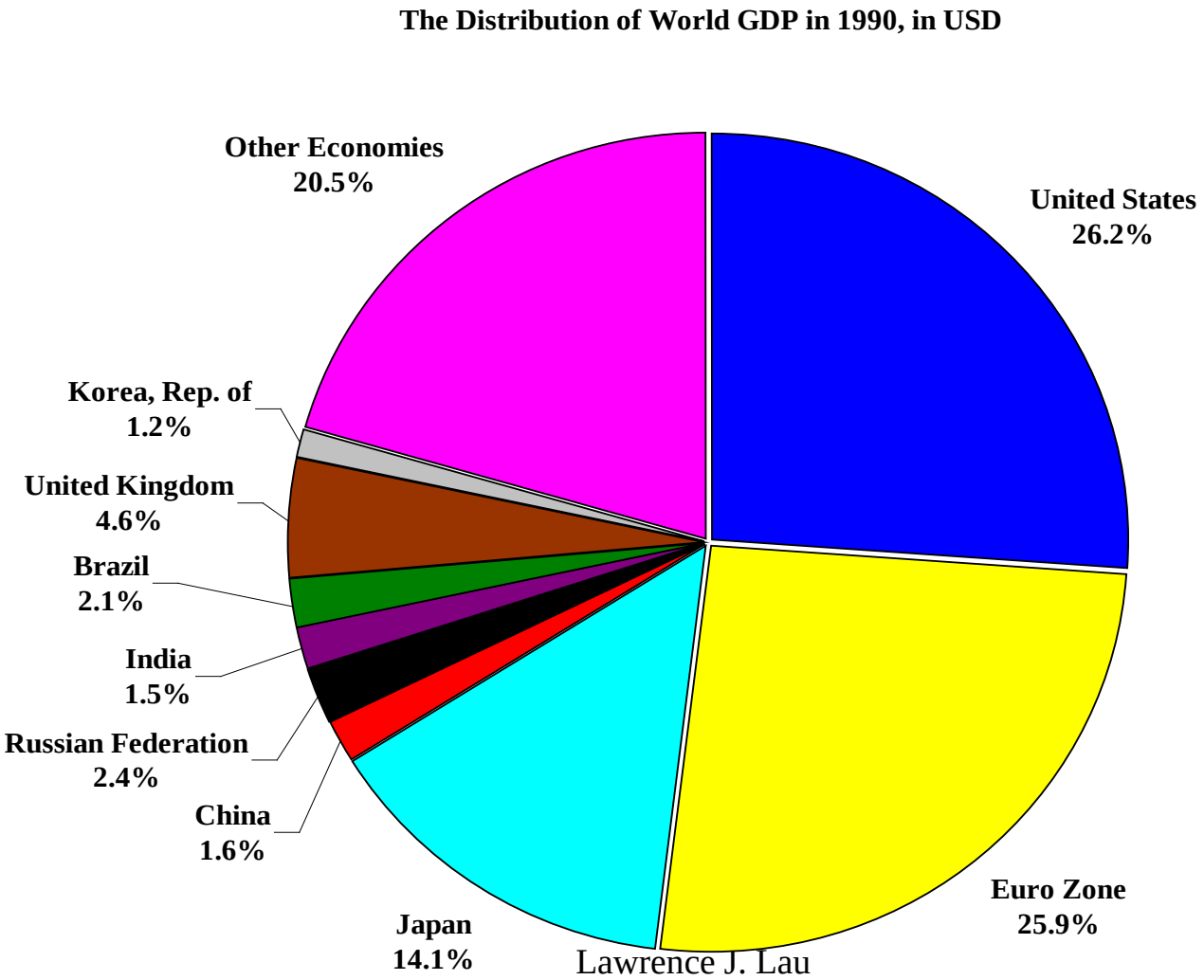
The Shifting Centre of Gravity of the World Economy: GDP

- In 1970, the United States and Western Europe together accounted for over 60% of World GDP. By comparison, East Asia (defined as the 10 Association of Southeast Asian Nations (ASEAN)--Brunei, Indonesia, Khmer Republic, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam--+ 3 (Mainland China, Japan and the Republic of Korea) and South Asia combined accounted for less than 15% of World GDP.
- In 1990, the United States and Western Europe together still accounted for over 55% of World GDP while East Asia and South Asia combined accounted for not quite 20% of World GDP.
- By 2012, the share of United States and Western Europe in World GDP has declined to approximately 45% whereas the share of East Asia and South Asia have risen to 30%.

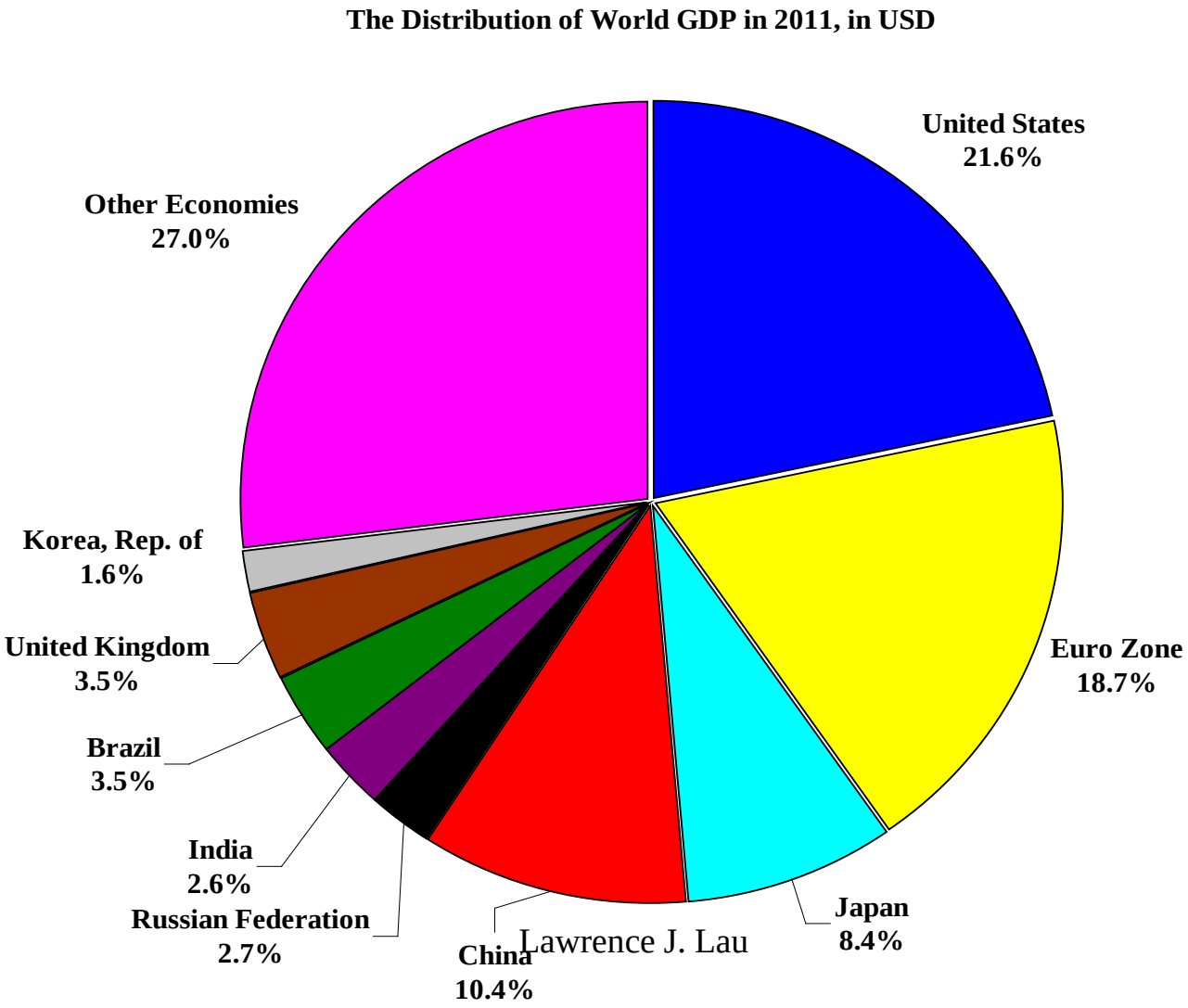
The Distribution of World GDP, 1970, US$



The Distribution of World GDP, 1990, US$



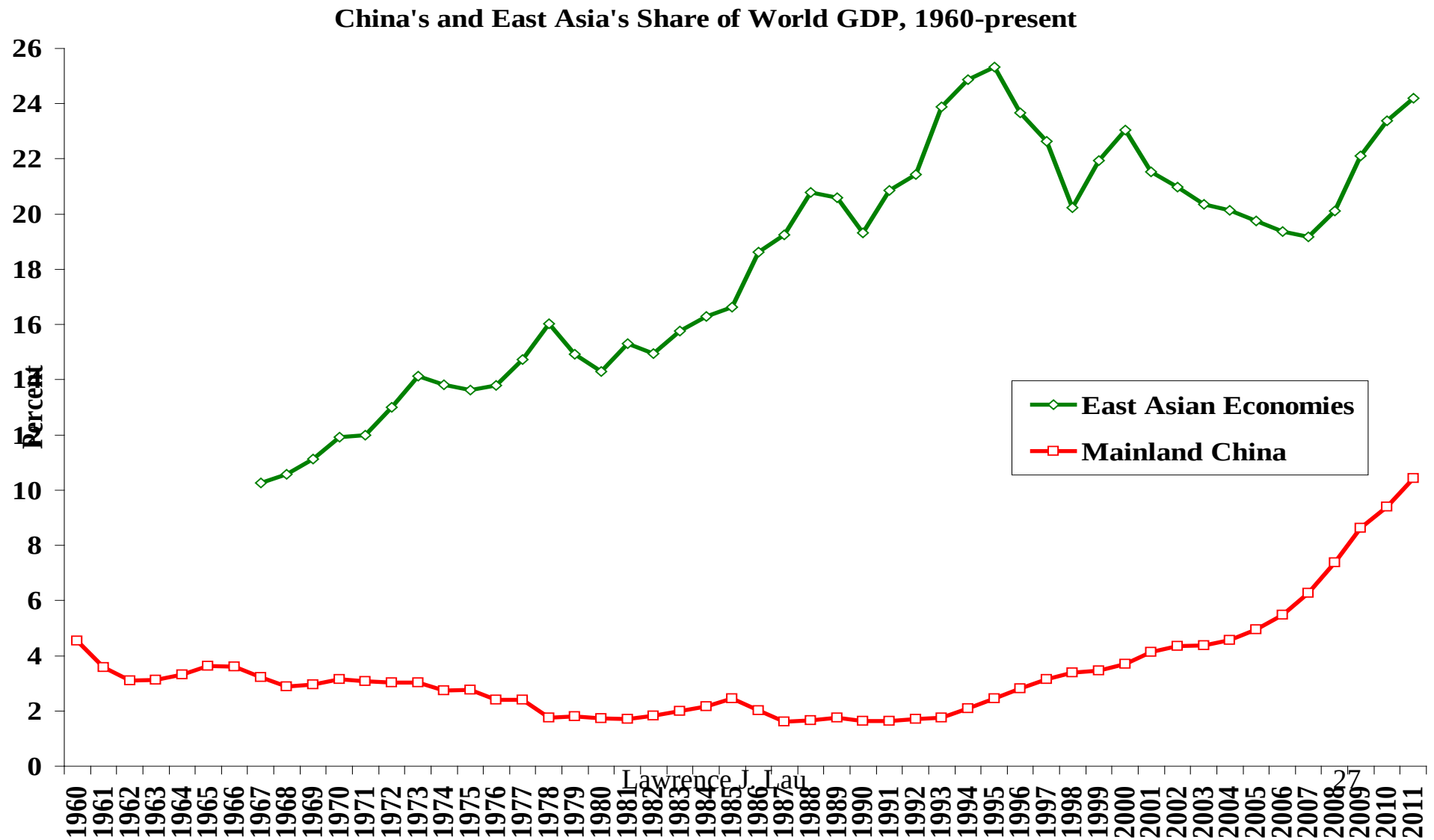
The Distribution of World GDP, 2012, US$



The Shifting Centre of Gravity of the World Economy: GDP

- The East Asian (defined as the 10 Association of Southeast Asian Nations (ASEAN) + 3 (Mainland China, Japan and the Republic of Korea) share of World GDP rose from just above 10% in 1970 to approximately 25% in 2012.
- The Mainland Chinese share of World GDP alone rose from less than 2% in 1970 to over 10% in 2012.

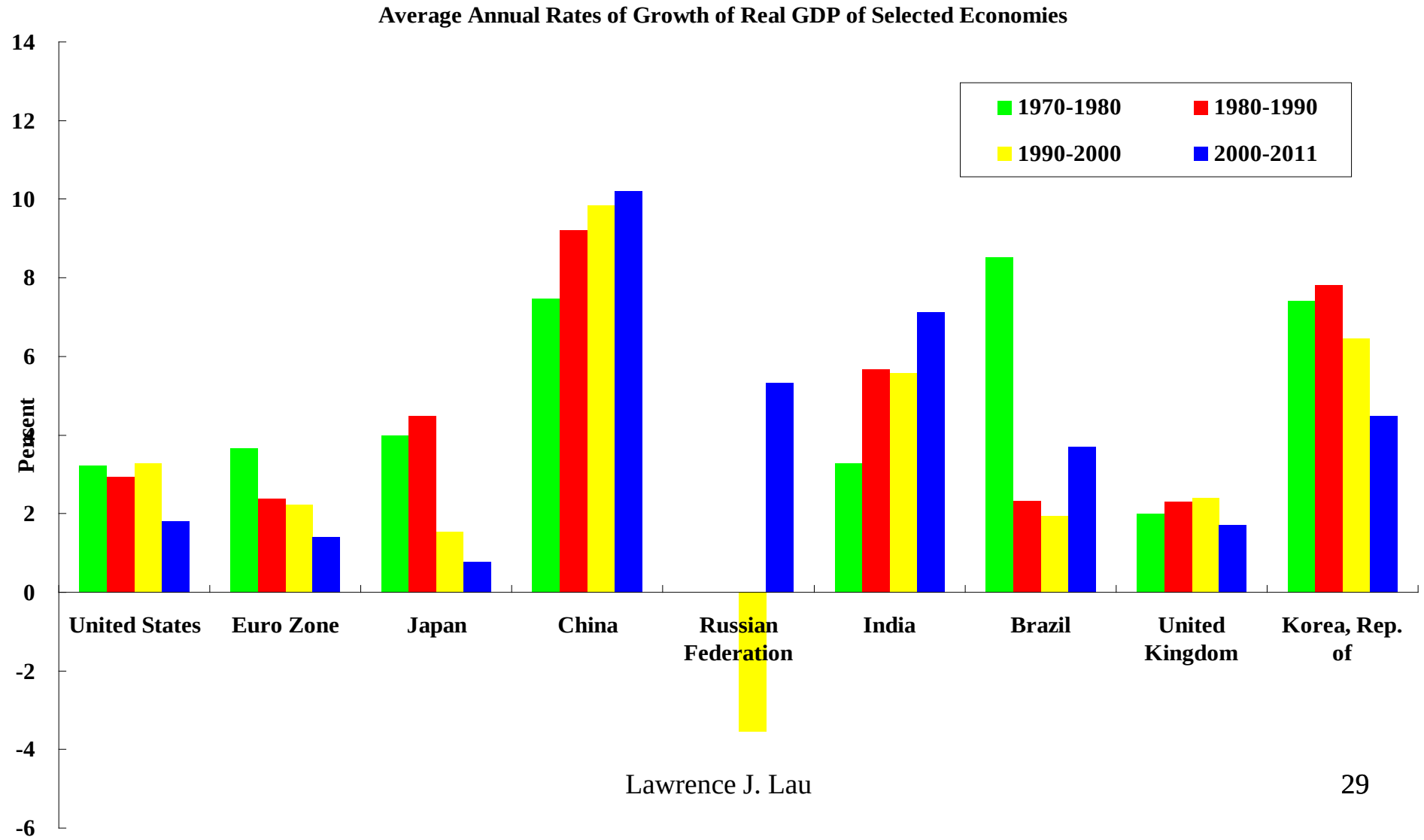
Mainland China and East Asia's Share of World GDP, 1960-present (Current Prices)



The Shifting Centre of Gravity of the World Economy: Economic Growth

- Mainland 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.
- Brazil has also grown very fast during the past decade because of the world natural resource boom.
- 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.

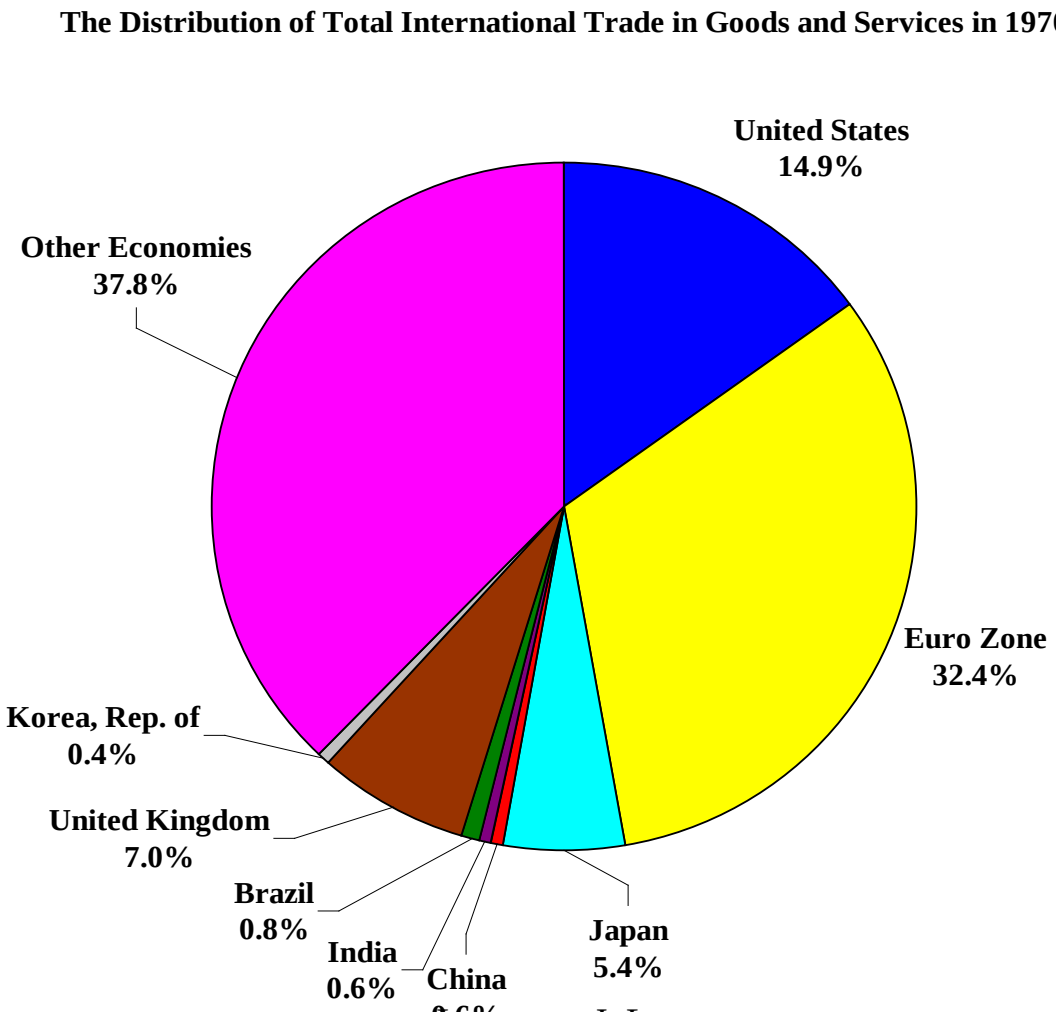
Average Annual Rates of Growth of Real GDP of Selected Economies



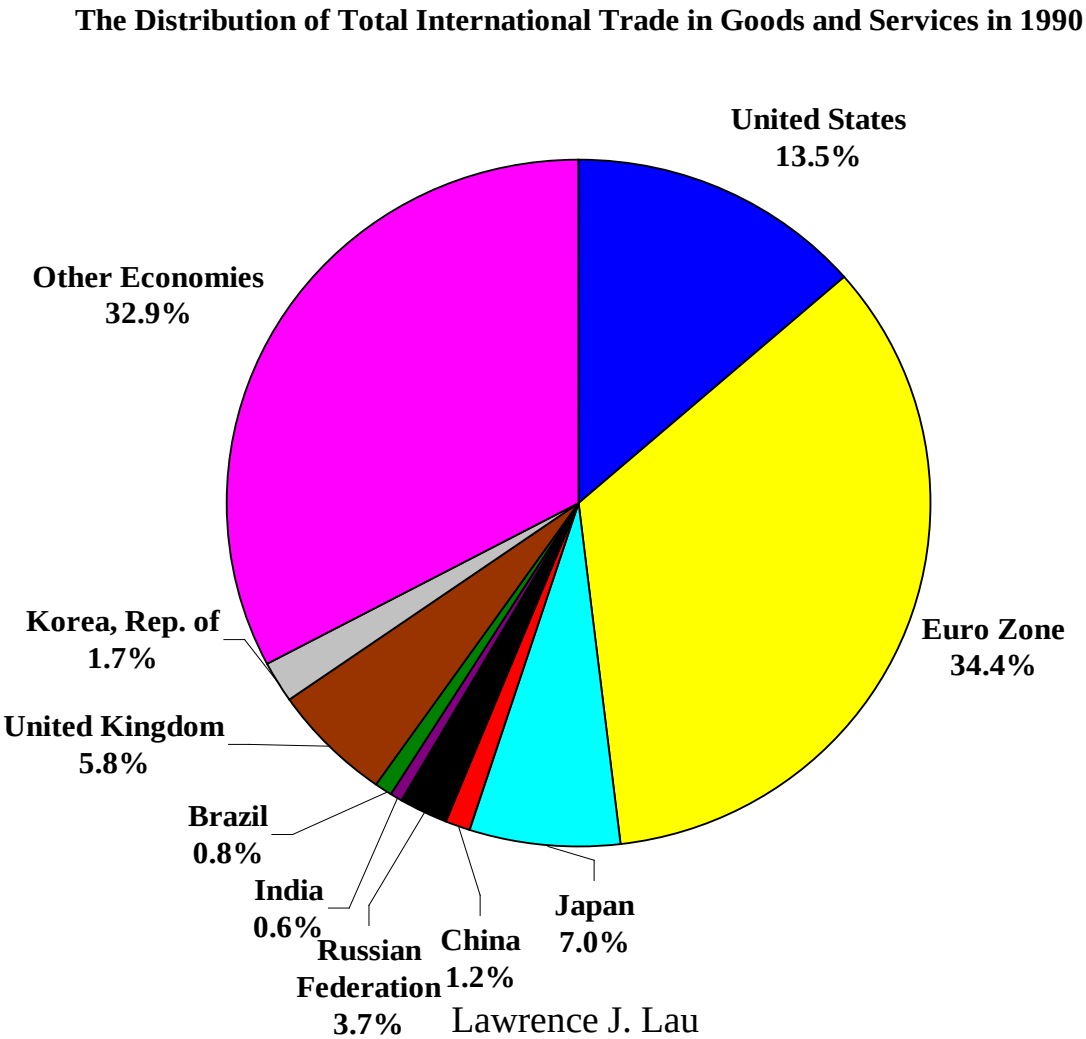
The Shifting Centre of Gravity of the World Economy: International Trade

- In 1970, the United States and Western Europe together accounted for over 60% of World trade. By comparison, East Asia and South Asia combined accounted for less than 10% of World trade.
- In 1990, the United States and Western Europe together still accounted for approximately 55% of World trade while East Asia and South Asia combined accounted for just over 10% of World trade.
- By 2011, the share of United States and Western Europe in World trade has declined to below 45% whereas the share of East Asia and South Asia has risen to 30%.

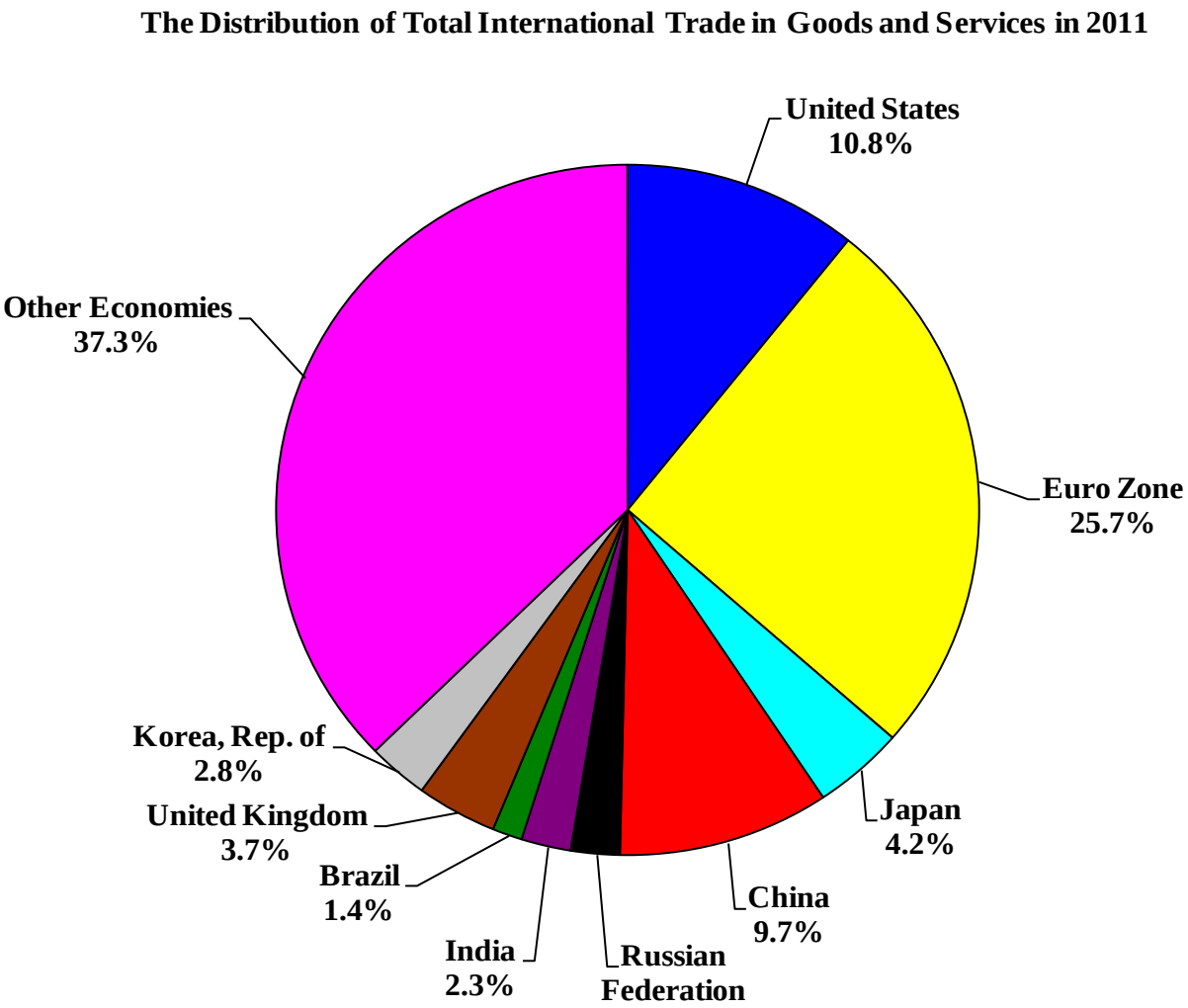
The Distribution of Total International Trade in Goods and Services, 1970



The Distribution of Total International Trade in Goods and Services, 1990



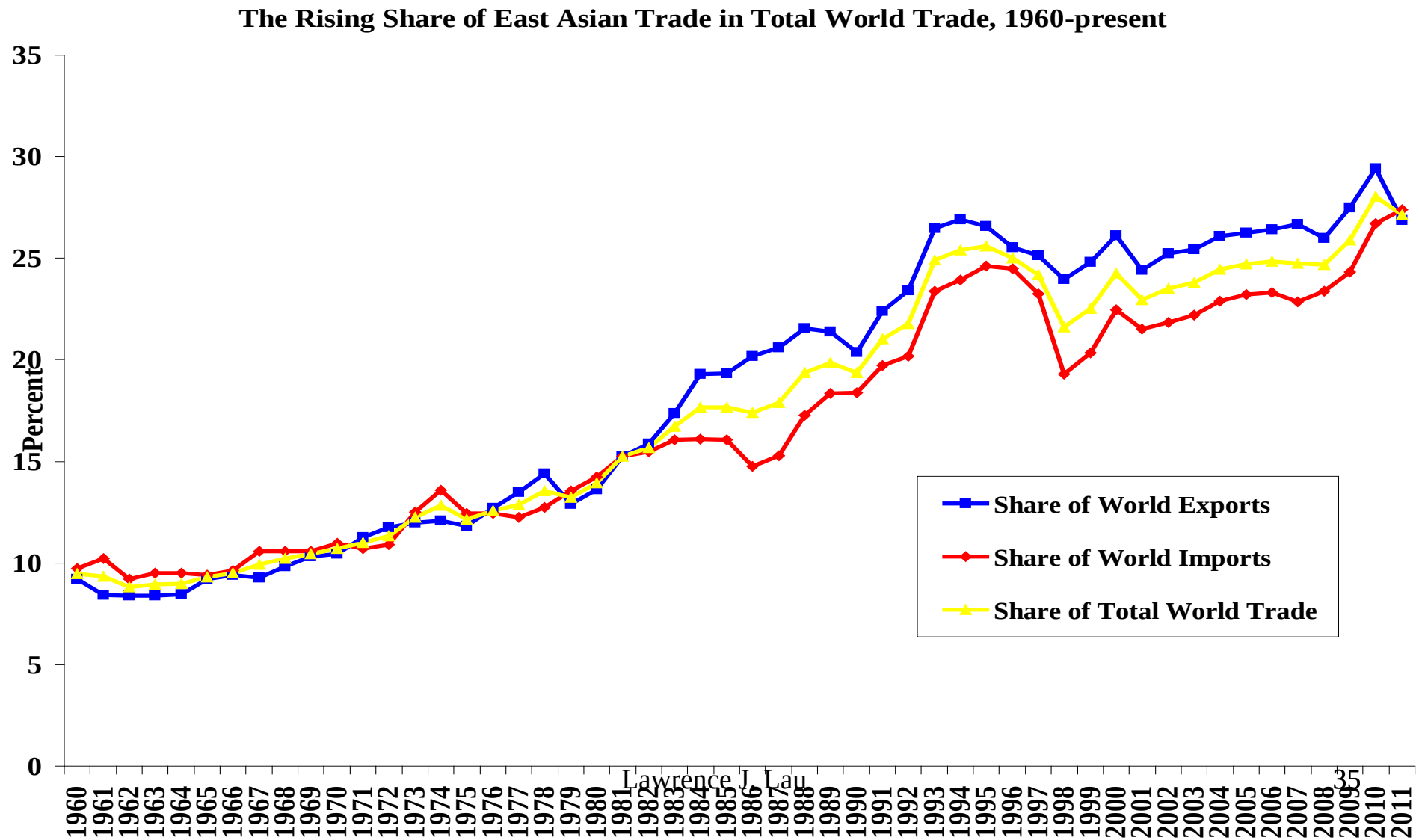
The Distribution of Total International Trade in Goods and Services, 2011



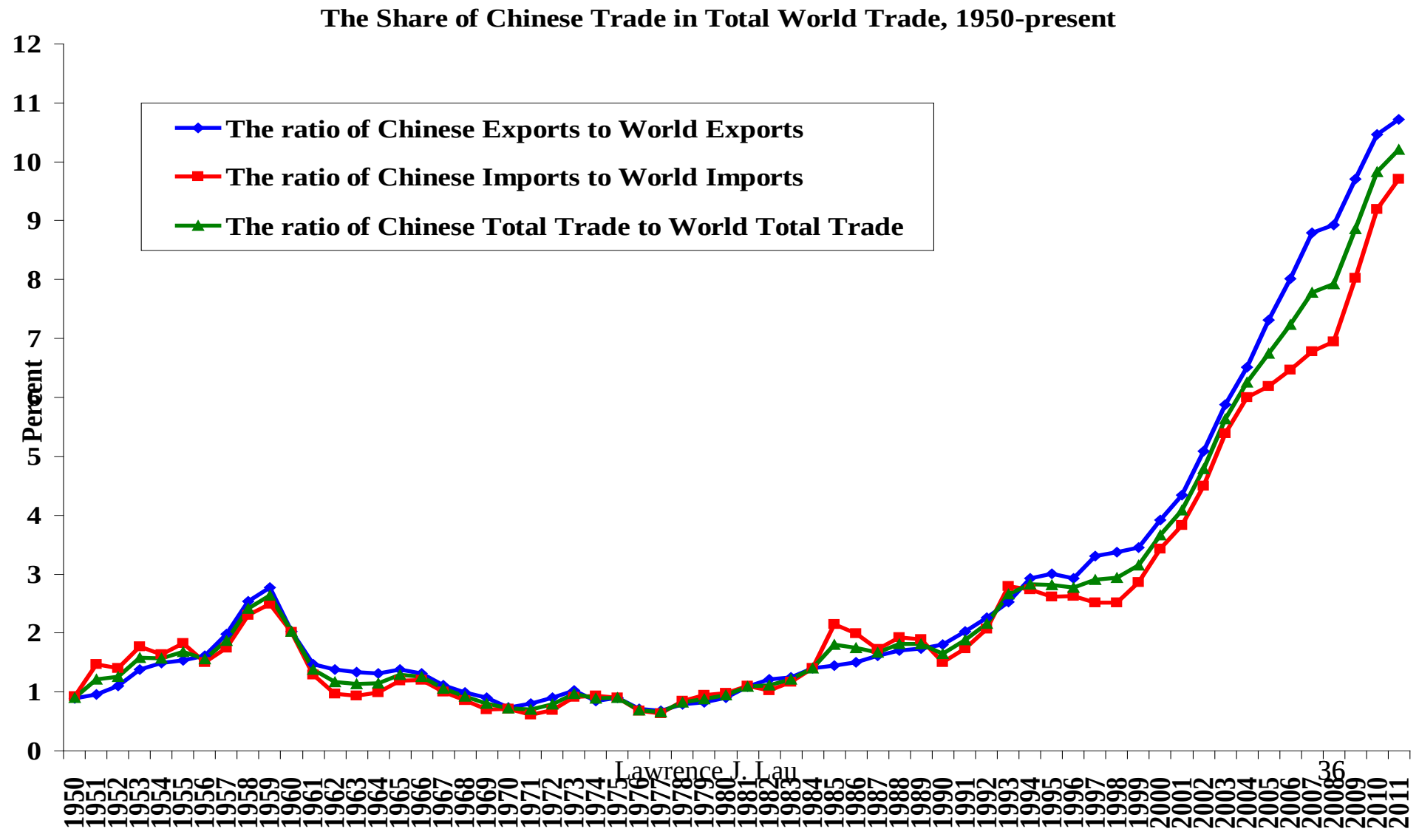
The Shifting Centre of Gravity of the World Economy: International Trade

- The East Asian (defined as the 10 Association of Southeast Asian Nations (ASEAN) + 3 (Mainland China, Japan and the Republic of Korea) share of World trade rose from 10% in 1970 to just below 25% in 2011.
- The Mainland Chinese share of World trade rose from 1% in 1970 to 10% in 2011.
- Mainland 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



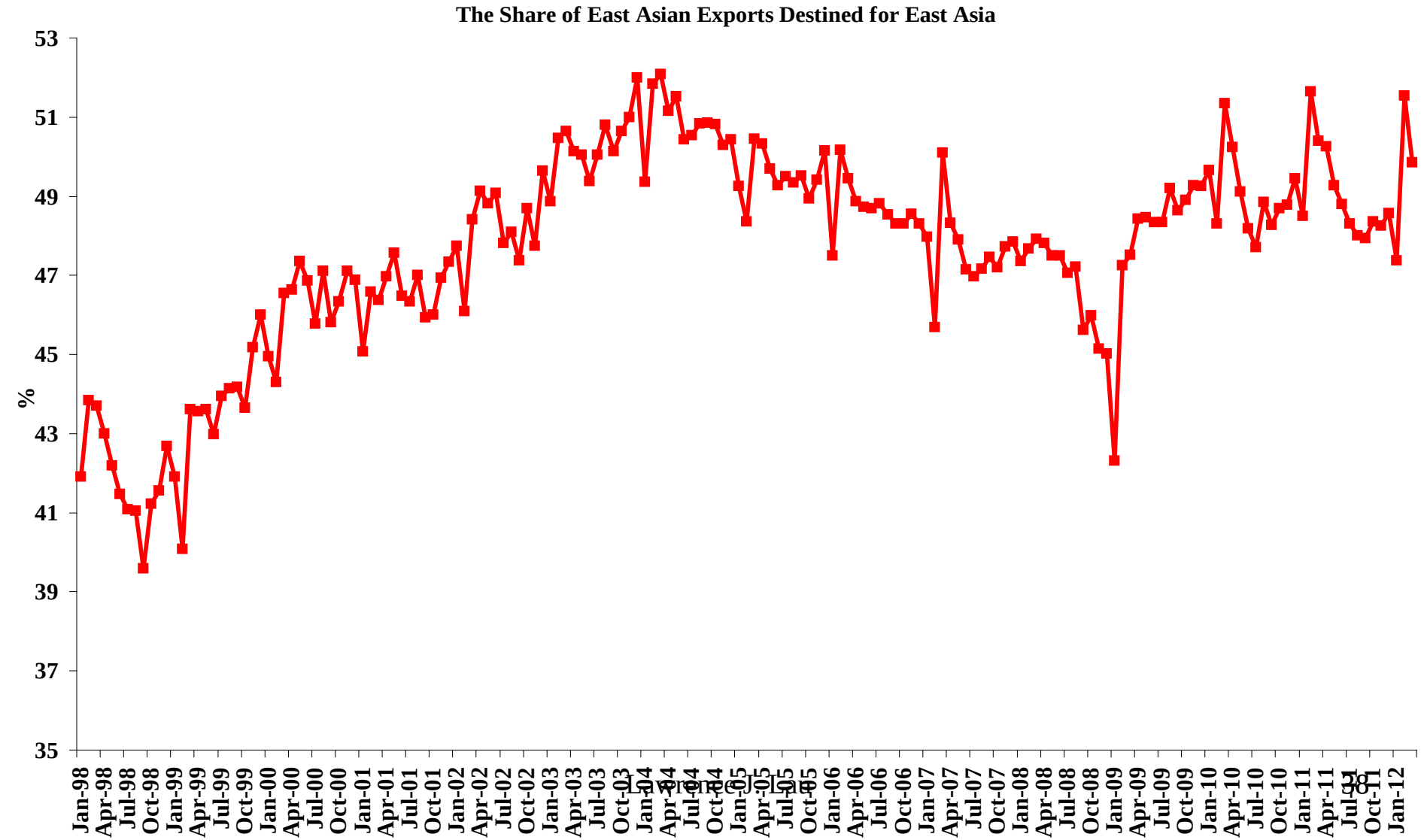
The Share of Mainland Chinese Trade in Total World Trade, 1950-present



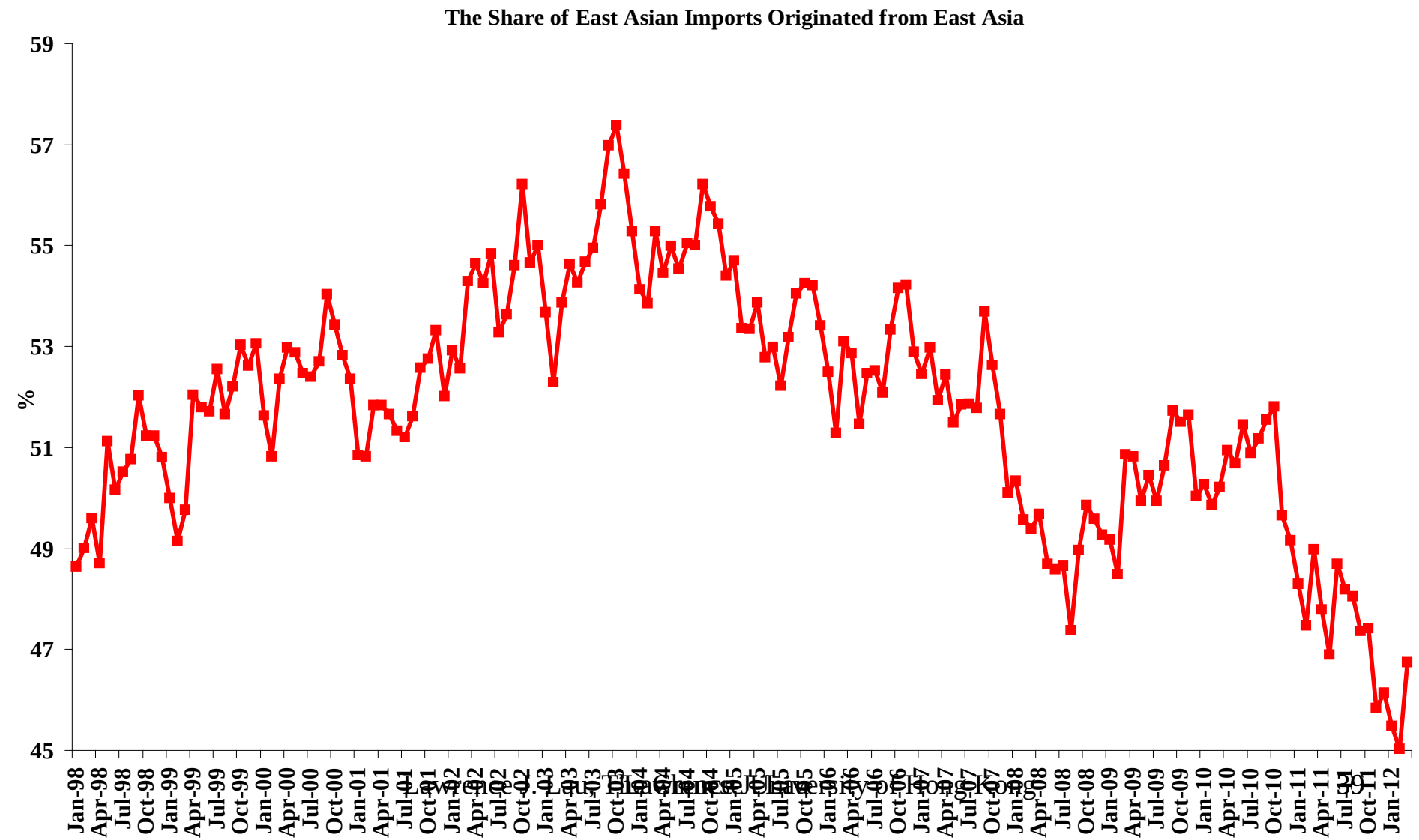
The Shifting Centre of Gravity of the World Economy: International Trade

- A particularly interesting development is the rise in intra-East Asian international trade. The share of East Asian trade 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 were destined for either the United States or Western Europe.
- Similarly, the share of East Asian imports originated from East Asia has remained above 45%.

The Share of East Asian Exports Destined for East Asia



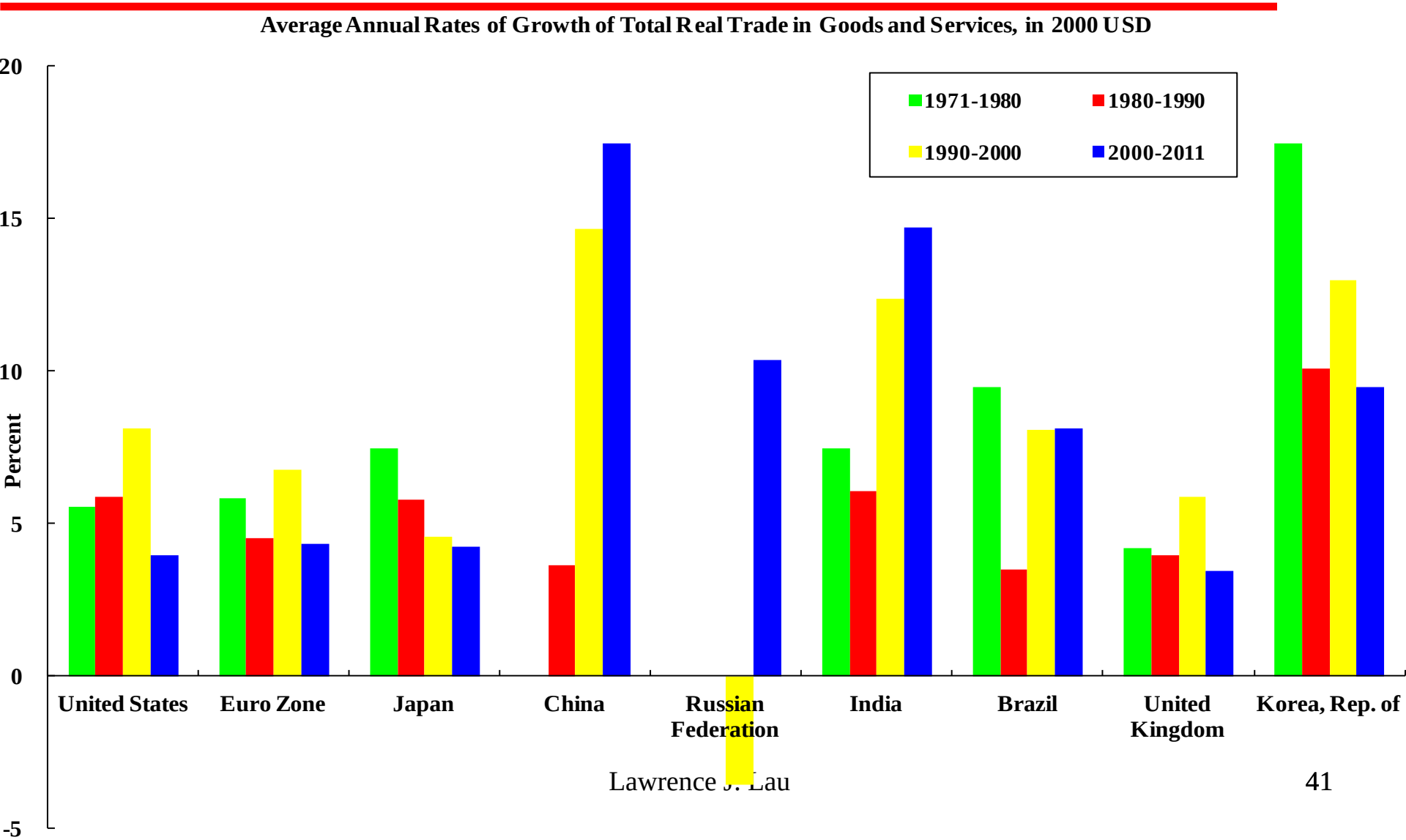
The Share of East Asian Imports Originated from East Asia



The Shifting Centre of Gravity of the World Economy: World Trade Growth

- South Korea, and more recently, Mainland China, India, Brazil and Russia, have had the highest rates of growth in international trade.
- Growth in Mainland Chinese international trade has been particularly rapid during the past decade because of its accession to the World Trade Organisation (WTO) and because of the expiration of the Multi-Fibre Agreement governing world trade in textiles.
- India, Russia and Brazil have also had exceptionally high growth in their international trade during the past decade.
- However, all the developed economies—the U.S., Euro Zone, Japan, and the U.K.—had relatively low and declining rates of growth of international trade during the past decades.

Average Annual Rate of Growth of Total International Trade in Goods and Services



Economic Slowdown in the Developed World

- We have seen how the rates of economic growth of developed economies have declined through the past decades.
- Moreover, the global economy has been in a state of turmoil since the outbreak of the global financial crisis in 2007, beginning with the sub-prime loan crisis in the United States, and followed by the bankruptcy of Lehman Brothers in September 2008. And just when the global economy appeared to stabilise in 2009, the European sovereign debt crisis broke out, first in Greece, and then spread to Ireland, Portugal, Italy and Spain.
- Recovery slowed down in the U.S. because of the European sovereign debt crisis, which reduced European demand for U.S. exports, even as the U.S. rate of interest became super-low because of combined effects of flight to safe haven and the successive waves of "Quantitative Easing—I, II and III". The Euro Zone economies went into a recession and global trade flows declined.

Economic Slowdown in the Developed World

- Throughout this crisis, however, the economies of the BRICS countries (Brazil, Russia, India, China and South Africa) continued to do reasonably well. Mainland China, in particular, was able to maintain its real rate of growth above 7.5%, lending credence to the "Partial De-Coupling Hypothesis", that is, the Chinese economy can continue to grow, albeit at a slower rate, even as the U.S. and European economies go into economic recession. The same applies, to a greater or lesser degree, to the other BRICS and East Asian economies.
- This partial de-coupling can occur because of the gradual shift in the centre of gravity of the World economy from the United States and Western Europe to Asia (including both East Asia and South Asia) over the past three decades.

Economic Slowdown in the Developed World

- Economic recovery of the U.S. has been painfully slow. The problem is that expectations can be self-fulfilling in the absence of any clear signal of change. If firms and households expect the economy to do terribly and act accordingly by reducing investment and consumption respectively, the economy will indeed turn out to be terrible, fulfilling their expectations.
- This may lead them to expect a further worsening of the economy, and act accordingly, resulting in an even further decline of the economy, creating a self-perpetuating downward spiral in which negative expectations lead to declines and declines feed into even more negative expectations.
- This has been, unfortunately, the story of the Japanese economy since its property price bubble burst in 1990. In order for expectations to change, there must be some concrete action that can act as a signal to the firms and households that the economy will be improving soon.

Economic Slowdown in the Developed World

- The U.S. has reached the limit of monetary policy. It is in a classic "liquidity trap" situation.
- The World economy has already experienced "Quantitative Easing I (QE-I)", "Quantitative Easing II (QE-II)", and "Quantitative Easing III (QE-III)" operations by the U.S. Federal Reserve Board. However, these operations did not seem to have done the U.S. real economy much good. Much of the excess liquidity generated went overseas, driving up exchange rates and asset prices elsewhere. If the U.S. had some form of capital control, so that the excess liquidity had to be kept and used within the U.S., it might perhaps have driven up some U.S. asset prices and led to some additional domestic investment. However, that has not been the case.

Economic Slowdown in the Developed World

- At this point, only an expansion of real aggregate demand can serve as an effective signal for a change in expectations. However, it does not appear likely that the U.S. Congress will authorise a fiscal expansion, even though that is exactly what is needed.
- There is ample excess capacity in the U.S. economy, especially in the construction sector and the building materials sector. What the U.S. Government should undertake is an expansion in capital expenditures focused on public infrastructure on the one hand and a reduction in recurrent expenditures on the other. It should be supporting growth and at the same time imposing austerity in terms of balancing recurrent revenue and recurrent expenditure.

Economic Slowdown in the Developed World

- The World Bank has forecast, in its Global Economic Prospects report, that the Global GDP, which grew 2.3% in 2012, will grow at 2.4% in 2013, 3.1% in 2014 and 3.3% in 2015. So there should be some steady improvement in the World economy over time.
- Moreover, the World Bank has also forecast that developing economies which grew 5.1% in 2012, will accelerate their growth to 5.8% in 2015.
- The latest International Monetary Fund (IMF) World Economic Outlook Update indicates that the World Output measured in market exchange rates, which grew 2.5% in 2012, will grow at 2.7% in 2013, and 3.4% in 2014, a little more optimistic than the World Bank.

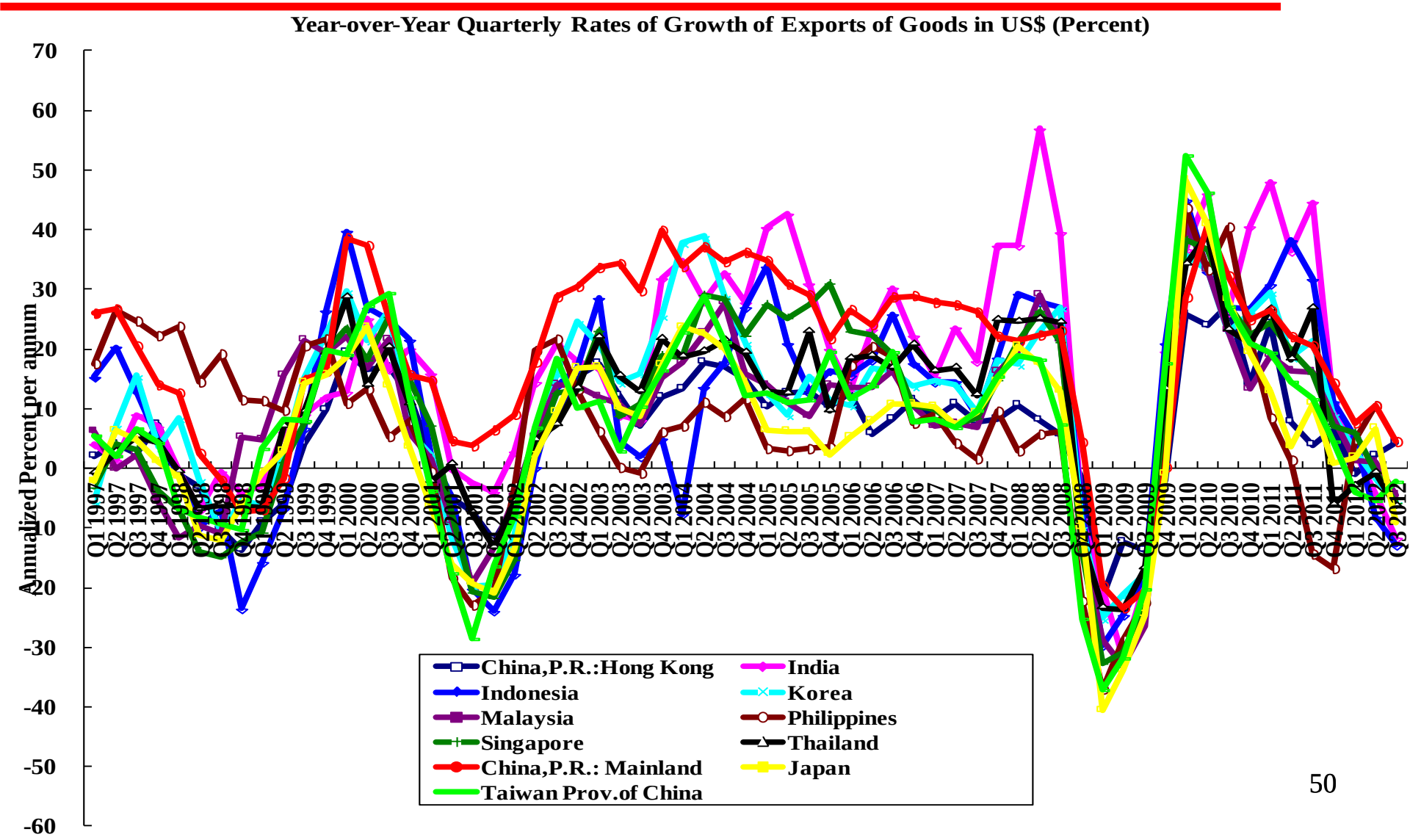
Economic Slowdown in the Developed World

- Even though these projections differ from each other, they all indicate steady improvement in the World economy over time.
- So, going forward, we can be a little more optimistic, especially about East Asia and the developing economies.

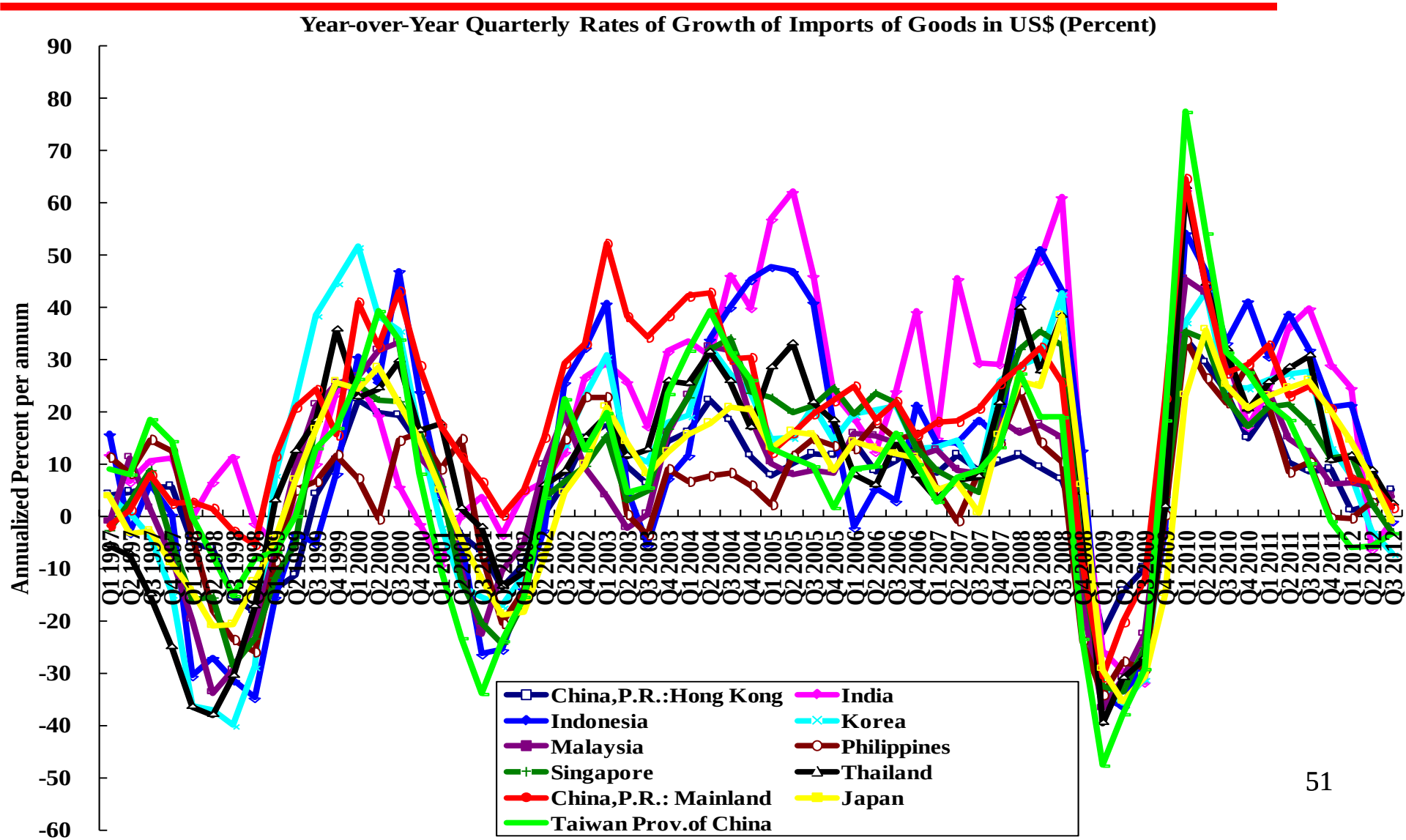
The Stability of the Growth of the Mainland Chinese Economy

- The rate of growth of Mainland Chinese real GDP is relatively stable, unlike the other East Asian economies, even as the rates of growth of Mainland Chinese exports and imports fluctuate as widely as the exports and imports of other East Asian economies. (See the following charts on the rates of growth of exports, imports and real GDP of East Asian economies).
- In addition, Mainland China is a large, continental economy like the United States, that is relatively self-sufficient and is therefore relatively insulated from disturbances in the rest of the World even though it is not immune from it.
- The Mainland economy should be able to achieve an average annual rate of growth of 7-8% over the next decade.

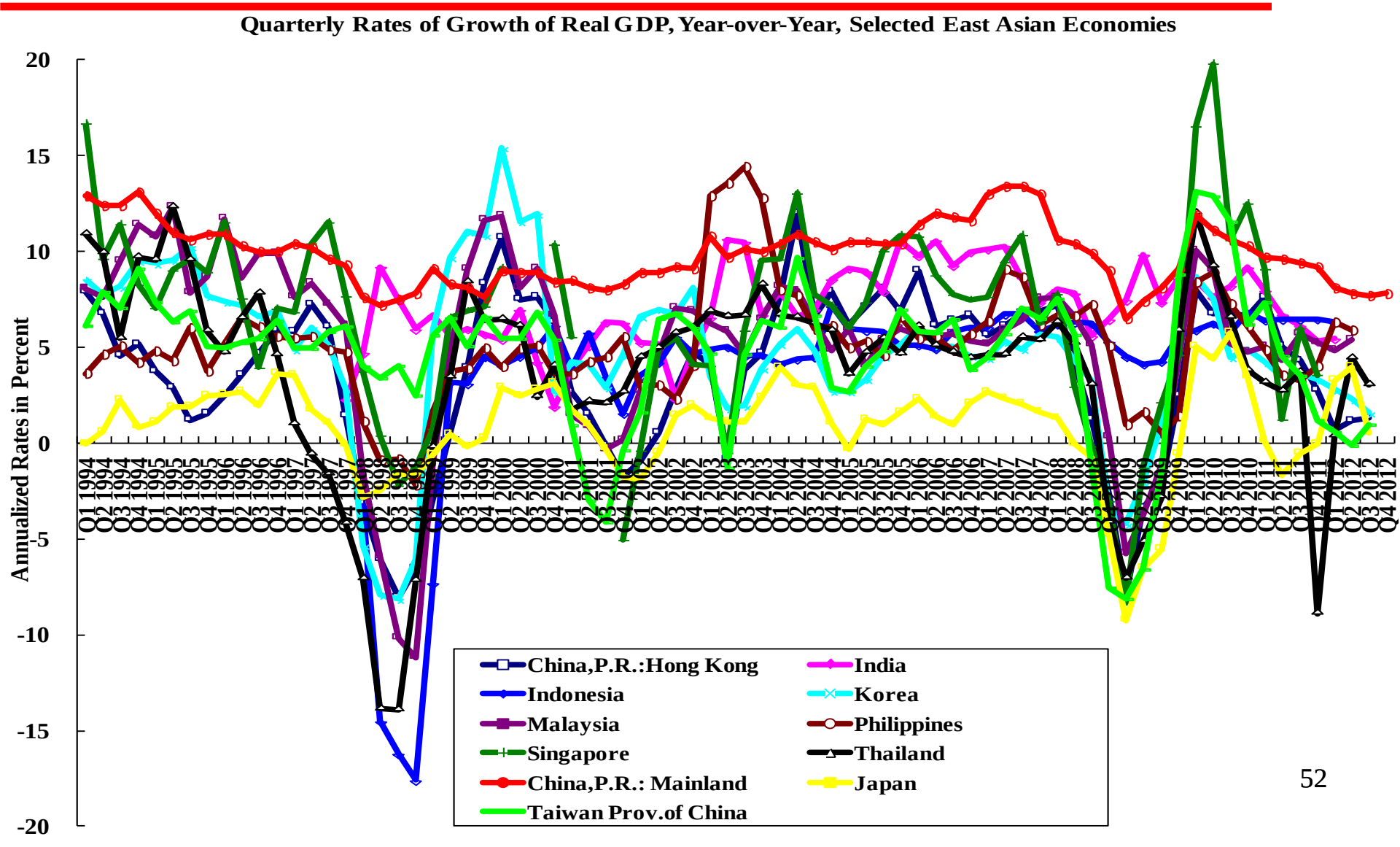
Quarterly Rates of Growth of Exports of Goods: Selected East Asian Economies



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



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



The Increases in Automation and Use of Robots in Manufacturing and Services

- The increases in automation and the use of robots will make the creation and maintenance of sufficient employment opportunities that much more difficult. Fortunately, this trend in only in its beginning stage in the developed economies and will take a while before it will have a significant impact on the supply of jobs.

The Increase in Life Expectancy and Decrease in Birth Rate

- The rapid ageing of the population is a serious problem in Mainland China but is also beginning to be a problem in many developed economies such as Japan and Western Europe. And it should also affect Taiwan.
- This has long-term implications as to how society should take care of its aged, especially how retirement and elderly care can be financed, and at the same time this will increase demand for doctors, nurses, and other care-takers.

Evolution of the Comparative Advantages of the Taiwan Economy

- Economic Growth with Surplus Labour
- Tangible Capital-Driven Growth
- Intangible Capital-Driven Growth
- The Advantage of Openness
- The Limits of Small Scale

Economic Growth with Surplus Labour

- Taiwan had almost no natural resources. In the 1950s, Taiwan had a large supply of surplus labour, especially as a result of the increased agricultural productivity that occurred after the land reform. This provided the classic case of economic development with surplus labour as described and analyzed by the late Prof. W. Arthur Lewis, Nobel Laureate in Economic Sciences.
- It is important to remember that the principal source of economic growth during this phase is not the surplus labour itself, but the accumulation of tangible capital in the non-agricultural sector, which made it possible for the surplus labour to move from the agricultural to the non-agricultural sector to be productively employed.

Economic Growth with Surplus Labour

- During this phase, tangible capital was accumulated in the non-agricultural sector and surplus labour moved from the agricultural sector to the non-agricultural sector as complementary tangible capital became available in the non-agricultural sector. For such movement of labour to continue, a relatively high domestic savings rate was critically needed, unless it was supplemented by foreign aid. Fortunately, Taiwan had the benefit of U.S. aid until 1965.
- The tangible capital–labour ratio in the non-agricultural sector remained more or less constant in real terms during this phase.
- However, the surplus labour was exhausted in the 1970s.

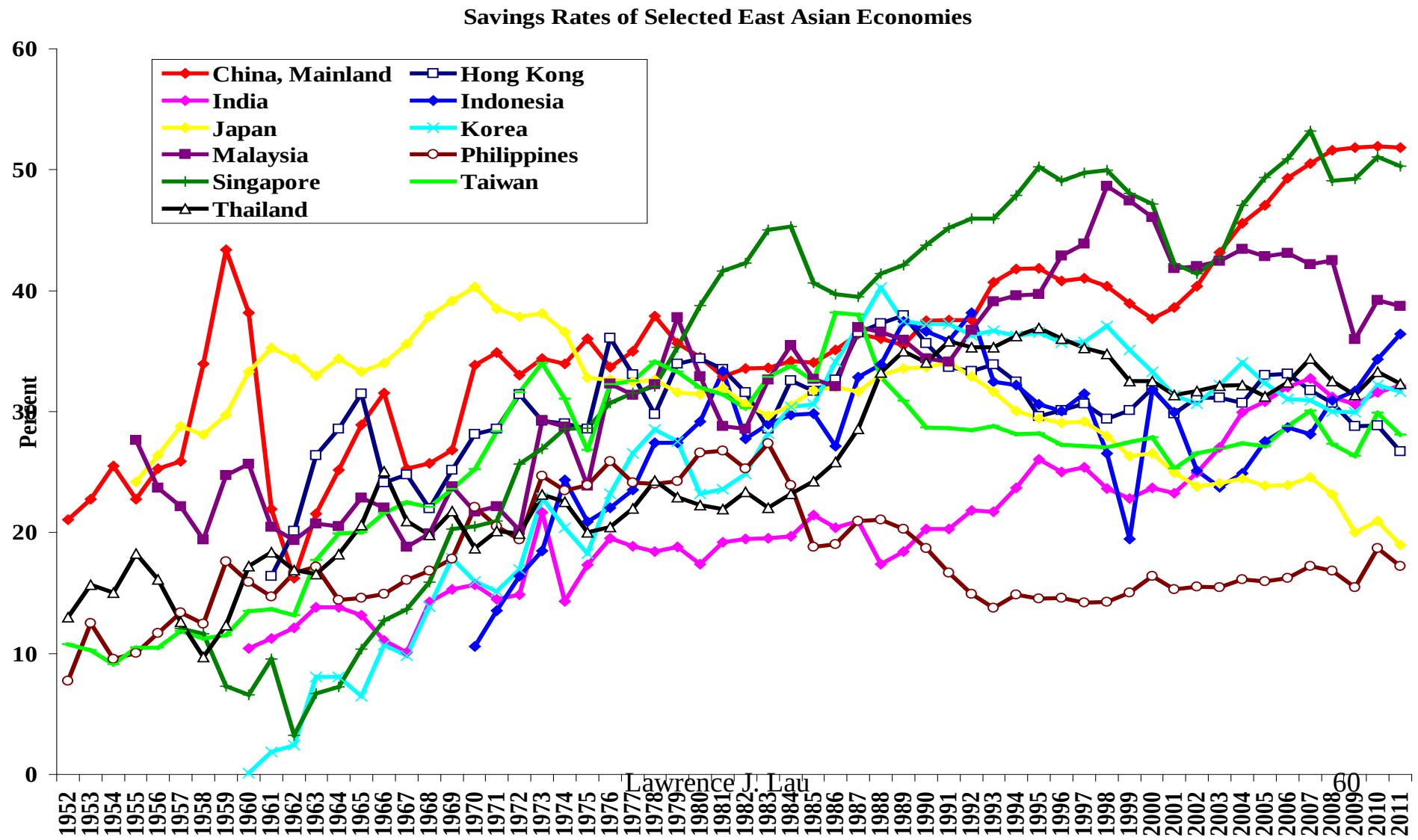
Tangible Capital-Driven Growth

- This was followed by a phase in which the tangible capital-labour ratio in the non-agricultural sector began to rise. The growth in tangible capital was therefore also the principal source of growth of the real GDP during this phase.
- This phase continued until the 1980s when the importance of intangible capital was recognised. The Hsinchu Science Park was established during this period.

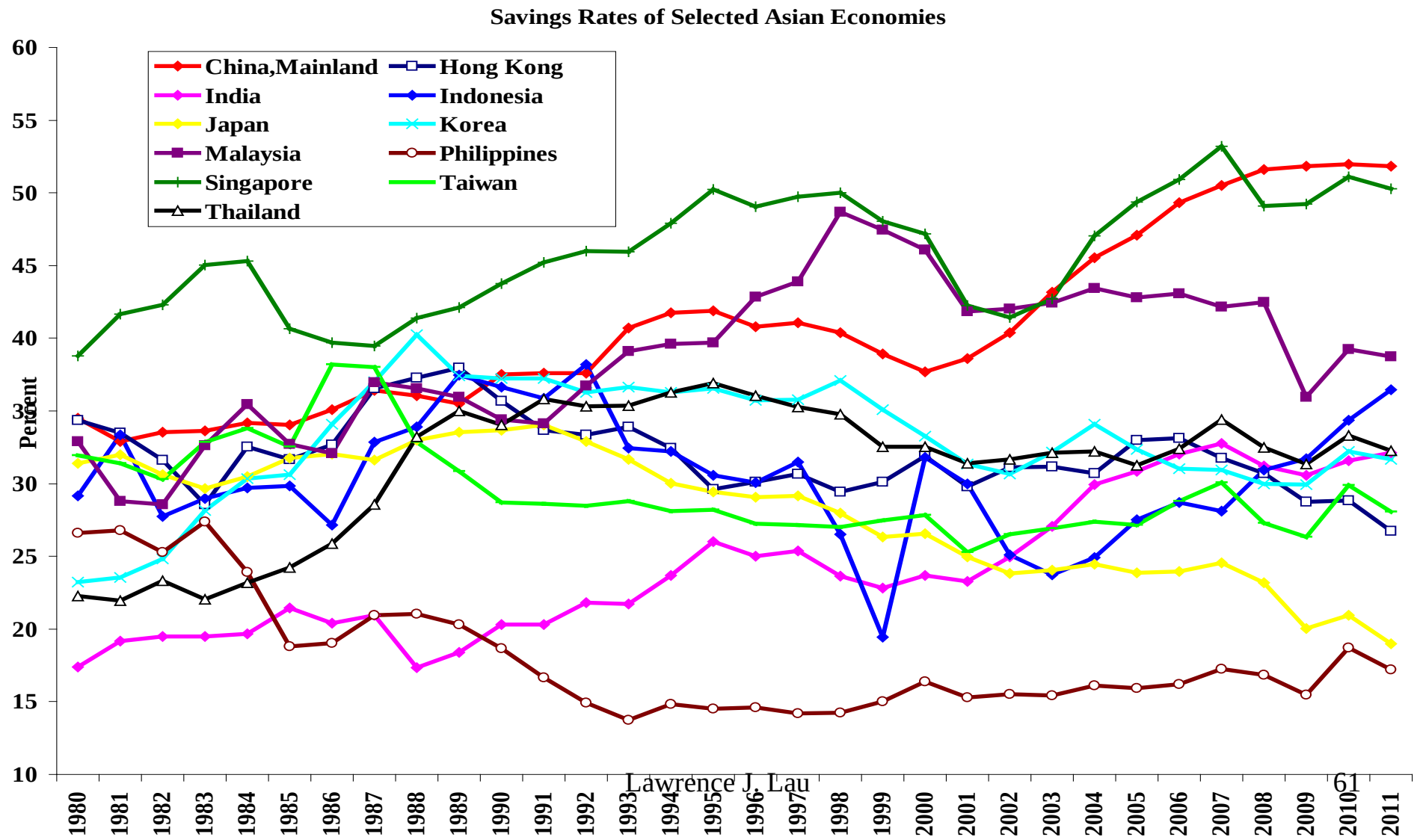
Tangible Capital-Driven Growth

- Taiwan has consistently had a high national savings rate of between 25% and 30% since the 1970s. This savings rate is adequate to finance its domestic investment needs, even as U.S. aid was phased out in 1965. Taiwan has not had to depend on foreign direct investment, foreign portfolio investment, or foreign loans for its domestic investment needs since then.
- The actual national savings rate of Taiwan in recent years is probably higher than the measured national savings rate because of the expensing of educational and R&D expenditures which properly speaking should have been recognised as investment expenditures rather than current expenditures.

Savings Rates of Selected Asian Economies (1952-present)



Savings Rates of Selected Asian Economies (1980-present)



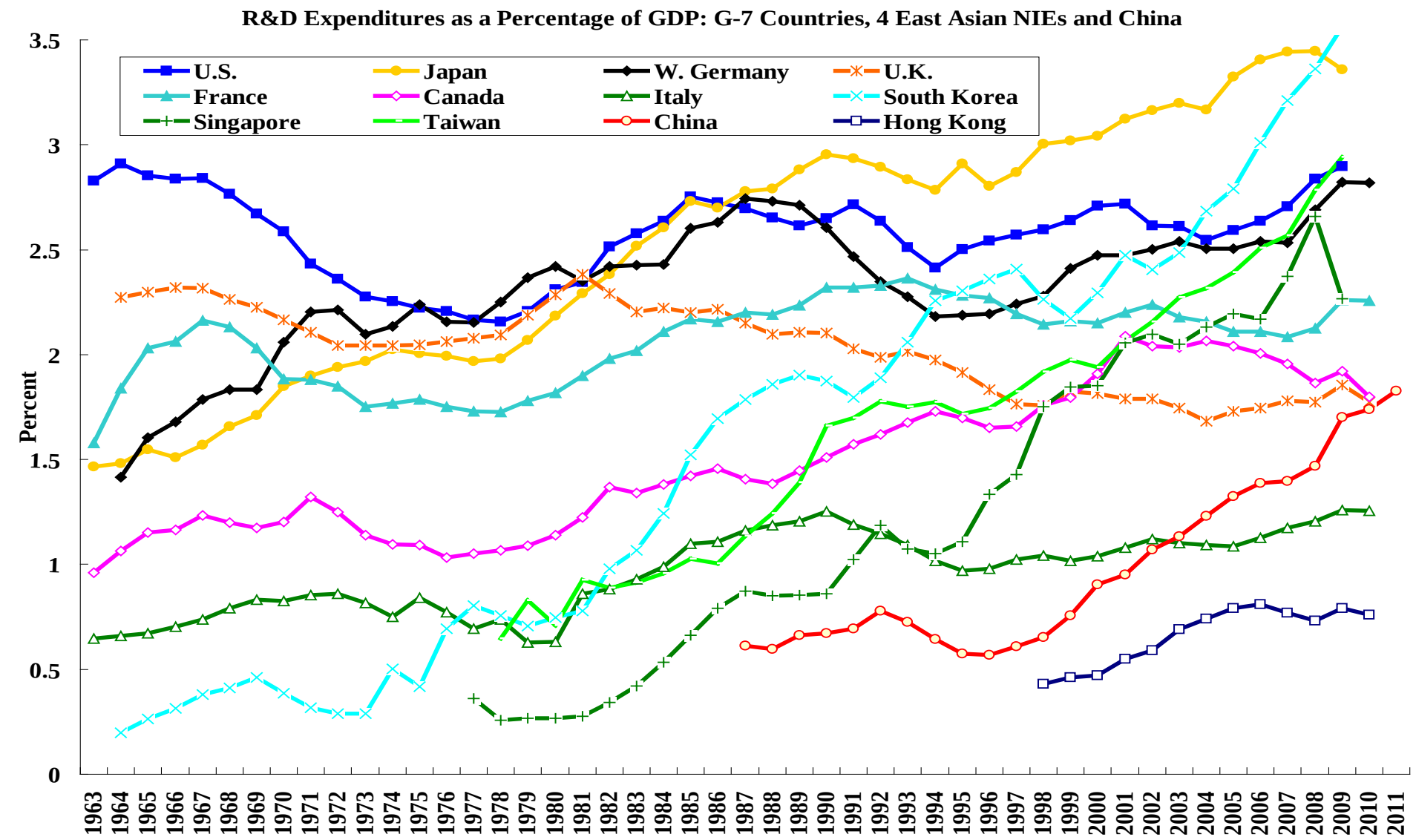
Intangible Capital-Driven Growth

- In the late 1980s and early 1990s, the principal source of economic growth of Taiwan has begun to change from the growth of tangible capital to that of intangible capital. Intangible capital includes human capital, R&D capital and goodwill (reputational capital). Advertising and brand-building are examples of investment in reputational capital.
- This period also coincided with the gradual change from "original equipment manufacturing (OEM)" to "original development and manufacturing (ODM)" on the part of Taiwan firms.

Intangible Capital-Driven Growth

- Sustained investment in research and development (R&D) is essential for technical progress in an economy. In the late 1980s, Taiwan began to increase its investment in research and development (R&D). Expenditure on R&D has been rising rapidly, both in absolute value, and as a percentage of GDP. The Taiwan R&D Expenditure/GDP ratio has exceeded 2.5%, comparable to that of the U.S. and other developed economies but behind that of Japan and South Korea.
- By comparison, the Mainland Chinese R&D Expenditure/GDP ratio is targeted to reach 2.2% only in 2015.

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



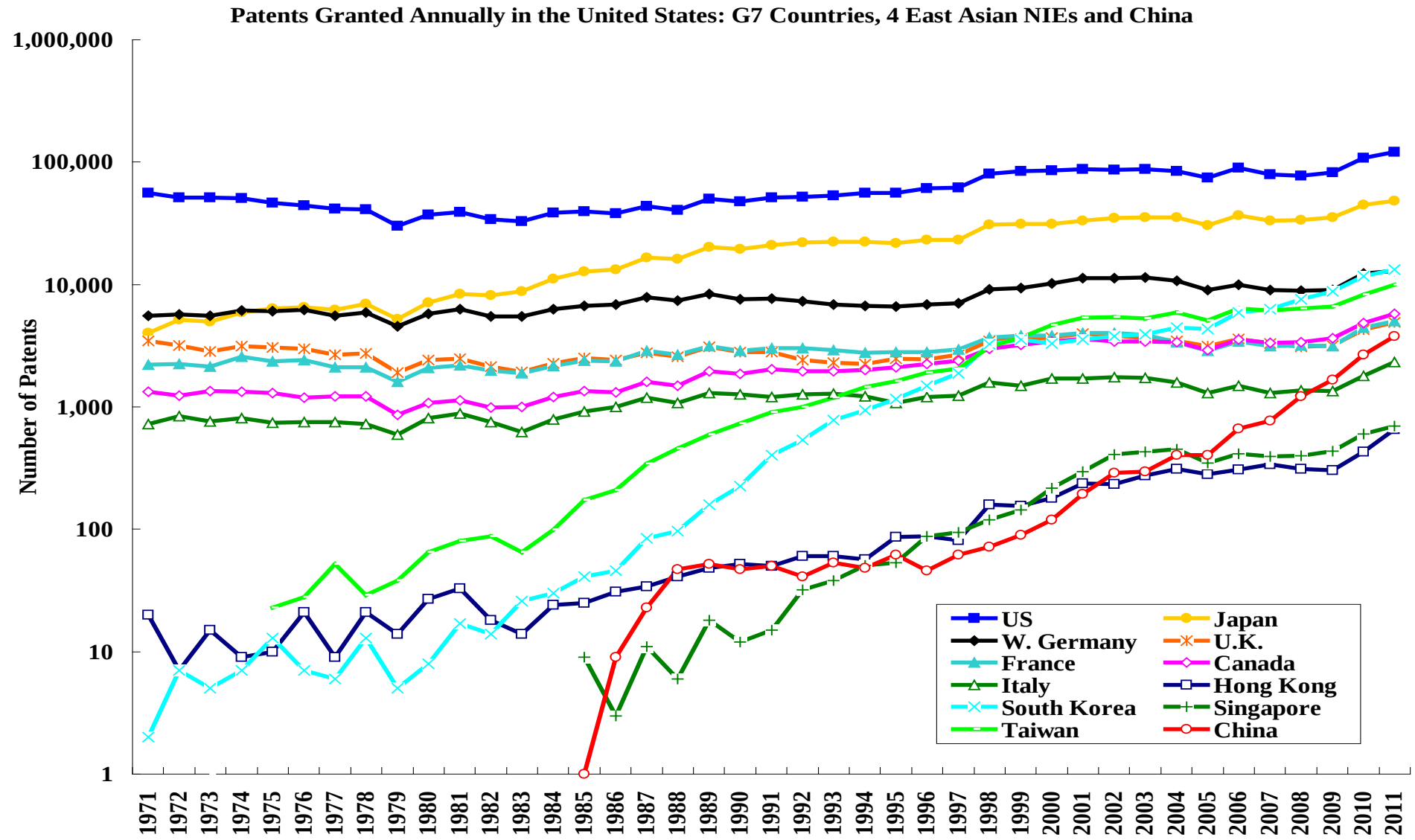
Intangible Capital-Driven Growth

- One indicator of the potential for technical progress (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 more than 120,000 patents granted in 2011, followed by Japan, with approximately 48,000. (Since these are patents granted in the U.S., the U.S. may have a home advantage; however, for all the other countries, the comparison across them should be fair.)

Intangible Capital-Driven Growth

- The number of U.S. patents granted to Taiwan applicants has been averaging close to 10,000 each year lately (9,907 in 2011). Taiwan is now behind only the U.S., Japan, Germany and South Korea in terms of U.S. patents granted each year and is ahead of Canada, France, Italy and the U.K.

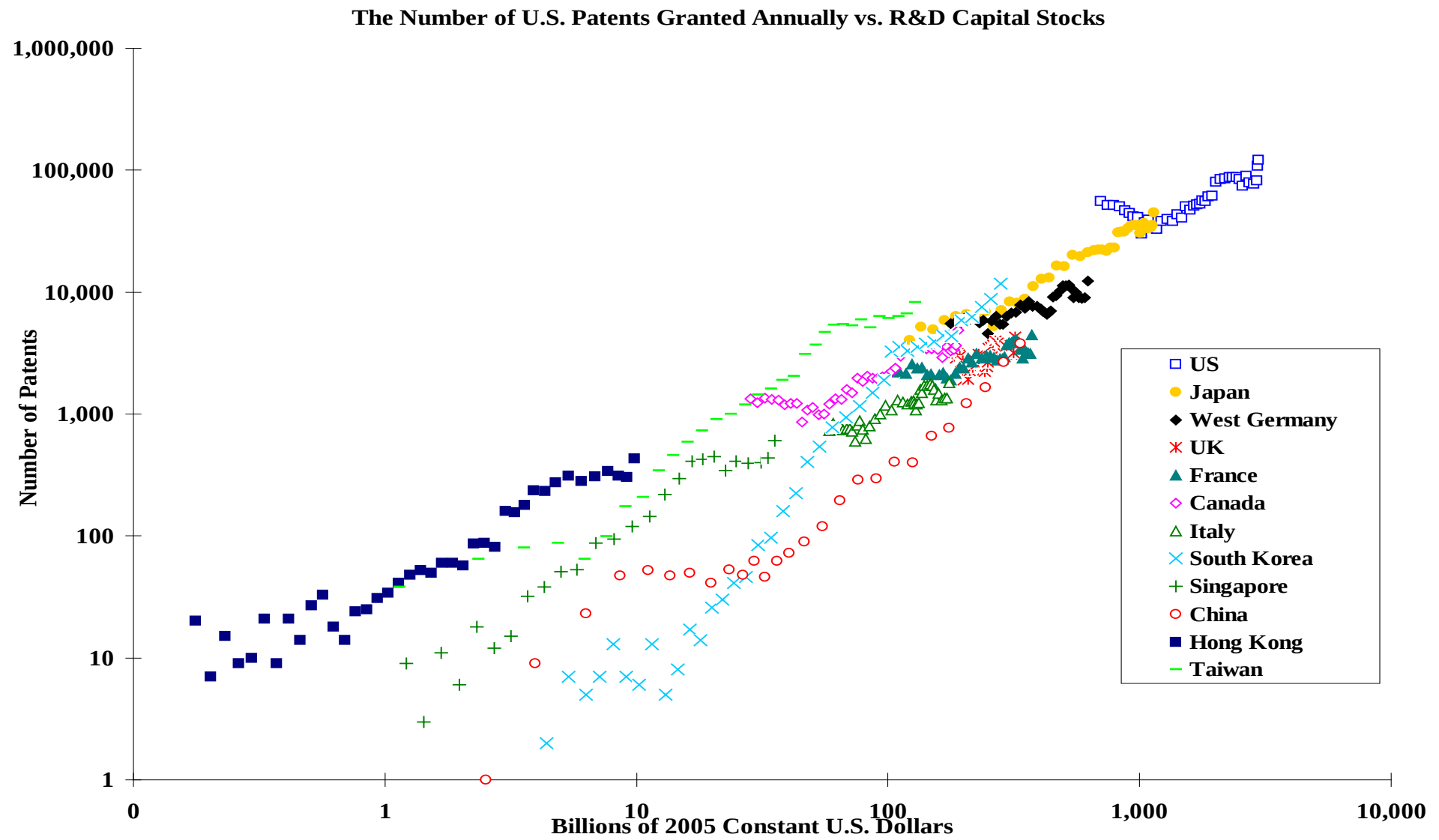
Patents Granted in the United States: G-7 Countries, 4 East Asian NIEs & China



Intangible Capital-Driven Growth

- The stock of R&D capital, defined as the cumulative past real investment in R&D less depreciation of 10% per year, can be shown to have a direct causal relationship to the number of patents granted (see the following chart, in which the number of patents granted is plotted against the R&D capital stock for each country and each year).
- Taiwan's R&D capital lags behind all other economies except Hong Kong and Singapore. However, Taiwan's efficiency in the generation of patents in the U.S. leads those of other economies in terms of the number of U.S. patents granted for given levels of the stock of R&D capital.

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



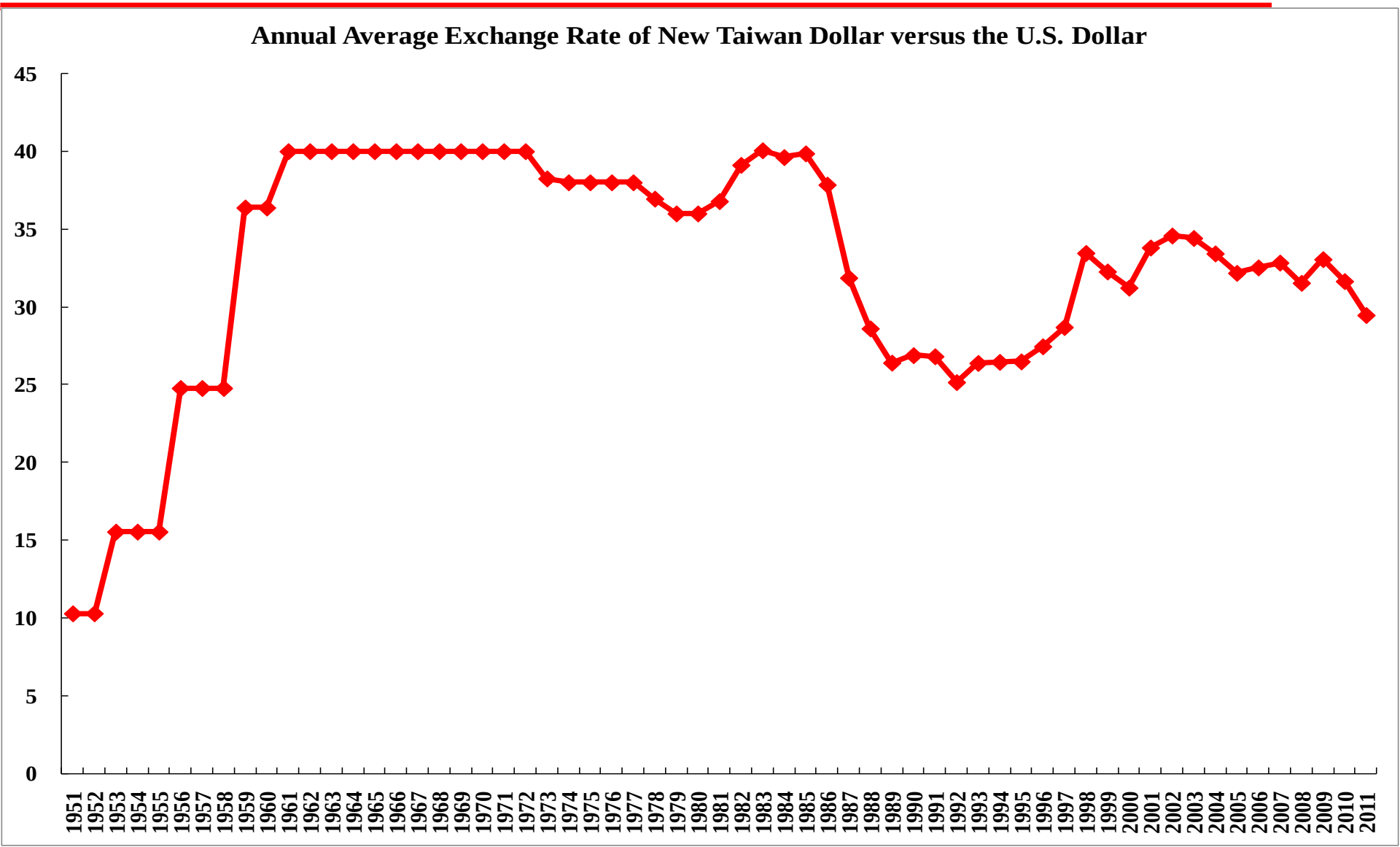
Intangible Capital-Driven Growth

- Taiwan's success in shifting from tangible-capital driven economic growth to intangible-capital driven economic growth is due to the abundance of human capital (in part from the immigration in 1949 and the almost 100% current university enrolment rate), the investment in R&D capital, the strict protection of intellectual property rights, and the close relationship with the high-technology industry in the U.S. and the Silicon Valley in particular.
- Taiwan also benefits from its proximity to the large Mainland Chinese market. The returns to investment in intangible capital can be extremely high in a large market such as Mainland China.

The Advantage of Openness

- The shift from an import substitution to an export promotion economic development strategy, pioneered in Taiwan, played a critical role in its economic development. This shift occurred in the 1950s, when the New Taiwan Dollar was successively devalued from NT$10 per US$ in 1952, to NT$24 in 1956, NT$36 in 1960 and finally NT40/US$ in 1961 (see the following Chart).
- However, the benefits of international trade go beyond the macroeconomic effects of export surpluses. Even if international trade is balanced or in deficit, it still brings significant benefits, some of which are not adequately reflected in the conventional measurements of the Gross Domestic Product (GDP).

The New Taiwan Dollar/U.S. Dollar Nominal Exchange Rate, Annual Average



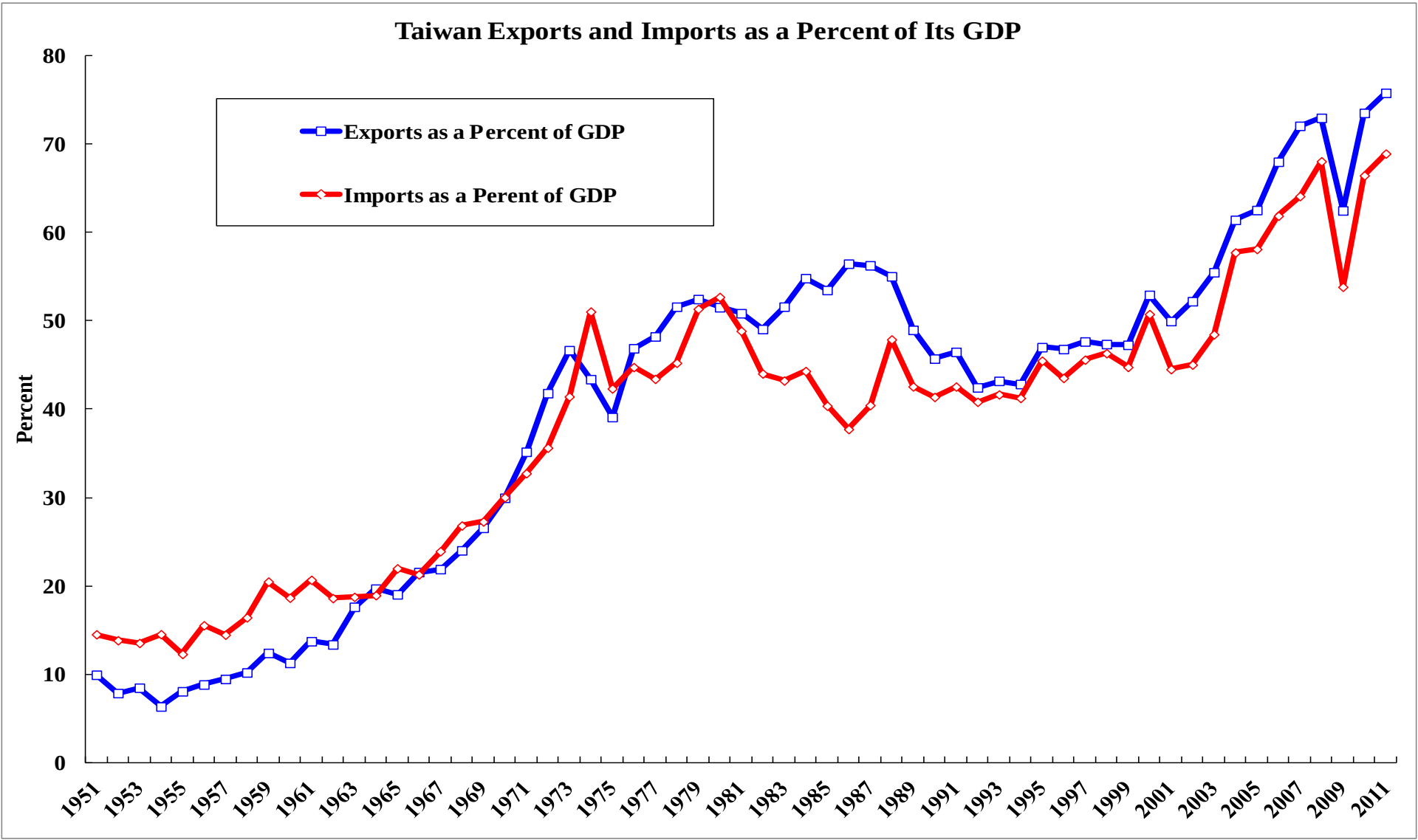
The Advantage of Openness

- The exchange rate adjustments triggered a significant increase in the share of exports in GDP, from less than 10 percent in 1951 to almost 50 percent in 1973, when the first oil shock occurred. Then beginning in 2001, the share of exports in GDP resumed its climb to more than 75 percent in 2011, helped by the entry of Mainland China into the World Trade Organisation (WTO).
- Similarly, the share of imports in GDP also increased from 15 percent in 1951 to almost 70 percent in 2011, consisting mostly of fuel, raw materials, components and parts, and semi-finished goods.
- The increases in both export and import shares in GDP indicate that the economy of Taiwan is increasingly specialised and benefits from such specialisation. They also reflect the rapid growth of international trade in the World.
- Taiwan has also consistently had an annual trade surplus since 1980.

The Advantage of Openness

- The World's first Export-Processing Zone was established in Kaohsiung in the early 1960s. It managed to attract significant foreign direct investment, which was quite important at the time, as the domestic savings rate had not risen as yet.
- Foreign direct investment (FDI) also helped to establish Taiwan Semiconductor Manufacturing Corporation in the 1980s.
- Japanese trading firms played an important role in the industrialisation process of Taiwan, finding customers and providing credit for Taiwan exporters.

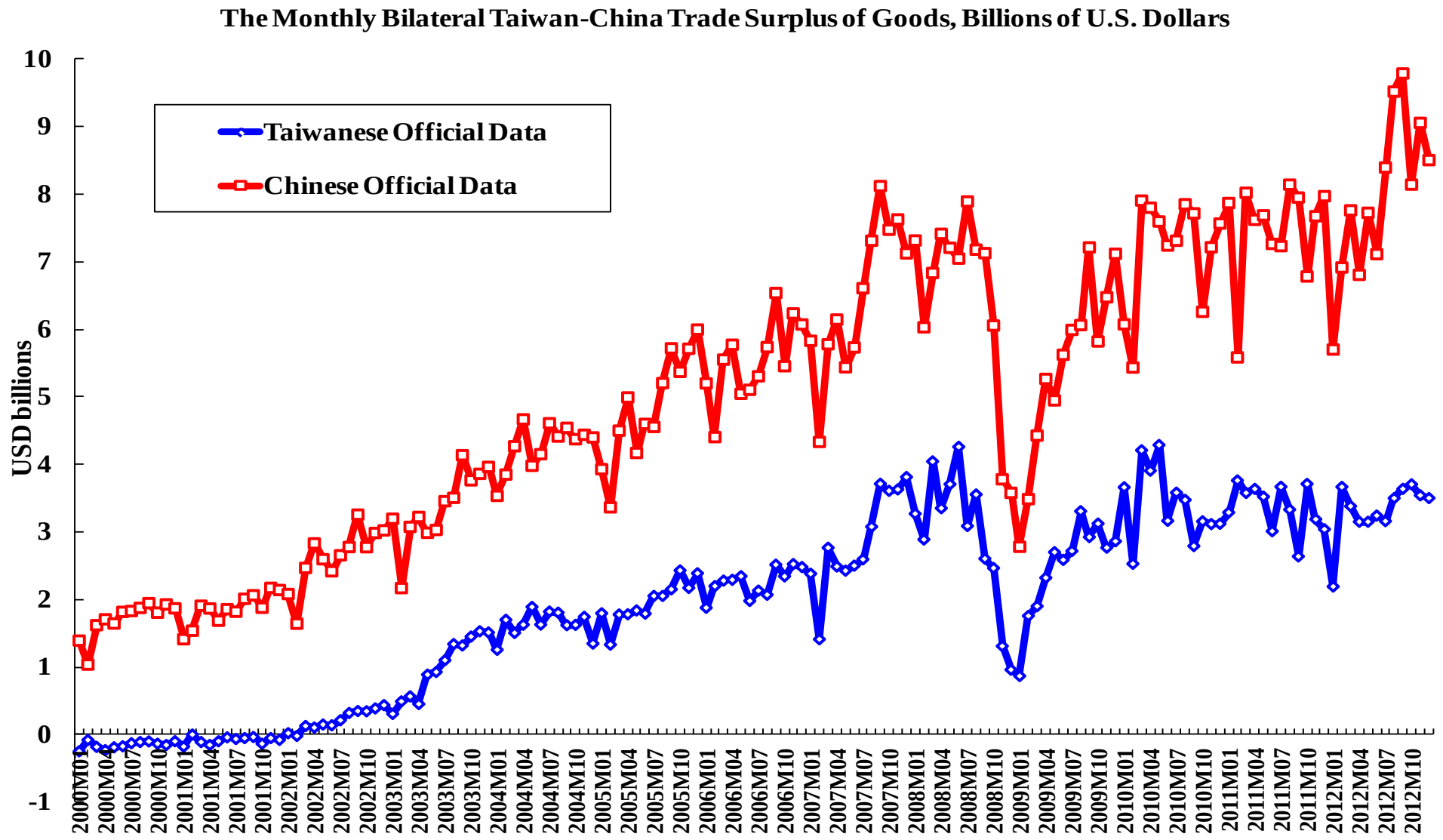
Exports and Imports as a Percent of Taiwan GDP



The Advantage of Openness

- Mainland China has become the most important trading partner of Taiwan. It is the most important destination for Taiwan exports (over 50% in 2011). The overwhelming proportion of Taiwan exports to Hong Kong are actually destined for the Mainland. Taiwan also has its largest trade surplus with the Mainland.
- There is some concern about the over-dependence of the Taiwan economy on the Mainland. The key is to make the relationship inter-dependent. As long as there is continuing innovation in the Taiwan firms, for example, through continued investment in R&D, the dependence is mutual--while the market is on the Mainland, the technology is from Taiwan. It is only when innovation stops that the inter-dependence turns into one-way.

The Monthly Bilateral Taiwan-Mainland Trade Surplus of Goods, Billion U.S. Dollars



The Limits of Small Scale

- However, the growth of the Taiwan economy is limited by its relatively small scale.
- Taiwan's own domestic market is not large enough to realise the economies of scale from large-scale production. Thus, for example, its automobile industry never took off despite an earlier start than the South Korean one.
- Its own domestic market is also not large enough to support and sustain the development of innovative high-technology products on its own. The Hsinchu Science Park has been successful because of its close ties with the Silicon Valley.

The Limits of Small Scale

- The invention of a new product or process typically has a relatively high fixed cost. However, once a product or process is successfully invented, the marginal (variable) cost of producing it or applying it is low. Thus, the larger the initial market, the higher is the rate of return on the initial investment. This also applies to other forms of investment in intangible capital such as brand-building.

The Limits of Small Scale

- This is one of the reasons why venture capital investment is so successful in the United States, but not elsewhere. The large initial market in the U.S. is a significant advantage.
- It is true that there are exceptions of globally successful enterprises established in small economies, such as Volvo in Sweden and Nokia in Finland. But these enterprises were successful because they operated worldwide without regard to the borders.
- Mainland China can potentially provide the large initial market that is needed for successful investment in venture capital, brand building and other forms of intangible capital.

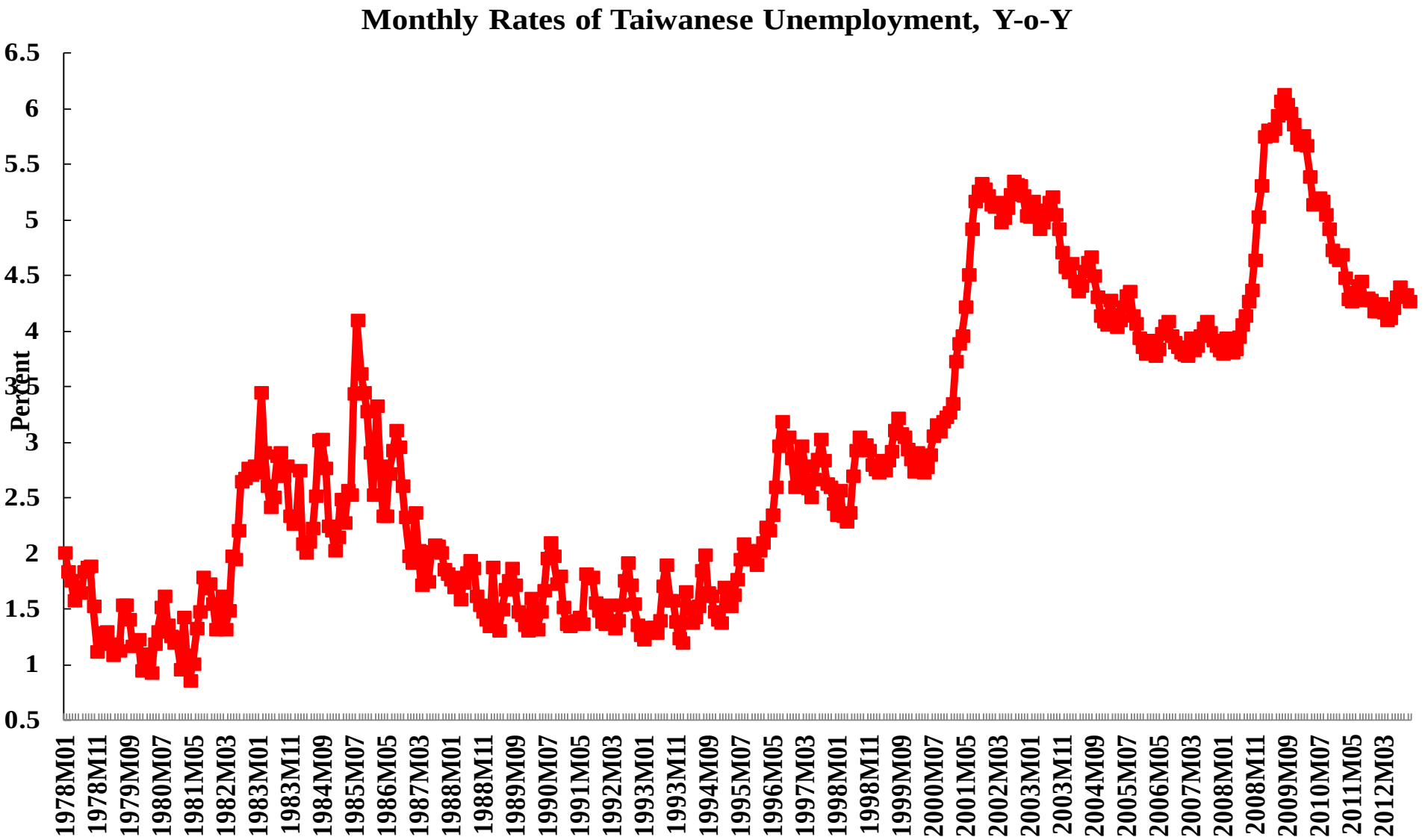
Challenges and Opportunities for the Taiwan Economy

- Promoting and sustaining full employment
- Raising per capita income
- Improving the income distribution
- Avoiding the “Middle Income Trap”

Promoting and Sustaining Full Employment

- The advances in information and communication technology and globalisation have also meant that all jobs that can be moved away to a lower-cost location will be moved away. This has happened to the U.S., Japan, Hong Kong and even the Mainland. Taiwan is no exception.
- Promoting and sustaining full employment must therefore be the most important objective of the Government in Taiwan. Employment (and in the longer term, education) are the only known effective means of alleviating poverty and reducing the degree of income inequality.
- The unemployment rate in Taiwan was for long periods below 2 percent, compared to the current 4.2%.

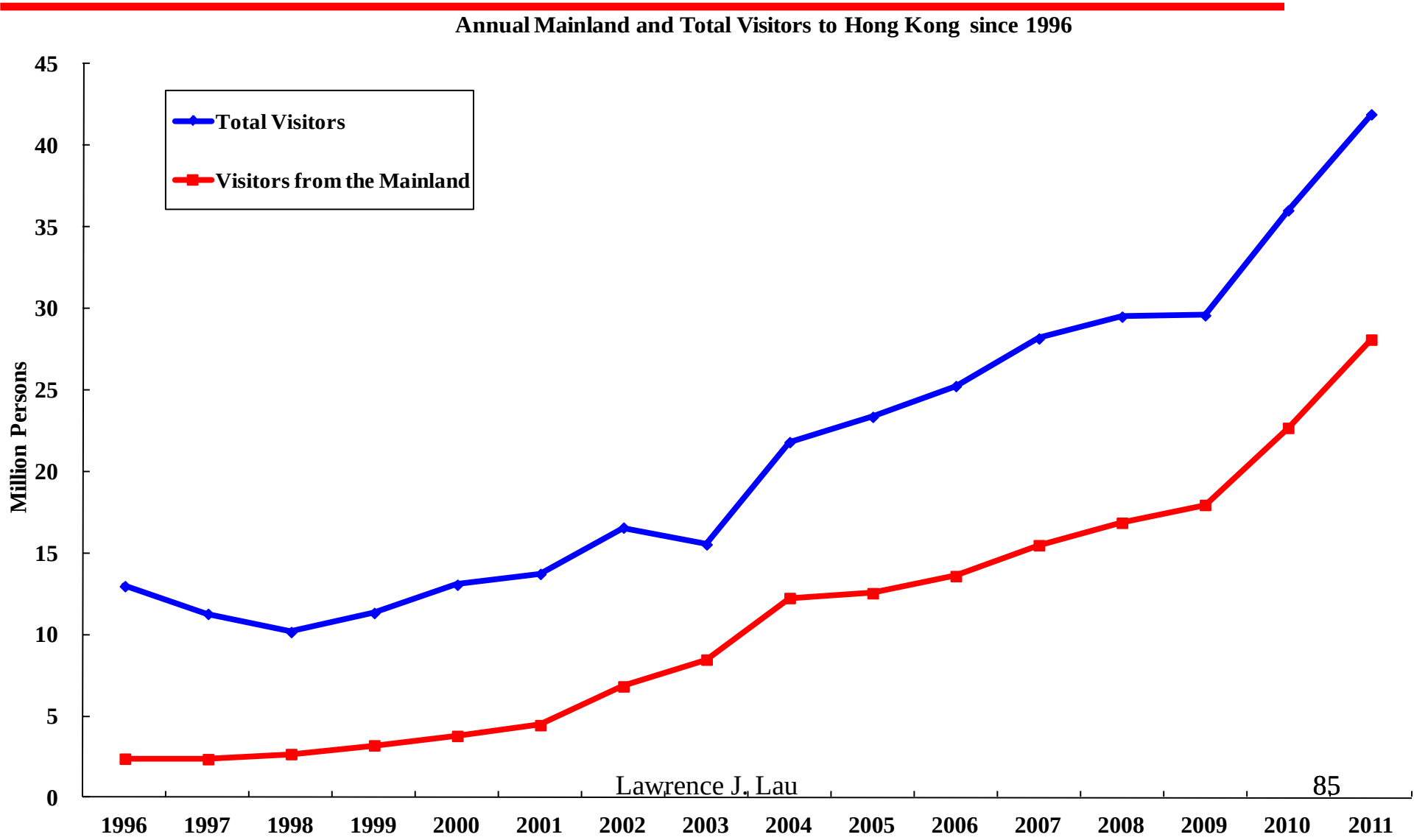
Taiwan Unemployment Rate



Promoting and Sustaining Full Employment

- Tourism generates job opportunities for the unskilled and low-skilled and these jobs cannot be moved away. These visitors generate demands for hotels, restaurants, retail, and transportation and through these demands create many job opportunities that cannot be moved away.
- Thus, tourism, especially Mainland Chinese tourists under the "individual visit scheme", should be promoted. The Taiwan Government just recently announced plans to expand the number of Mainland tourists to be admitted per day to 7,000.
- Admitting non-local students to the universities and colleges in Taiwan, where there is excess capacity, from the rest of East Asia, where there is excess demand also generates a more recurrent aggregate demand for lodging and food as well as other services, creating jobs and helping to achieve internationalisation at the same time, in addition to making long-term friends for Taiwan. (Consider, for example, Boston and Massachusetts).

Annual Mainland and Total Visitors to Hong Kong since 1990



Raising per Capita Income

- In the longer run, real GDP per capita can be raised only if more productive jobs can be created. This requires the upgrading of the labour force and moving up the value chain.
- Upgrading the quality of the labour force requires increasing investment in human capital through education and re-training.
- It is also through investment in intangible capital such as R&D and goodwill that the firms in Taiwan can move up the value chain, creating more revenue and profits, higher productivity and hence higher wages for their workers.

Raising per Capita Income

- At this time, Taiwan has the advantage of its intangible capital. We have already discussed the importance of R&D capital. However, Taiwan also has a significant lead in reputational capital (also known as goodwill). It should capitalise on it to build a lead especially in retail services on the Mainland (and elsewhere), taking advantage of the Economic Cooperation Framework Agreement (ECFA).
- Taiwan firms such as Kang Shifu, Wang Wang, Tianfu and Giant have been extraordinarily successful in building their brands in Mainland China, capturing large market shares, even though they started out as relatively small firms in Taiwan. Other Taiwan firms, especially those with their own unique products and technologies, should be able to do the same.

Raising per Capita Income

- However, brand-building is a pre-requisite for Taiwan firms to take advantage of the huge Mainland market. It is true that brand-building requires resources, but it also enables firms with brand names to have much more pricing power and higher profit margins than firms that do only OEM (original equipment manufacturing) business. Brand-building has high returns in the vast internal Mainland Chinese market.

Raising per Capita Income

- The huge potential Mainland market of 1.34 billion consumers not only enables the realisation of economies of scale but also greatly enhances the productivity of intangible capital (e.g., R&D capital, goodwill). The fixed research and development costs of a new product or process can be easily amortised over a large market. The benefits of investment in goodwill, e.g., brand-building, are also much greater in a large market.
- Active participation in the huge potential Mainland market by Taiwan firms also enables them to take part in the setting of product and technology standards, for example, fourth-generation (4-G) standards for telecommunication, and share the benefits of such standard-setting.

Raising per Capita Income

- An example of a highly successful high-technology Taiwan firm on the Mainland is MediaTek, which has made significant inroads in the Mainland smart-phone market. More than 60 percent of all smart-phones shipped on the Mainland in 2012 used MediaTek's mobile chipsets.

Raising per Capita Income

- Attracting external direct investment can also raise real GDP per capita in Taiwan. External direct investment can bring with it not just capital, but also technology, markets and new business models. It can augment aggregate demand and increase employment.
- Taiwan needs to conclude more double-tax agreements (DTAs) with more countries and regions so as to facilitate external (including the Mainland) direct investment. For example, Taiwan should try to conclude avoidance-of-double-tax agreements with Hong Kong, Mainland China and the U.S.

Improving the Income Distribution

- The income distribution can be improved by the upgrading of the labour force through investment in human capital and the creation of better-paying jobs. However, this takes time.
- Tax reform can help through changing the rate and structure of income taxation—for example, by lowering the tax rate on the lowest personal income tax bracket and adding an additional upper personal income tax bracket with a higher tax rate (this can be a revenue-neutral change); gradually implementing worldwide taxation on Taiwan firms, coupled with double-tax agreements, to encourage the repatriation of revenue, profits and perhaps even jobs to Taiwan.

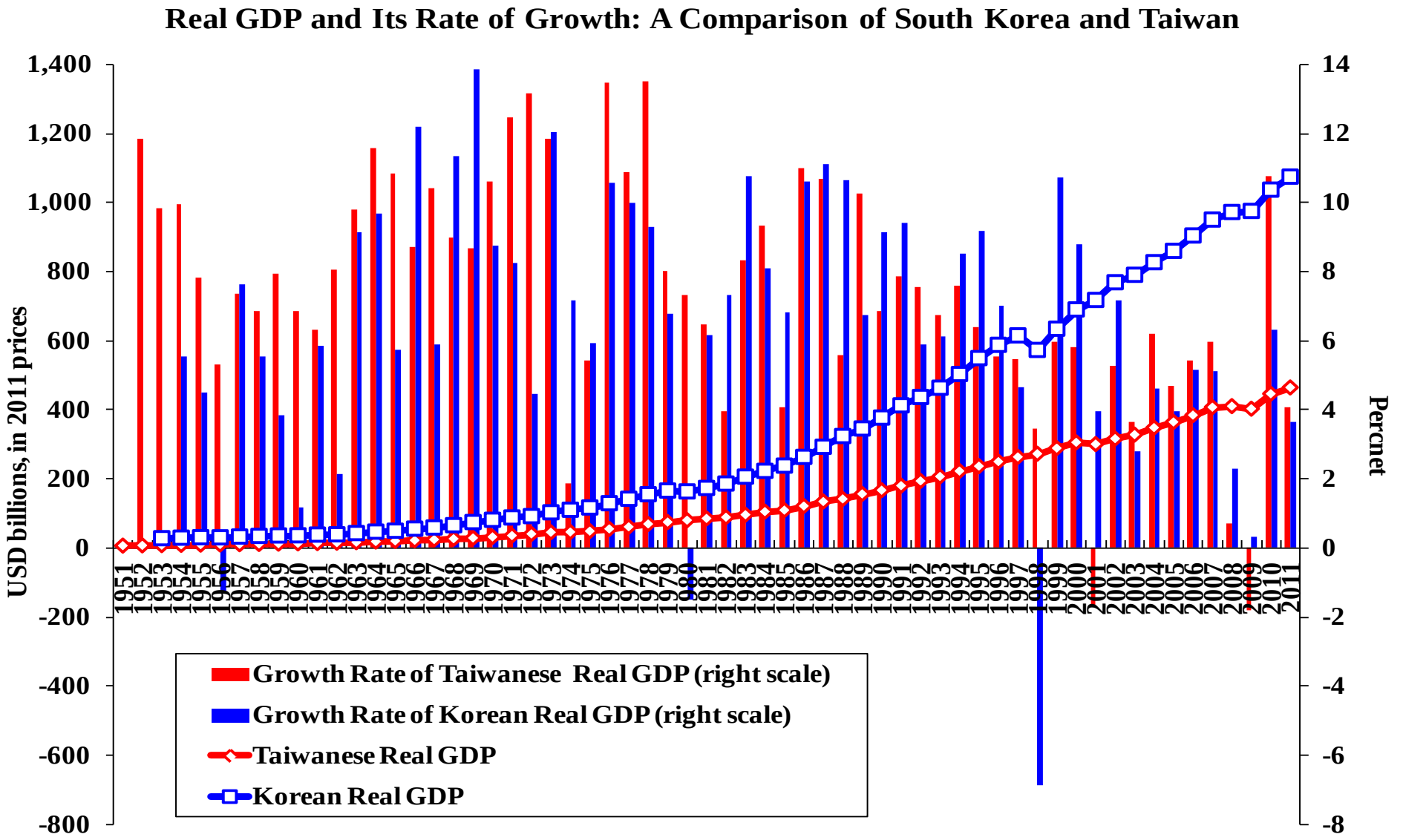
Improving the Income Distribution

- Providing public goods such as basic education, health care, clean air and clean water, public transportation, and access to the internet at subsidized or no cost is also an effective means of reducing the degree of real income disparity as that both the rich and the poor can enjoy such benefits equally.

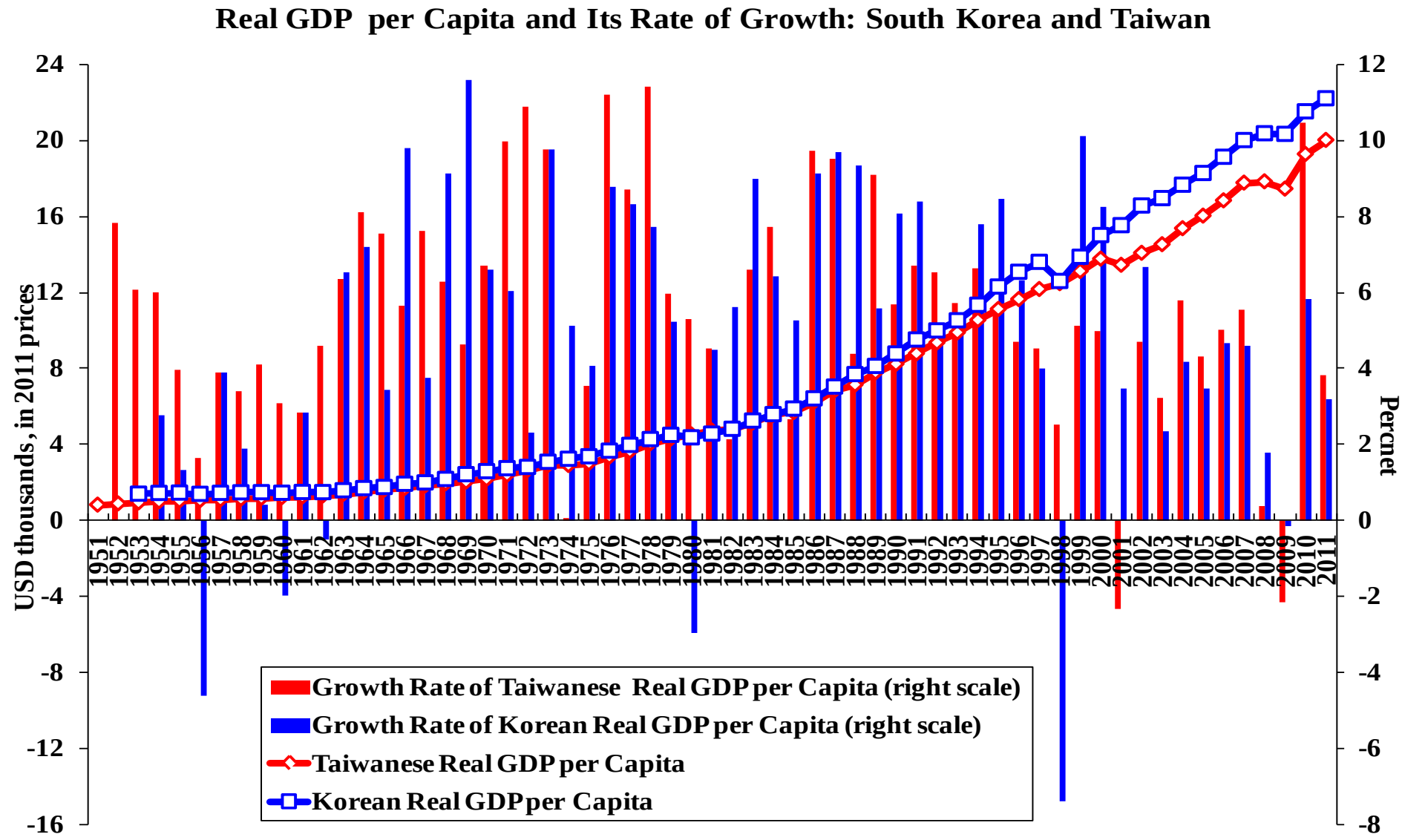
Avoiding the "Middle Income Trap"

- It is also instructive to compare the economic development experience of South Korea and Taiwan, as they both started under similar circumstances—a lack of natural resources and under constant military threat. They both adopted similar policies of export promotion.
- Economic growth in Taiwan began before South Korea, but South Korea began to surpass Taiwan in the 1980s. South Korea has a much larger population, 50 million, than Taiwan (23 million), so that a direct comparison of GDP may not be too helpful. However, a comparison of GDP per capita of the two countries shows that the South Korean economy has done better than the Taiwan economy since the late 1980s, notwithstanding the setback South Korea suffered during the 1997-1998 East Asian currency crisis.

Real GDP & Its Rate of Growth: South Korea and Taiwan (2011US$)



Real GDP per Capita and Its Growth Rate: South Korea and Taiwan (2011US$)



Avoiding the "Middle Income Trap"

- With per capita GDP of US$22,196 and US$20,006 in 2011 (in current prices) both South Korea and Taiwan still lag significantly behind other developed economies such as Japan (US$45,903 in 2011 prices) and the United States (US$48,112 in 2011 prices) in terms of GDP per capita.
- On the whole, the South Korean Government has been much more aggressive in its use of economic policies to promote the growth of the South Korean economy.

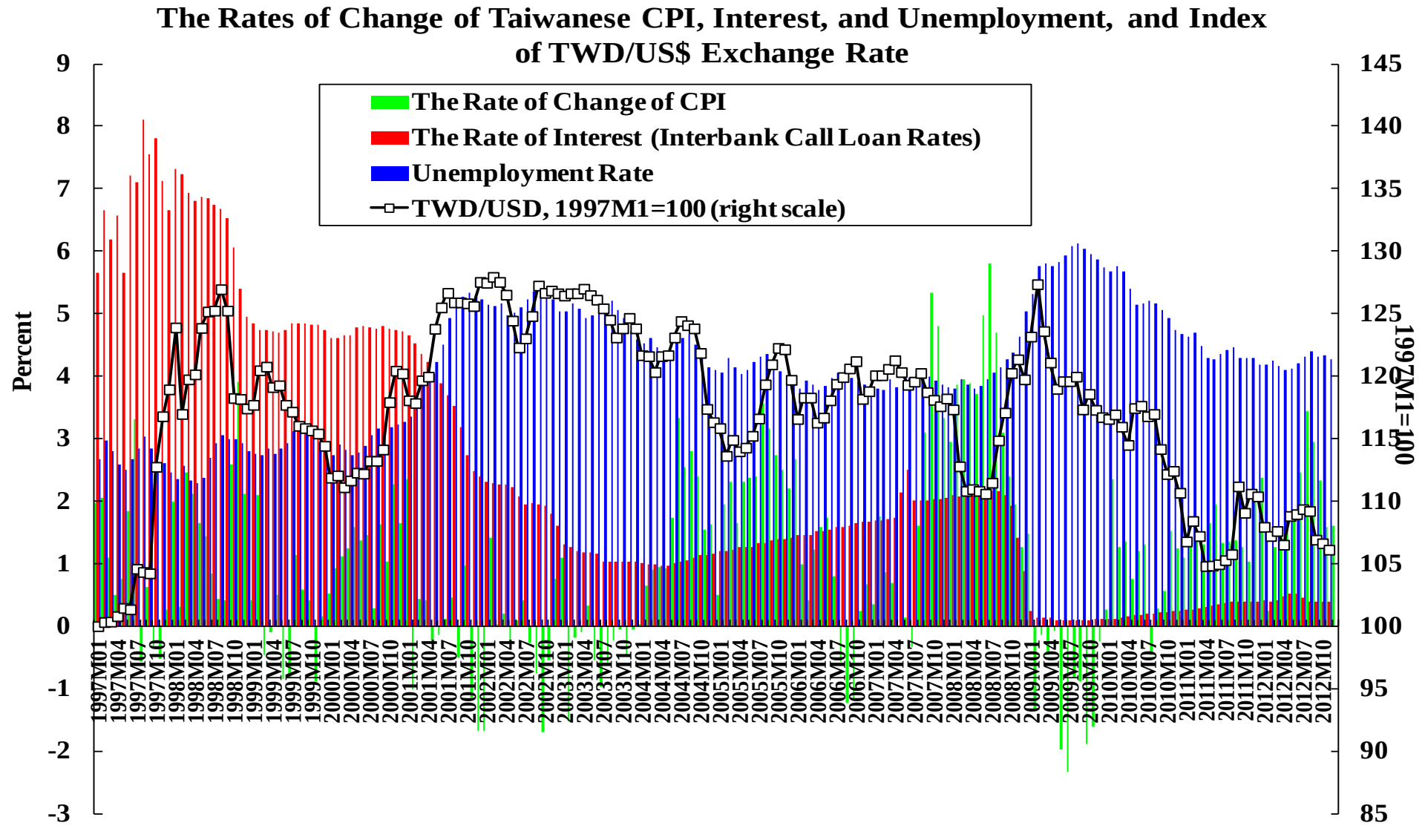
Avoiding the "Middle Income Trap"

- The real rate of interest in Taiwan has been negative for a while. This demonstrates the limits of monetary policy when expectations of the future are negative or pessimistic.
- Unless expectations can be changed, the economy will remain in doldrums. The Japanese economy since 1990 provides such an example.
- While it is important to balance the recurrent budget expenditures with the recurrent budget revenue in the medium to long term, capital expenditures, which are discretionary, should be considered separately.
- Major public infrastructural projects, undertaken in an economic recession, can change expectations about the future of the economy and hence encourage private investment and consumption.

Avoiding the "Middle Income Trap"

- This is the time for the Taiwan Government to launch some major public infrastructure projects, financing them not through additional public debt but through the sale of shares in companies like TSMC that are held by the Government.
- Examples of such projects can include a high-speed rail link between Kaohsiung and Pingtung, or between Taipei and Hualien, which will help to integrate the economy of Taiwan, or free access to the internet from all educational institutions. By using the shares to finance these projects, the Government can avoid enlarging the budget deficit or the public debt.

The Rates of Change of Taiwan CPI, Interest, and Unemployment, & Index of NT$/US$ Exchange Rate



Avoiding the "Middle Income Trap"

- The European and U.S. economies will be recovering very slowly so that Taiwan will need to look to elsewhere for sources of ultimate export demand. The internal consumption market on the Mainland can provide some help through increased demand for Taiwan exports. In addition, as noted above, the large Mainland Chinese market can increase the returns to Taiwan investment in intangible capital greatly.
- There can also be increases in the number of tourists from the Mainland, especially under the Individual Visit Scheme.

Avoiding the "Middle Income Trap"

- Taiwan's direct investment on the Mainland in the 1990s was critical to the initial success of the Mainland's economic reform and opening to the World. Now is the time for the direct investment flow to be reversed, for both state-owned and non-state-owned enterprises on the Mainland to invest in Taiwan. Not only will such direct investment increase aggregate demand but also create a much more balanced "economic interdependence".

Avoiding the “Middle Income Trap”

- What would probably benefit Taiwan the most would be "green field" investments as opposed to the purchase of existing assets by Mainland or other entities. This is because the former creates additional aggregate demand and would increase employment whereas the latter only benefits the owners of the existing assets. This can justify a policy of encouraging greenfield direct investments from the Mainland to Taiwan.

Concluding Remarks: What Can Taiwan Do?

- First, it should try to change expectations about the future. Undertaking some major infrastructural projects will do it, as will opening up cross-straight direct investment flows in a significant way, subject to restrictions based on national security considerations.
- Second, it should try to create jobs for the unskilled and the low-skilled that are sustainable, e.g., through tourism.
- Third, it should encourage more investment in both tangible and intangible capital, including education and R&D.
- Fourth, it should try to reform the tax system so as to even out the distribution of the tax burden.
- Fifth, it should provide public goods such as education, health care, clean air, clean water, free access to the internet as a means of equalising the distribution of real income across individuals and households.

Concluding Remarks

- I am optimistic about the future of the Taiwan economy. It is time for the Taiwan Government to make a bold move to turn around expectations and get the economy moving again.
- Taiwan's current GDP per capita is still low enough so that a long-term average real rate of growth of GDP of 5-6 percent per annum is possible if the unemployment rate can be brought back down to say 2%.
- A lower unemployment rate will mean higher consumption, higher savings and higher investment for the Taiwan economy.
- The creation of jobs is key.