

China in the Global Economy

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A Preview

- ◆ The Chinese Economy Today
- ◆ How Reliable Are Chinese Economic Data?
- ◆ Comparison with Developed and Developing Economies
- ◆ Prospects for Future Economic Growth
 - ◆ Sources of East Asian Economic Growth
 - ◆ The Three Paradigms of Economic Growth
 - ◆ The Development of the “Great West”
- ◆ Potential Risk Factors
 - ◆ Recurrence of the SARS epidemic
 - ◆ Non-Performing Loans Crisis
 - ◆ Exchange Rate Mechanism
 - ◆ Taiwan Straits

The Chinese Economy Today

The Chinese Economy Today (1)

- ◆ East Asia is the fastest-growing region in the world over the past two decades, the East Asian currency crisis of 1997-98 notwithstanding.
- ◆ China is the fastest growing country in East Asia—approximately 9% p.a. since beginning of economic reform (1979) and 7.7% over the past five years.
- ◆ Between 1979 and 2002, Chinese real GDP grew from \$177 billion to \$1.24 trillion (2002 prices) (6th largest GDP in the world) and real GDP per capita grew from \$183 to \$960. The U.S. GDP (approximately \$10.5 trillion) and GDP per capita (approximately \$37,000) are respectively more than 8 and 38 times the comparable Chinese figures in 2002.
- ◆ China survived the East Asian currency crisis relatively unscathed.
- ◆ Despite the SARS epidemic, the rate of growth of real GDP in 2003/Q2 was 6.7%, YoY, the lowest for the same period since 1992. The rate of growth in 2003/H1 was 8.2%. For the year as a whole, the rate of growth should easily attain 7.5%.
- ◆ China is one of the very few socialist countries that have made a successful transition from a centrally planned to a market economy—the 10th Five-Year (2001-2005) Plan is only indicative and not mandatory; the rate of interest (the price of money) and the exchange rate are the only prices that are still administratively determined on the margin.

The Chinese Economy Today (2)

	1979	2002
	US\$	(2002 prices)
Real GDP	177 bill.	1.24 trill.
Real GDP per capita	183	960

The Chinese Economy Today (3)

	U.S.	China
	US\$ (current prices)	
2002 GDP	10.5 trill.	1.24 trill.
2002 GDP per capita	37,000	960

The Chinese Economy Today (4)

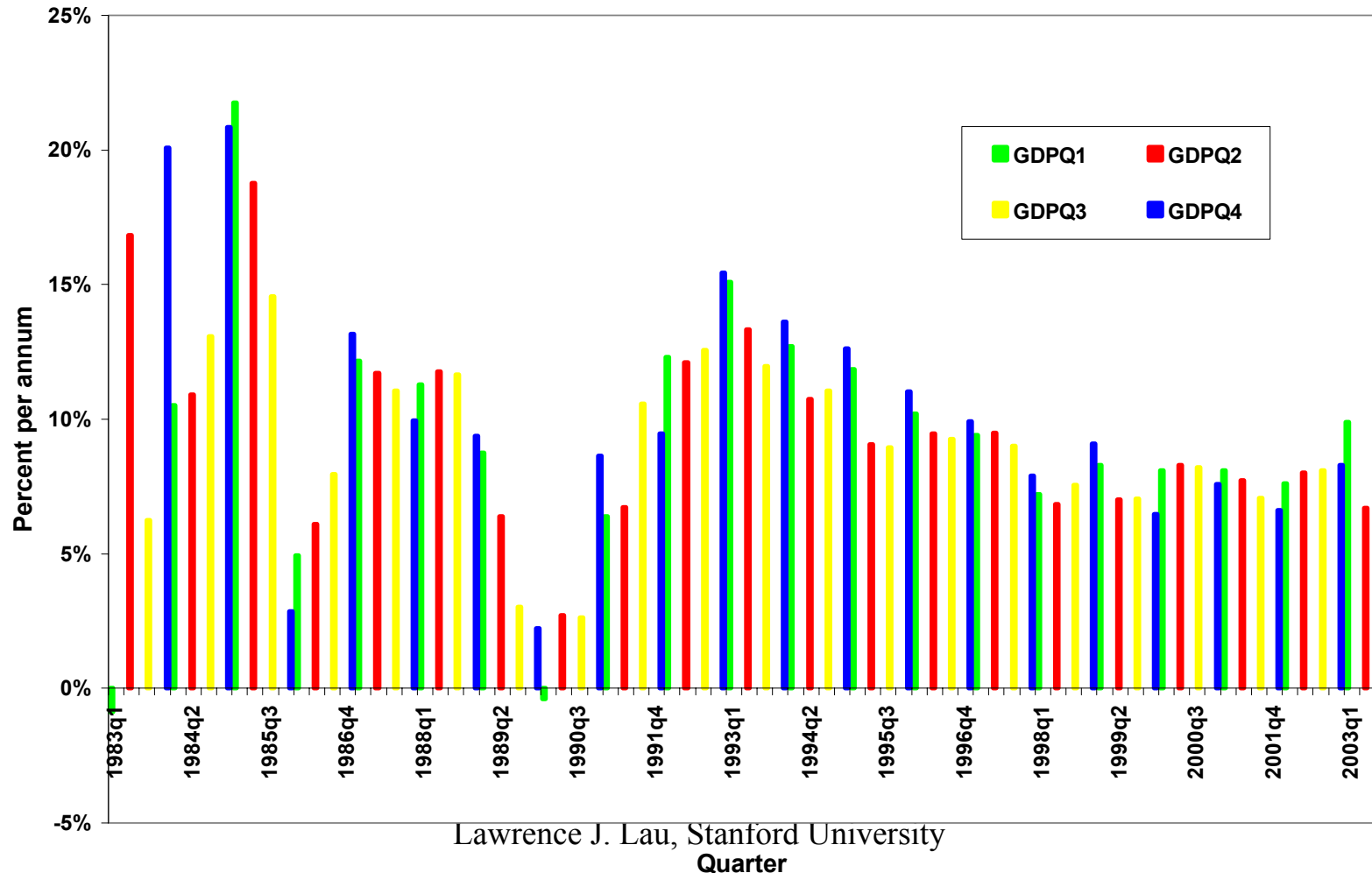
- ◆ The private (non-state) sector accounts for more than 65% of GDP and an even greater percentage of employment in 2002—non-state-owned firms face hard budget constraints and ordinary citizens can make a good living without being beholden to the state.
- ◆ China is no longer a “shortage” economy--insufficient aggregate demand is a real possibility.
- ◆ China is the 6th largest trading country in the world (exports of goods of US\$325.6 billion—an increase of 22.3% over 2001—and imports of goods of US\$295.2 billion—in increase of 21.1%— totaling US\$620.8 billion in 2002). In 2003/H1, despite the SARS epidemic, Chinese exports grew 33.6% YoY.
- ◆ Trade with East Asian economies, both exports and imports, have been increasing at rates of 20% and higher. In particular, China has become a major export destination for and has trade deficits vis-à-vis most East Asian economies.
- ◆ Chinese accession to the World Trade Organization has been very smooth; many anticipated negative effects have not occurred. The WTO General Council has said that “China has basically completed the commitments and obligations for the first year.”
- ◆ The “World’s Factory” (surplus labor) but also the “World’s Market”

Rates of Growth of Real GDP and Inflation (% p.a.)

◆ Actual	Real GDP	RPI	CPI
1997	8.8	0.8	2.8
1998	7.8	-2.6	-0.8
1999	7.1	-2.9	-1.3
2000	8.0	-1.5	0.4
2001	7.3	-0.8	0.7
2002	8.0	-1.3	-0.8
2003Q1	9.9		0.5
2003Q2	6.7		0.7
2003H1	8.2		0.6

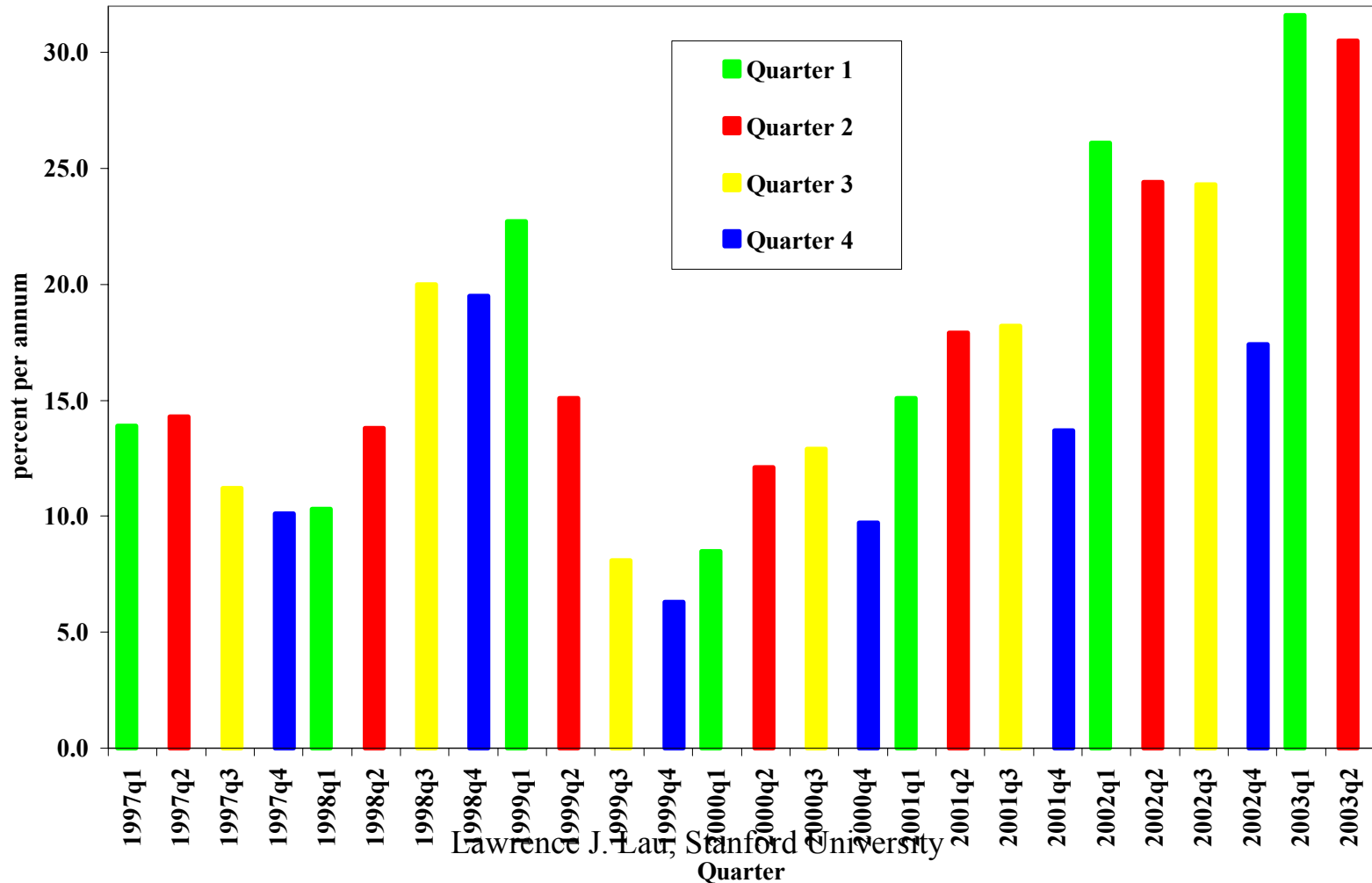
Quarterly Rates of Growth of the Real GDP of the Chinese Economy, Y-o-Y

YoY Quarterly Rates of Growth of Real GDP



Quarterly Rates of Growth of Real Gross Fixed Investment of the Chinese Economy, Y-o-Y

YoY Quarterly Rates of Growth of Real Gross Domestic Fixed Investment

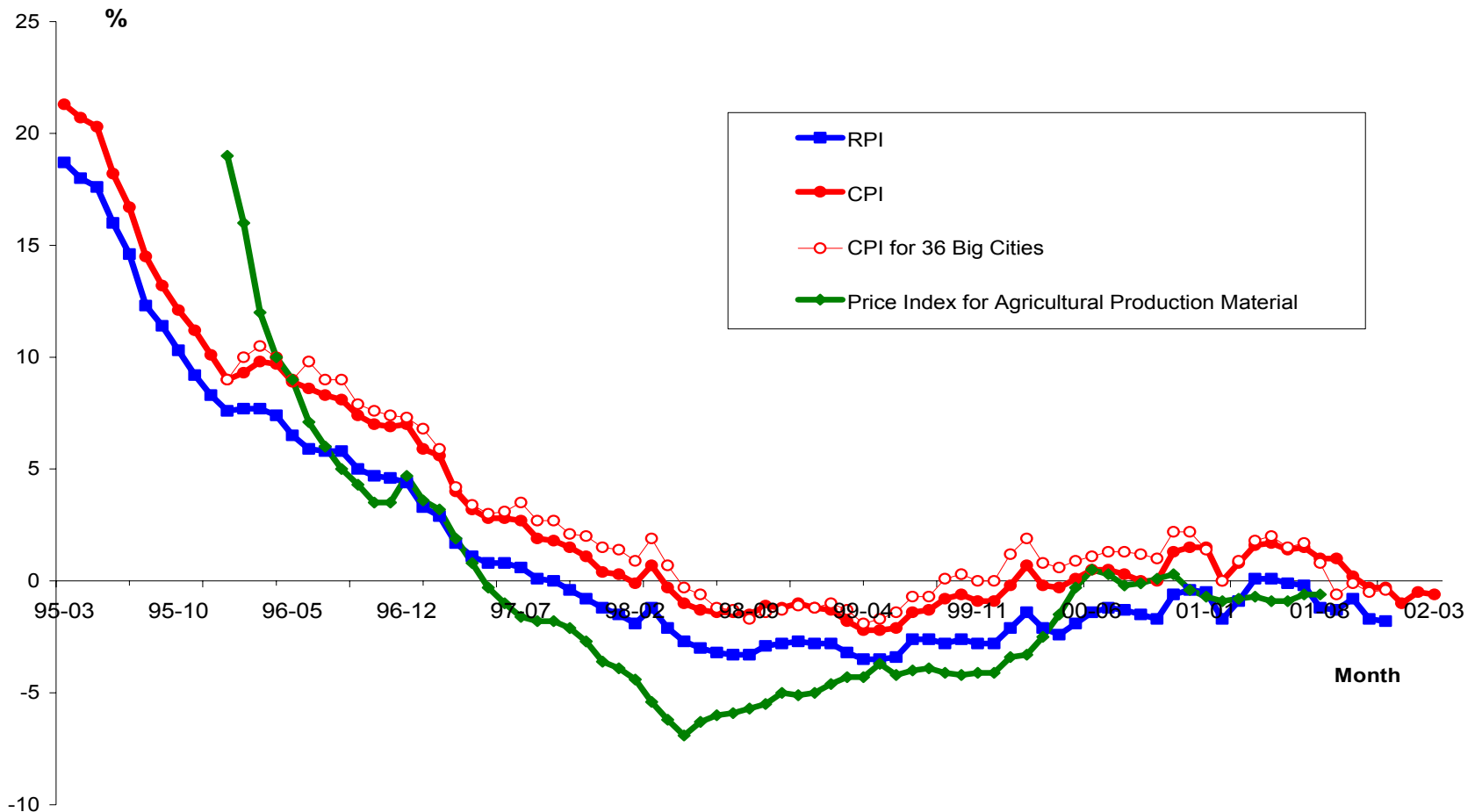


Has “Deflation” Stopped?

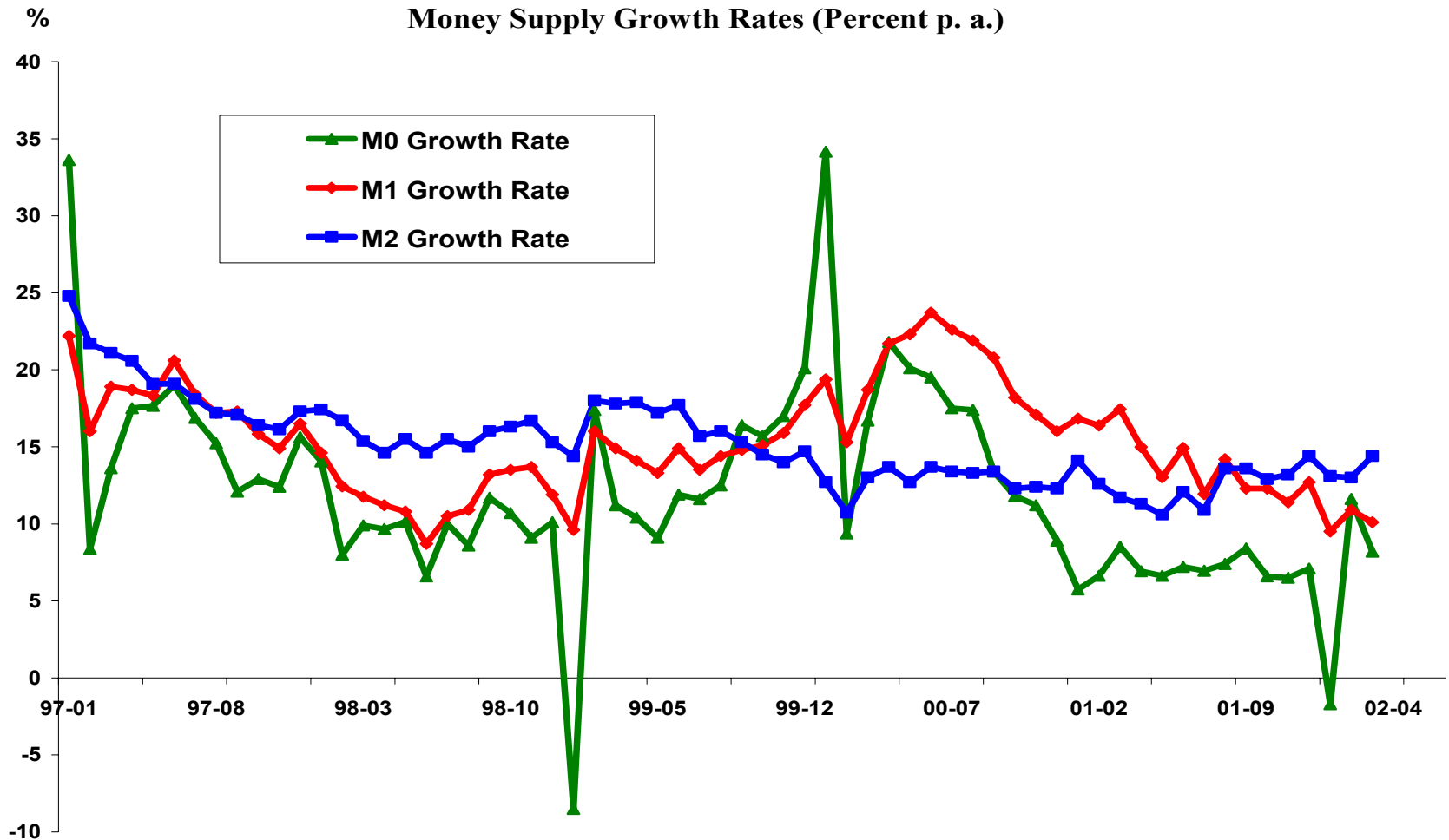
- ◆ Deflation has slowed. In 2003Q1, the rate of growth of the consumer price index (CPI) is a positive 0.5%. In 2003/M1-4, the rate of growth of the CPI was 0.6% YoY.
- ◆ The “core” rate of inflation is non-negative
 - ◆ The decline in prices over the past few years was due in part to the fall in the prices of energy, in particular oil, and agricultural products, in particular food.
 - ◆ It was also due in part to the increase in productivity (reduction in cost) and in competition, the decrease in the degree of monopolistic market power (reduction in profit margin), and more recently by the decrease in prices induced by realized and expected import tariff reductions mandated by the accession agreement to the WTO.
 - ◆ The long-term core inflation rate--inflation rate net of changes in the prices of energy and food--may be estimated at between 0 and 1 percent--there is no deflation.
 - ◆ The key to determining whether there is deflation in the classic macroeconomic sense is whether the components of aggregate demand—real consumption and investment—are growing. They have been growing at respectively 10.2% and 16.1% in 2002. In 2003Q1, gross fixed investment grew 31.6% YoY.
- ◆ Lack of upward pressure on the wage rate of unskilled labor and hence on the price level.
- ◆ The target for the growth of the money supply for 2003 is 16%. In April, 2003, M1 grew 18%. M2 grew 19.2%, 20.2% and 21% YoY in April, May and June respectively.
- ◆ The People’s Bank of China raises the reserve ratio from 6% to 7% to slow down the growth of money supply and credit—it indicated that it might increase the reserve ratio further if the growth of credit continues to exceed the target.

The Consumer and Retail Price Indices

Monthly Rates of Change of Price Indices Since 1995 (Y-o-Y)



Growth Rates of the Money Supply



Exports, Imports and Foreign Exchange Reserves

- ◆ In 2002, exports of goods totaled US\$325.6 billion (an increase of 22.3% over 2001) and imports of goods US\$295.2 billion (an increase of 21.1%) with a trade surplus of US\$30.4 billion (the current account surplus, including trade in both goods and services, was US\$35.4 billion).
- ◆ In 2003/H1, exports increased 34% YoY to US\$190.3 billion and imports increased 44.5% to US\$185.8 billion, resulting in a trade surplus of US\$4.5 billion (a decline of US\$8.9 billion from the same period in 2002). In 2003/Q1 there was a trade deficit of US\$1 billion, the first quarterly trade deficit since 1993. It is anticipated that there will be a trade deficit in the low to middle single digits for the entire year (it will be the largest annual trade deficit since 1993).
- ◆ Chinese tourists traveling abroad reached 16.6 million in 2002, an increase of 36.8% from 2001; 10 million Mainlanders are expected to visit Hong Kong in 2003, and the rate of growth is projected to be 20% per annum over the next five years. Chinese tourists are in general big spenders. The tourism component of the balance of payments turned negative in 2000 and remained so.

Exports, Imports and Foreign Exchange Reserves

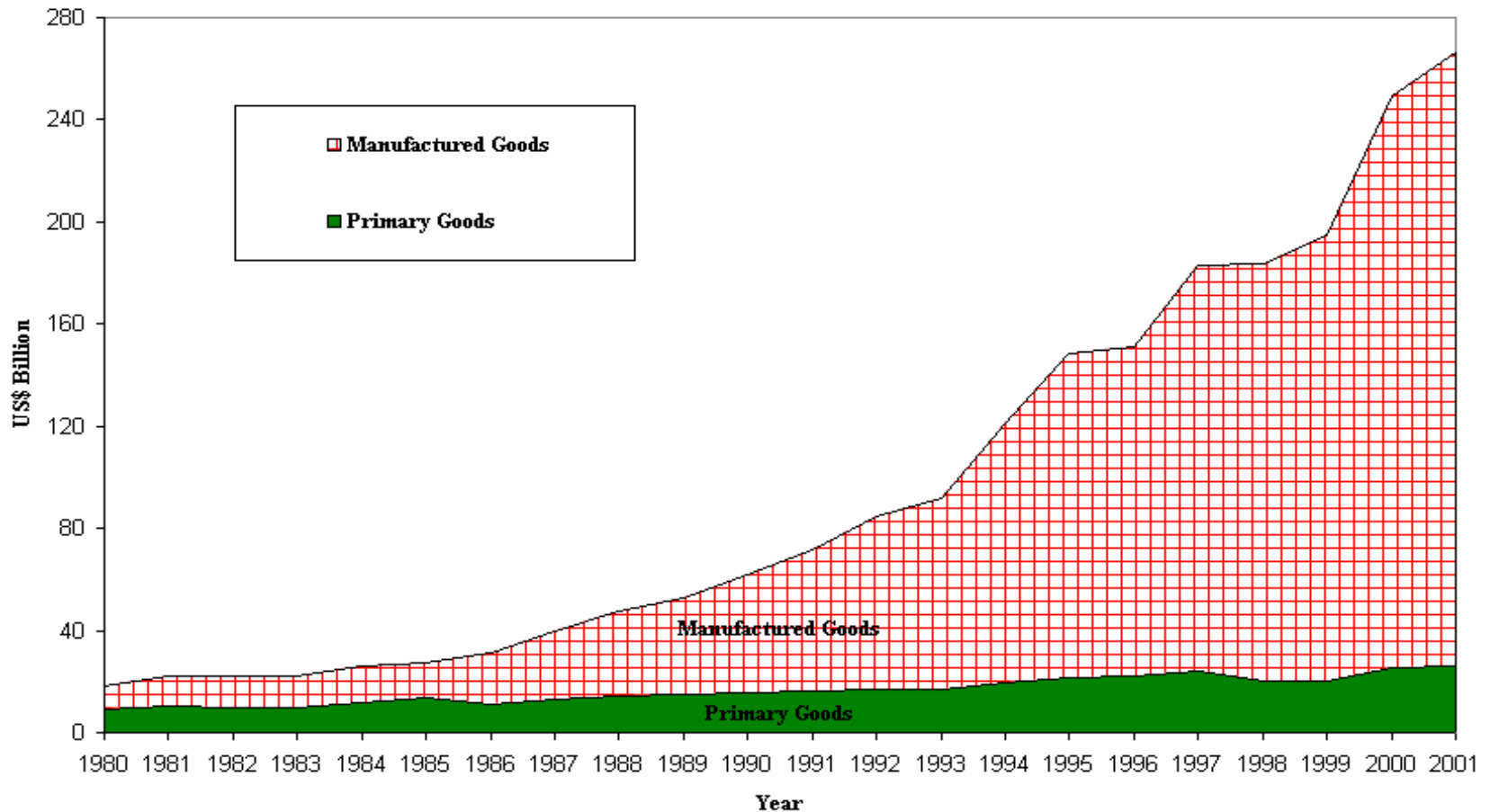
- ◆ In 2003/H1, according to Japanese statistics, Chinese exports to Japan increased 24% YoY to US\$34.69 billion and Chinese imports from Japan increased 49% to US\$25.76 billion. China has become Japan's second largest export market, after the United States.
- ◆ In 2003/07, Japanese trade surplus vis-à-vis the world, was a seasonally adjusted US\$6.3 billion and that with the U.S. was US\$4.8 billion.

Exports, Imports and Foreign Exchange Reserves

- ◆ Official foreign reserves continued to rise, reaching US\$212.2 billion and US\$286.4 billion as of the end of 2001 and 2002, respectively. These represent respectively increases of US\$46.6 billion and US\$74.2 billion over the previous year and much larger than the trade surpluses of US\$22.5 billion and US\$30.4 billion. The official foreign reserves also surpass total outstanding external loans (approximately US\$165 billion as of year end 2002) by a wide margin.
- ◆ At the end of 2003/H1, official foreign exchange reserves stood at US\$346.5 billion. The increase of more than US\$60.1 billion during 2003/H1 occurred despite a relatively small trade surplus of US\$4.5 billion. During the same period, actual FDI inflow amounted to US\$30.3 billion, suggesting an inflow of “hot money” of approximately US\$25 billion.
- ◆ At the end of 2003/M4, foreign exchange deposits in Chinese financial institutions reached US\$148.6 billion, an increase of 5.4% YoY, out of which corporate deposits constituted US\$48.7 billion and savings deposits US\$90.2 billion.
- ◆ The exchange rate of the Renminbi vis-à-vis the U.S. Dollar has remained stable since 1994 (in fact, there has been a slight appreciation from 8.7 Yuan/US\$ to 8.28 Yuan/US\$) and is expected to remain so. (Trading in non-deliverable one-year forwards (NDFs) suggests that the expected exchange rate is 8.137 Yuan per US\$.) Dr. Frederick Hu of Goldman Sachs predicted that the trading band might be widened to 2.5% by mid-year 2004, making possible a slight revaluation.

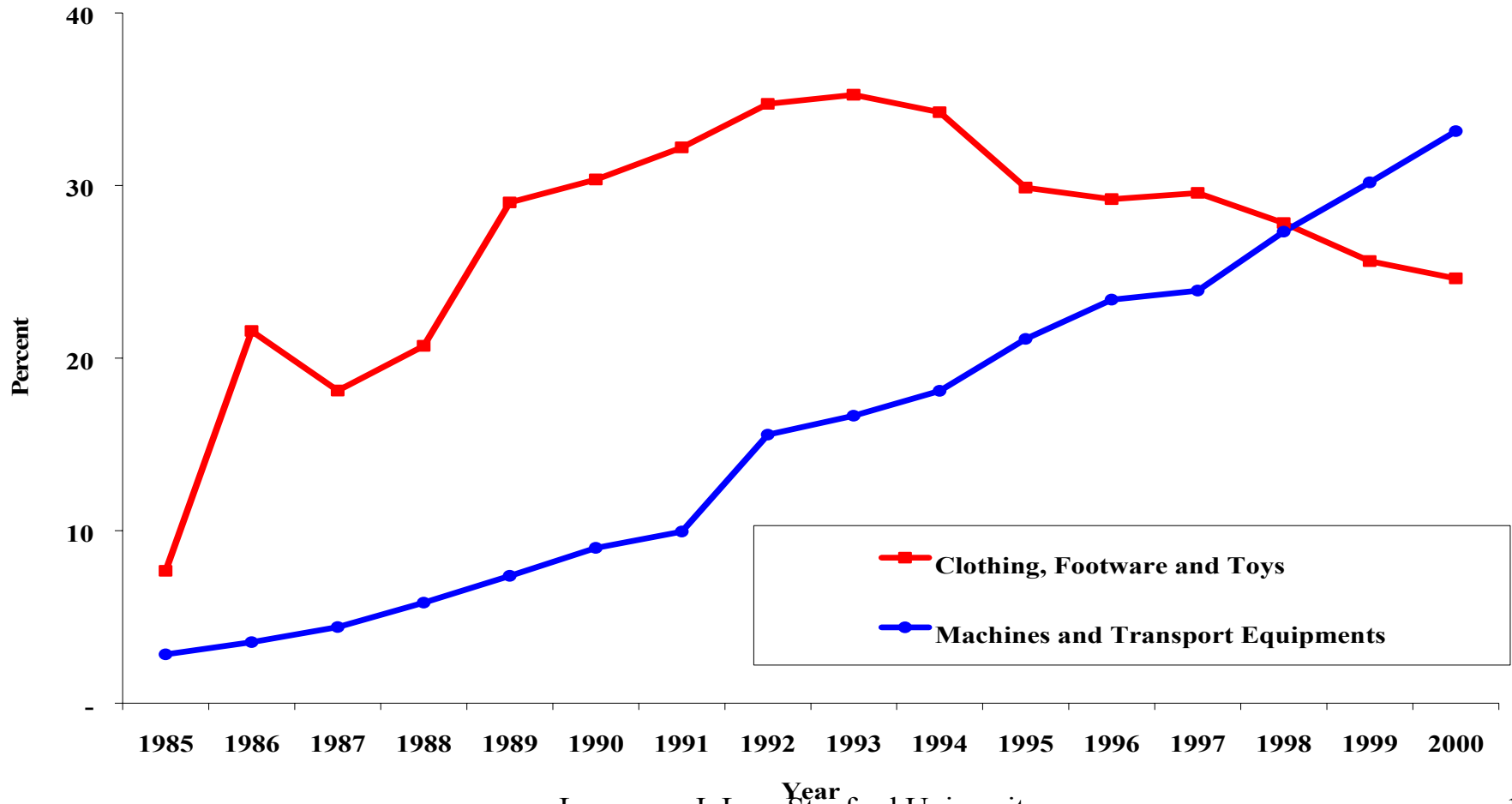
Composition of Chinese Exports by Primary Commodities versus Manufactured Goods

Chinese Exports by Commodities: Primary versus Manufactured Goods



Manufactured Exports as a Percent of Total Chinese Exports

Distribution of Chinese Manufactured Exports as Percent of Total Exports
1985-2000



Direct and Total Effects of Non-Competitive-Imports (NCI) Model (Value-Added)

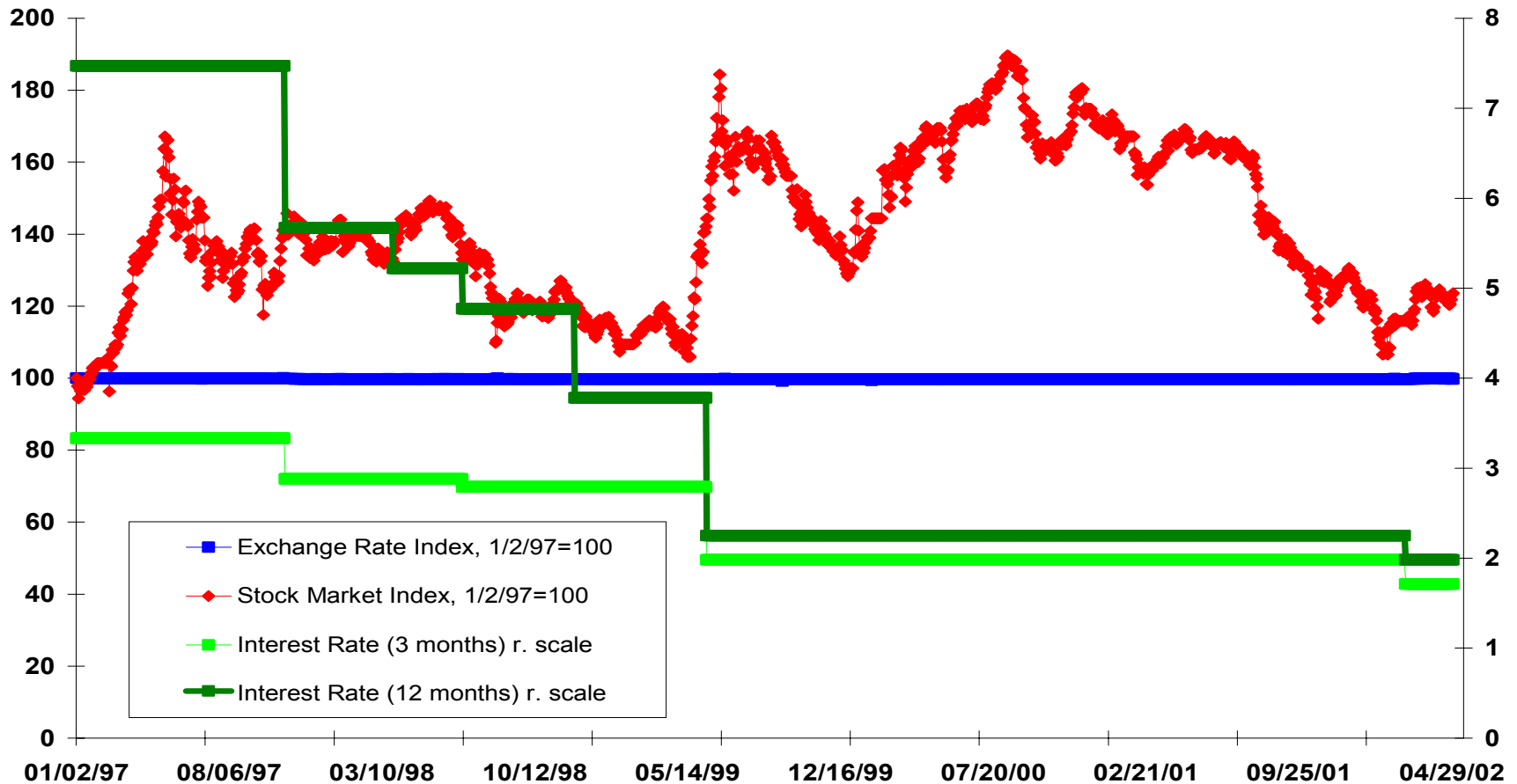
	Direct	Total
◆ Processing Exports	0.153	0.176
◆ Textiles	0.147	0.165
◆ Wearing Apparel	0.158	0.170
◆ Non-Processing Exports	0.329	0.925
◆ Textiles	0.195	0.934
◆ Wearing Apparel	0.229	0.944
◆ All Exports (Weighted Average of Processing and Non-Processing Exports)	0.240	0.545
◆ Textiles	0.178	0.657
◆ Wearing Apparel	0.183	0.441

Direct and Total Effects of Non-Competitive-Imports (NCI) Model (Employment)

	Direct	Total
◆ Processing Exports	0.048	0.057
◆ Textiles	0.044	0.050
◆ Wearing Apparel	0.048	0.052
◆ Non-Processing Exports	0.214	0.703
◆ Textiles	0.107	0.845
◆ Wearing Apparel	0.108	0.745
◆ All Exports (Weighted Average of Processing and Non-Processing Exports)	0.130	0.375
◆ Textiles	0.084	0.558
◆ Wearing Apparel	0.069	0.294

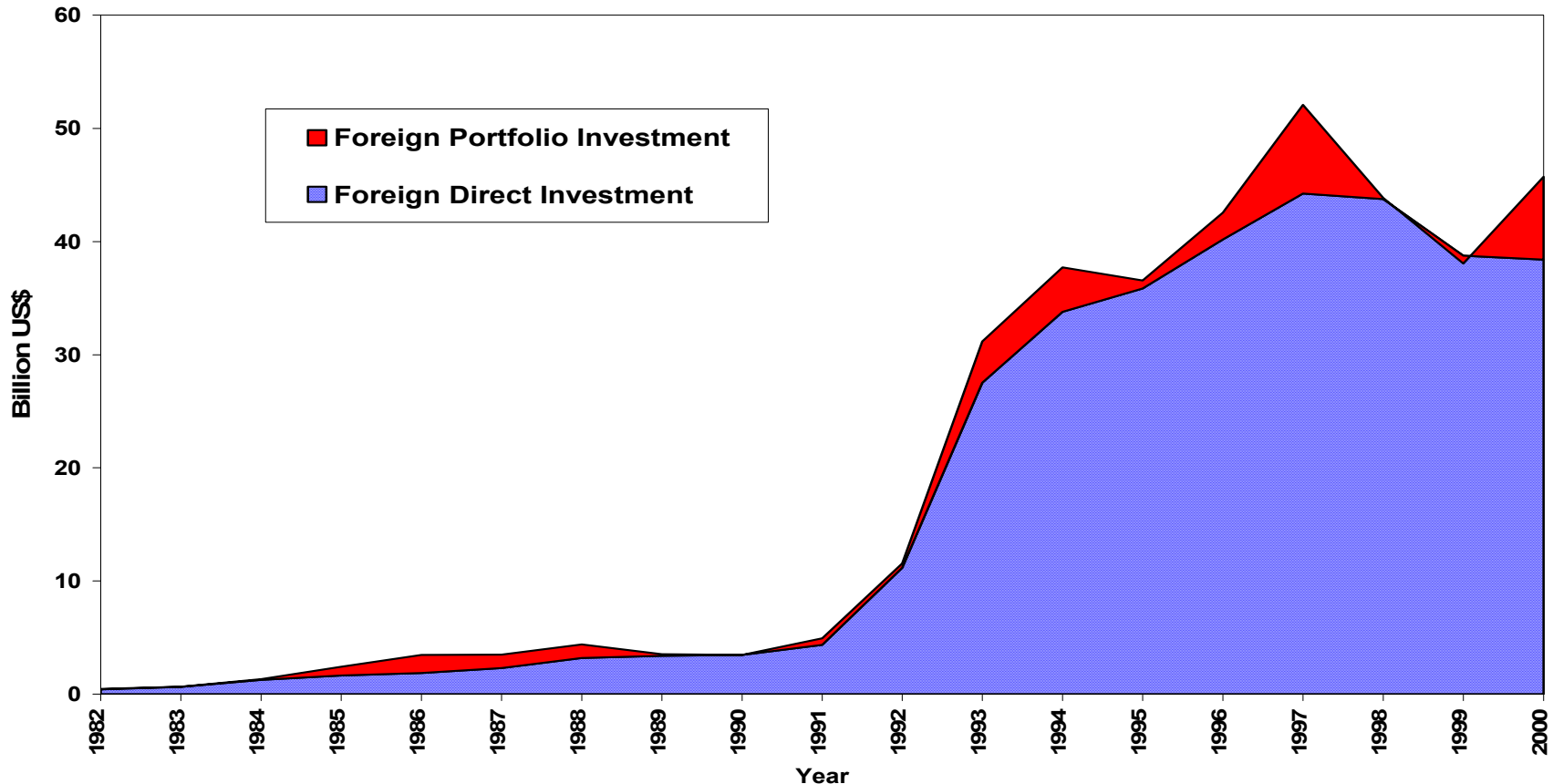
The Exchange Rate, the Interest Rates and the Stock Market Index

Exchange Rate, Stock Market Index and Interest Rates
China



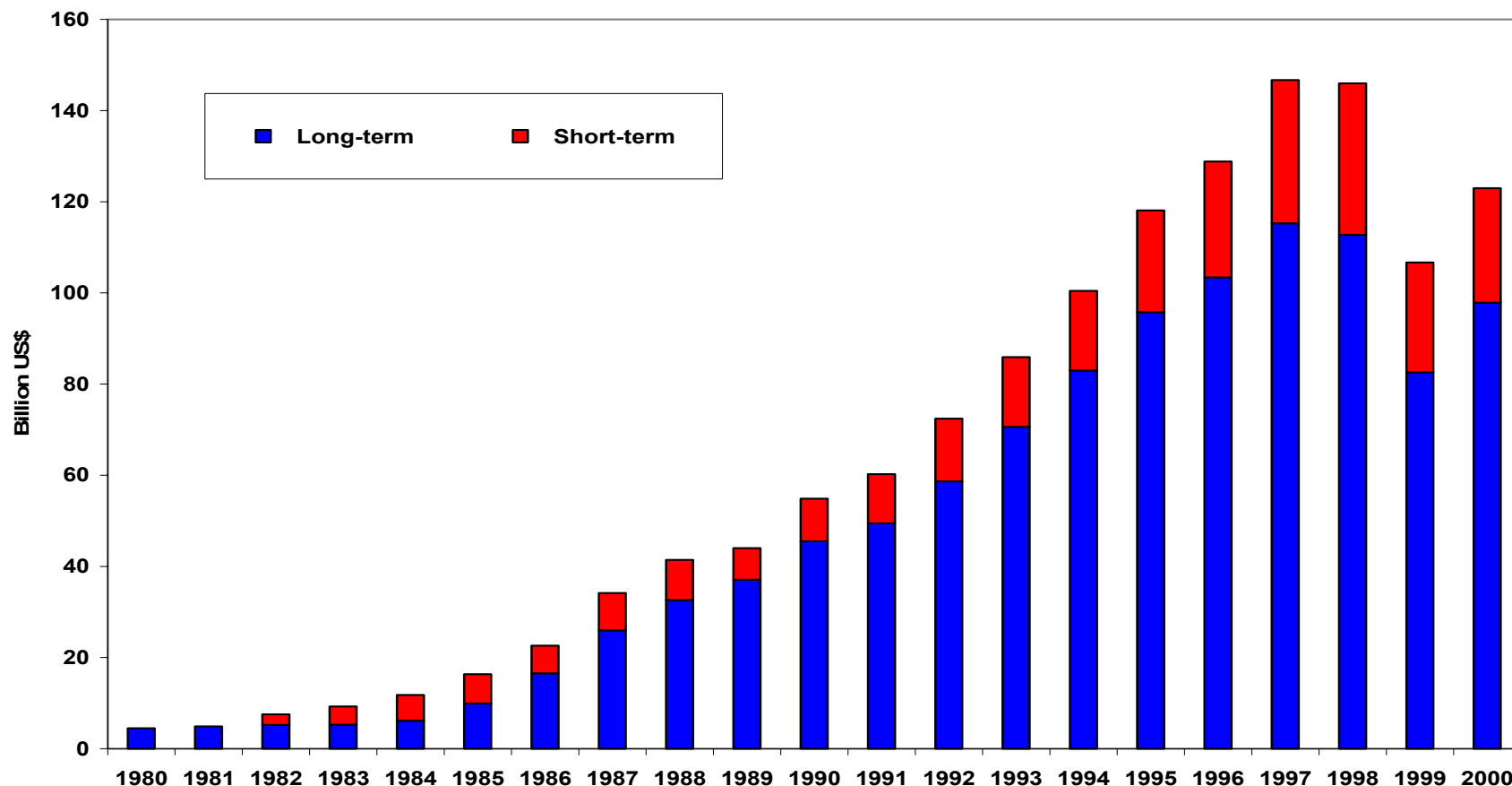
Composition of Foreign Investment—Portfolio vs. Direct: China (Annual Data)

Composition of Foreign Investment, China



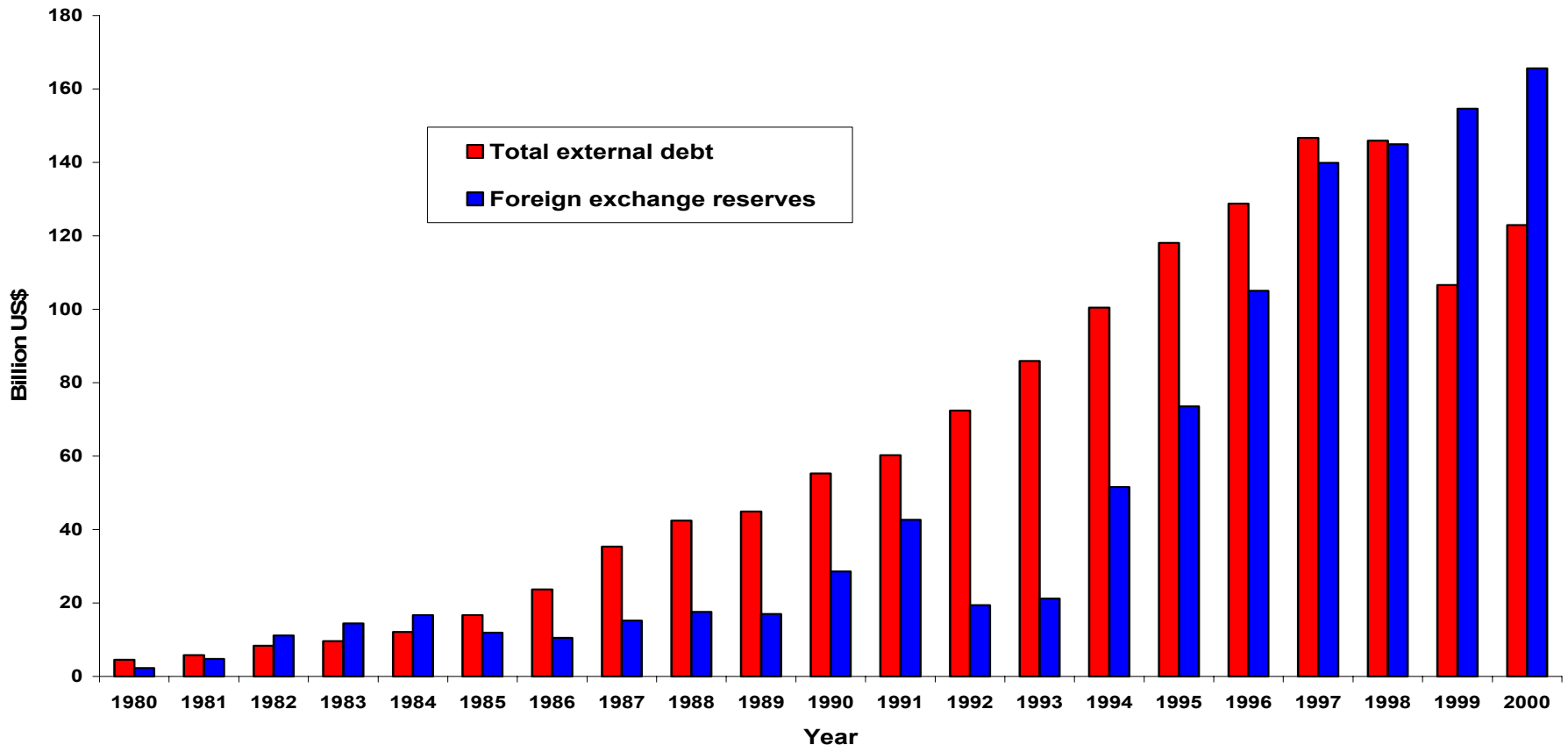
Composition of External Debt—Short-Term (Less Than a Year) vs. Long-Term: China

Stock of External Debt: China
Bank for International Settlements Data



External Debt and Official Foreign Exchange Reserves: China

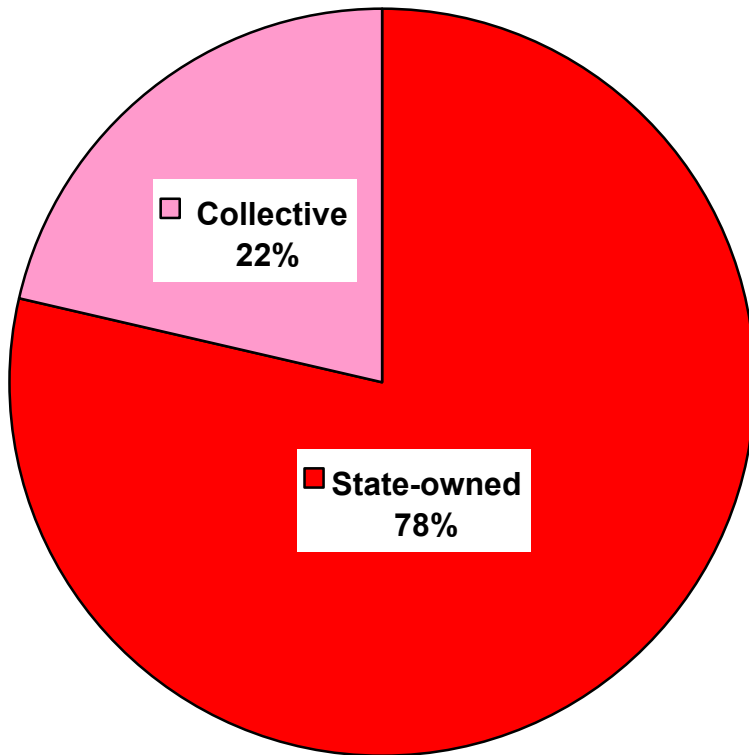
China's External Debt vs. Foreign Exchange Reserves
(International Financial Statistics Data)



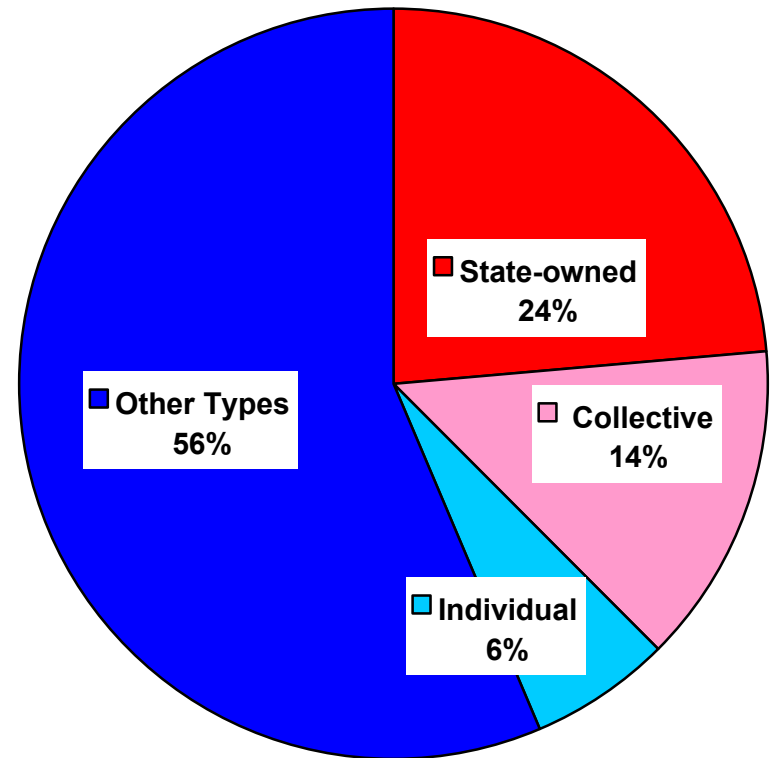
The Growth of the Non-State Sector-Industry

Distribution of Gross Value of Industrial Production by Ownership

1979

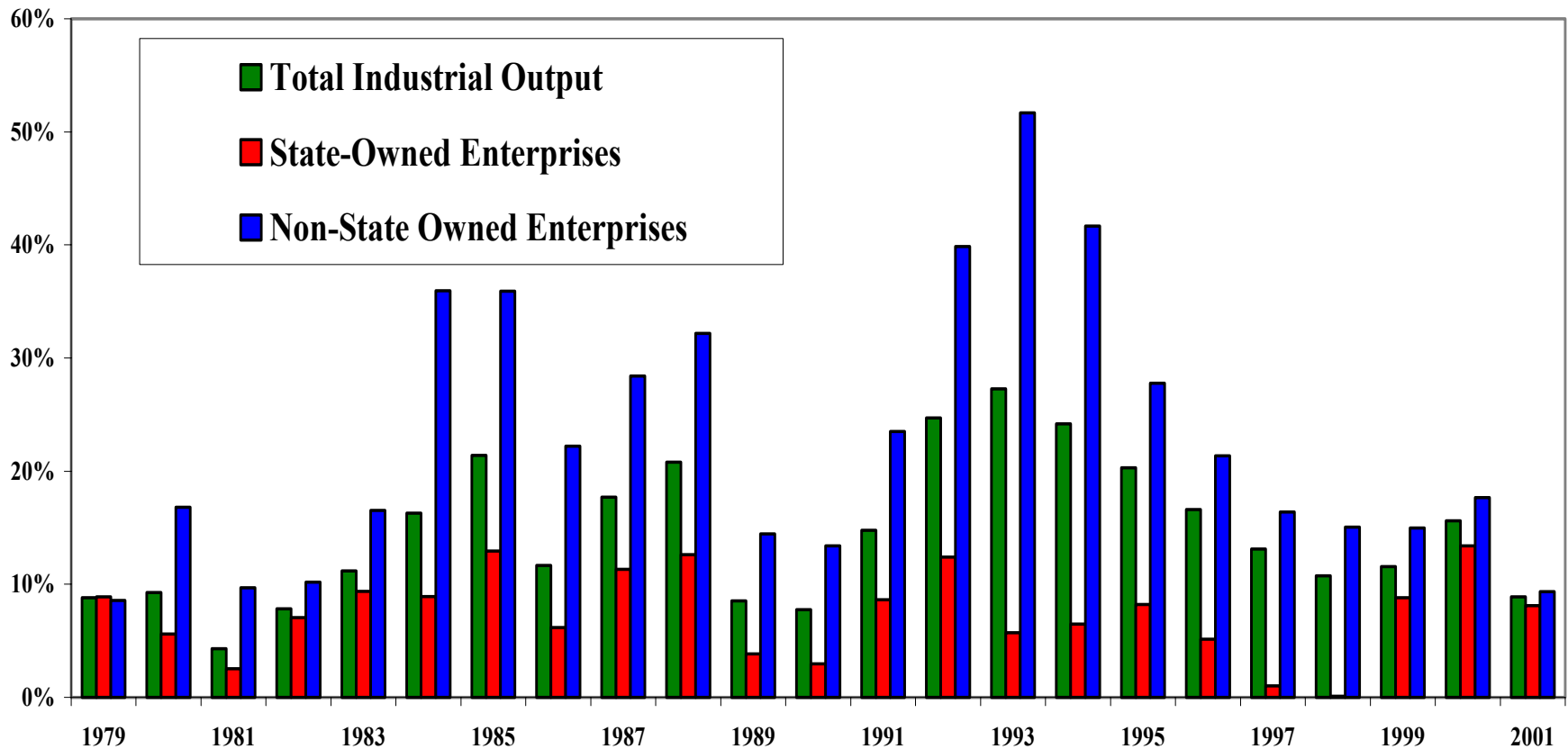


2000

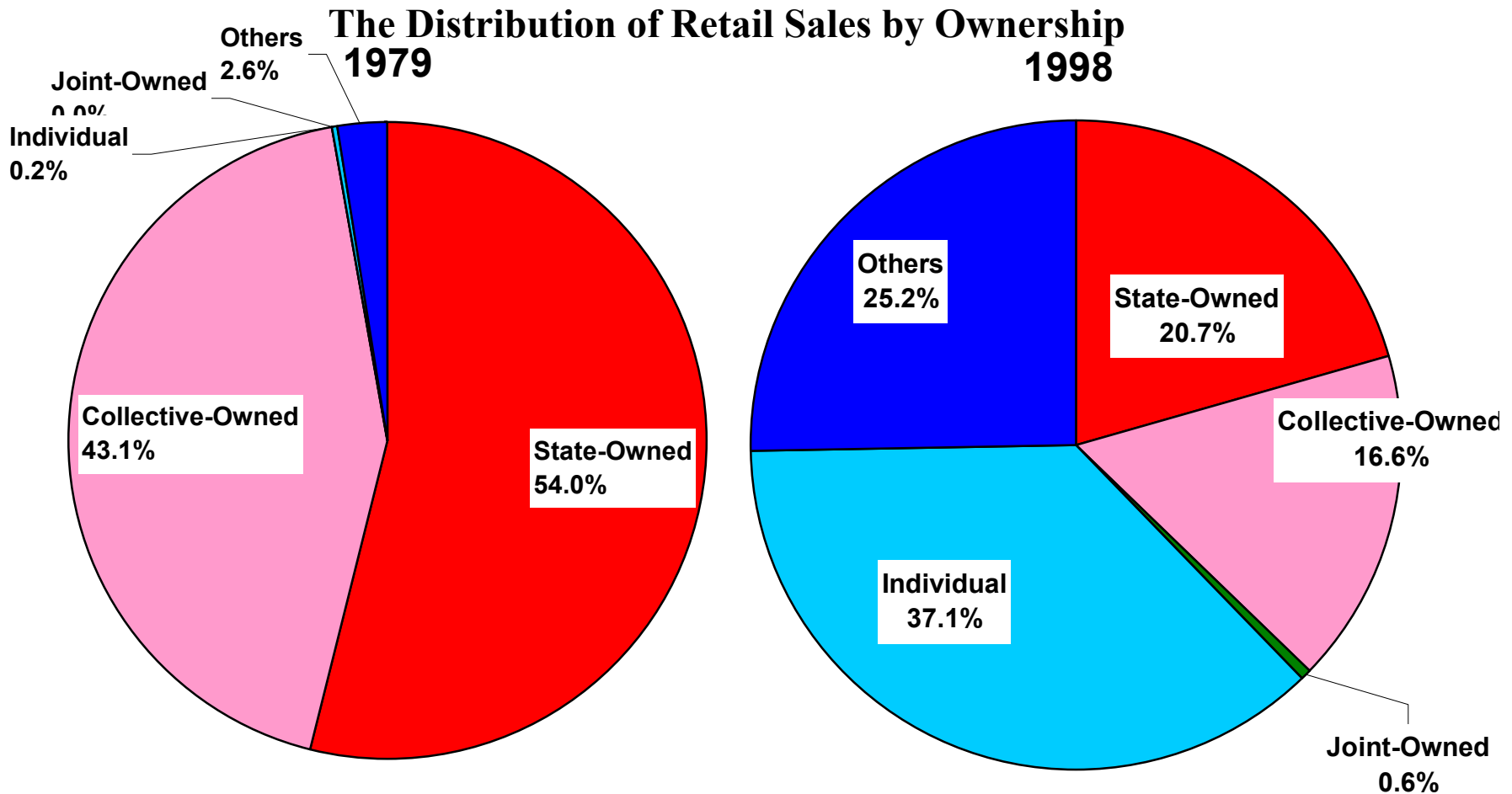


The Growth of Industrial Output by Sector of Ownership

The Rate of Growth of Industrial Output by Sector of Ownership



The Growth of the Non-State Sector-Retail



Privatization

- ◆ Provincial and local governments can dispose of their shares in the local enterprises, including selling them to other investors, both domestic and foreign.
- ◆ The central government maintains control over approximately 190 large state-owned enterprises under its recently established State Assets Management Commission.
- ◆ The central government will issue rules on the sale of government shares.
- ◆ A more promising target for merger and acquisition activities is the foreign-invested enterprises, either joint ventures or wholly-owned. Many of the initial shareholders in these enterprises are ready to take their profits.
- ◆ Labor retention, disclosure and transparency, warranties and representations, as well as indemnification, remain important issues in these transactions.

The Tenth Five-Year Plan (2001-2005)

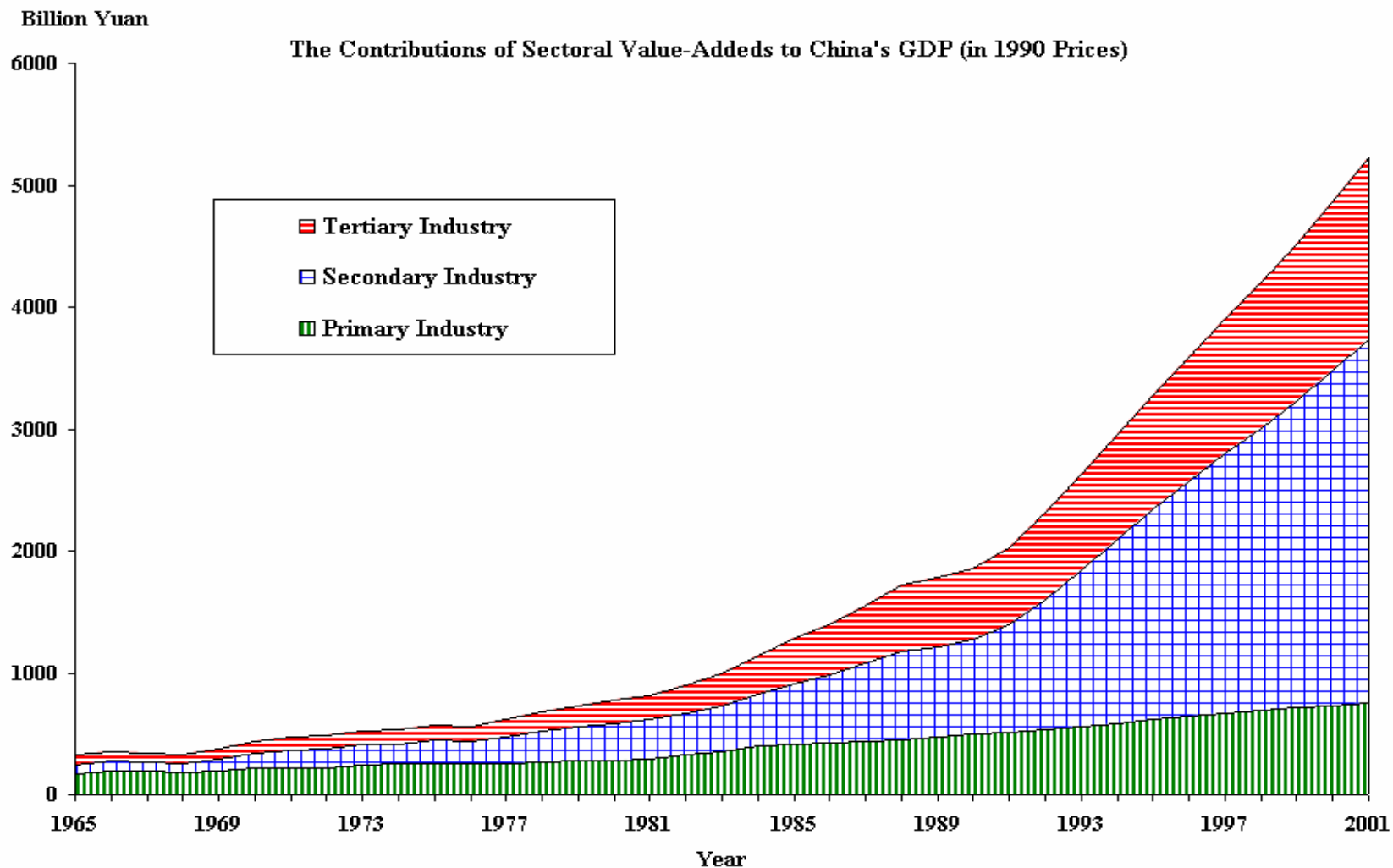
- ◆ An indicative (or predictive) plan rather than a mandatory plan
- ◆ Doubling of real GDP between 2001 and 2010, with an implied rate of growth of 7.2% p.a.
- ◆ An inflation target of less than 3% p.a.
- ◆ An increase in the share of central government revenue in GDP (the introduction of a comprehensive individual income tax)—tax revenue as a proportion of GDP rose from 14.2% of GDP in 2000 to 17.1% of GDP in 2001
- ◆ Indirect (macroeconomic) control of the economy using instruments such as money supply, interest rate and exchange rates rather than direct (microeconomic) control through administrative directives, commands and central planning with mandatory targets

Marketization:

Final Abolition of Planned Prices

- ◆ The market prices of more than 99% of commodities have been determined by supply and demand for at least a decade
- ◆ In 2001/07, the remaining planned prices are abolished with the exception of the following: the prices of natural gas, oil, edible oils, grains, tobacco, water, salt, and products related to national security
- ◆ The exchange rate and the rate of interest are still determined administratively by the People's Bank of China, the central bank
- ◆ The dual-track system of prices introduced in the mid-1980s to facilitate the transition of China from a centrally planned to a socialist market economy has finally been phased out, reducing to a single-track, market-based system, with the exceptions noted above

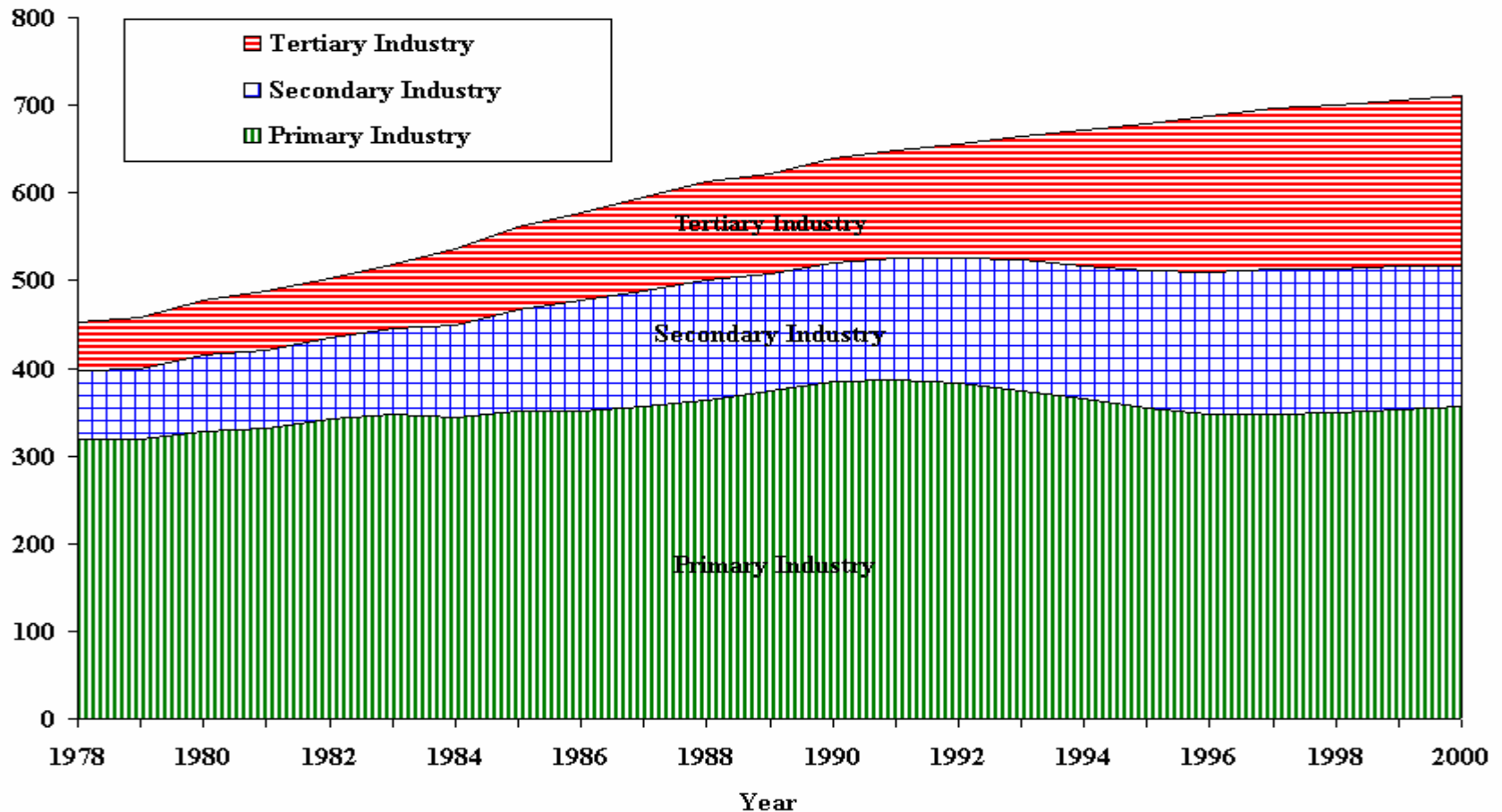
The Contributions of Sectoral Value-Addeds to China's GDP



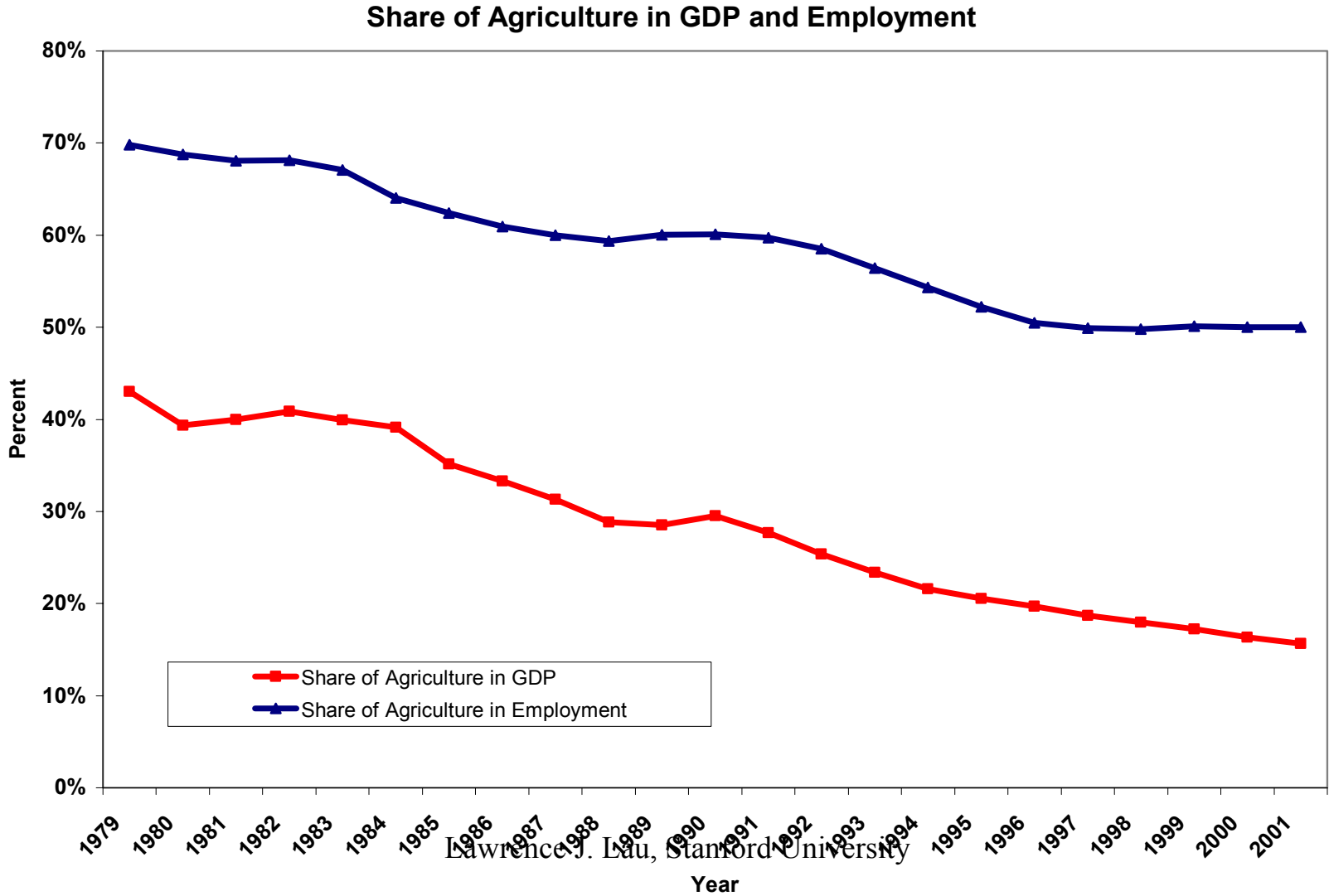
The Sectoral Contributions to China's Employment

The Sectoral Contributions to China's Employment

Million Persons

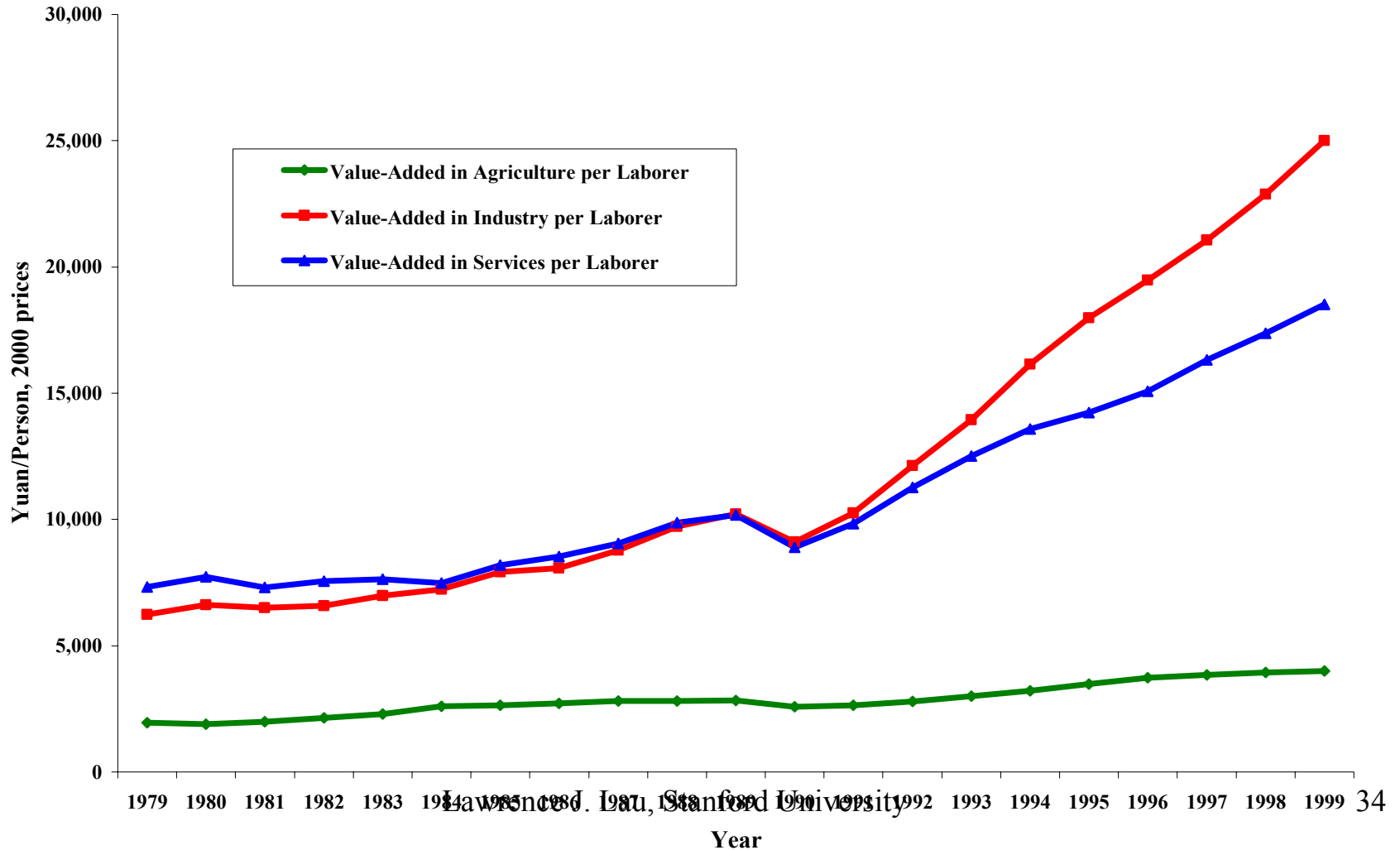


The Share of Agriculture in GDP and Employment



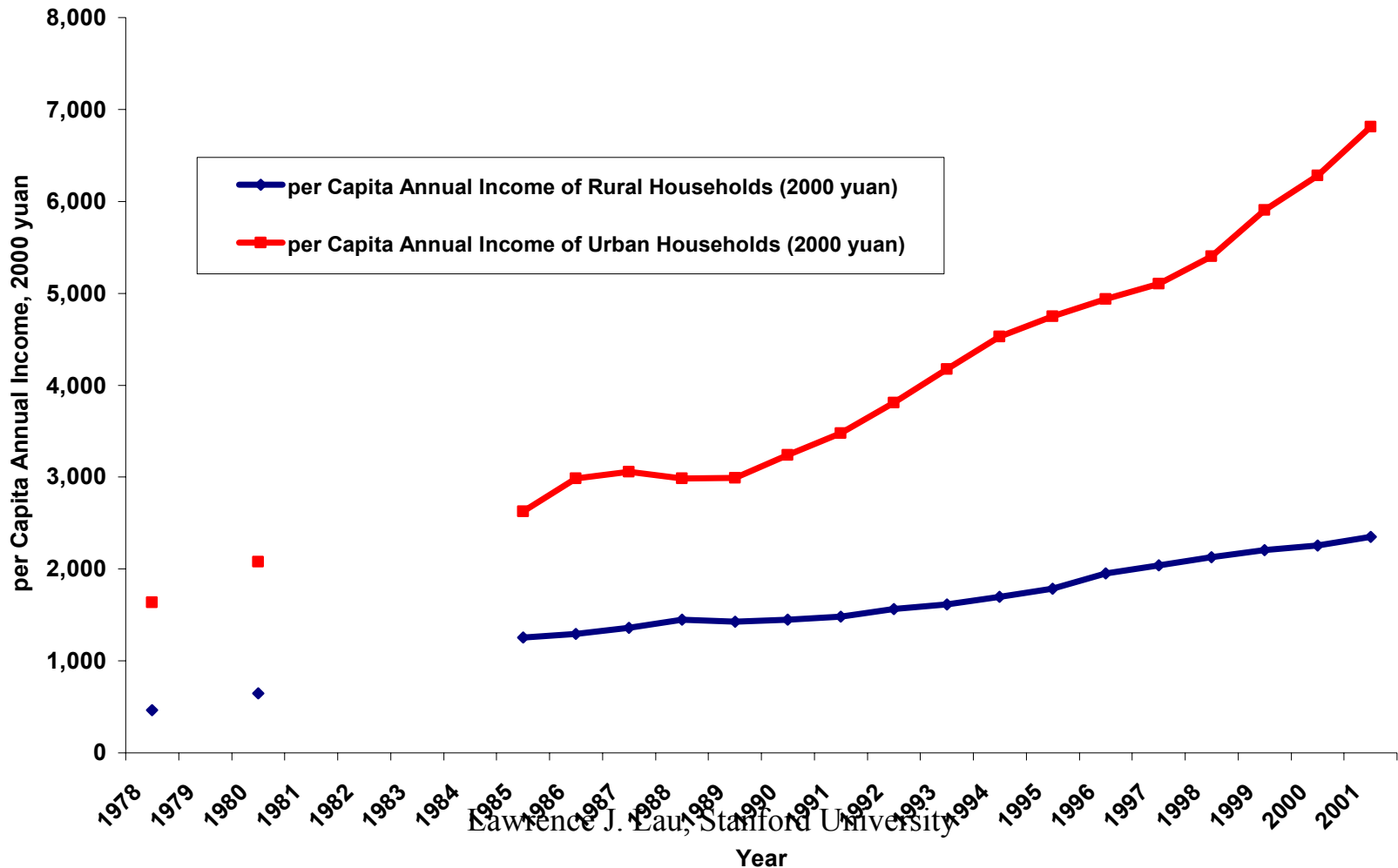
Comparison of Values-Added per Laborer in Agriculture, Industry and Services

Value-Added per Laborer by Sector, 2000 prices



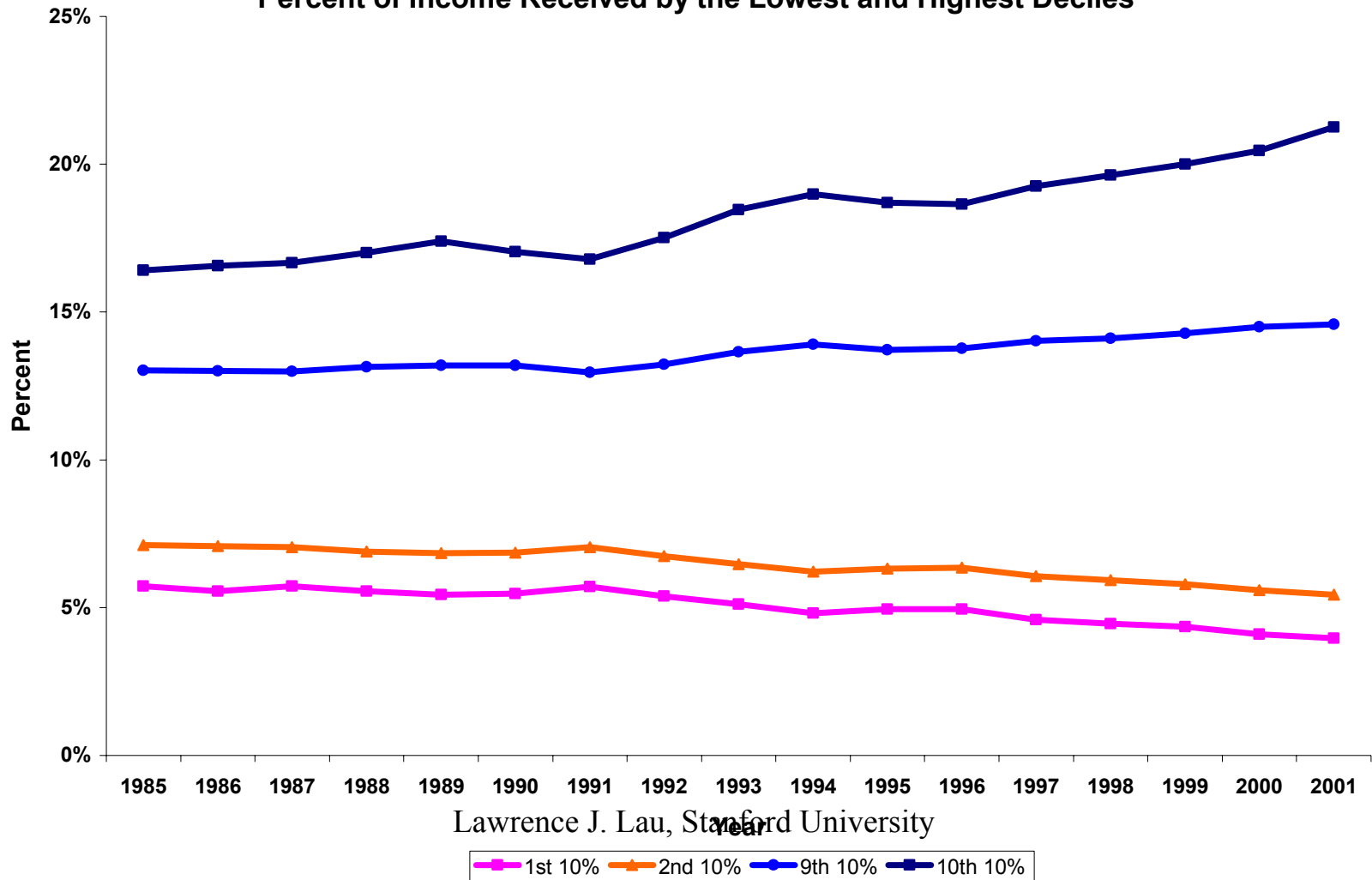
Real Income per Capita of Urban and Rural Households

Comparison of per Capita Annual Income of Rural and Urban Households, 2000 prices



The Distribution of Income among Urban Households in China

Distribution of Income among Urban Households:
Percent of Income Received by the Lowest and Highest Deciles



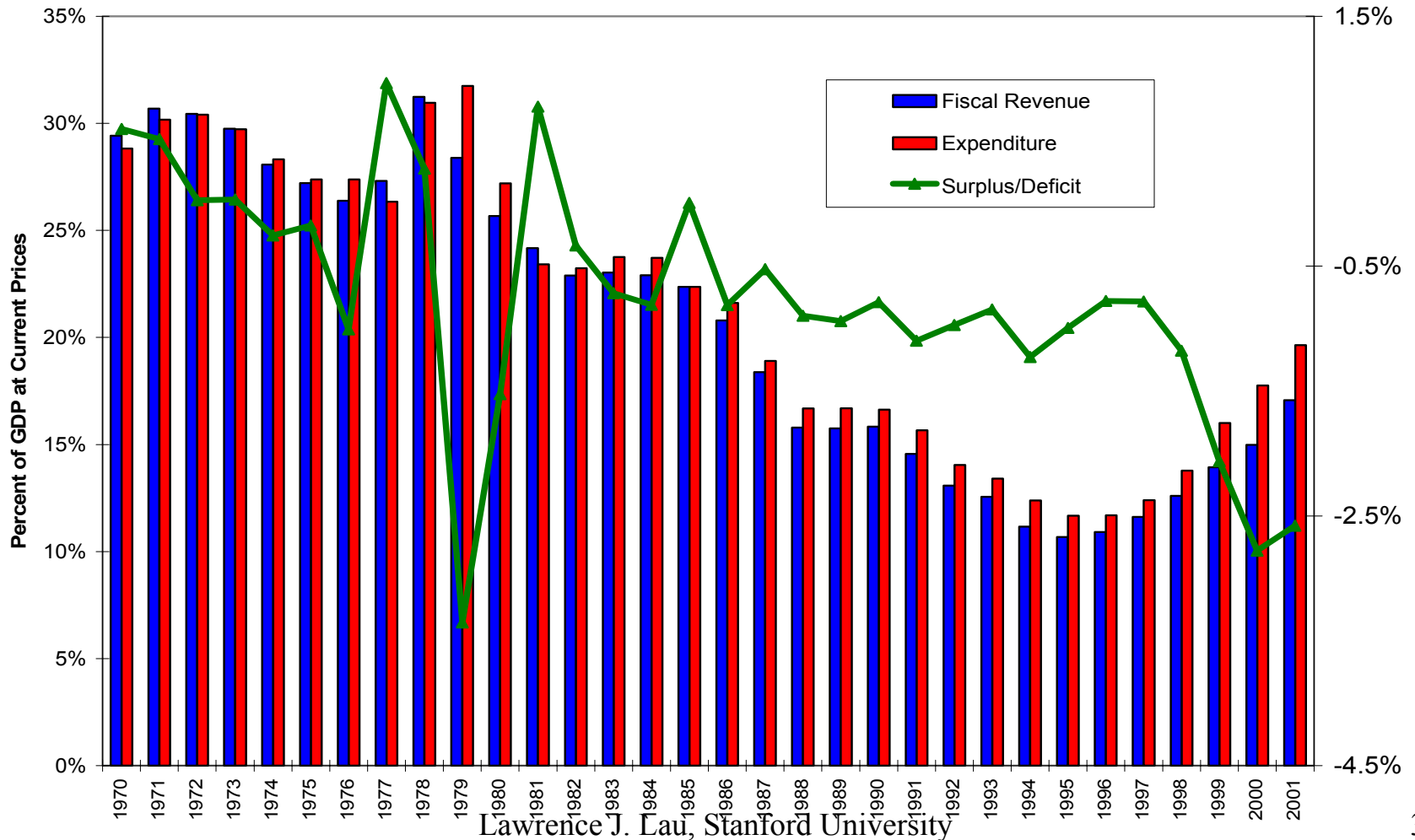
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Industrialization and Urbanization (1)

- ◆ The share of agriculture (primary sector) in GDP has declined from 43% in 1979 to less than 16% in 2001. Over the same period, the share of agriculture in employment has declined from almost 70% to 50% but appears to have stalled for the past few years.
- ◆ Given the large and increasing gap between the value-added per laborer in the agricultural and non-agricultural sectors, the transformation of the economy from agriculture to industry (and services) is inevitable in order that real GDP per capita can continue to rise. Historically, no large economy has successfully achieved a high level of real GDP per capita without a massive shift of the population and labor force out of agriculture.
- ◆ Industrialization and urbanization are complementary— industrialization (or more broadly the growth of the non-agricultural sector) requires urbanization and urbanization facilitates industrialization.

Total Government Budget Revenue, Expenditure, and Deficit as a Percent of GDP

Total Government Budget Revenue and Expenditure as Percent of GDP



Lawrence J. Lau, Stanford University

How Reliable Are Chinese Economic Data?

How Reliable Are Chinese Economic Data?

- ◆ Since 1979, there has been no intentional falsification of statistical data on the part of the National Bureau of Statistics (NBS), an independent agency of the central government of the People's Republic of China.
- ◆ If in fact, there were intentional falsification of the published statistical data by the Government of the People's Republic of China, that implies the maintenance of two separate sets of books. There is no evidence that there exist two sets of books at the National Bureau of Statistics.
- ◆ One may criticize the methodology, the adequacy of the sampling techniques, the method of data collection, processing and adjustments; and there are undoubtedly biases and errors in the published data, e.g., the omission of the underground economy.
- ◆ However, the year-to-year rate of growth of real GDP should be reasonably reliable despite the biases because the degree of biases in the estimation of the levels of GDP changes only very gradually over time.
- ◆ There is likely to be under-reporting in wealthy regions and over-reporting in poor regions. The actual degree of inequality is probably greater than that revealed by the officially published statistics.

How Reliable Are Chinese Economic Data?

- ◆ Discrepancy between the NBS figures and the published provincial figures--the figure for the rate of growth of Chinese GDP published by the NBS is almost always less than the weighted average of the rates of growth of Chinese provincial GDPs, published by the provincial and regional statistical bureaus, by a significant margin.
- ◆ This has been true for many years, and is a widely known fact, and openly acknowledged by the NBS, and is reflected in the annually published Statistical Yearbook of China.
- ◆ The NBS believes that its national figure is much more accurate and reliable than the sum or weighted average of the provincial and regional figures. While it uses the provincial figures as one of the inputs, the NBS has other, independent, sources of data which it uses for making the final adjustments.

Is GDP Growth Compatible with the Growth of Electricity and Freight Traffic?

- ◆ The rate of growth of electricity production is 6.2% in 1999, 10.7% in 2000, and 8.5% in 2001; The rate of growth of freight traffic is 2.4% in 1999, 3.5% in 2000, and 3.1% in 2001.
- ◆ Common factors:
 - ◆ The rate of growth of the manufacturing sector has slowed down relative to the construction sector and the service sector.
 - ◆ Differences in the rates of growth between heavy and light industry.
 - ◆ Intra-industry changes in the composition of outputs, including upgrading of the qualities (and hence values-added) of products.
 - ◆ Effects of changes in the loci of production and consumption.
- ◆ Factors specific to electricity production:
 - ◆ Effects of changes in prices--the price of electricity has risen 3-4 fold since 1990.
 - ◆ Effects of changes in efficiency.
 - ◆ Other “economic” and technical reasons for changes in the rates of transmission losses.
 - ◆ Effects of co-generation--under-reporting and marginal users.
- ◆ Factors specific to freight traffic:
 - ◆ Effects of environmental regulation and inter-fuel substitution—almost 50% of railroad freight traffic was for coal.

How Reliable Are Chinese Economic Data?

The Rate of Growth of Freight Transported

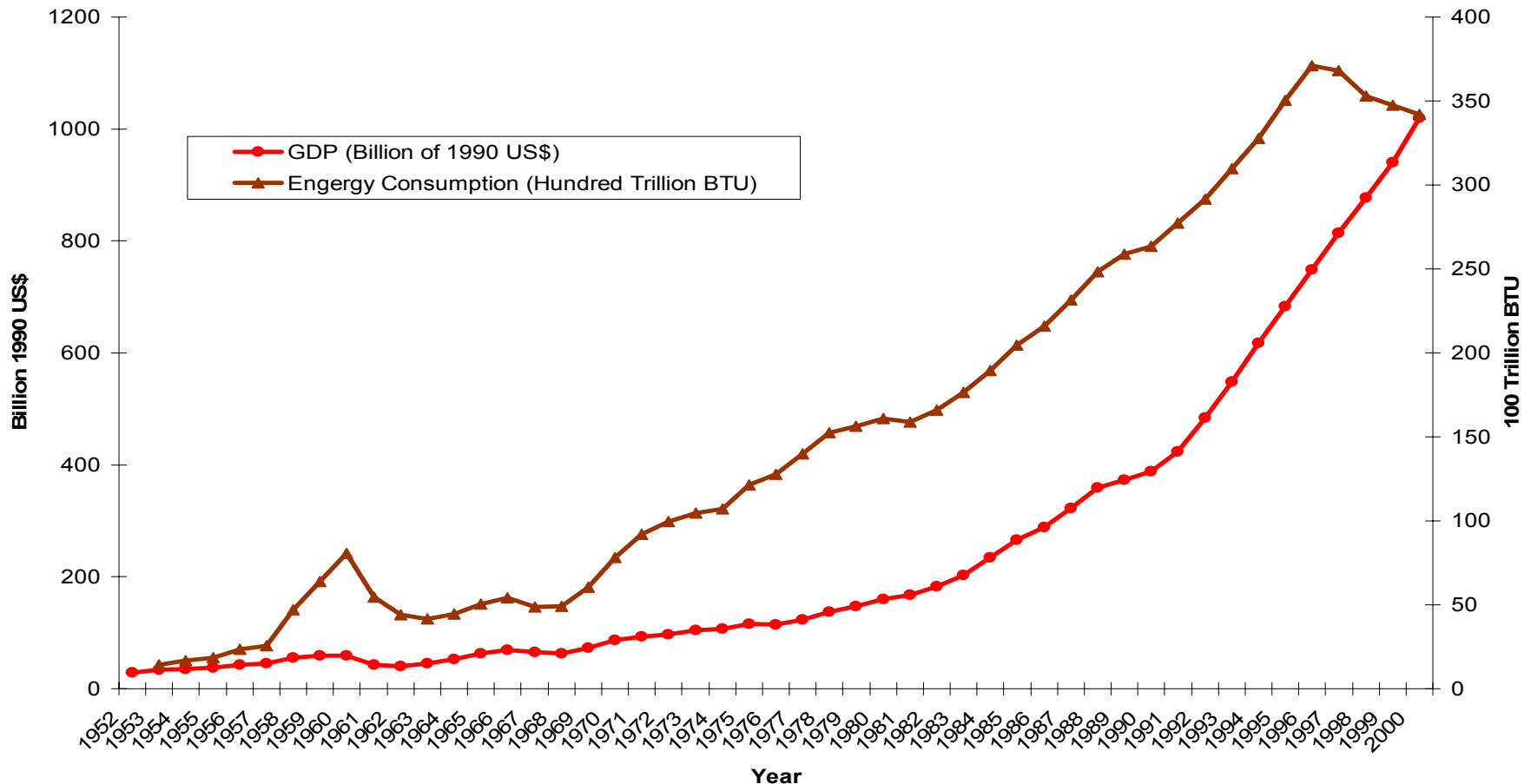
- ◆ Why was the rate of growth of railroad freight transported, measured in metric ton-kilometers, negative in 1998 at the same time the rate of growth of real GDP was 7.8%?
- ◆ While there is no compelling reason why the rate of growth of freight should be the same as the rate of growth of real GDP, the fact that they were in opposite directions was alarming and greatly puzzling. At the time, the Chinese Government was sufficiently concerned about the apparent discrepancy between the two rates of growth to have commissioned a study to look into the matter. The major cause for the reduction of railroad freight transported, it turned out, was the large reduction in the consumption of coal, caused mostly by the then newly issued environmental regulations covering the major urban areas.
- ◆ Almost half of Chinese freight transported was due to coal; with a sharp reduction in the quantities of coal shipped from the production areas in western China to the population centers on the eastern seaboard, there was a similarly sharp reduction in the total ton-kilometers. The coal that was used in eastern China was largely replaced by oil and gas, and indirectly, by electricity. If one looks at the rate of growth of non-coal freight transported in 1998, it was only slightly negative and not inconsistent with the secular decline in non-coal railroad freight transported relative to the real GDP.

Why Was the Rate of Growth of Energy Consumption So Low During 1997-2000?

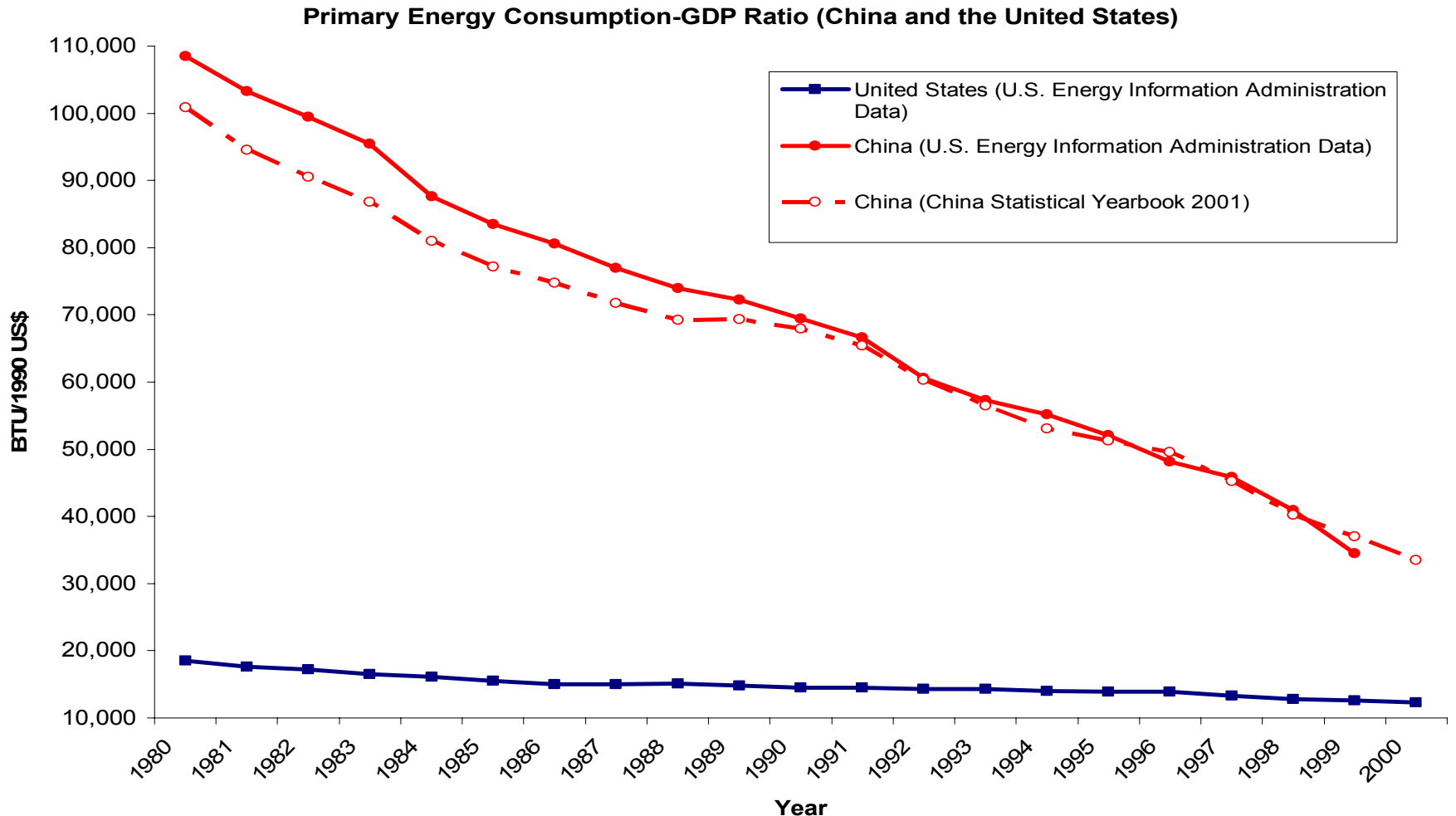
- ◆ For a rapidly growing and transforming economy, one expects the energy to real GDP ratio to decline over time. In the case of China, a number of factors that are relevant:
 - ◆ (i) the rise in the relative price of energy in the early 1990s (e.g., the price of electricity has increased 3 to 4-fold) and the resulting conservation efforts;
 - ◆ (ii) the more efficient production and transmission of energy from the new and large-scale power plants and power grids;
 - ◆ (iii) the change in the intersectoral composition of GDP, principally the rapid growth of the service (including construction) sector, which requires little energy, relative to the agricultural and industrial sectors and the more rapid growth of light industry relative to heavy industry; and
 - ◆ (iv) the change in the intra-sectoral composition of output, due especially to the upgrading of quality—for example, the proportion of high-quality steel produced in the steel sector has been rising rapidly, with the value-added rising much faster than energy consumption per ton. Thus, for the steel sector, the energy to value-added ratio will appear to be declining. The rate of growth of GDP can therefore be much faster than the rate of growth of energy consumption.
 - ◆ In the Chinese case, there is actually an additional factor. As part of an environmental and safety campaign, many small and medium coal mines were ordered closed in 1997. However, many localities, for a variety of reasons, secretly kept these mines working, and their production did not find their way into the statistics. No one knows for sure how much unreported production of coal there was during each of these years. It may be estimated to be on the order of 10% of the annual output in 1997, and then declining gradually over time, as these mines became closed. Thus, it is in part the under-reporting of coal production (and consumption), rather than the over-reporting of real GDP, that contributed to the slower reported rate of growth of energy relative to real GDP during some of these years.
- ◆ The Chinese energy consumption/GDP ratio has been declining continuously since 1980 by approximately 2/3 (while the U.S. energy consumption/GDP ratio has declined by approximately 1/3 between 1980 and 2000).

Real GDP and Energy Consumption of China 1952-2000

Real GDP and Energy Consumption of China



Primary Energy Consumption-GDP Ratio (China and the United States)



How Reliable Are Chinese Economic Data?

The Rates of Growth of Physical Outputs

- ◆ Why was the rate of growth of value added in industry as a whole so much higher than the weighted average of the rates of growth of the quantities of individual physical industrial commodities and products?
- ◆ The explanation lies once again in the change in the intra-sectoral composition of output—over time, as the quality of the goods produced improved, say, from raw iron to stainless steel, from plain cotton textiles to expensively finished designer fabrics, the value-added per ton of steel or per meter of cloth rose rapidly. For a developed economy nearly at equilibrium, the improvement in quality is marginal and gradual; for a rapidly growing and transforming economy such as China's, these improvements can come about very quickly and abruptly, resulting in real value-added rising significantly faster than the quantities of physical outputs.

How Reliable Are Chinese Economic Data?

Cross-Validation with Other Data

- ◆ It is possible to cross-check these figures on the rates of growth of real GDP, derived mostly from the production side, with those estimates derived independently from other methods. There are at least two other methods: the expenditure approach, consisting of looking at the rates of growth of final demands—consumption, investment, government expenditures, and net exports; and the income approach, consisting of adding up the incomes of households and enterprises (and indirect taxes), derived from survey rather than production or end use data.
- ◆ The results of these calculations do not differ from the published rates of growth of GDP by more than 100 basis points, which should be considered to be well within the margin of error for the statistics of a developing country.
- ◆ It is also possible to cross-check these figures with imports data, obtained from the statistics of trading partner countries (Chinese imports must be the exports of some other countries).
- ◆ It is also possible to cross-check using the quantity theory of money equation (the sum of the rates of growth of the money supply and the velocity of circulation of money must be equal to the sum of rates of growth on information and real GDP):

$$MV=PT$$

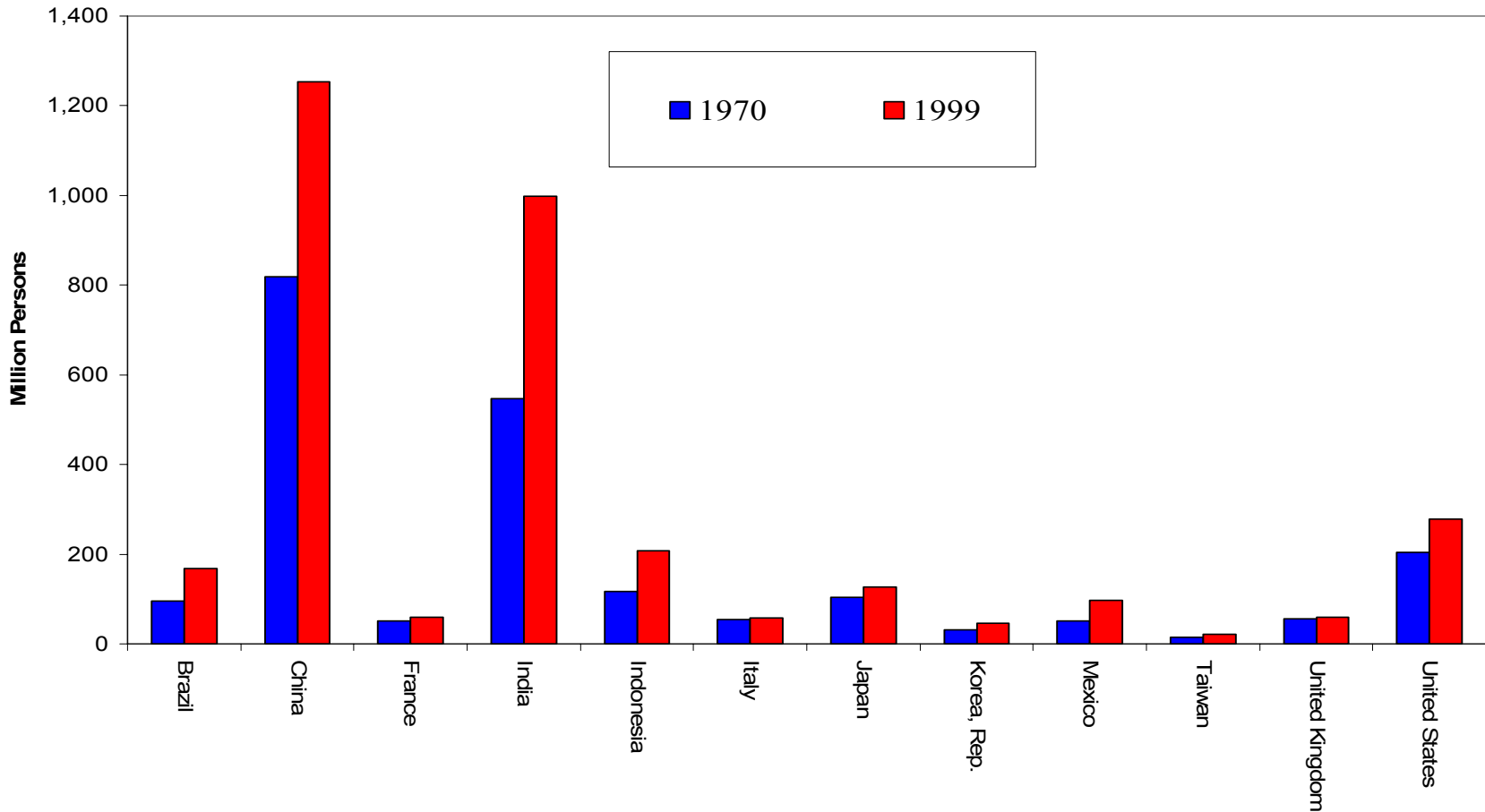
Are the Reported Rates of Growth of Real GDP Reliable? 1999

- ◆ The expenditure approach
 - ◆ Rate of growth of real gross fixed investment=7.3% with a share of GDP of 35.3% (=2.6%)
 - ◆ Rate of growth of changes in stocks estimated at -18.0% with a share of 2.8% (= - 0.5%)
 - ◆ Rate of growth of real retail sales=10%; rate of growth of real per capita disposable income (=9.3% urban; 4% rural); rate of growth of real personal consumption=8.9% with an estimated share of GDP of 46% (=4.1%)
 - ◆ Rate of growth of government consumption=14.1% with a share of GDP of 11.9% (=1.7%)
 - ◆ Rate of growth of net exports estimated at between 20% and 50% (trade surplus was US\$30 billion in 1999 with the crackdown on smuggling; smuggling adjusted trade surplus in 1998 may be estimated at between US\$20-25 billion) with a share of GDP of 3.8% (=0.76%)
- ◆ The sum of the real rates of growth of the components of expenditure = $2.6 - 0.5 + 4.1 + 1.7 + 0.76 = 8.66\%$ (compared to 7.1%); excluding the rate of growth of net exports, the estimated rate of growth of real GDP according to the expenditure approach would be 7.9%.

Comparison with Developed and Developing Economies

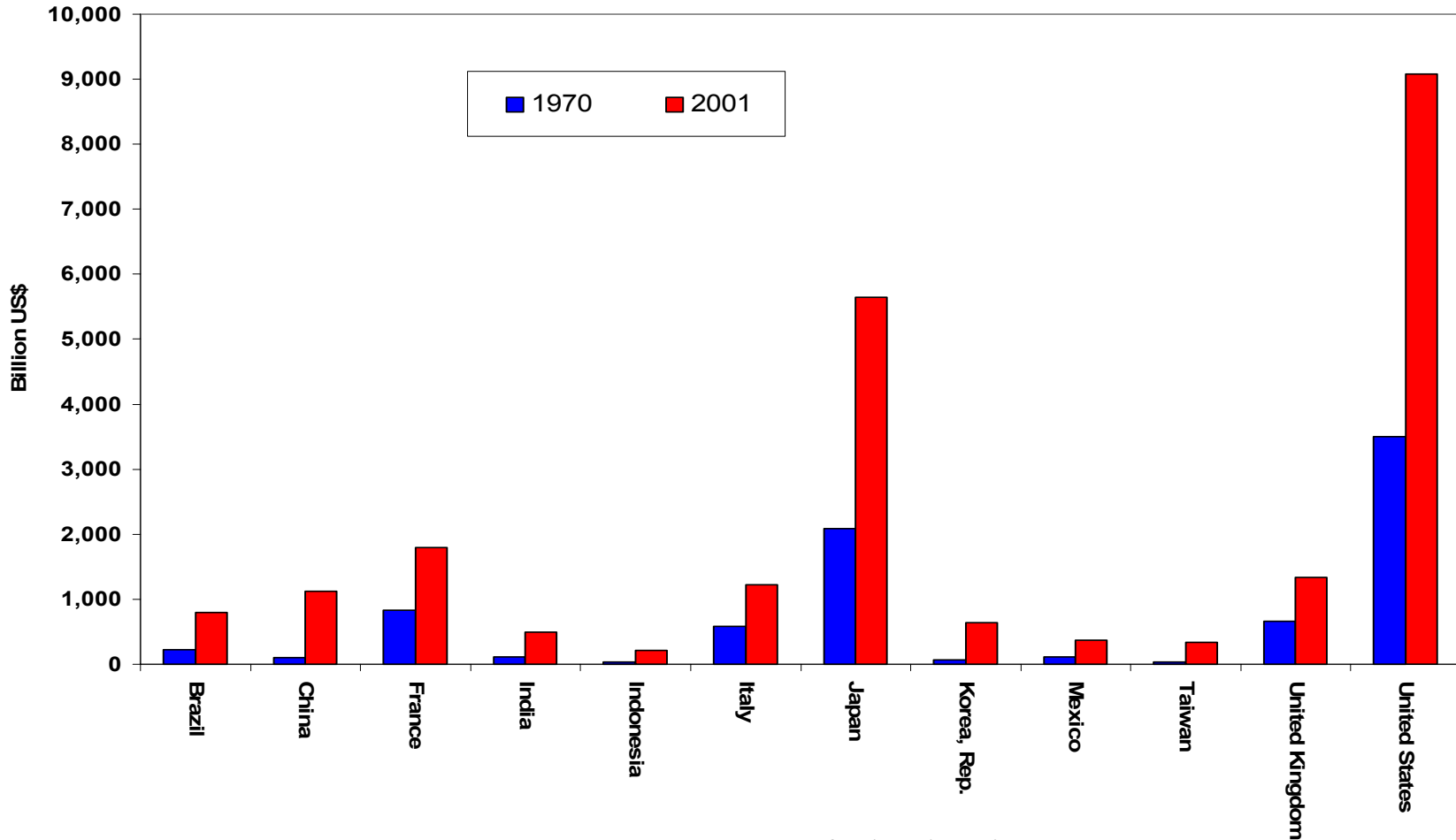
Population of Selected Countries and Regions, 1970 and 1999

Population of Selected Countries and Regions



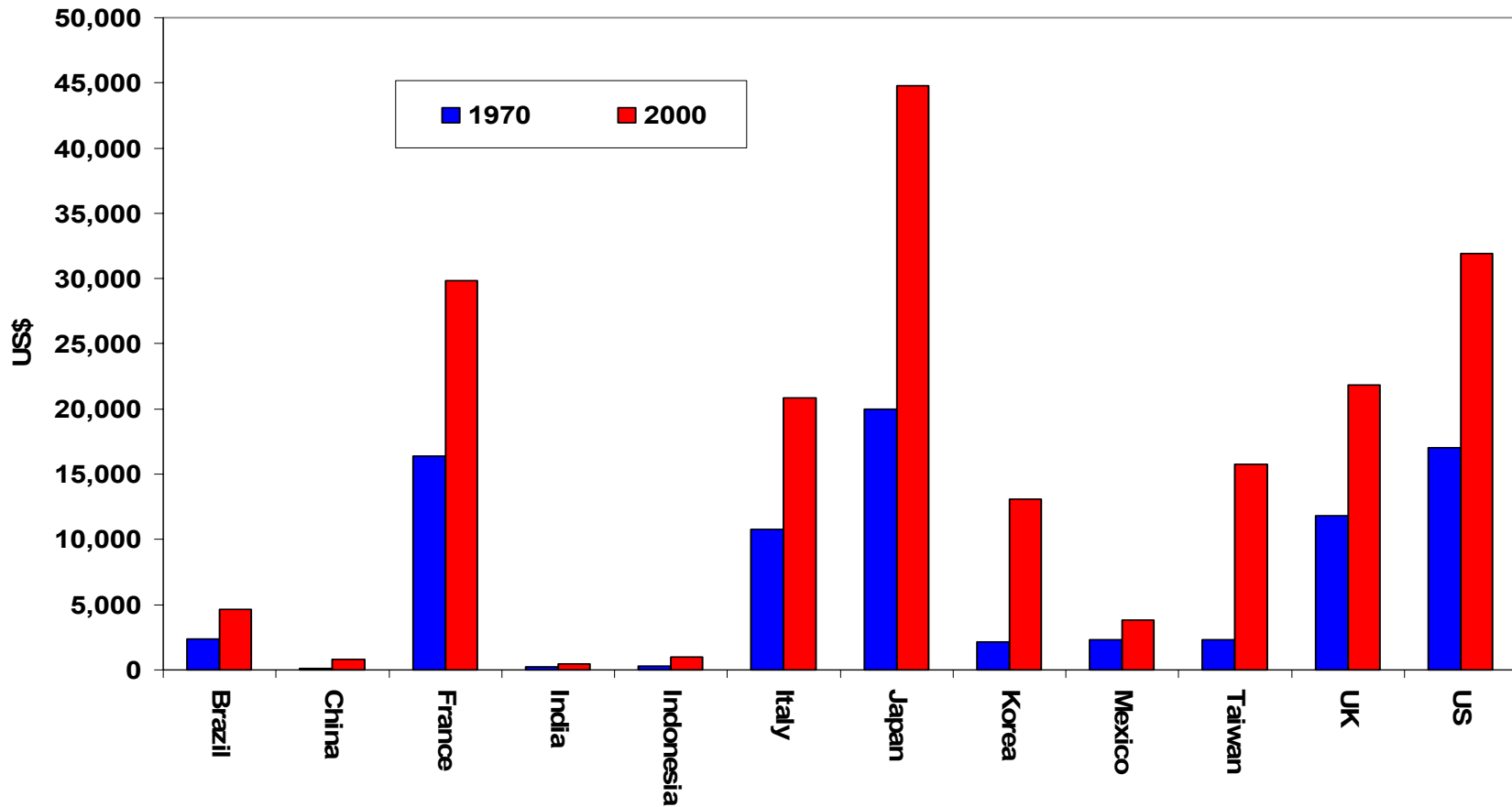
Real GDP of Selected Countries and Regions, 1970 and 2001

Real GDP of Selected Countries and Regions, 1970 and 2001
(1995 US\$)

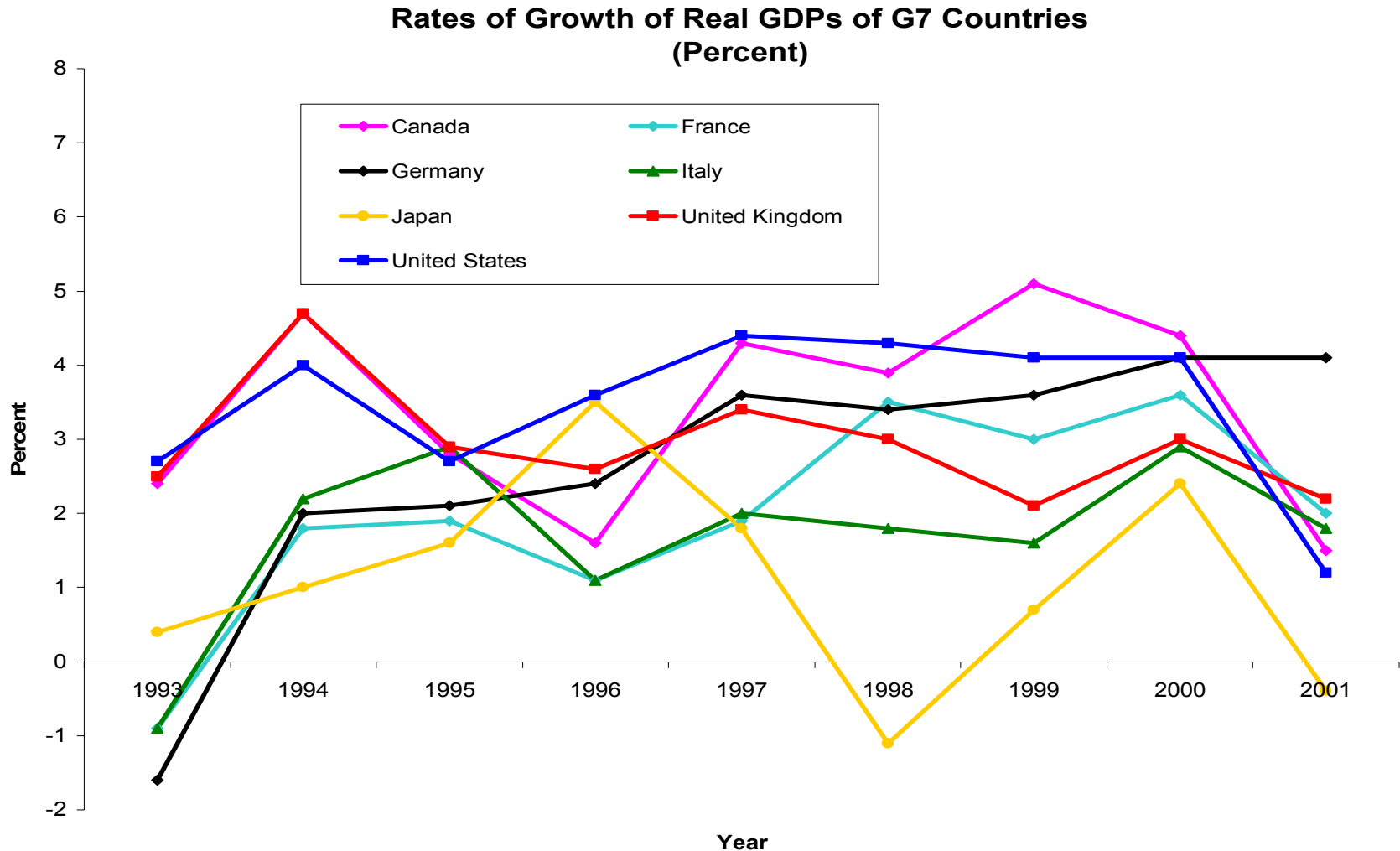


Real GDP per Capita of Selected Countries and Regions, 1970 and 2000

Real GDP per Capita of Selected Countries and Regions, 1970 and 2000
(1995 US\$)

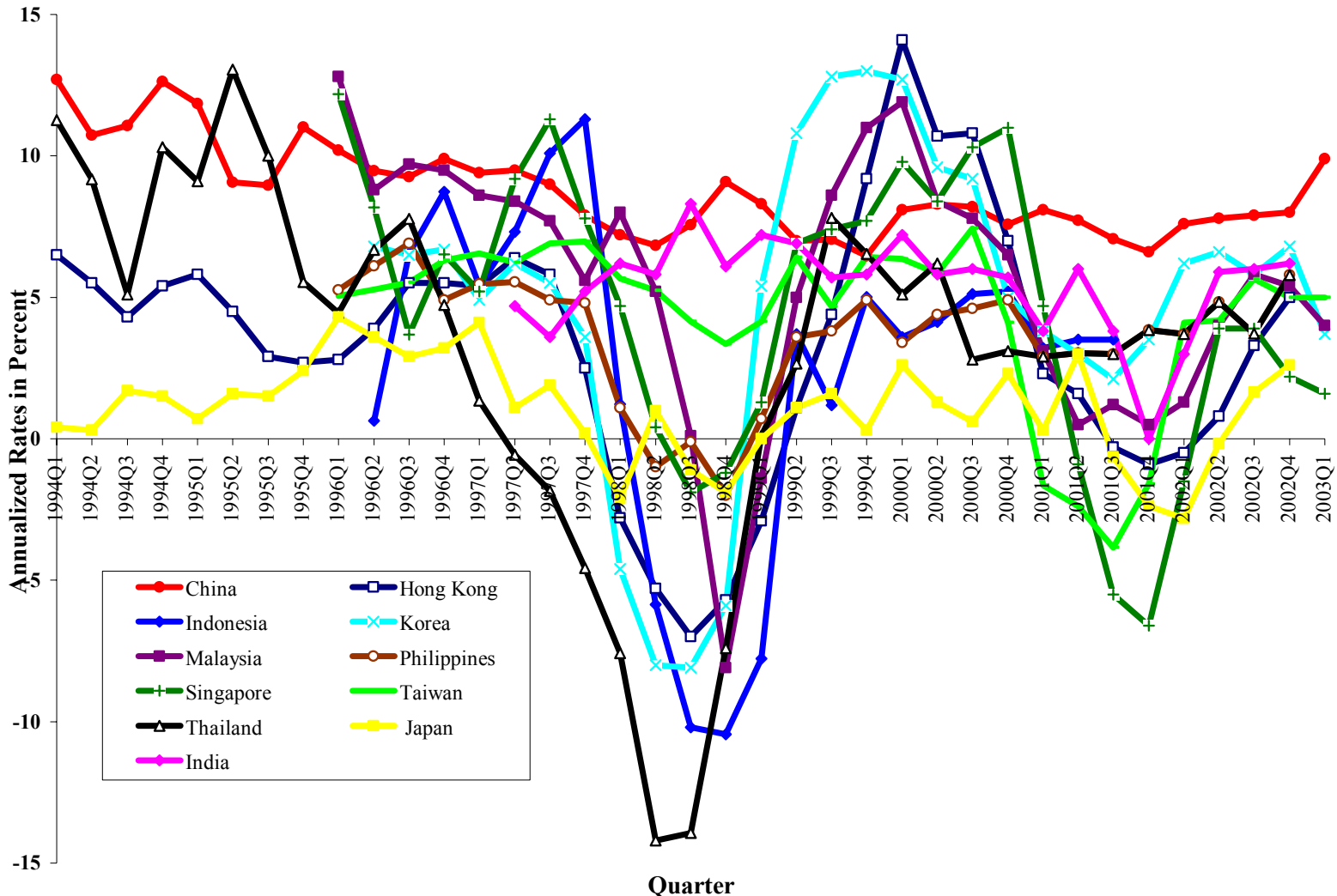


Rates of Growth of Real GDP of G7 Countries



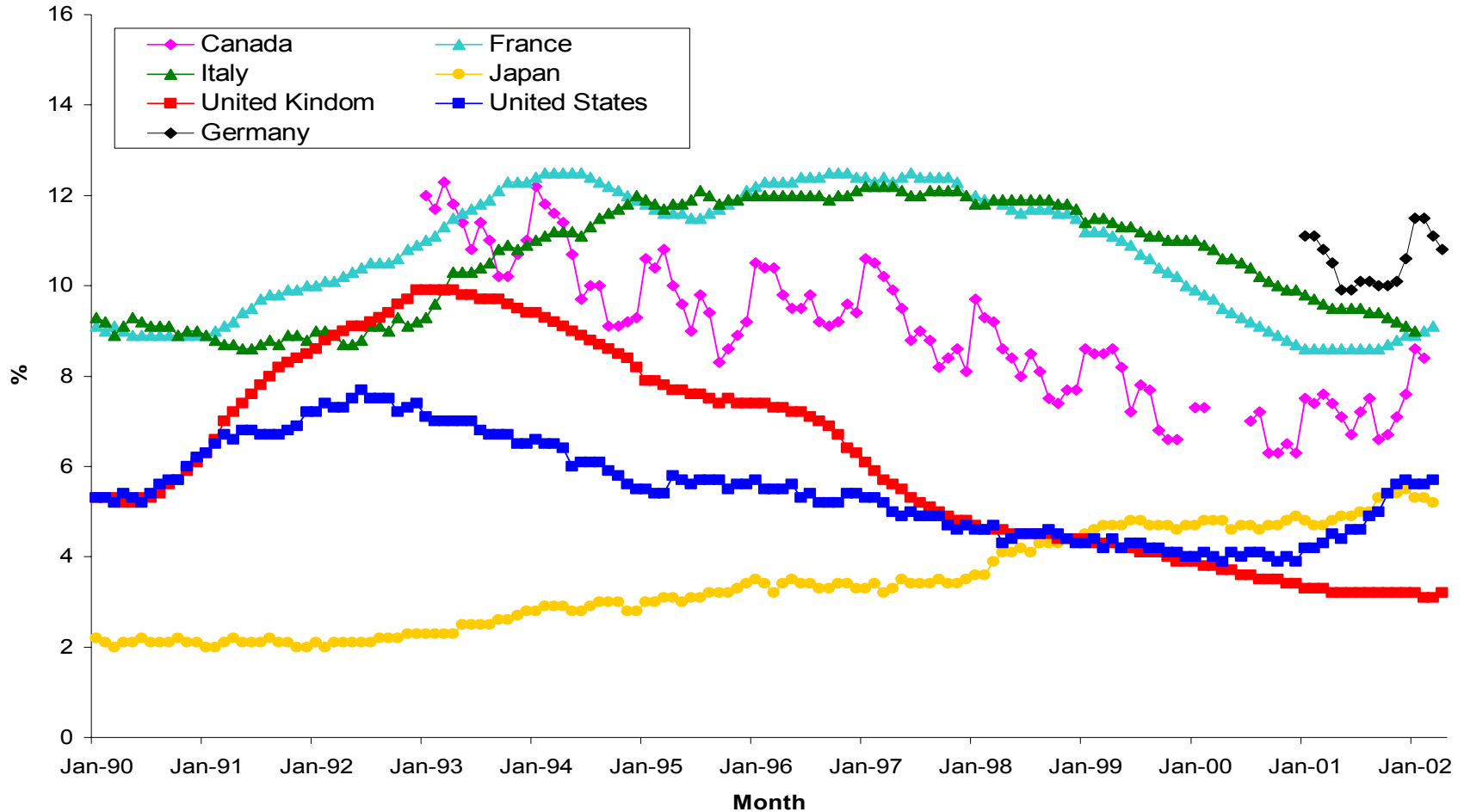
Quarterly Rates of Growth of Real GDP: Selected East Asian Economies

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



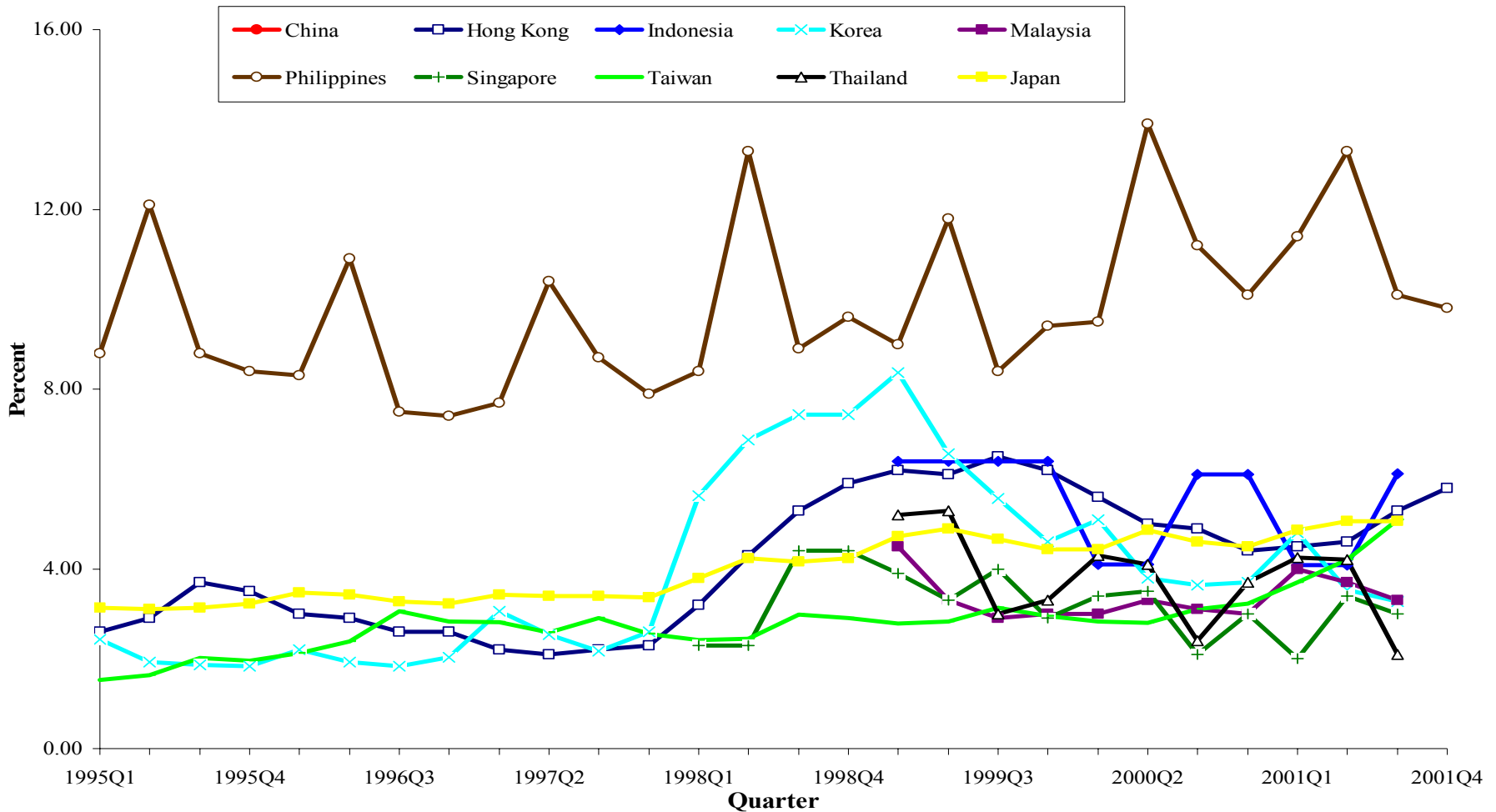
Rates of Unemployment of G-7 Countries

Monthly Unemployment Rates of G7 Countries



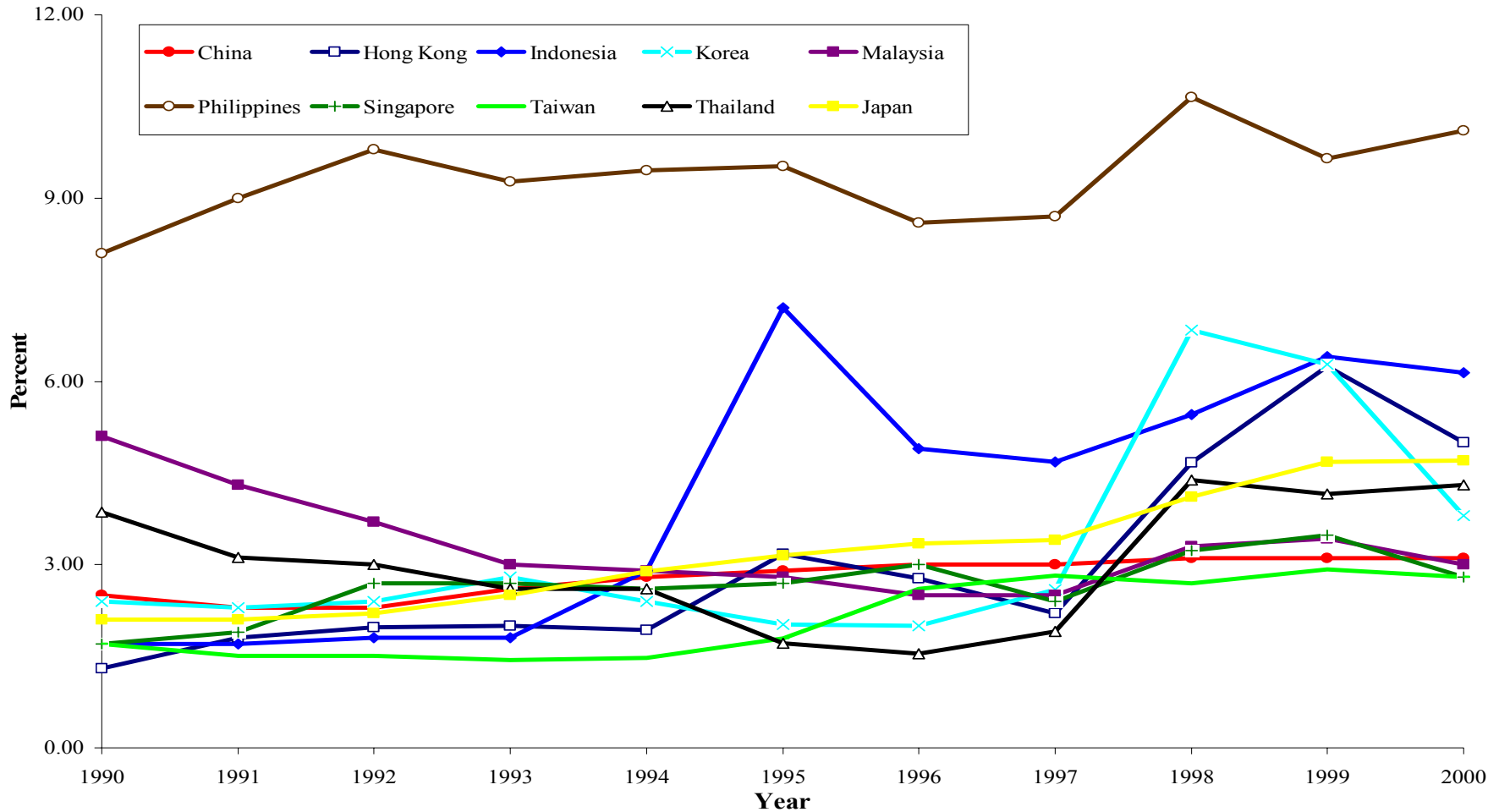
Quarterly Rates of Unemployment: Selected East Asian Economies

Unemployment Rate of Selected East Asian Economies (Quarterly Data)



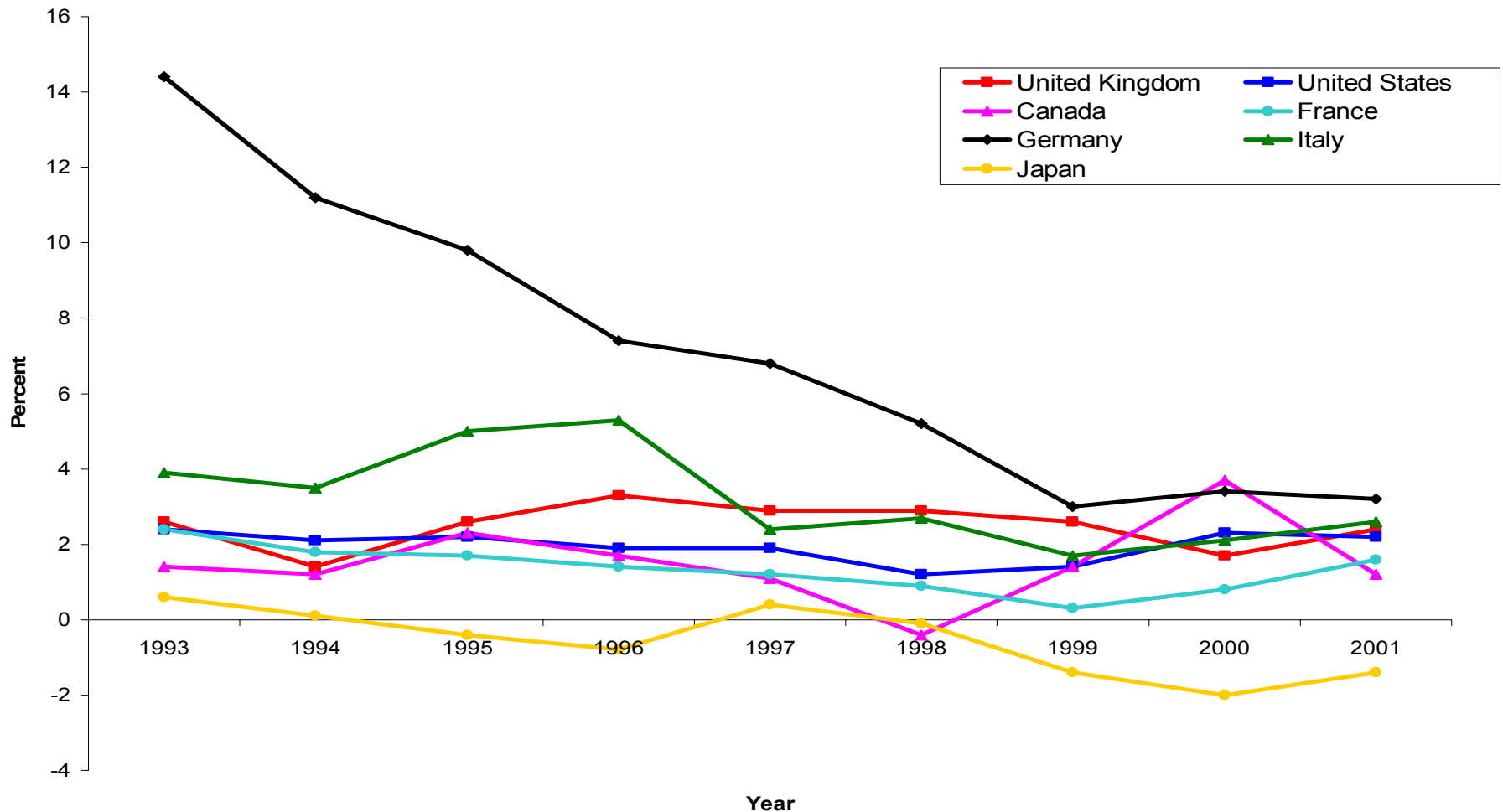
Annual Rates of Unemployment: Selected East Asian Economies

Annual Unemployment Rates of Selected East Asian Economies



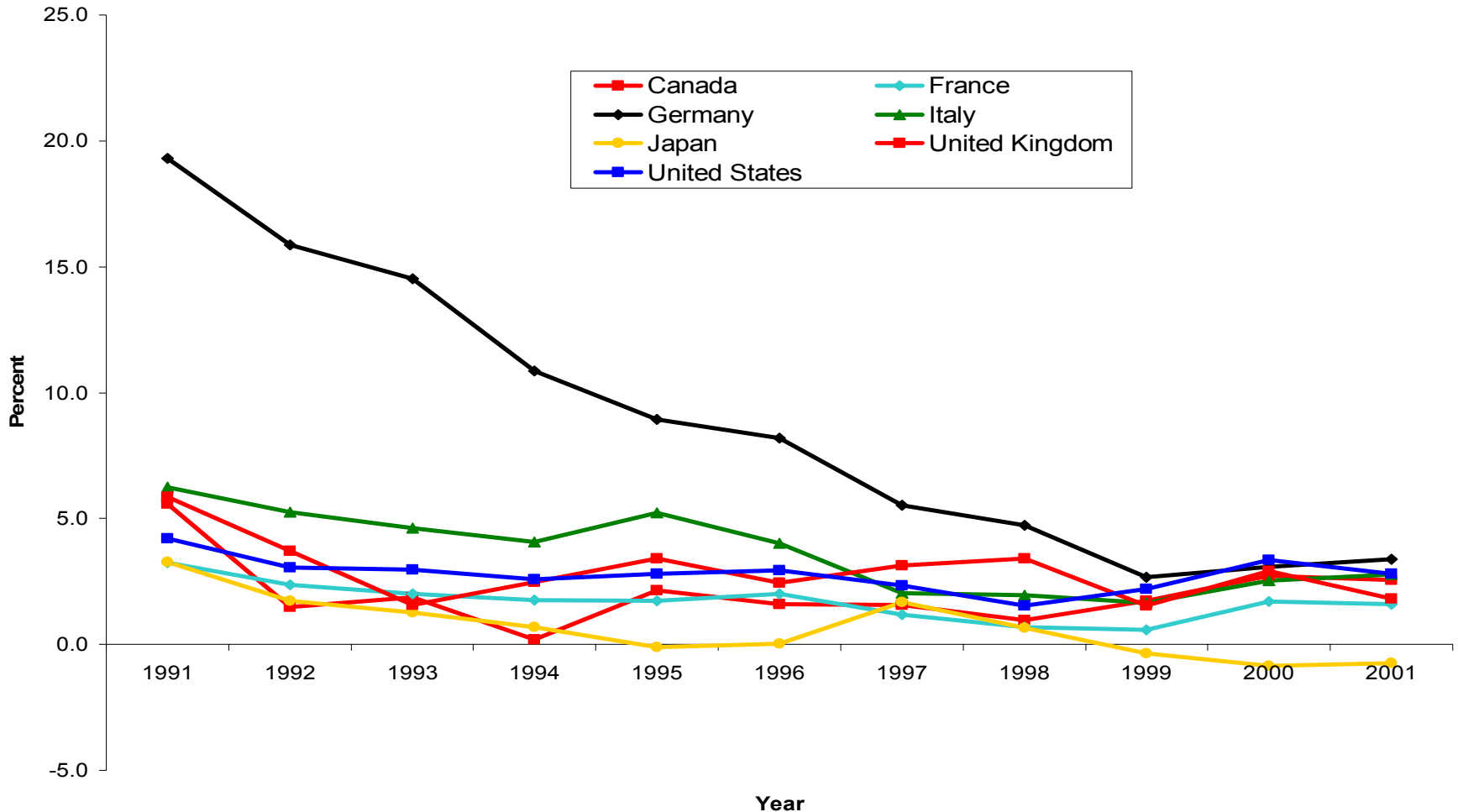
Rates of Inflation of G-7 Countries (GDP Deflator)

Rates of Inflation of G-7 Countries (GDP Deflator)



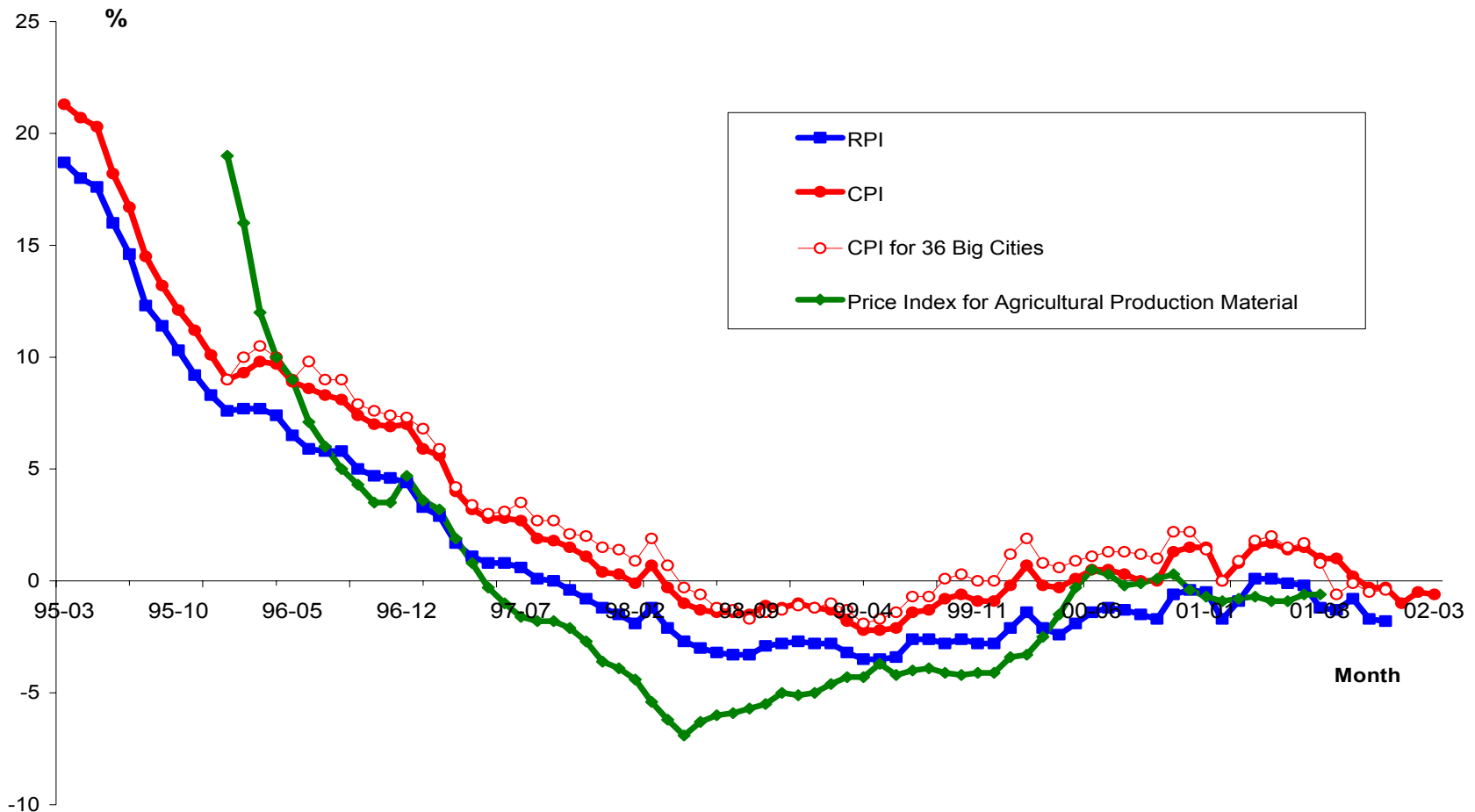
Rates of Inflation of G-7 Countries (CPI)

Rates of Inflation of G-7 Countries (CPI)

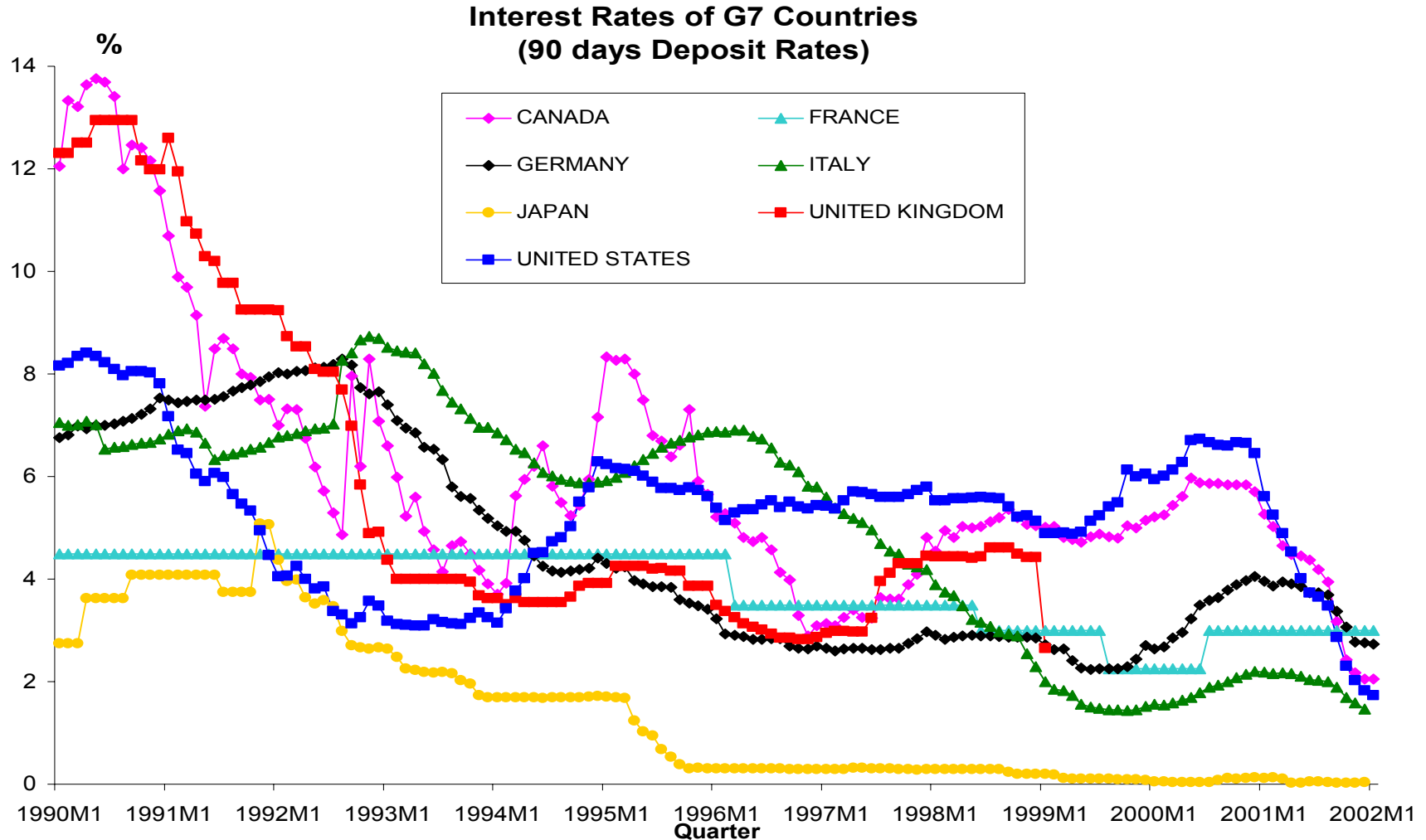


The Consumer and Retail Price Indices

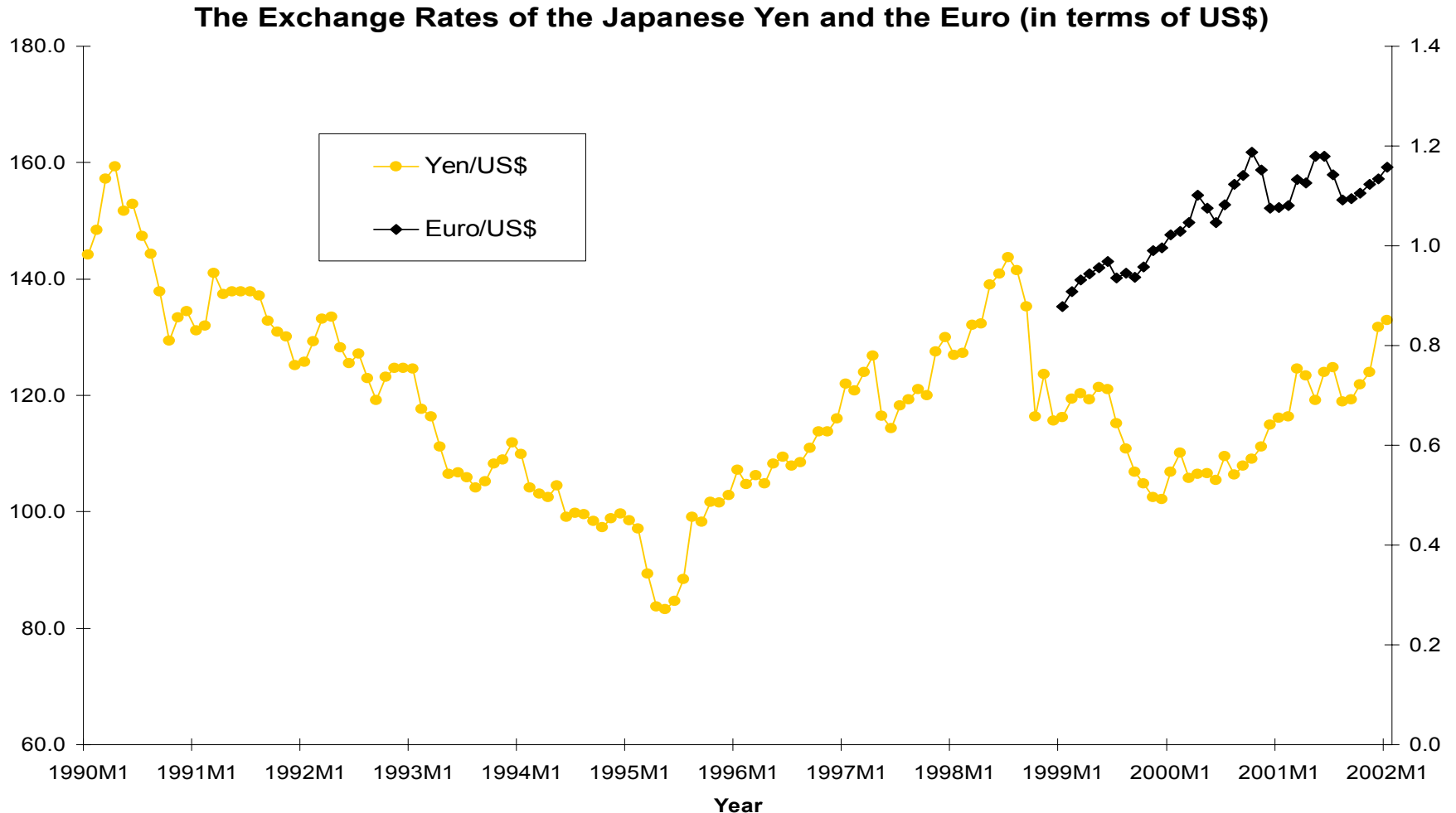
Monthly Rates of Change of Price Indices Since 1995 (Y-o-Y)



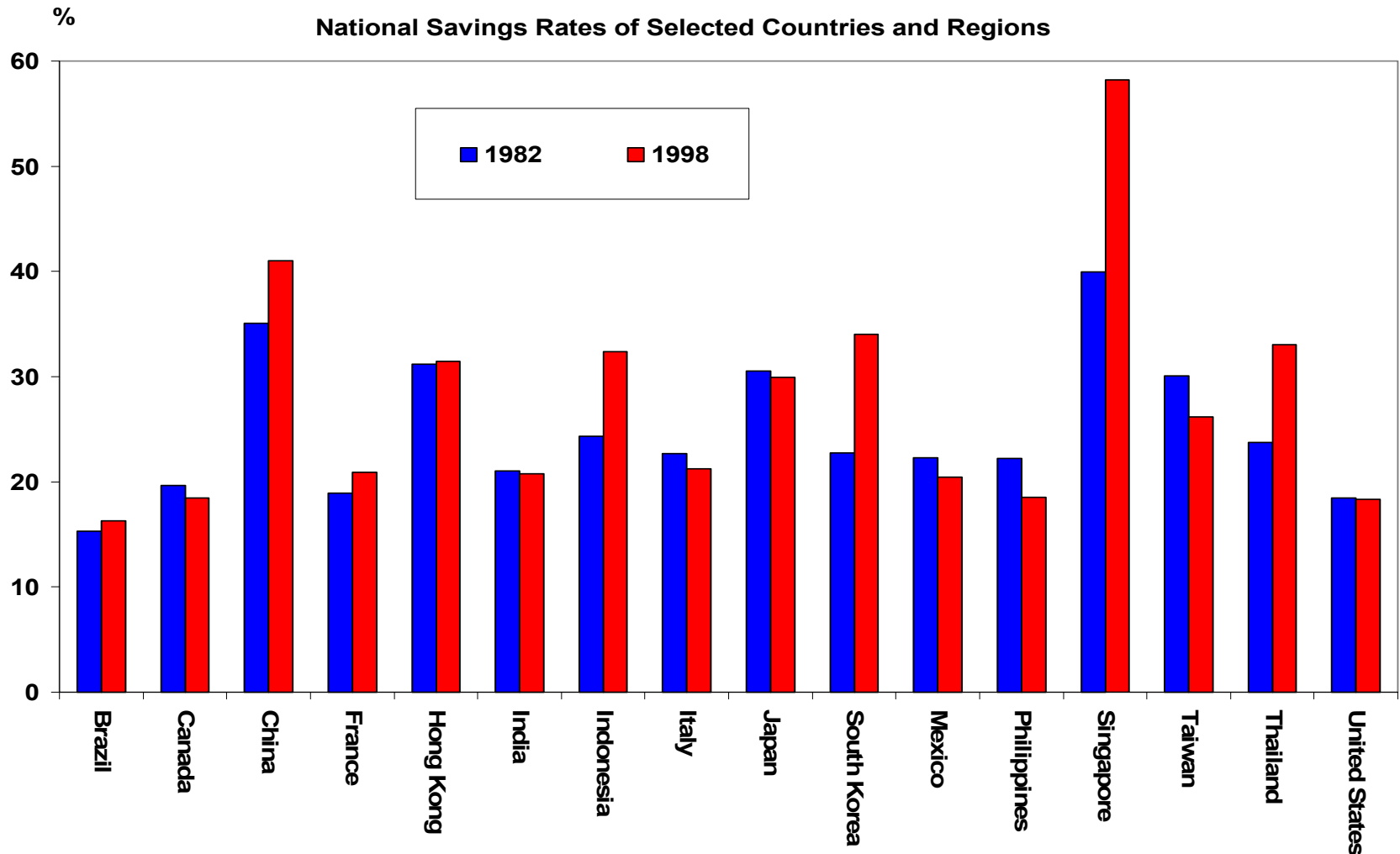
Rates of Interest of G-7 Countries



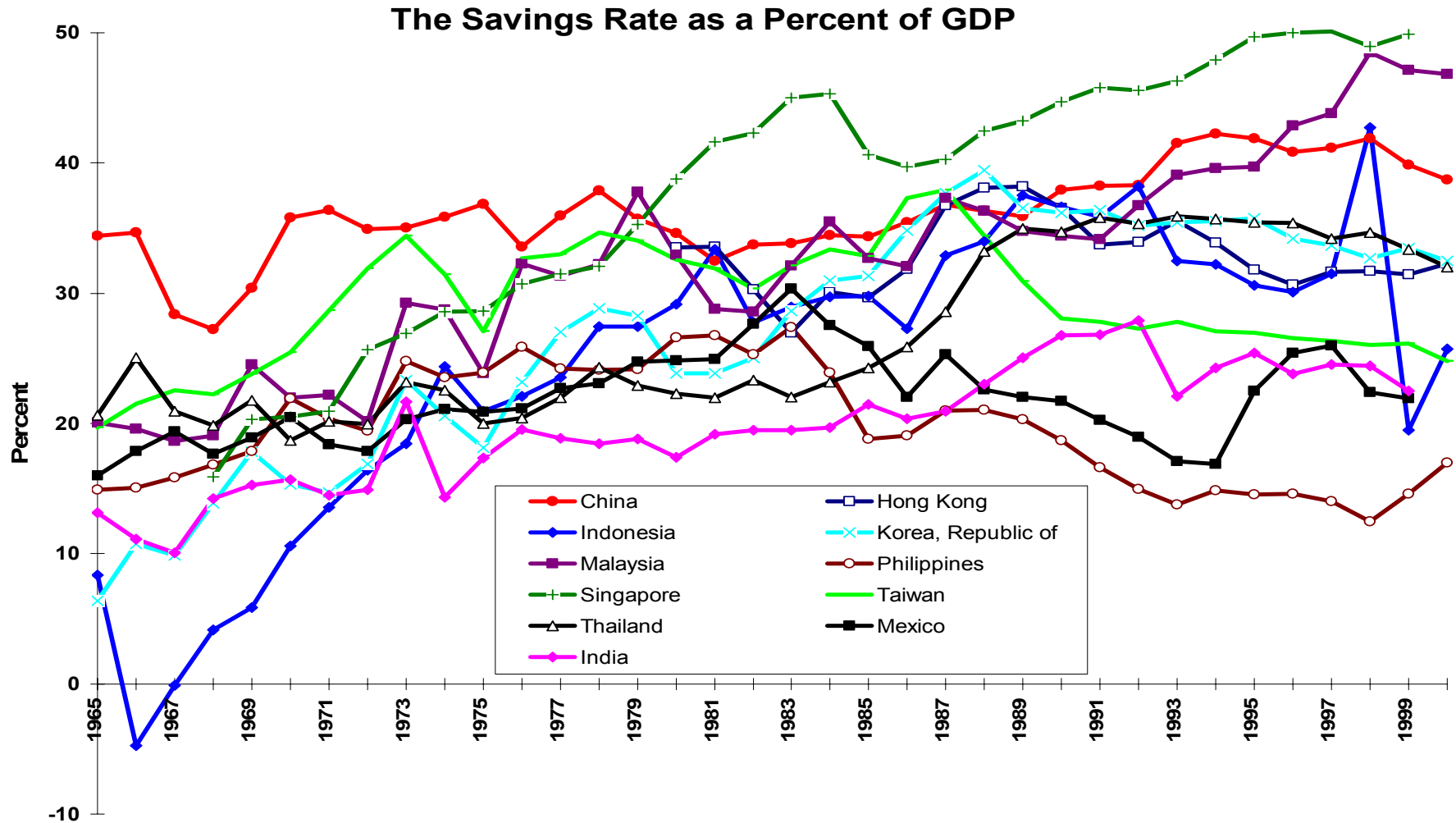
The Exchange Rates of the Japanese Yen and the Euro



National Savings Rate as a Percent of GDP: Selected Countries and Regions

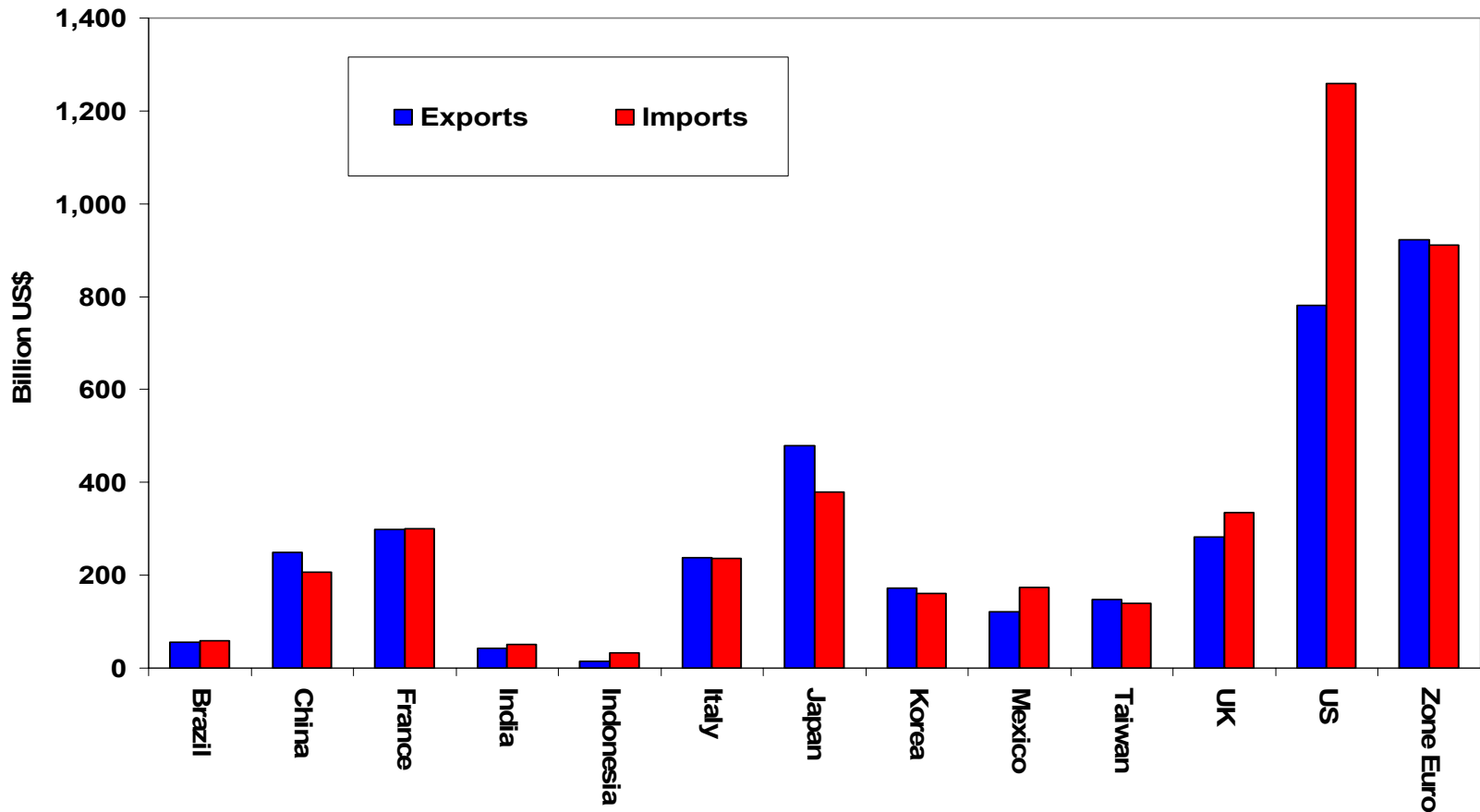


The Savings Rate as a Percent of GDP: Selected East Asian Countries and Regions



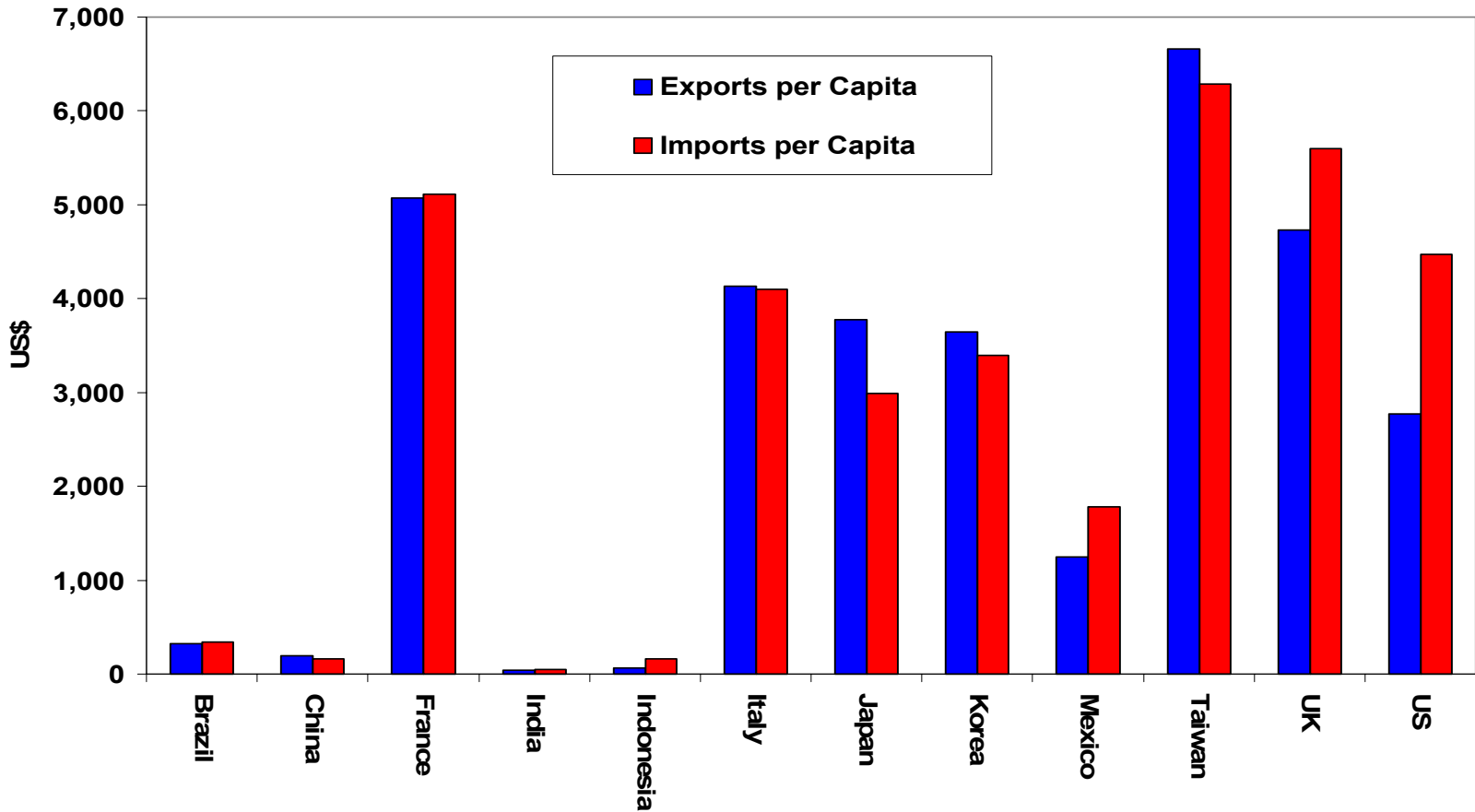
Exports and Imports (US\$): Selected Countries and Regions, 2000

Exports and Imports of Selected Countries and Regions, 2000
(US\$)

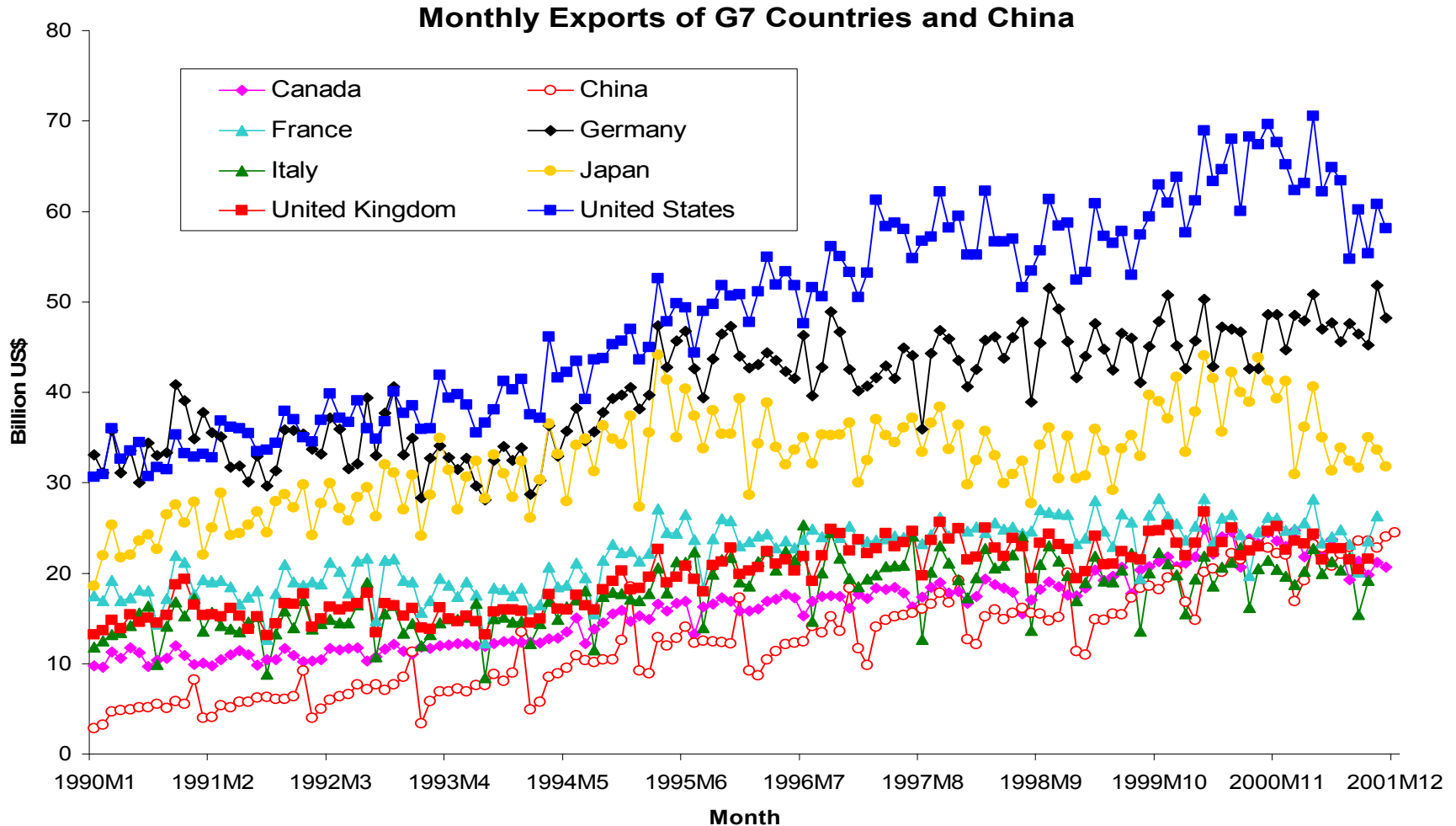


Exports and Imports per Capita (US\$): Selected Countries and Regions, 2000

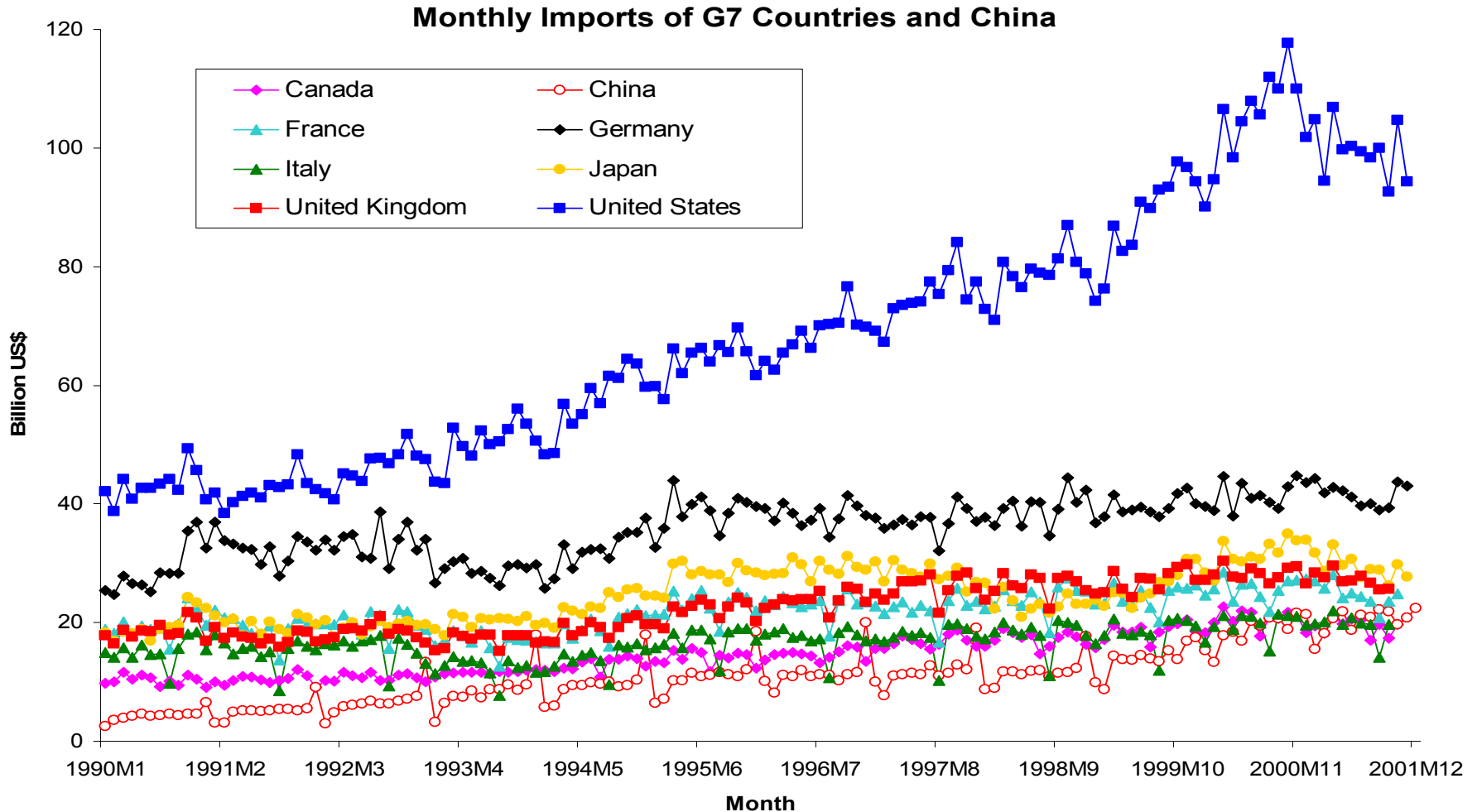
Exports and Imports per Capita of Selected Countries and Regions
(Year 2000)



Monthly Exports of G7 Countries and China



Monthly Imports of G7 Countries and China

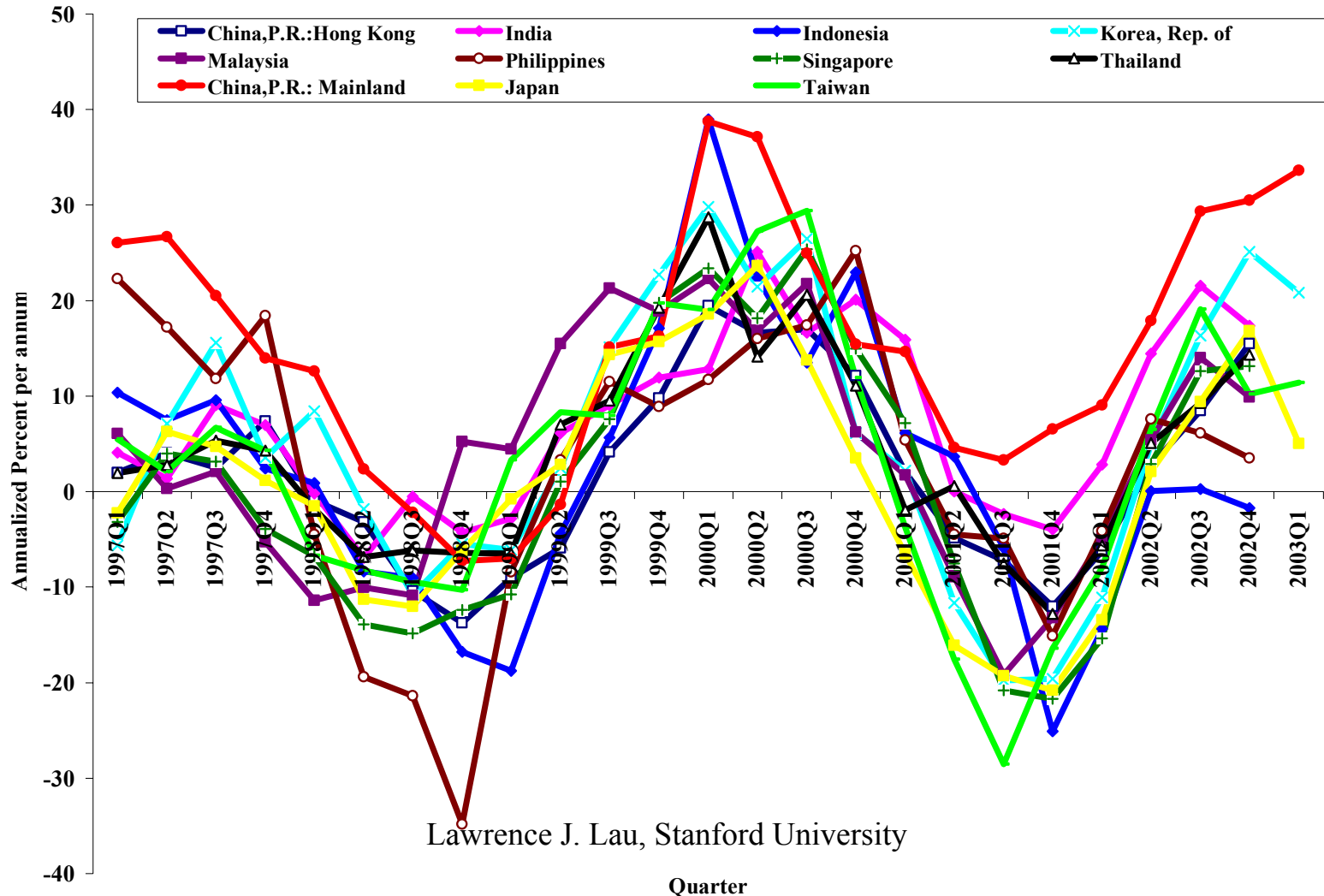


The Relative Stability of the Rate of Growth of Real GDP

- ◆ Gross domestic investment is mostly financed through domestic savings rather than foreign investment or loans.
- ◆ Foreign direct investment (FDI) accounts for approximately 10% of gross domestic investment in China, a relatively small proportion.
- ◆ Despite fluctuations in exports and imports, the rate of growth of real GDP has remained remarkably stable at 7-8%. Exports are approximately 25% of GDP, but the value-added content of exports is only approximately 30%, resulting in an export-generated value-added to GDP ratio of 7.5%. Chinese exports to the U.S. is approximately 8% of Chinese GDP (according to adjusted U.S. data), with a value-added content of 20%, resulting in a value-added to GDP ratio of 1.6%.
- ◆ The contribution of net exports of goods and services to the economic growth of 2002 is approximately 1% but is likely to be negative for 2003. The volatility of the Chinese annual rates of growth has also declined over time, indicating an improved capacity for macroeconomic management.

Quarterly Rates of Growth of Exports: Selected East Asian Economies

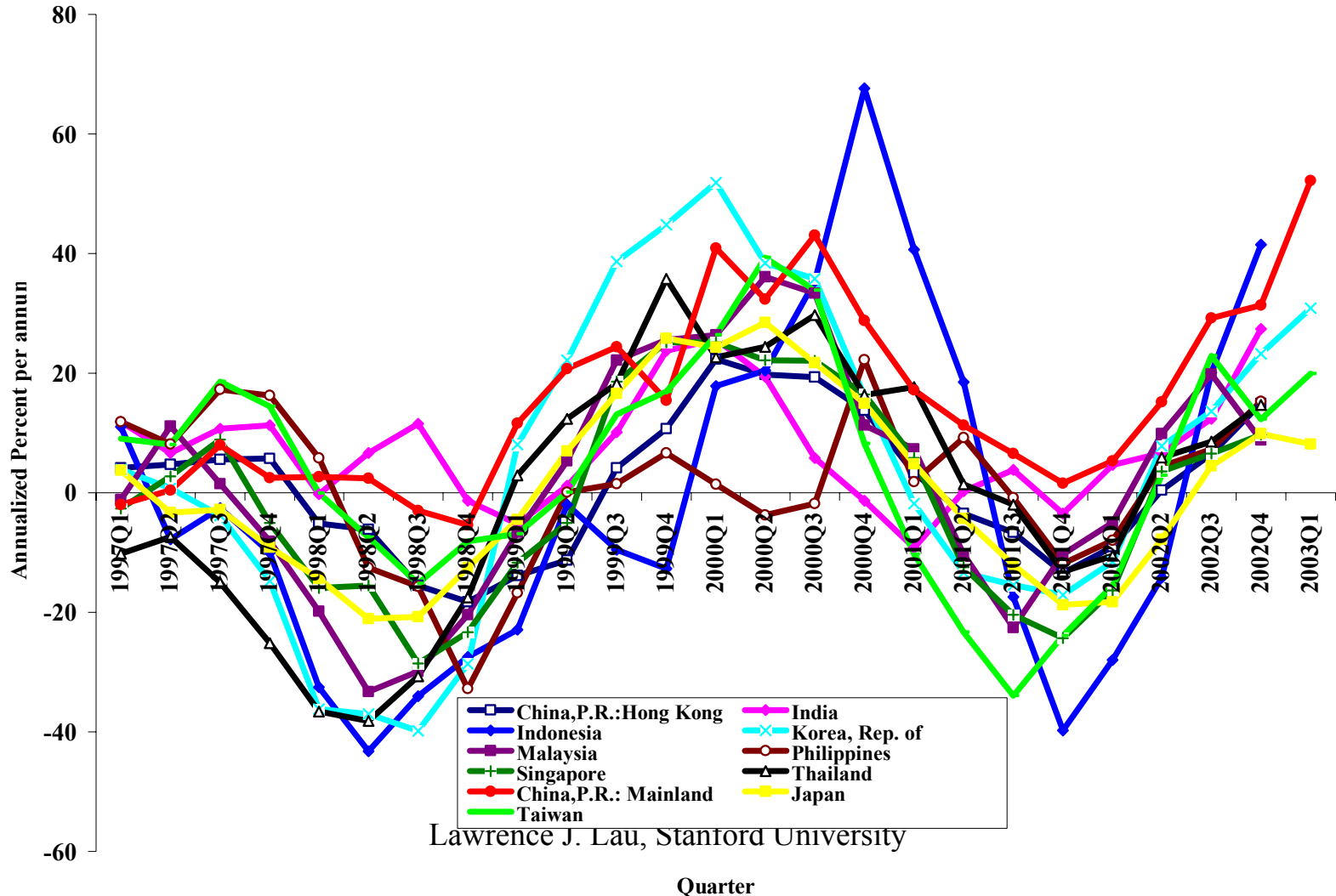
Year-over-Year Quarterly Rates of Growth of Exports in U.S.\$ (Percent)



Lawrence J. Lau, Stanford University

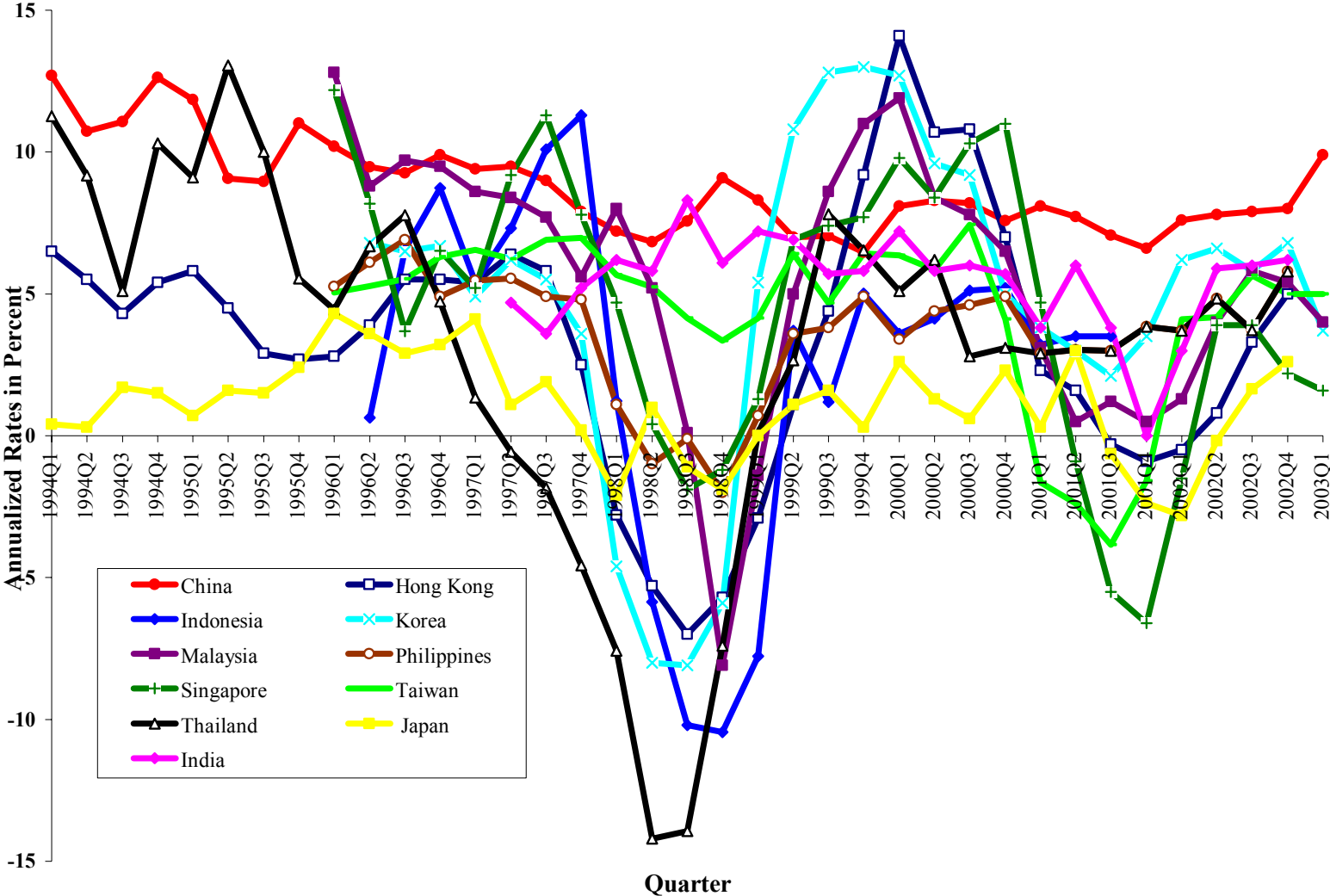
Quarterly Rates of Growth of Imports : Selected East Asian Economies

Year-over-Year Quarterly Rates of Growth of Imports in U.S.\$ (Percent)

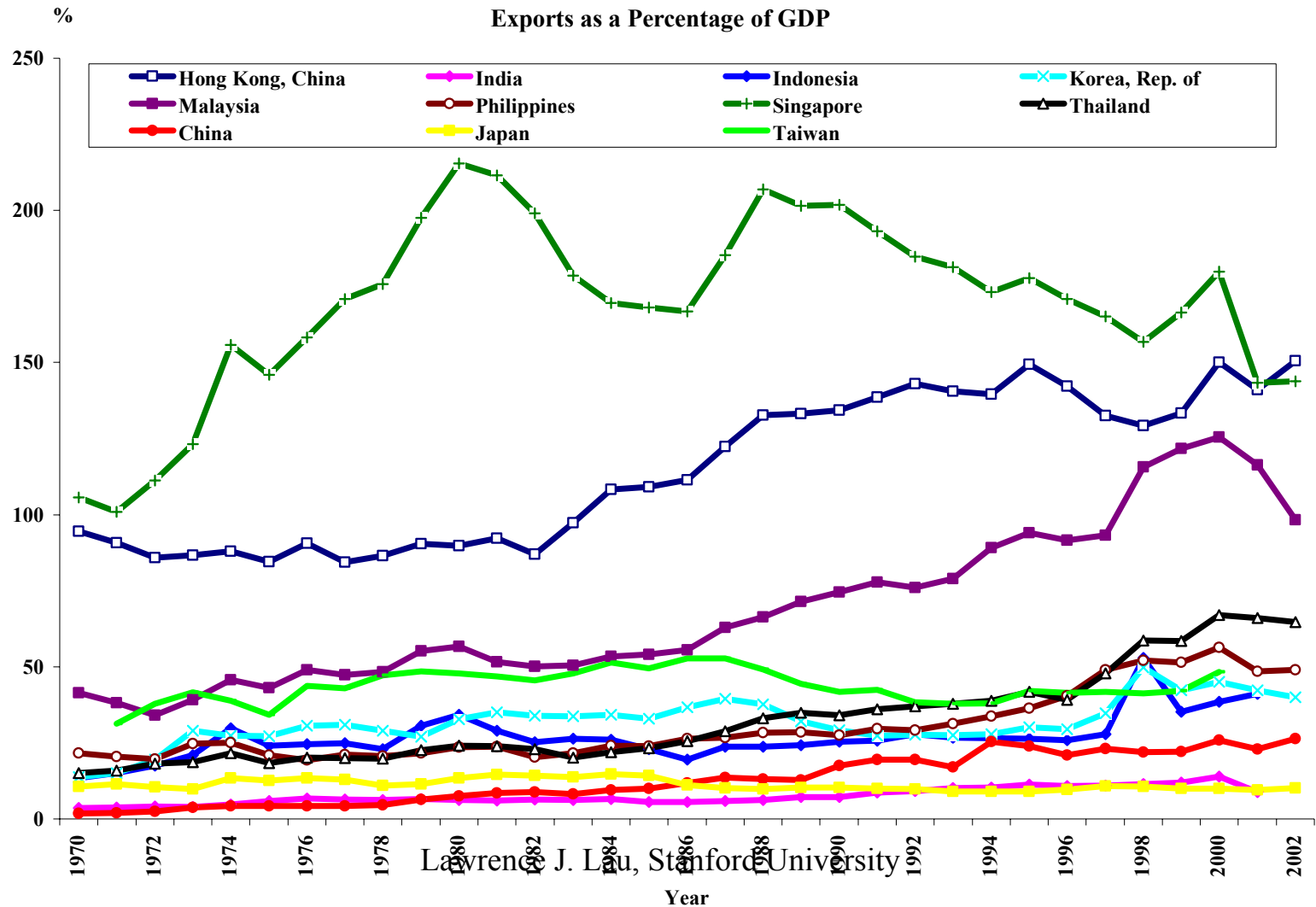


Quarterly Rates of Growth of Real GDP: Selected East Asian Economies

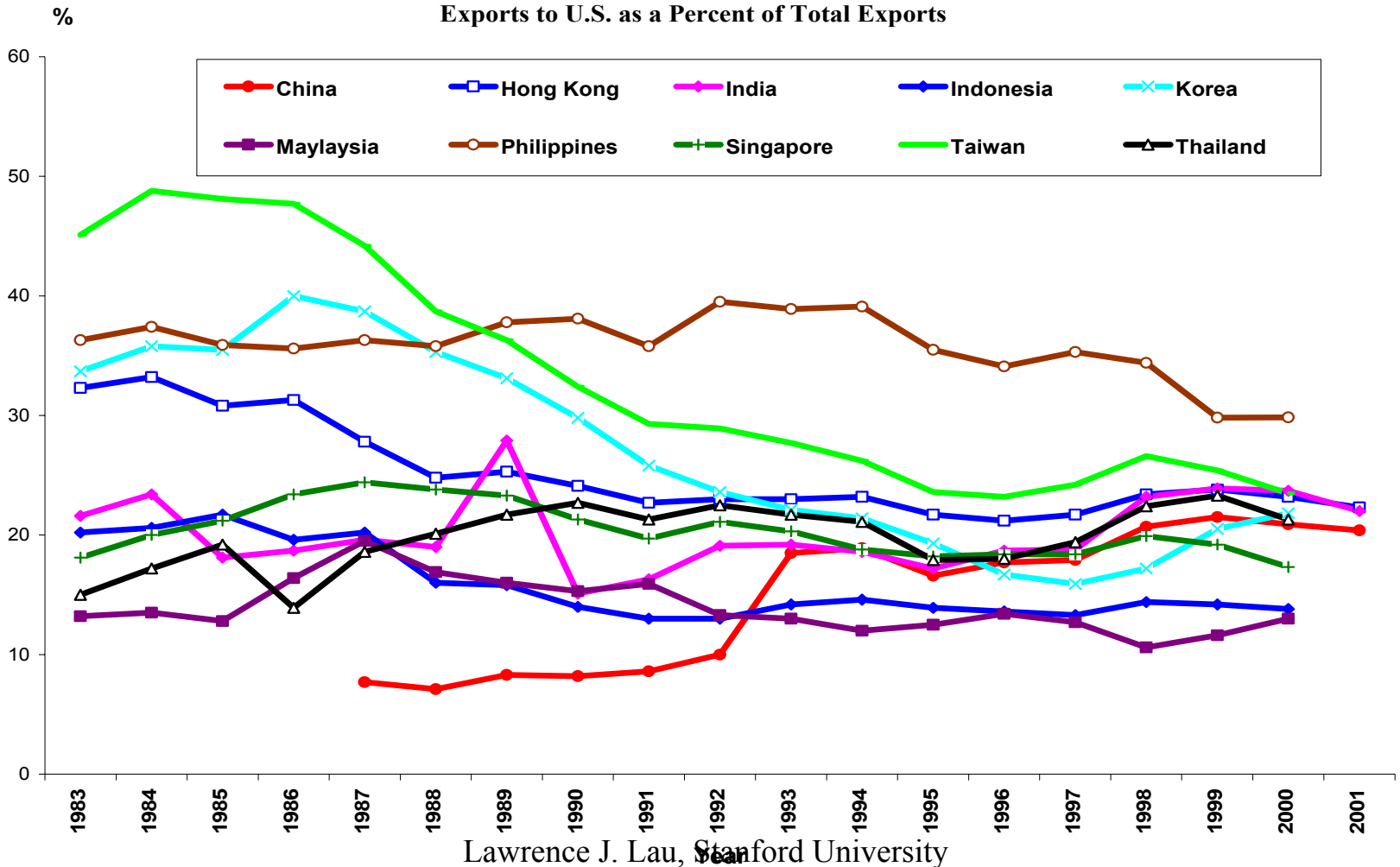
Quarterly Rates of Growth of Real GDP, Year-over-Year, Selected East Asian Economies



Exports as a Percent of GDP: Selected East Asian Economies and U.S.

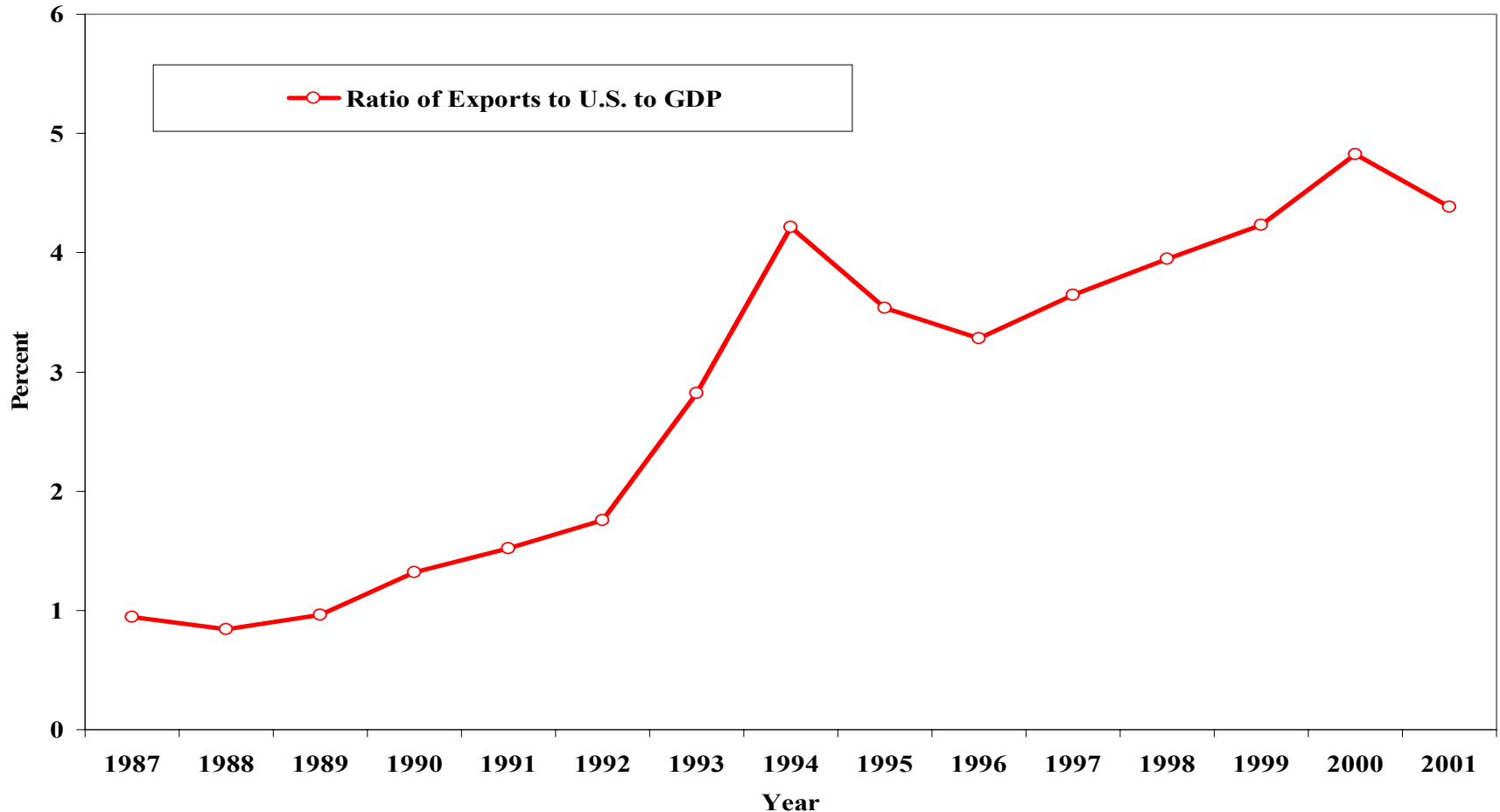


Exports to U.S. as a Percent of Total Exports

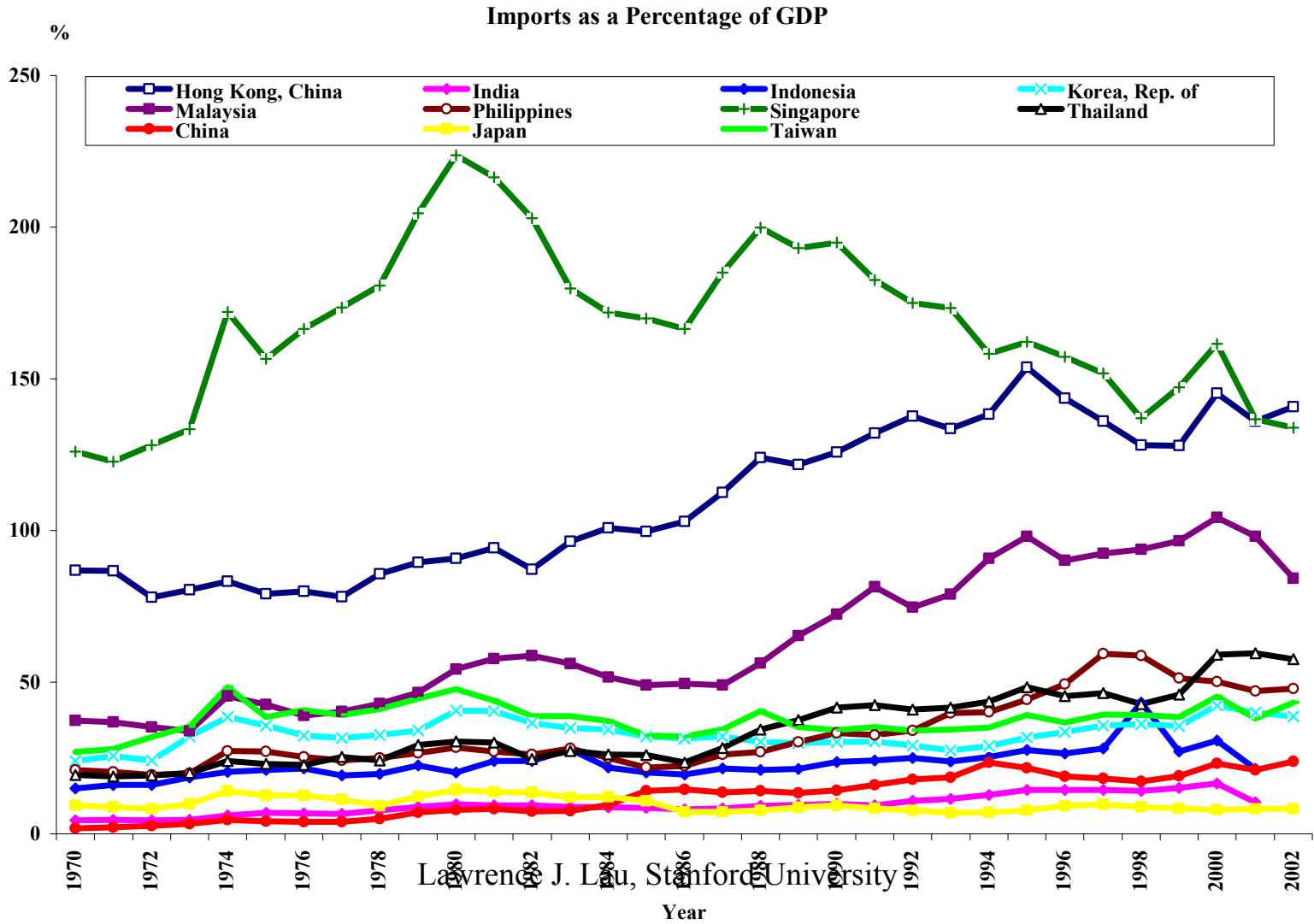


Chinese Exports to the United States as a Percent of Chinese GDP (Chinese Data)

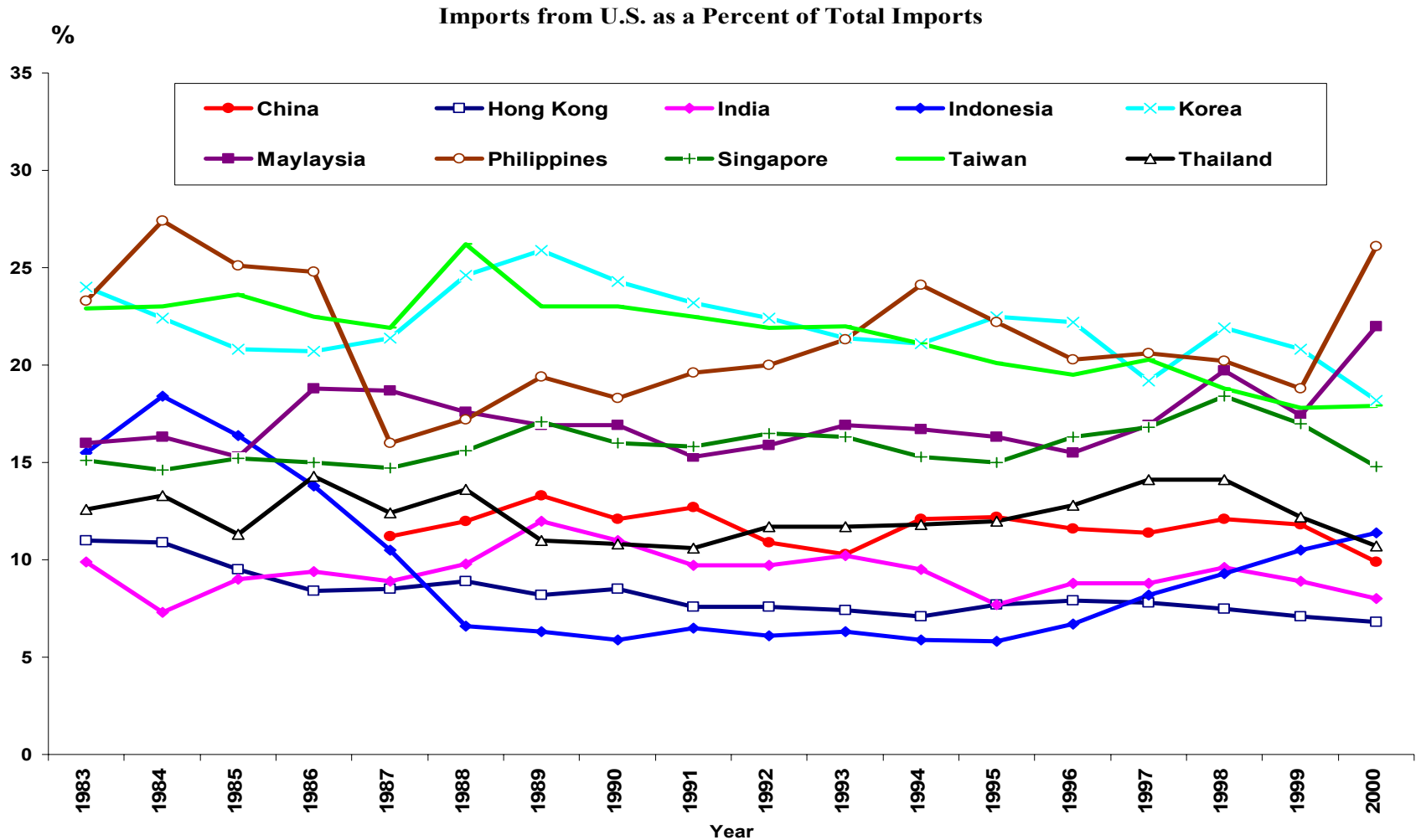
Chinese Exports to U.S. as a Percent of Chinese GDP



Imports as a Percent of GDP: Selected East Asian Economies and U.S.



Imports from U.S. as a Percent of Total Imports



China's Gross Domestic Investment as a Percent of GDP



Foreign Direct Investment (FDI)

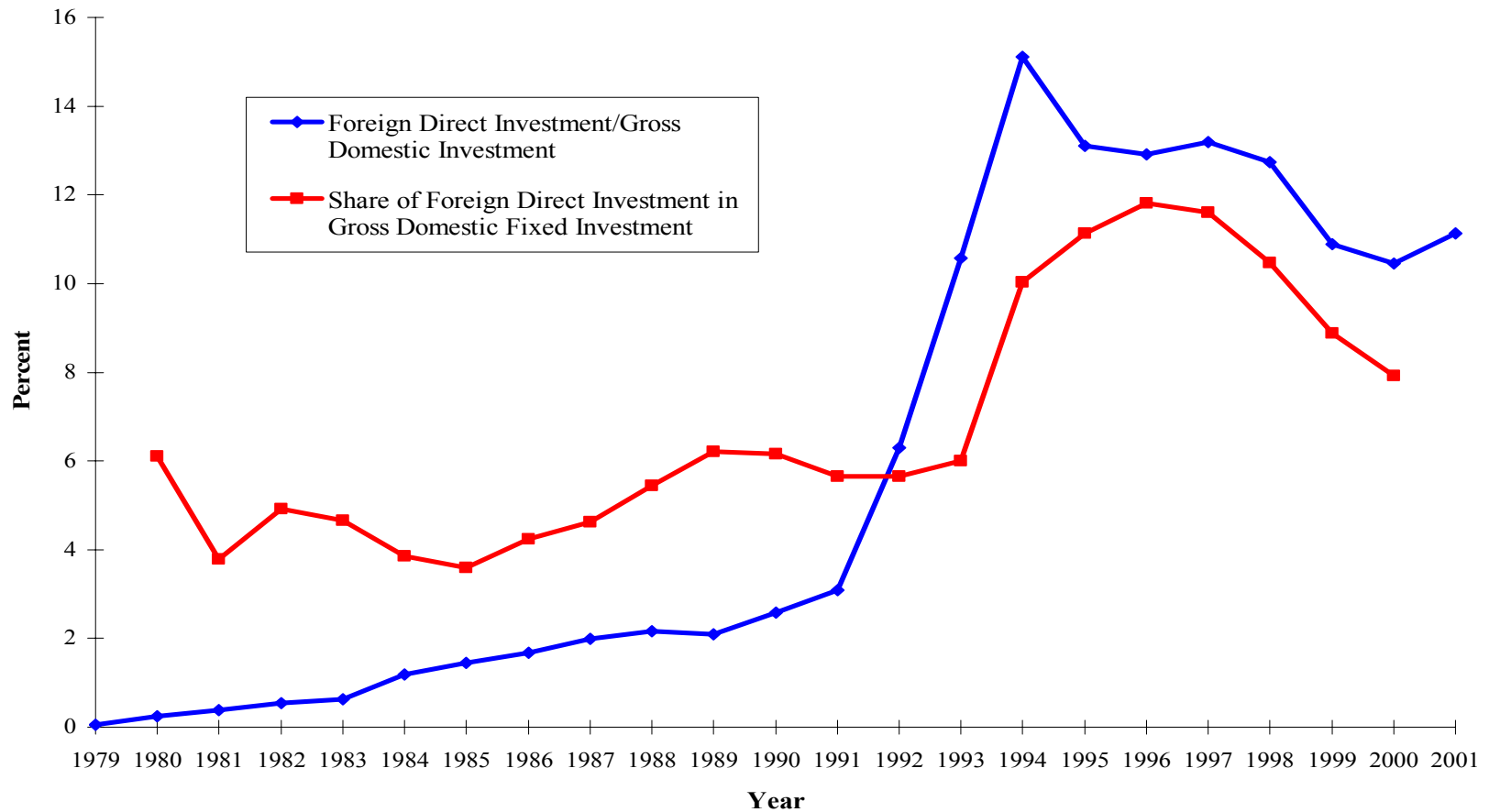
- ◆ FDI, at US\$60 billion a year, amounts to approximately 12% of the annual Chinese aggregate gross domestic investment of approximately US\$500 billion. Moreover, a significant proportion of it is what is known as “recycled” or “round-tripped” investment ultimately originated by Chinese entities and individuals. Quantitatively, FDI is not critical to the Chinese economy.
- ◆ Cumulative FDI at year end 2002 amounted to US\$ 448.17 billion
- ◆ Qualitatively, FDI is probably more important because it brings in technology, know-how, business methods, management techniques and markets that will otherwise be unavailable in China.
- ◆ China became the World’s leading recipient of FDI for the first time in 2002, with US\$52.7 billion, overtaking the United States with approximately US\$44 billion. However, its share of total World FDI is still relatively low—approximately 10%. (The U.S. was the largest recipient of FDI in the world in 2001, with US\$124 billion.)
- ◆ FDI has been responsible for most of the growth of exports (and imports). However, the nature of FDI has also changed--from export-oriented to domestic-market oriented; from light industry to heavy and high-technology industries; and from small projects to large projects.
- ◆ China as the World’s Factory as well as the World’s market.

Foreign Direct Investment (FDI)

- ◆ Collateralized loan program as a natural hedge for foreign direct investors
- ◆ Initial public offerings (IPOs) and listings on Chinese stock exchanges (the second board) as a potential exit strategy for foreign direct investors

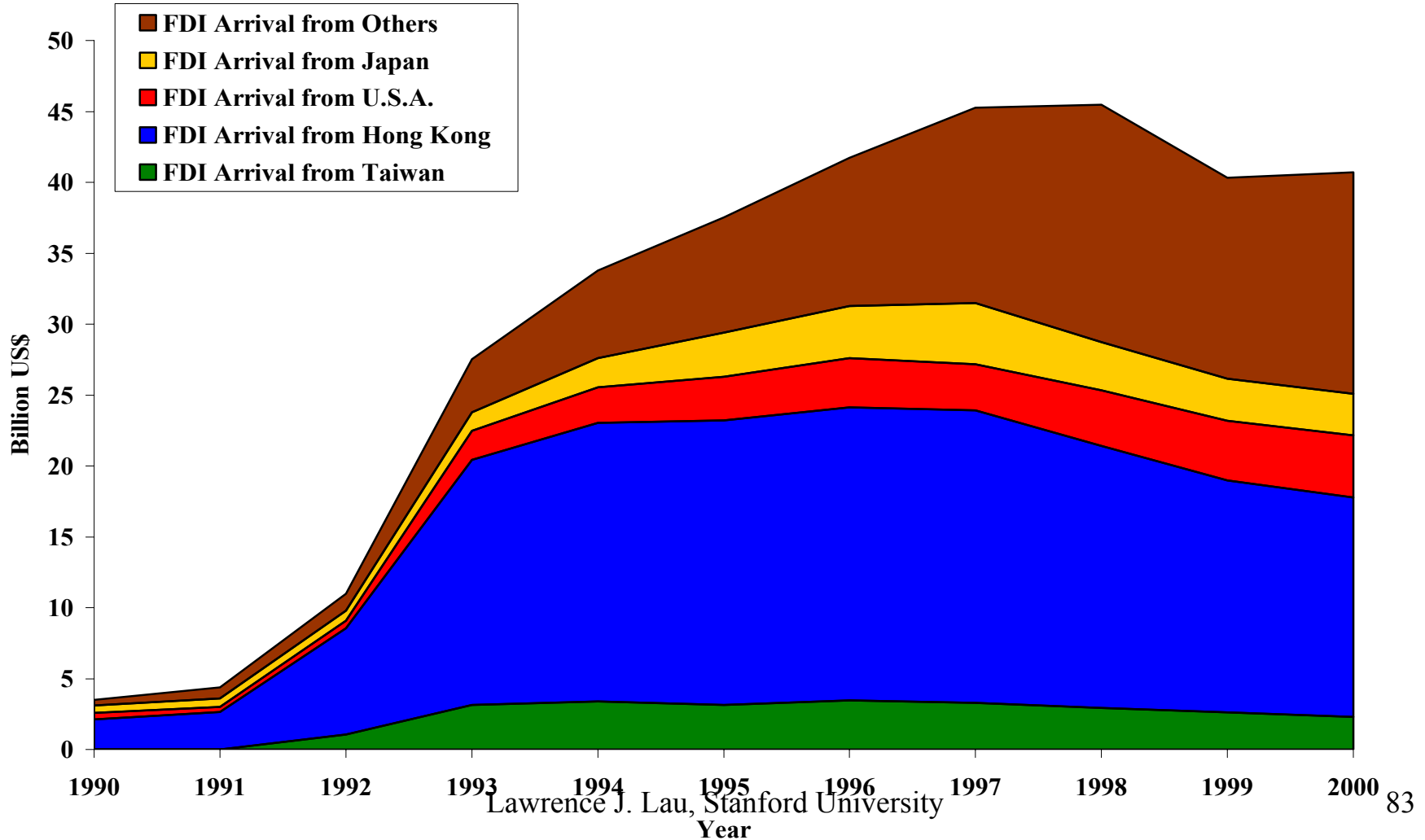
The Shares of FDI in Chinese Gross Domestic and Gross Domestic Fixed Investment

Fig. 1.2. The Share of Foreign Direct Investment in China (Percent)



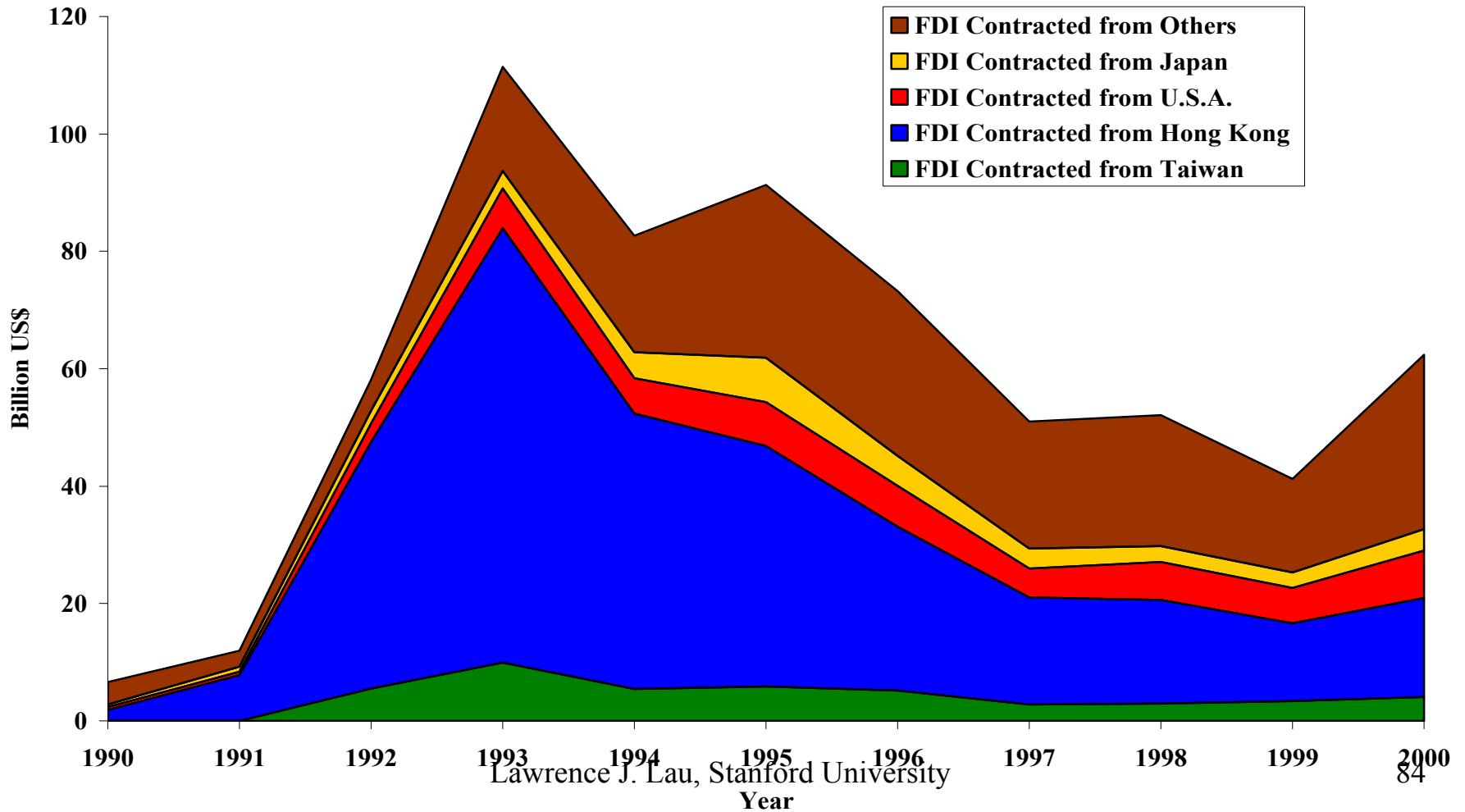
FDI Arrivals in China by Origin

FDI Arrivals in China by Source



FDI Contracted by Origin

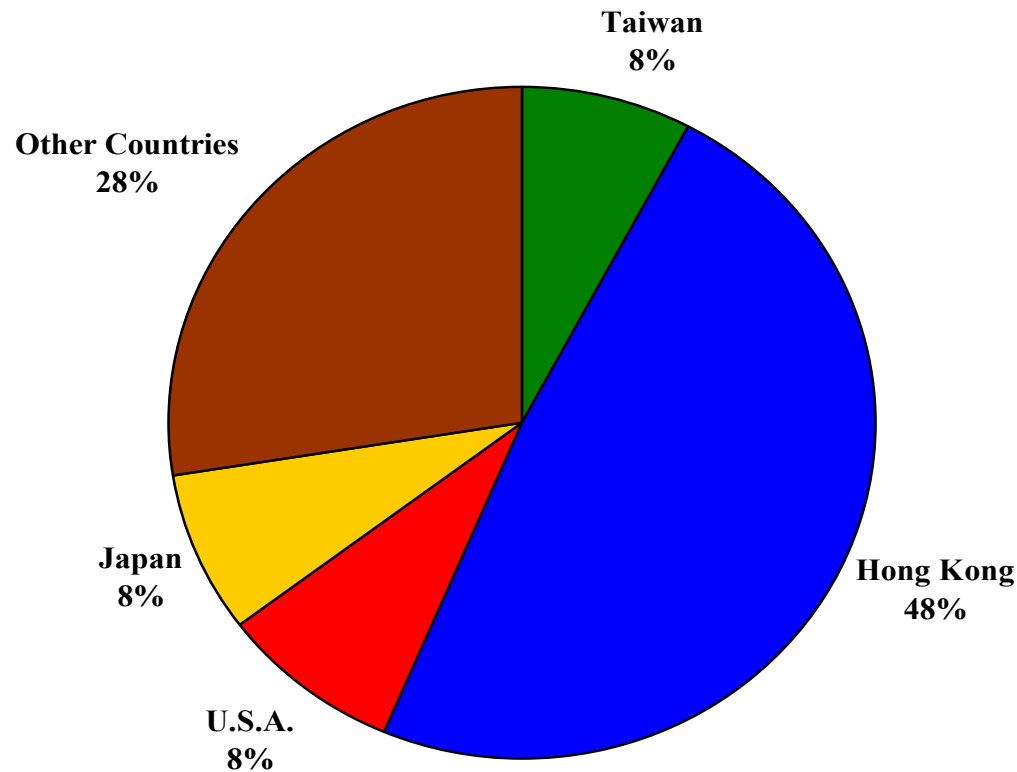
FDI Contracted in China by Source



Lawrence J. Lau, Stanford University
Year

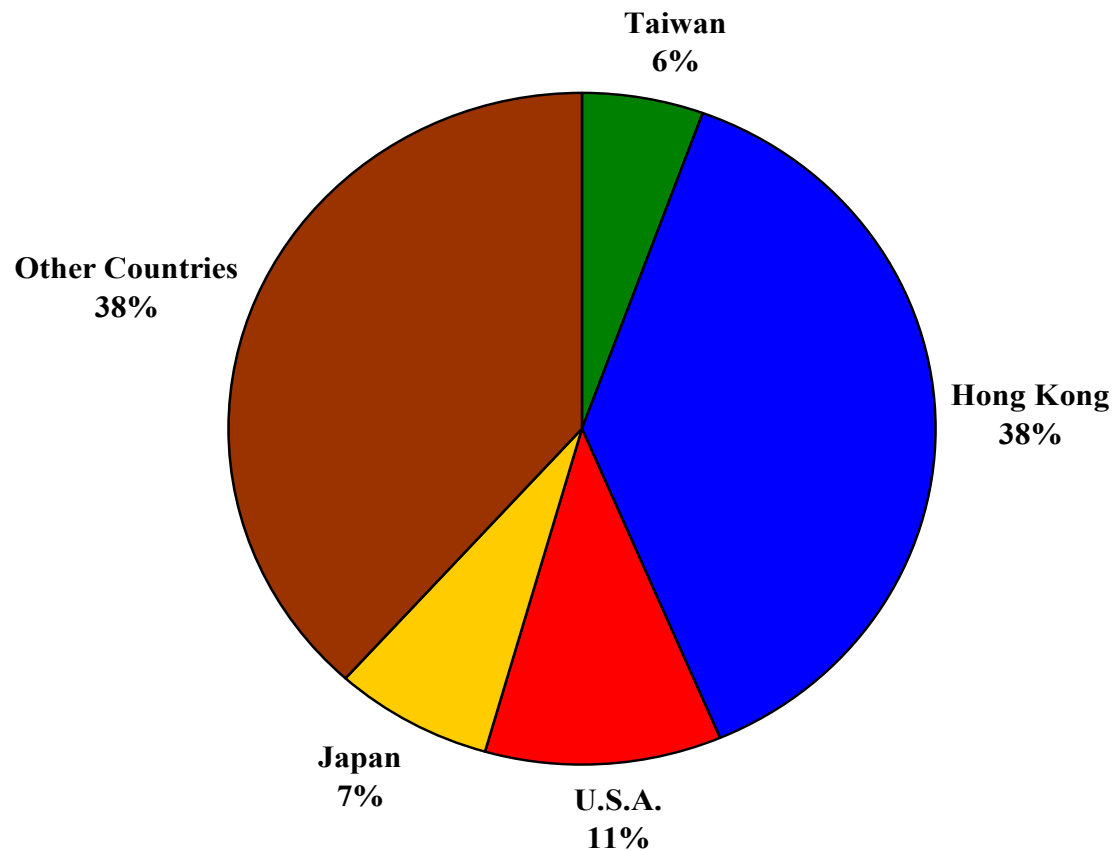
Distribution of Cumulative FDI Arrivals

Distribution of Cumulative FDI Arrivals in China, 1990-2000

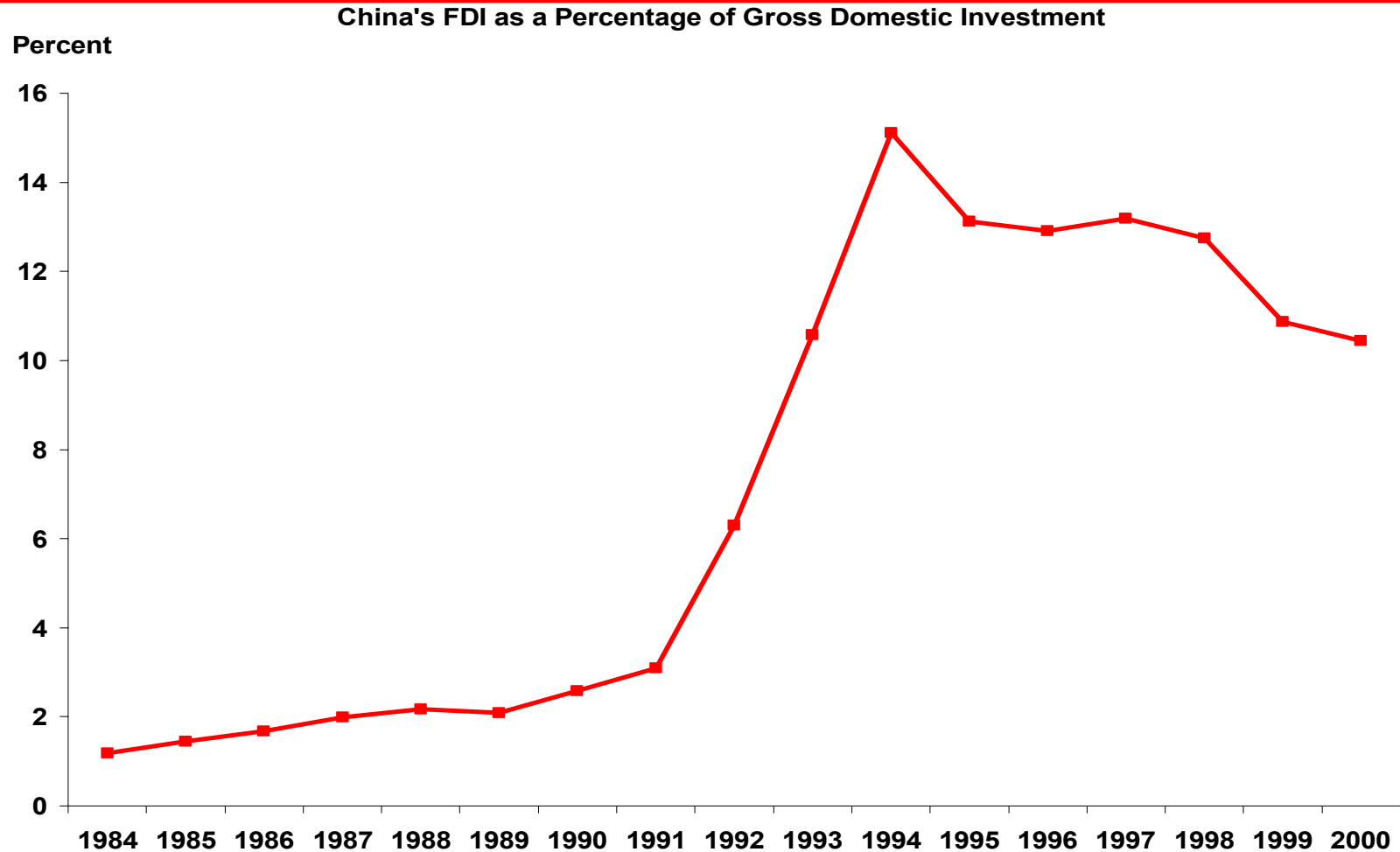


Distribution of FDI Arrivals in 2000

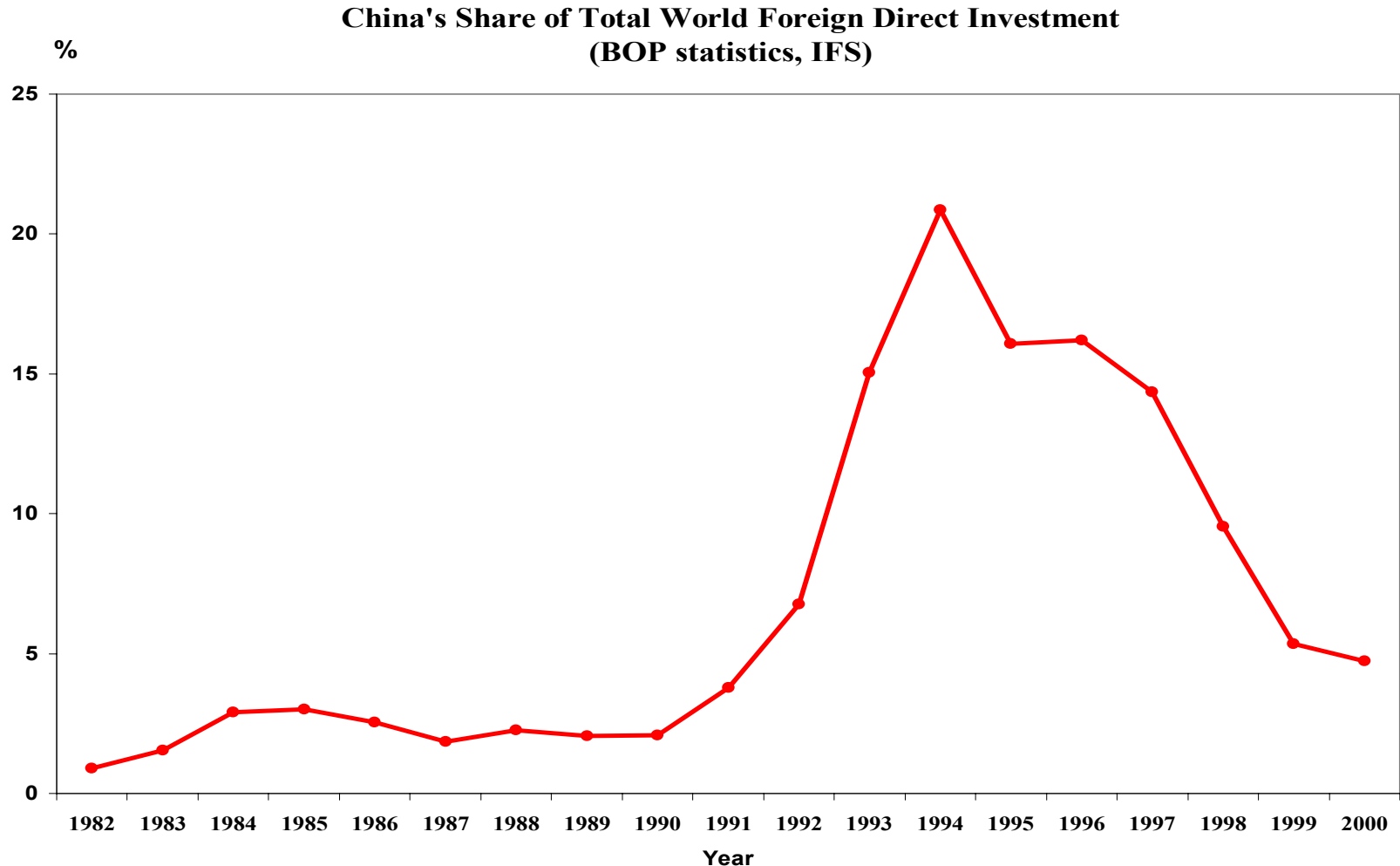
Shares of FDI Arrivals in China, 2000



China's FDI as a Percent of Gross Domestic Investment



China's Share of World Foreign Direct Investment



Globalization and Investment Diversification

- ◆ Geographical diversification has to be re-thought because of globalization
 - ◆ Diversification by multinational corporations: e.g., IBM is not a U.S. risk because of its significant business around the globe; similarly, Nestle is not a Swiss risk; these are all globally diversified corporations
 - ◆ Covariance due to supply-chain connections, e.g., Dell, and its sub-contractor in Taiwan, Quanta Computer, face the same risks—Quanta is not really a Taiwan risk
 - ◆ Covariance of markets—the stock markets have in recent years tended to move together
- ◆ There are gains from geographical diversification only if the economic performance of the different regions of investment are uncorrelated or negatively correlated
- ◆ The apparent “home bias” of the portfolios of domestic investors may be due to legal restrictions (both outbound and inbound), explicit or implicit restrictions on foreign ownership, transactions costs (including information acquisition and monitoring), corporate governance (and available float for the general public), competitiveness and fairness of the stock market, and exchange rate risks.
- ◆ China, India, and potentially Latin America are candidates for investment if diversification is the objective because they are large economies the rates of growth of which are not very sensitive to what happens outside

Investment in China by Foreign Investors: Considerations

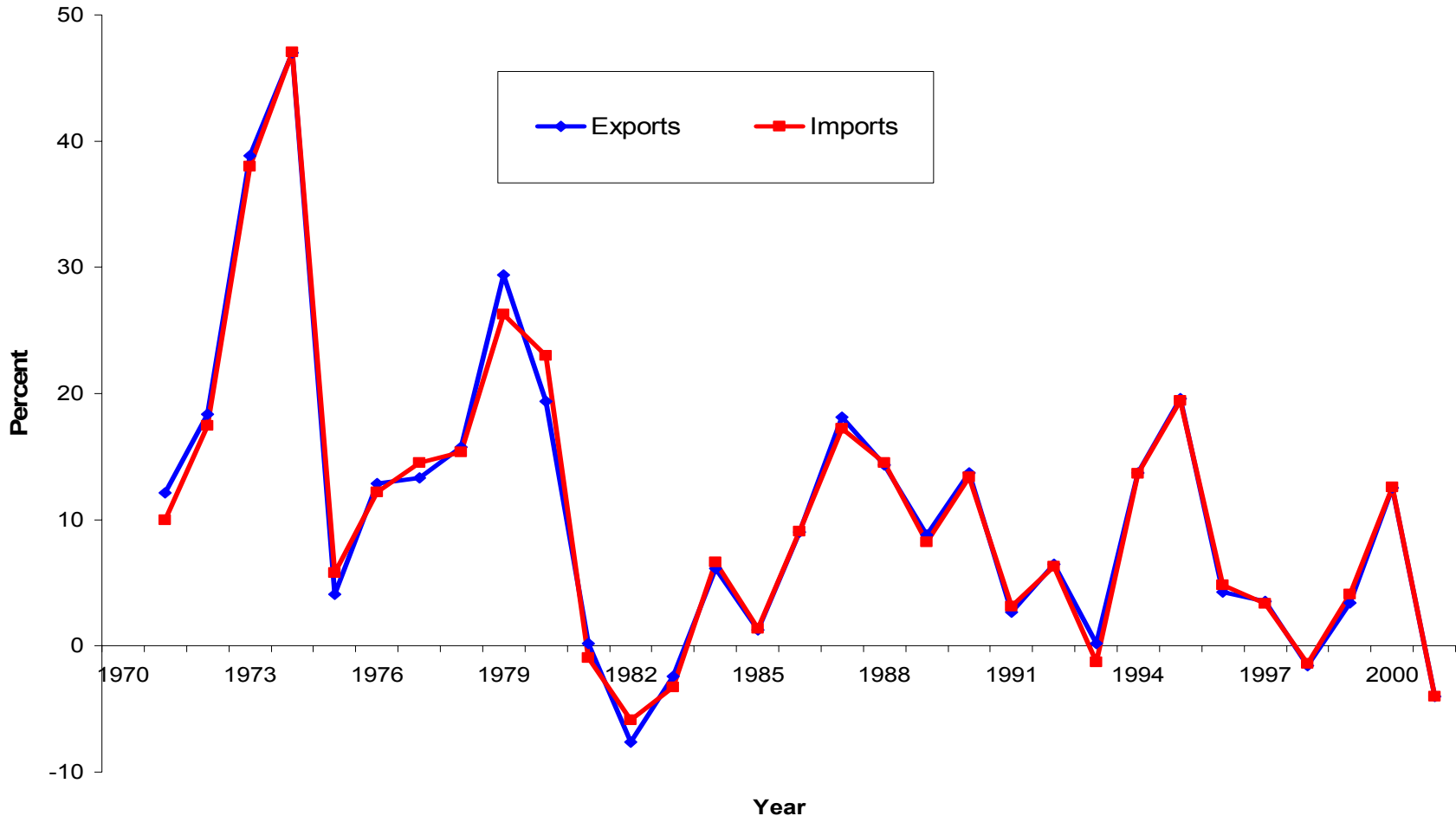
- ◆ Covariance between East Asian and U.S. markets
 - ◆ Covariance increased by globalization
 - ◆ The high-technology sector versus the traditional and the non-tradable sectors
 - ◆ Covariance between U.S. and China is small, hence maximum gain from diversification
- ◆ Public versus private markets
 - ◆ Credibility of public markets (insider trading, manipulation, protection of minority shareholders, disclosure and transparency)
 - ◆ Ease and necessity of direct financial monitoring
 - ◆ Casino mentality of public markets
- ◆ Portfolio versus direct investment
 - ◆ Possibility of capital control and other forms of restrictions on short-term capital flows
 - ◆ Necessity of continuous active direct monitoring
 - ◆ Choice of joint-venture partner(s), if any, critical
 - ◆ Availability of depositary receipts in liquid, transparent and well-regulated markets with no capital control
- ◆ Competitive advantage
 - ◆ Money alone is not sufficient because of relative abundance of domestic savings—foreign direct investors must have superior technology, know-how, knowledge or control of markets

Investment in China by Foreign Investors: Considerations

- ◆ The nature of foreign direct investment (FDI) in China has been undergoing a transformation
 - ◆ The nature of FDI has changed gradually from export-oriented to domestically oriented, taking advantage of the large Chinese domestic market; from light industry to heavy and high-technology industries, and from small projects to large projects
 - ◆ Foreign direct investors increasingly view China not so much as an export base but as a market for their finished products--e.g., BASF, General Motors, Motorola all plan to market at least a significant proportion of the products they produce in China in China itself

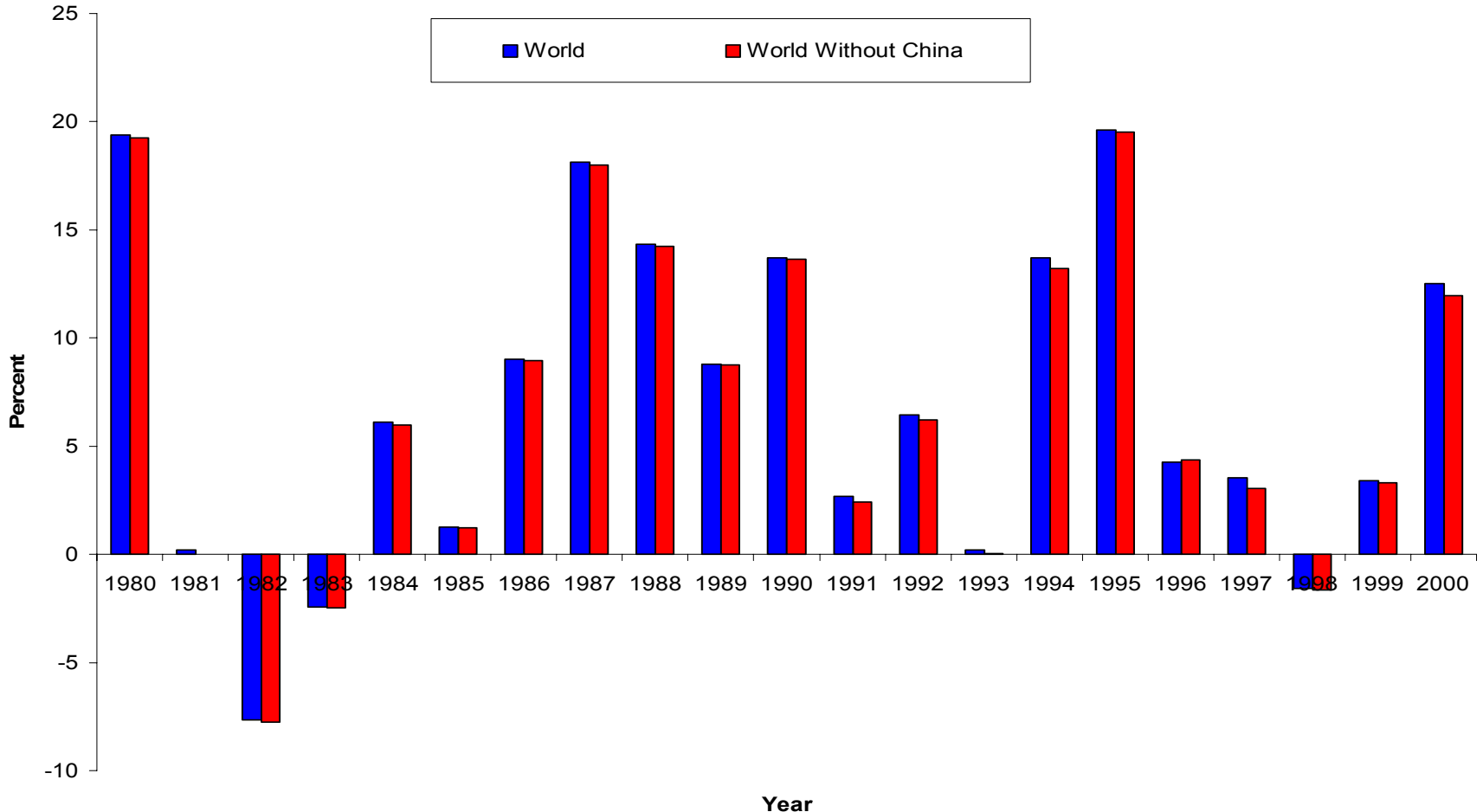
Rates of Growth of Total World Trade (US\$)

Rates of Growth of World Exports and Imports (Percent p.a.)



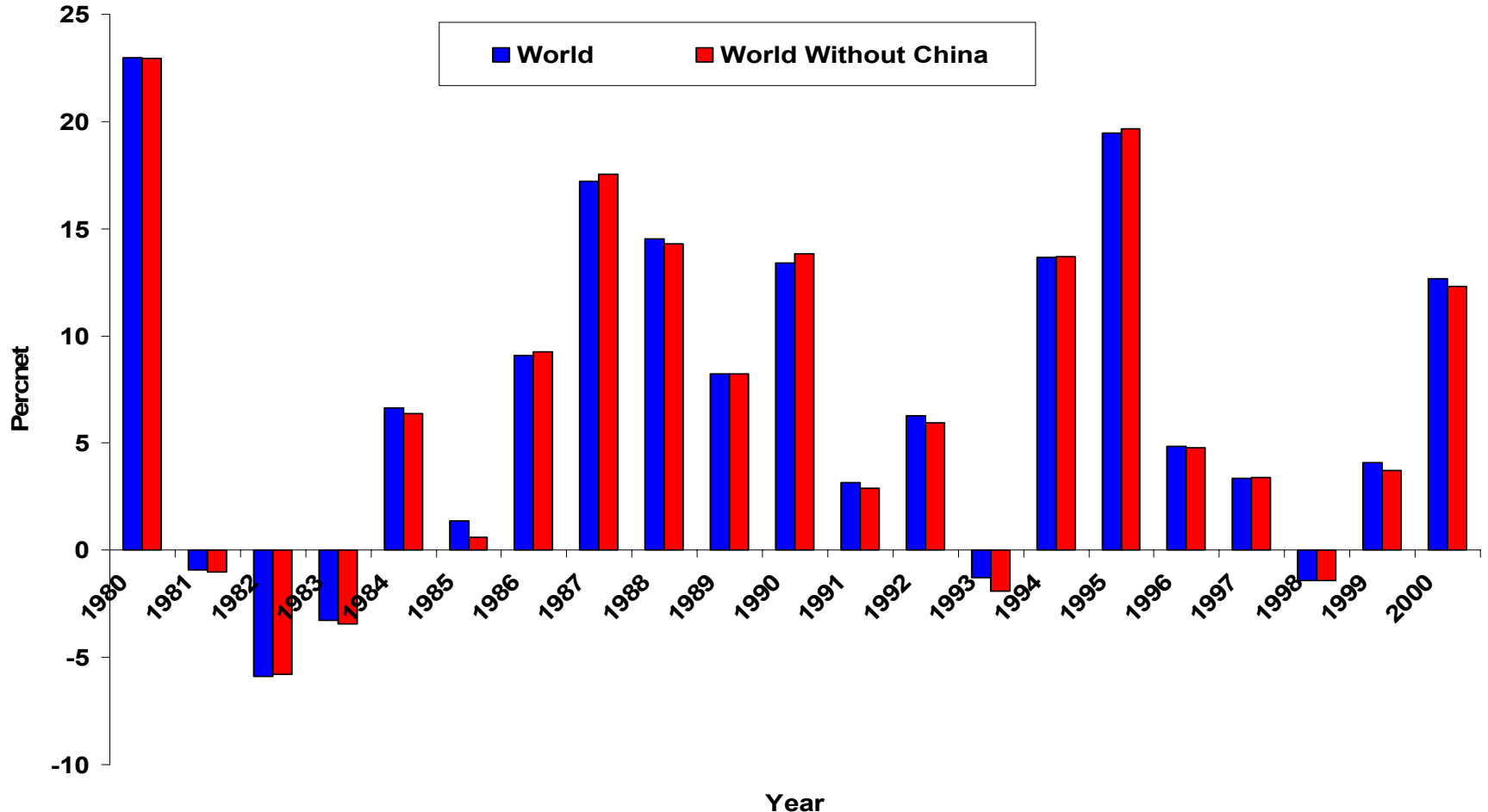
Rates of Growth of Total World Exports (US\$) with and without China

Growth Rates of Total World Exports with and without China (percent p.a.)



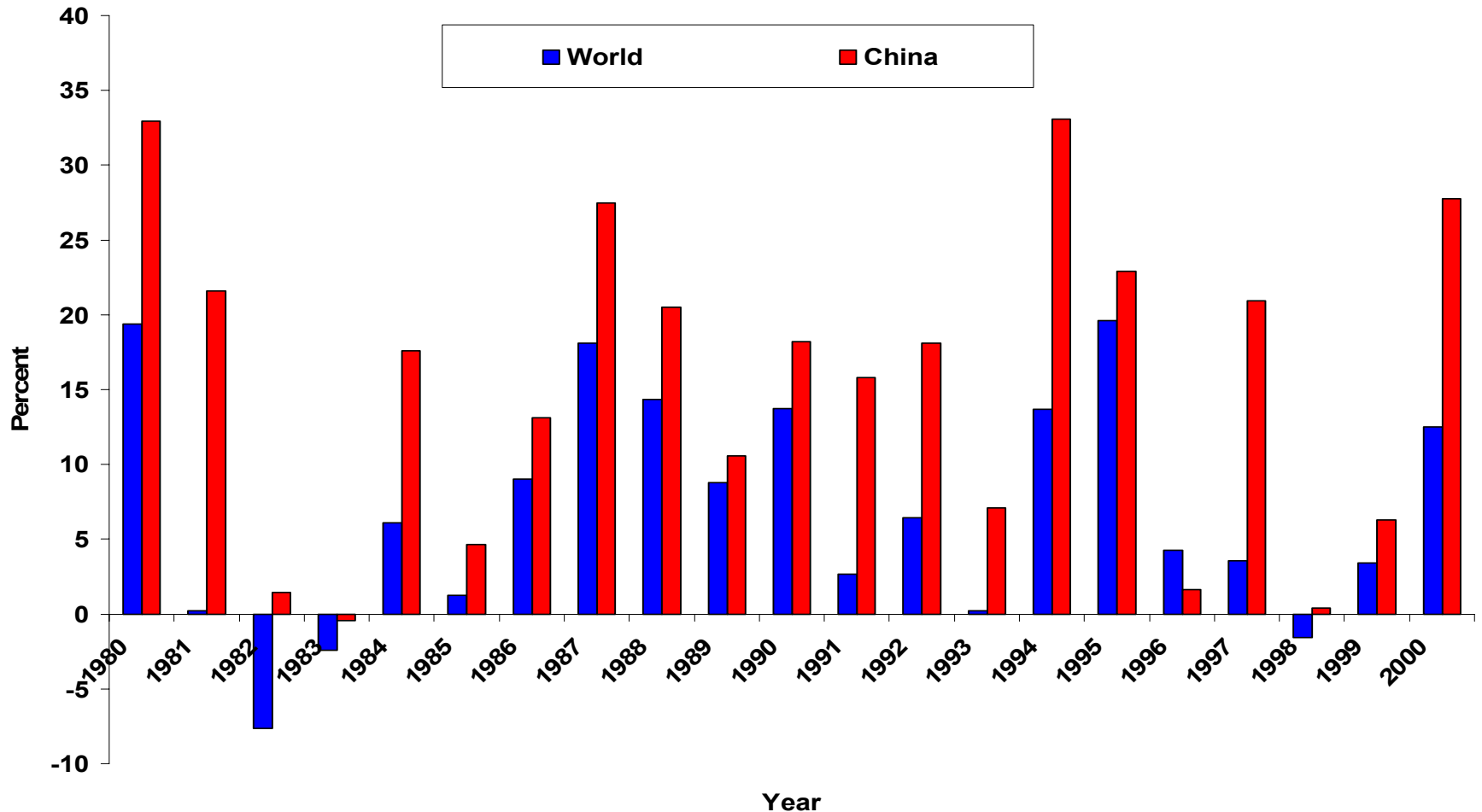
Rates of Growth of Total World Imports (US\$) with and without China

Growth Rates of Total World Imports with and without China (percent p.a.)



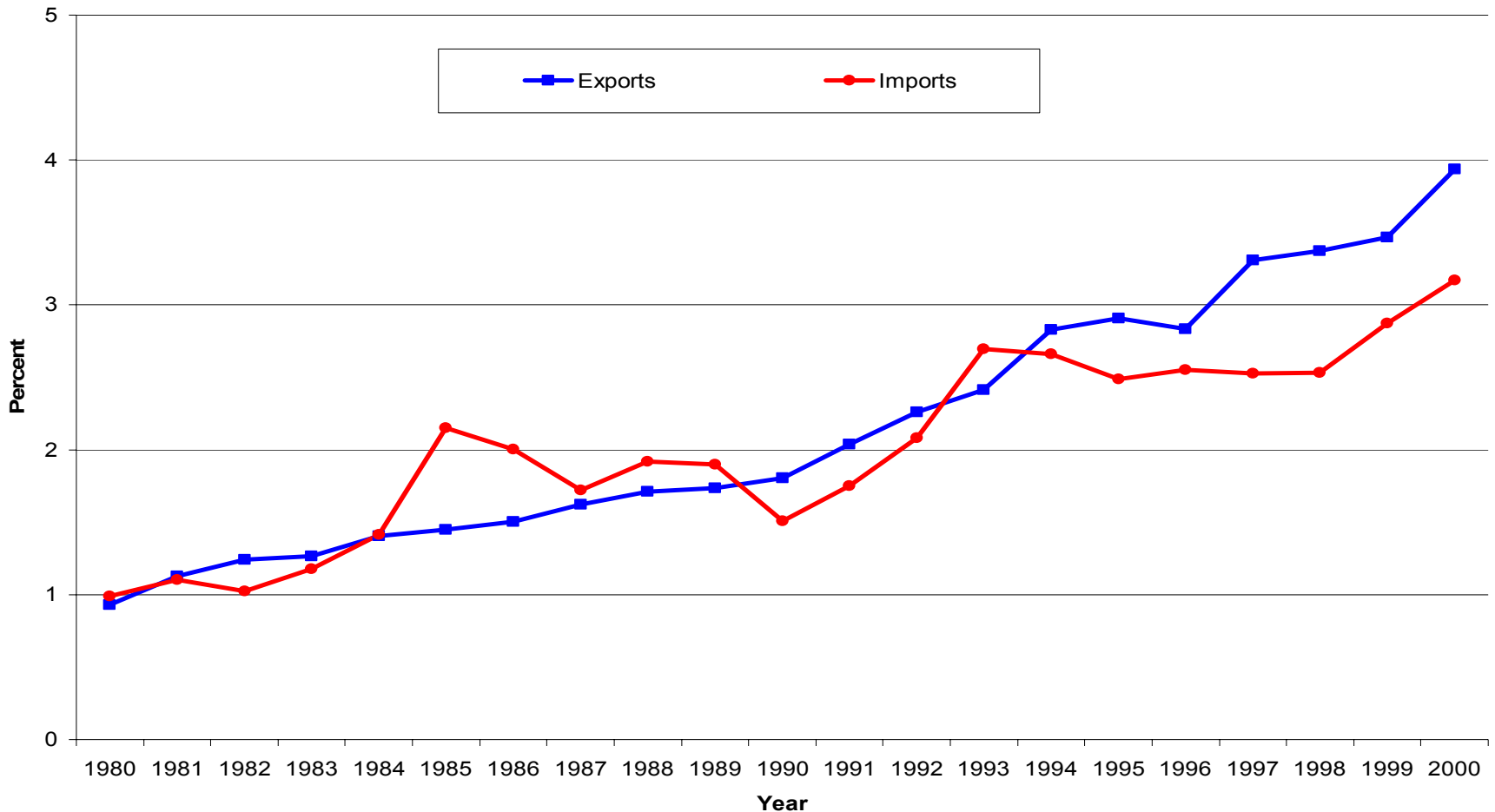
Rates of Growth of Total World Exports and Total Chinese Exports

Annual Rates of Growth of Total World Exports and Total Chinese Exports (percent p.a.)



China's Shares of Total World Trade

China's Share in World Trade



The ASEAN Free Trade Area (AFTA)

- ◆ Intra-ASEAN tariff rates have been lowered to 5% on Jan. 1, 2002 with the inauguration of the ASEAN Free Trade Area (AFTA) among Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand. The goal is to reach zero tariff rate within AFTA by 2010. The reduction in tariffs applies to 90% of products provided the ASEAN content of the product exceeds 40%.
- ◆ Khmer Republic, Laos, Myanmar and Vietnam are expected to join AFTA in 2006 and reach zero tariff rate within AFTA by 2015.
- ◆ Specific protection on manufactured and agricultural products still remains.

The China-ASEAN Free Trade Area

- ◆ Chinese Premier ZHU Rongji proposed in Brunei in November, 2001 a new free trade area, covering China and the ASEAN (Brunei, Indonesia, Khmer Republic, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam), to be created within ten years
- ◆ A 3 trillion US\$ market and 1.7 billion consumers
- ◆ Complementarity (primary raw materials) and competition (light manufactures)
- ◆ Opening the economies for trade—China will become a major export market for the ASEAN and vice versa
- ◆ The free trade area will promote foreign direct investment in the ASEAN region itself through the enlargement of the potential market
- ◆ A mutual support program for the currencies of one another, leading possibly to a currency area
- ◆ Simultaneous, coordinated expansions among the East Asian economies can help accelerate the recovery of the depressed economies of East Asia
- ◆ Significant political implications

Closer Economic Partnership Arrangement—Trade in Goods

- ◆ Affirmation of zero tariffs for Mainland imports to Hong Kong
- ◆ Tariffs on 273 Hong Kong-made goods, accounting for 67 percent of Hong Kong exports to China, will be completely exempted as of January 1, 2004 (compared to an average tariff rate of 9% by 2007 under the WTO agreement).
- ◆ In addition, tariffs on all other Hong Kong-made goods will be completely exempted by January 1, 2006.
- ◆ However, total tariff savings would amount to just below US\$100 million.

Closer Economic Partnership Arrangement—Trade in Services

- ◆ Firms in 18 (17 originally) service sectors in Hong Kong, including retailers, wholesalers, distributors, logistics companies and shipping lines, will be allowed to set up wholly owned subsidiaries in China sooner and with fewer restrictions than is required under the WTO accession agreement. (However, such firms must have been in operation in Hong Kong for more than three to five years in order to qualify for the preferential treatment.)
- ◆ Banks based in Hong Kong, including Hong Kong subsidiaries of foreign banks, will face a lower threshold in terms of total assets (US\$6 billion compared to US\$20 billion) for entry into the Chinese market.
- ◆ Chinese language movies produced by Hong Kong production companies will not be subject to the Chinese import quota on foreign movies.
- ◆ Renminbi accounts will be permitted for Hong Kong residents and firms.
- ◆ Promotion of tourism in both directions
 - ◆ Chinese citizens from selected cities, (originally Dongguan, Jiangmen and Zhongshan, in Guangdong), China are now permitted to visit Hong Kong for the purpose of sight-seeing as individual tourists. The rate of growth of the total number of Chinese tourists visiting abroad is projected to be more than 20% per annum over the next five years.

Prospects for Future Economic Growth

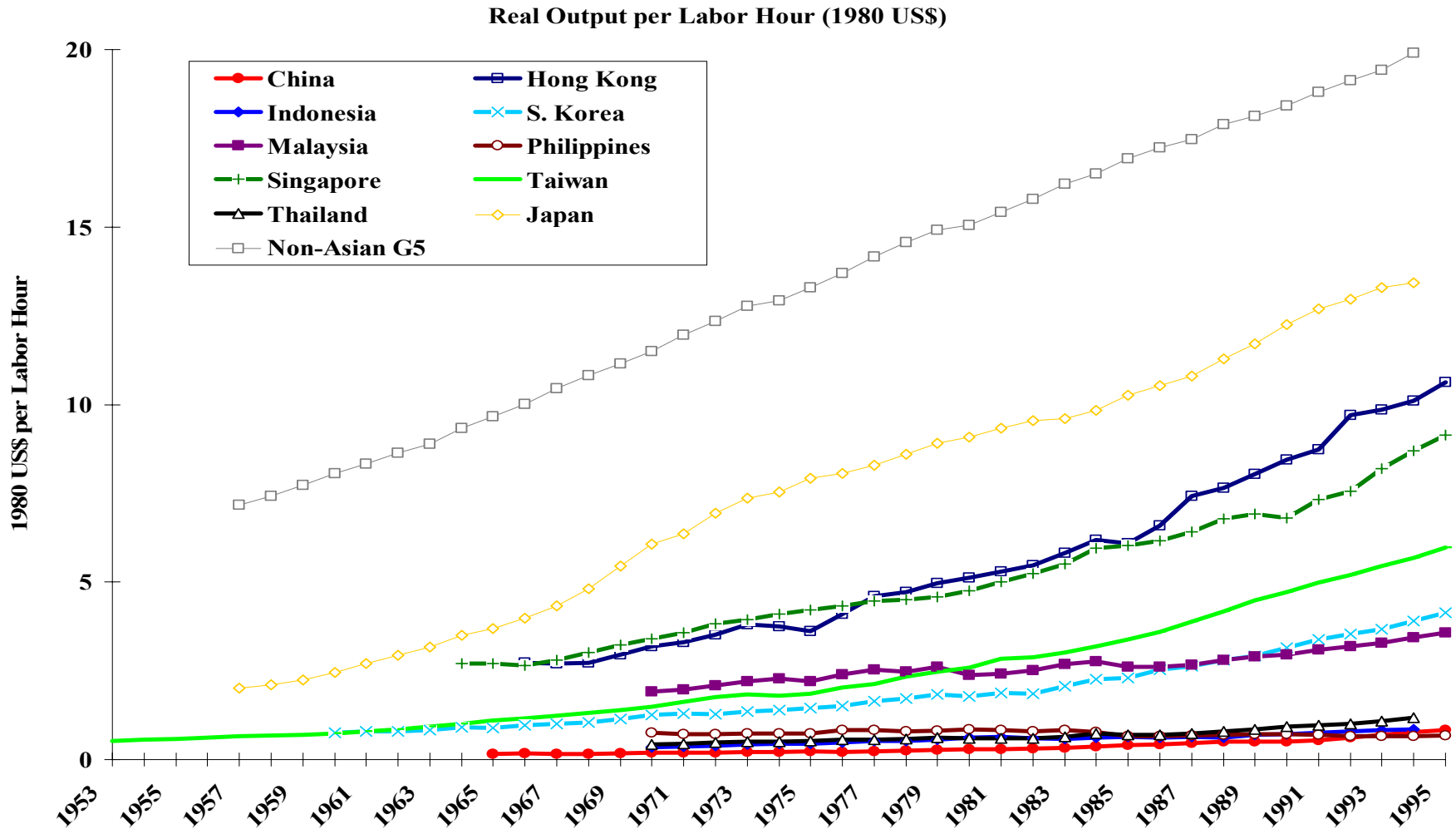
Rates of Growth of Inputs & Outputs of the East Asian Developing & the G-7 Countries

Table 1.1: Average Annual Rates of Growth of Real Output and Inputs (Entire Sample Period), percent

	Sample Period	Output (Real GDP)	Tangible Capital Stock	Utilized Tangible Capital	Employment	Total Labor Hours	Average Years of Education of the Working-Age Population ¹	Total Years of Education of the Working-Age Population ¹	Average Share of Labor Earnings to GDP
Hong Kong	66-95	7.36	8.79	8.79	2.56	2.44	2.09	4.80	0.51
South Korea	60-95	8.49	12.28	12.28	3.06	3.35	3.72	6.31	0.37
Singapore	64-95	8.88	10.23	10.23	4.29	4.70	3.28	5.92	0.38
Taiwan	53-95	8.45	11.76	11.76	2.69	2.33	2.72	5.40	0.44
Indonesia	70-94	6.68	10.73	10.88	2.72	2.72	7.70	10.34	0.31
Malaysia	70-95	7.32	9.65	9.65	4.15	4.68	4.88	8.02	0.34
Philippines	70-95	3.53	5.32	5.40	3.37	3.94	4.46	7.41	0.33
Thailand	70-94	7.74	9.69	9.68	2.74	2.93	4.75	8.00	0.25
China	65-95	8.30	11.60	11.63	2.55	2.55	3.12	5.99	0.54
Japan	57-94	5.88	8.12	7.98	1.12	0.56	0.98	2.15	0.62
France	57-94	3.33	3.93	3.88	0.40	-0.24	1.11	1.95	0.64
West Germany	57-94	3.25	3.25	3.09	0.08	-0.29	1.00	1.55	0.66
United Kingdom	57-94	2.41	3.90	3.81	0.23	-0.11	0.83	1.14	0.65
United States	49-94	3.13	3.03	3.30	1.71	1.31	0.81	2.06	0.66

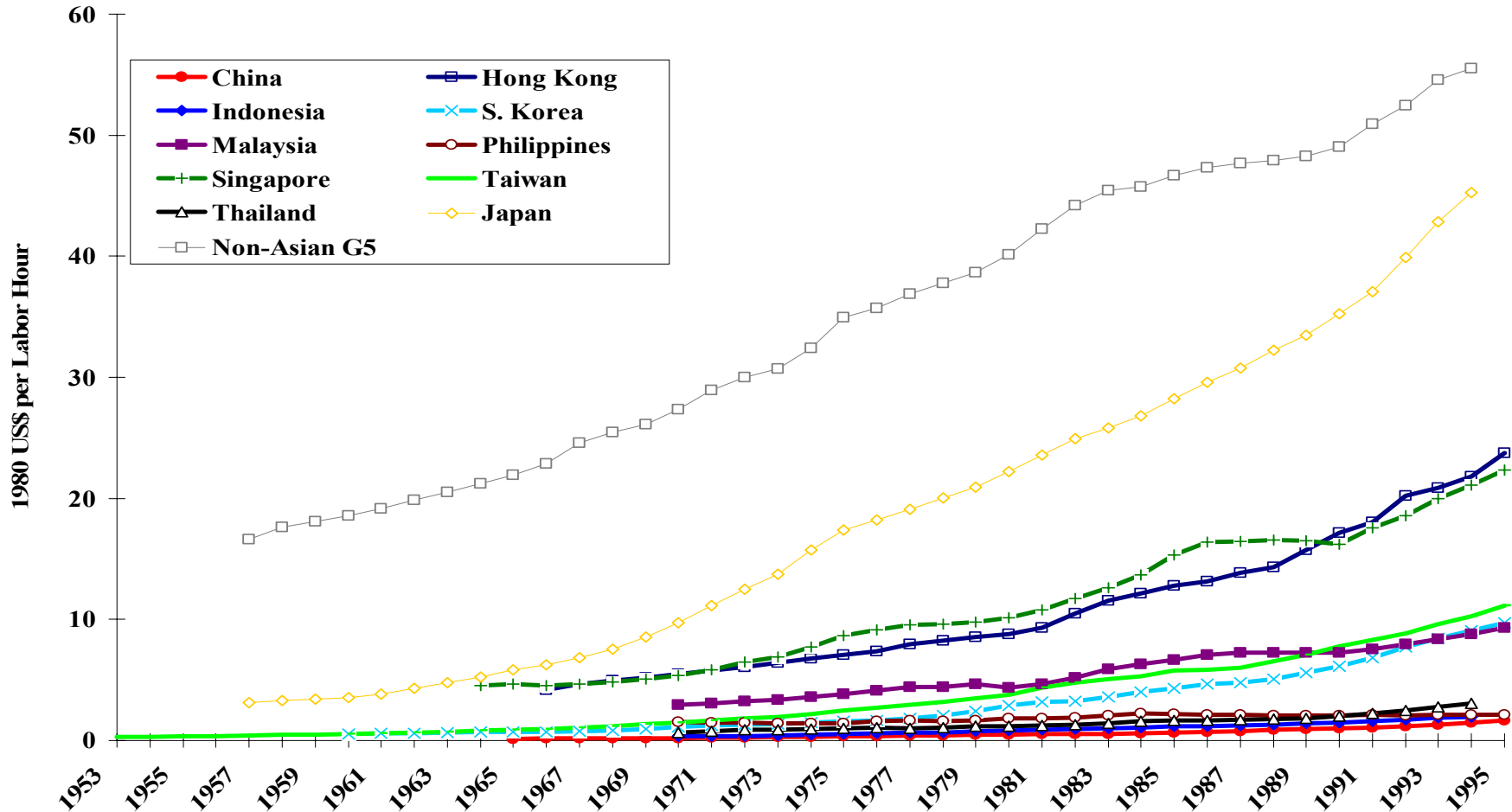
Note: 1. Working-age population is defined as the number of persons in the population aged between 15 and 64, inclusive.

Real Output per Labor Hour (1980 US\$)

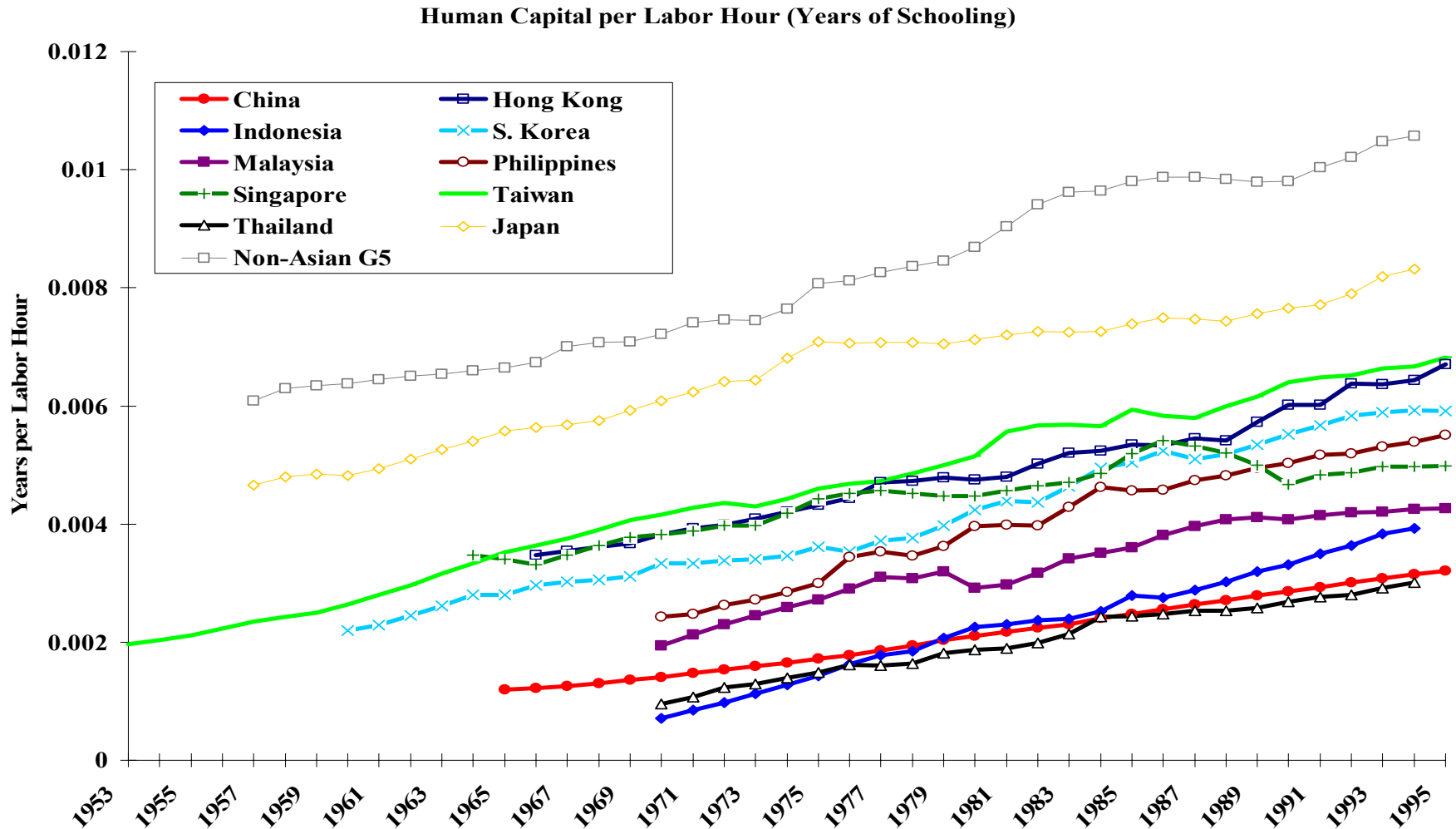


Tangible Capital Stock per Labor Hour (1980 US\$): Selected Economies

Tangible Capital Stock per Labor Hour (1980 U.S.\$)



Human Capital per Labor Hour (Years of Schooling): Selected Economies



The Sources of Economic Growth: Findings of Kim & Lau As Reported by Krugman (1994)

- ◆ Using data from the early 1950s to the late 1980s, Kim and Lau (1992, 1994a, 1994b) find, by estimating a meta-production function for the G-5 and the 4 Newly Industrialized Economies (NIEs—Hong Kong, South Korea, Singapore and Taiwan) that:
 - ◆ (1) No technical progress in the East Asian NIEs but significant technical progress in the industrialized economies (IEs)
 - ◆ (2) East Asian economic growth has been tangible input-driven, with tangible capital accumulation as the most important source of economic growth (the latter applying also to Japan)
 - ◆ Working harder as opposed to working smarter
 - ◆ (3) Technical progress is the most important source of economic growth for the IEs, followed by tangible capital, accounting for over 50% and 30% respectively, with the exception of Japan
 - ◆ NOTE THE UNIQUE POSITION OF JAPAN!

The Findings of Kim & Lau (1992, 1994a, 1994b)

- ◆ (4) Technical progress is purely tangible capital-augmenting and hence complementary to tangible capital, confirming the earlier findings of Boskin and Lau for the Group-of-Five (G-5) Countries
- ◆ (5) Despite their high rates of economic growth and rapid capital accumulation, the East Asian Newly Industrialized Economies actually experienced a significant decline in productive efficiency relative to the industrialized countries as a group
- ◆ (6) Technical progress being purely tangible capital-augmenting implies that it is less likely to cause technological unemployment than if it were purely labor-augmenting
- ◆ (7) Similar results are obtained when China and the ASEAN countries of Indonesia, Malaysia, Philippines and Thailand are included in the sample.

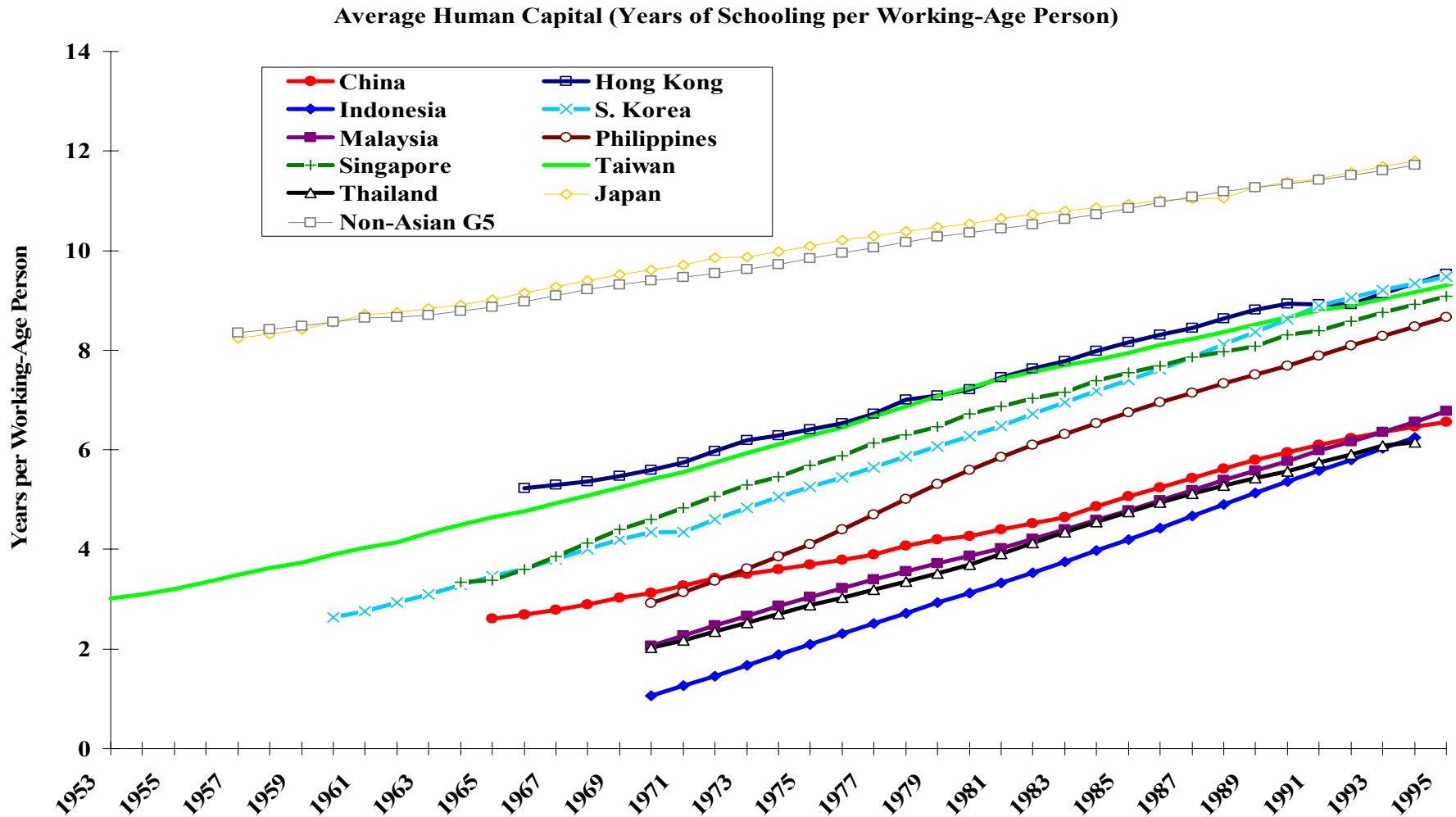
The Sources of Economic Growth--Developing Economies

- ◆ Different types of measured inputs play different roles at different stages of economic growth
- ◆ Tangible capital accumulation is the most important source of growth in the early stage of economic development
- ◆ But simply accumulating tangible capital is not enough--it must also be efficiently allocated
- ◆ Efficient tangible capital accumulation is the major accomplishment of the East Asian NIEs in the postwar period
 - ◆ Market-directed allocation of new investment, aided by export orientation, promotes efficiency
 - ◆ Private enterprises have the incentives for prompt self-correction
- ◆ Intangible capital accumulation becomes important only after a certain level of tangible capital per worker is achieved but has begun to be important for some East Asian NIEs such as South Korea and Taiwan

The Sources of Economic Growth-- Developed Economies

- ◆ The most important source of economic growth for developed economies is technical progress, accounting for more than half of the growth of output
- ◆ Tangible capital is the next important source of economic growth, accounting for almost a third
- ◆ Technical progress reflects the effects of intangible capital--R&D capital, knowledge capital, goodwill, etc.
- ◆ The United States is the world leader in human capital and R&D capital

Average Human Capital (Years/Working-Age Person: Selected Economies)



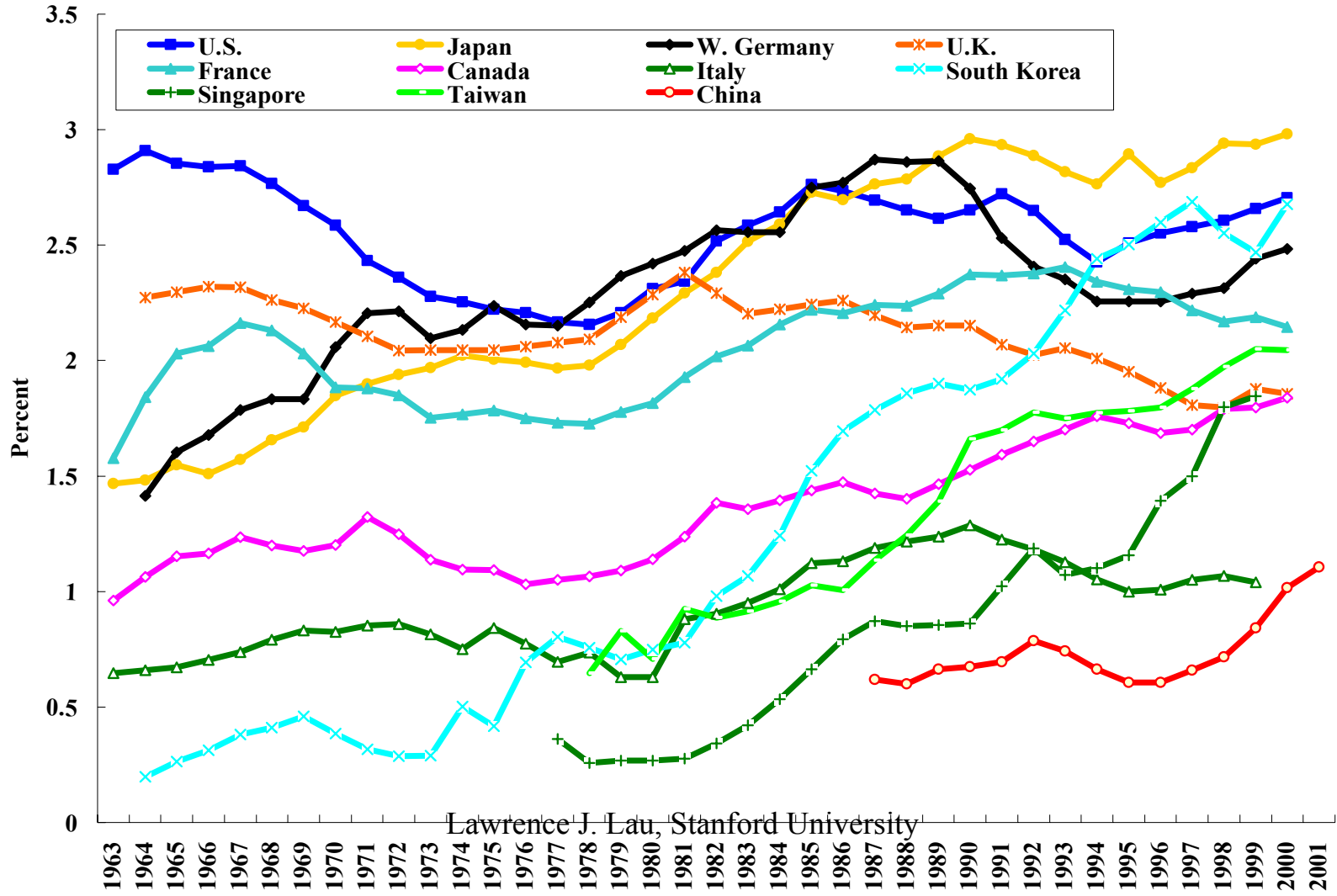
Sources of East Asian Economic Growth with 3 Inputs and Technical Progress-Breaks in 1973, 1985

Table 7.5a: Growth Accounts: Contributions of the Sources of Growth (3 Sub-Periods)
(Three-Input Model with Human Capital and Shifts in the Rates of Capital-Augmentation)
: Full Sample for 4 NIEs and G-5

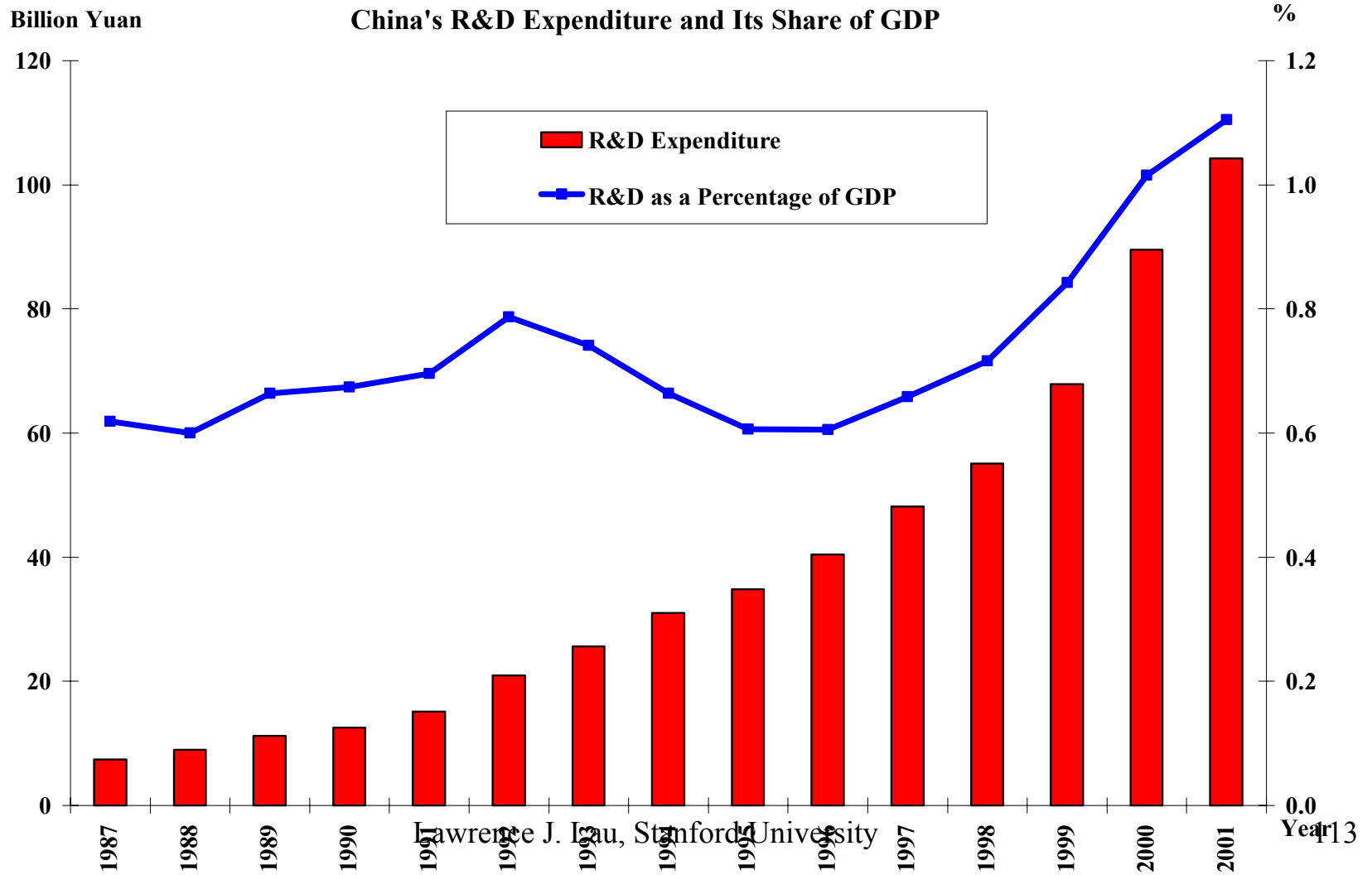
	Sample period	Tangible Capital	Labor	Human Capital	Technical Progress
(1) Pre-1973					
Hong Kong	66-73	57.58 (9.67)	32.35 (3.10)	10.07 (5.57)	0.00
South Korea	60-73	55.66 (11.58)	27.99 (4.14)	16.35 (7.70)	0.00
Singapore	64-73	48.87 (12.73)	36.87 (7.56)	14.26 (9.17)	0.00
Taiwan	53-73	65.56 (13.21)	22.20 (2.63)	12.24 (6.73)	0.00
Japan	57-73	44.02 (11.43)	9.14 (0.82)	3.24 (2.87))	43.59
Non-Asian G-5 Countries	57-73	33.94 (4.62)	9.65 (4.24)	4.42 (1.70)	51.99
(2) 1974–1985					
Hong Kong	74-85	53.79 (9.58)	36.76 (3.40)	9.46 (5.67)	0.00
South Korea	74-85	62.33 (13.28)	25.99 (2.83)	11.68 (6.41)	0.00
Singapore	74-85	56.19 (9.94)	31.86 (3.42)	11.96 (5.48)	0.00
Taiwan	74-85	65.51 (11.89)	25.04 (2.23)	9.44 (4.98)	0.00
Japan	74-85	31.26 (6.73)	14.44 (0.93)	2.83 (1.69)	51.46
Non-Asian G-5 Countries	74-85	28.49 (2.65)	-10.90 (-0.42)	7.62 (1.90)	74.79
(3) Post-1986					
Hong Kong	86-95	36.82 (7.56)	9.65 (0.53)	5.32 (3.10)	48.21
South Korea	86-95	34.82 (11.90)	19.28 (2.76)	5.26 (4.15)	40.65
Singapore	86-95	33.62 (8.50)	29.39 (4.32)	5.26 (3.38)	31.73
Taiwan	86-95	35.15 (9.01)	13.71 (1.34)	4.32 (3.13)	46.82
Japan	86-94	29.84 (4.86)	14.86 (1.11)	3.42 (1.44)	62.05
Non-Asian G-5 Countries	86-94	21.08 (2.70)	18.42 (5.37)	4.68 (1.36)	55.81

R&D Expenditures as a Ratio of GDP: G-7 Countries, 3 East Asian NIES & China

Figure 8.1: R&D Expenditures as a Percentage of GDP: G-7 Countries, 3 East Asian NIES and China

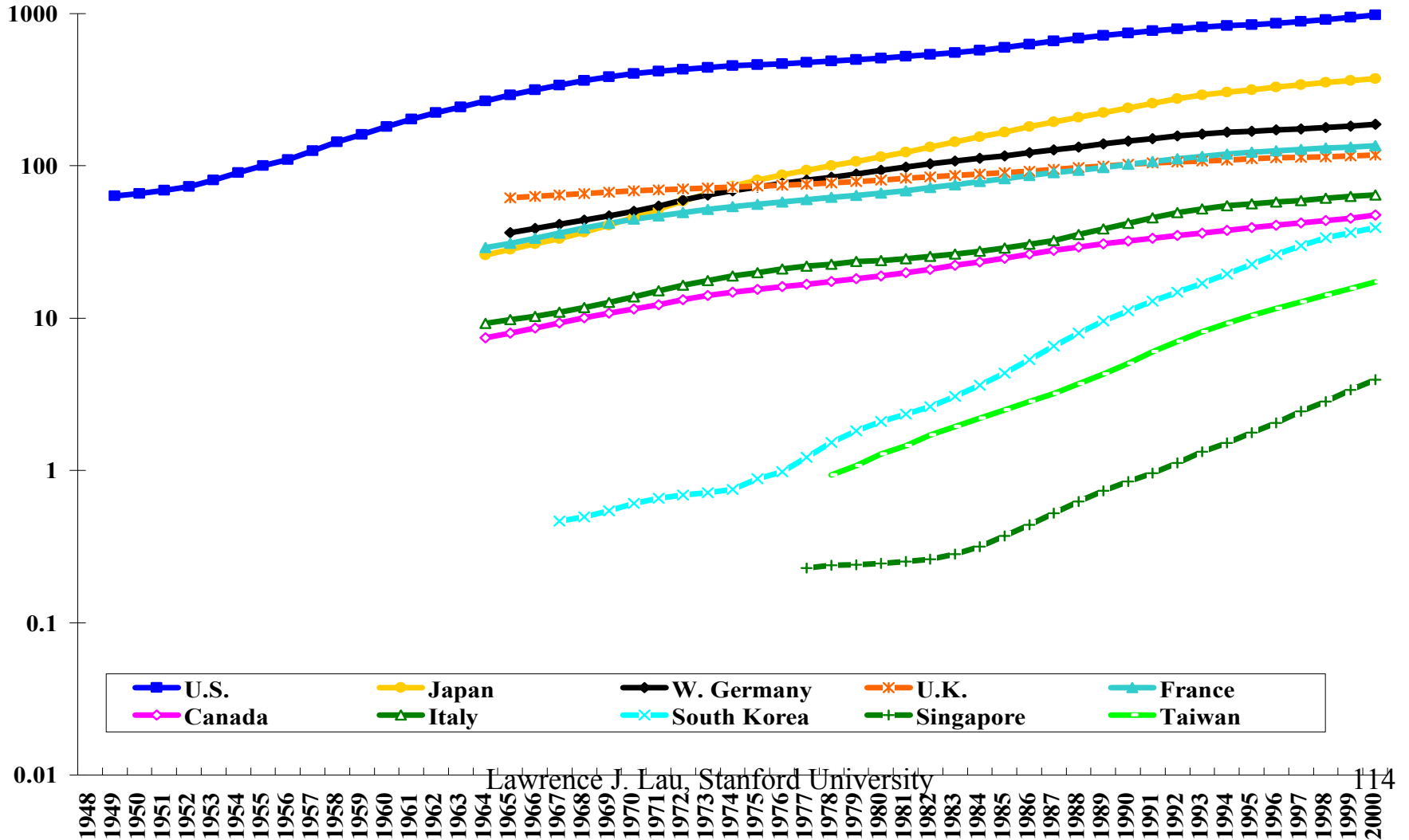


R&D Expenditures: China

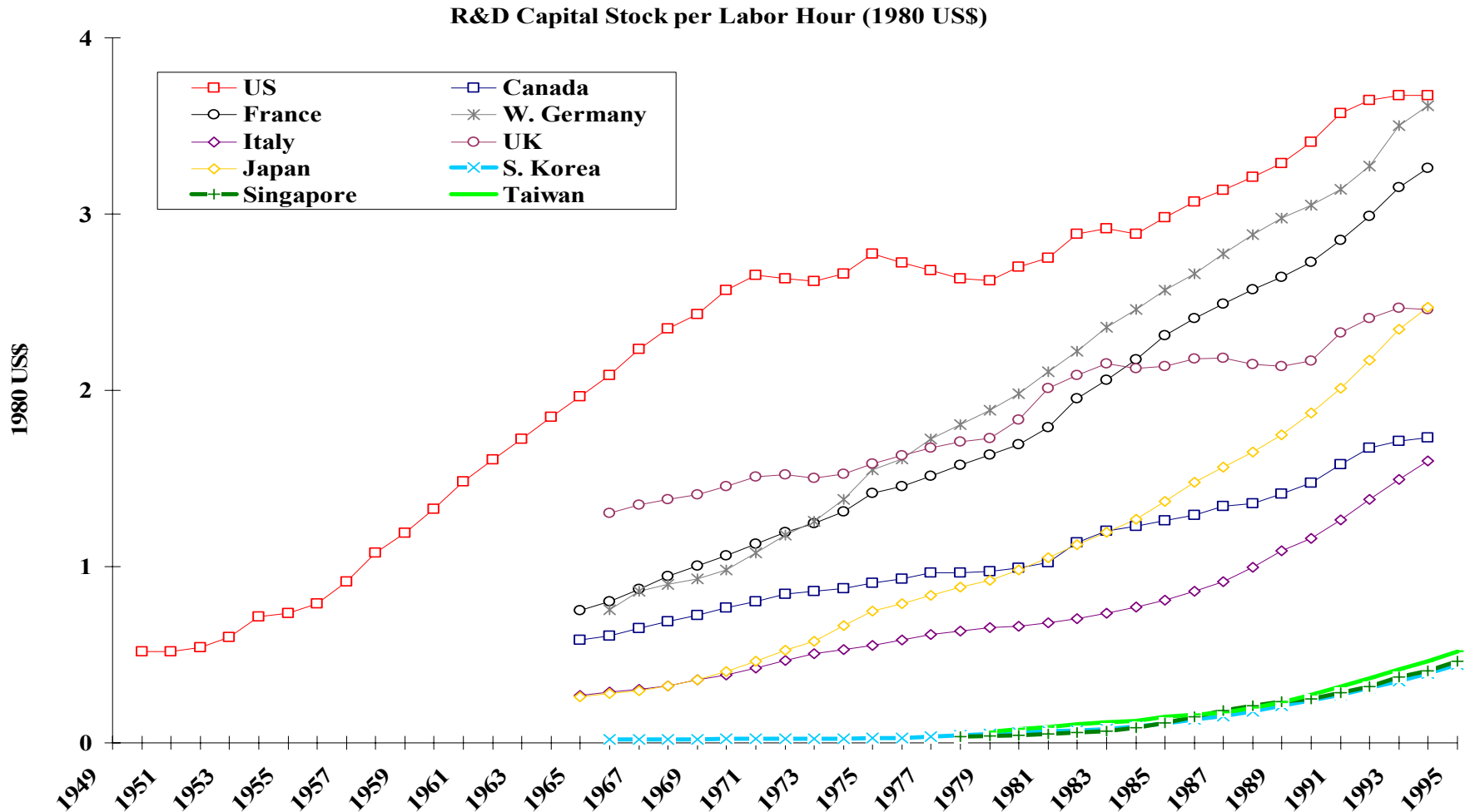


R&D Capital Stocks: G-7 Countries and 3 East Asian NIEs

Figure 8.2: R&D Capital Stocks in Billions of 1980 U.S. Dollars

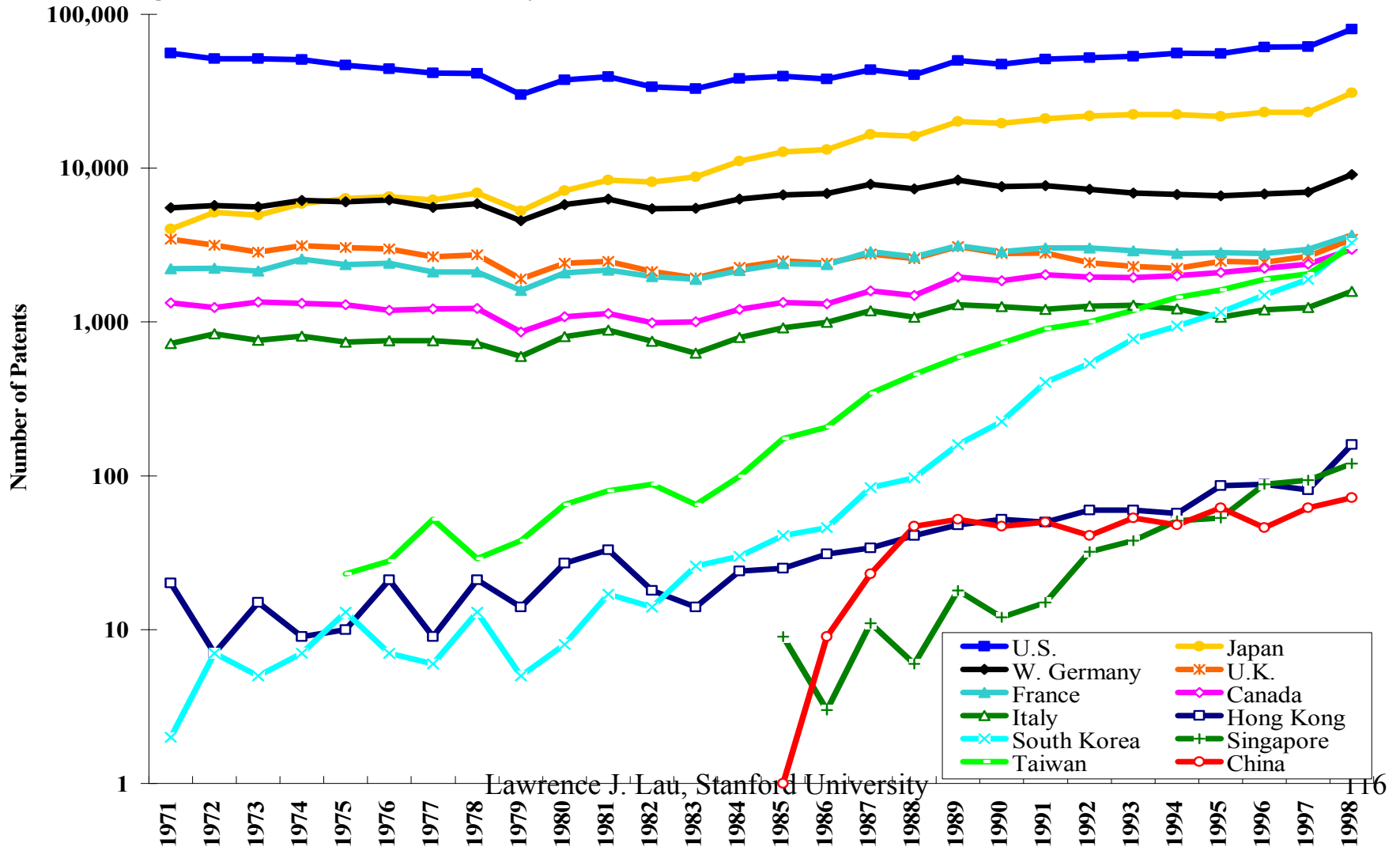


R&D Capital Stock per Labor Hour (1980 US\$): Selected Economies



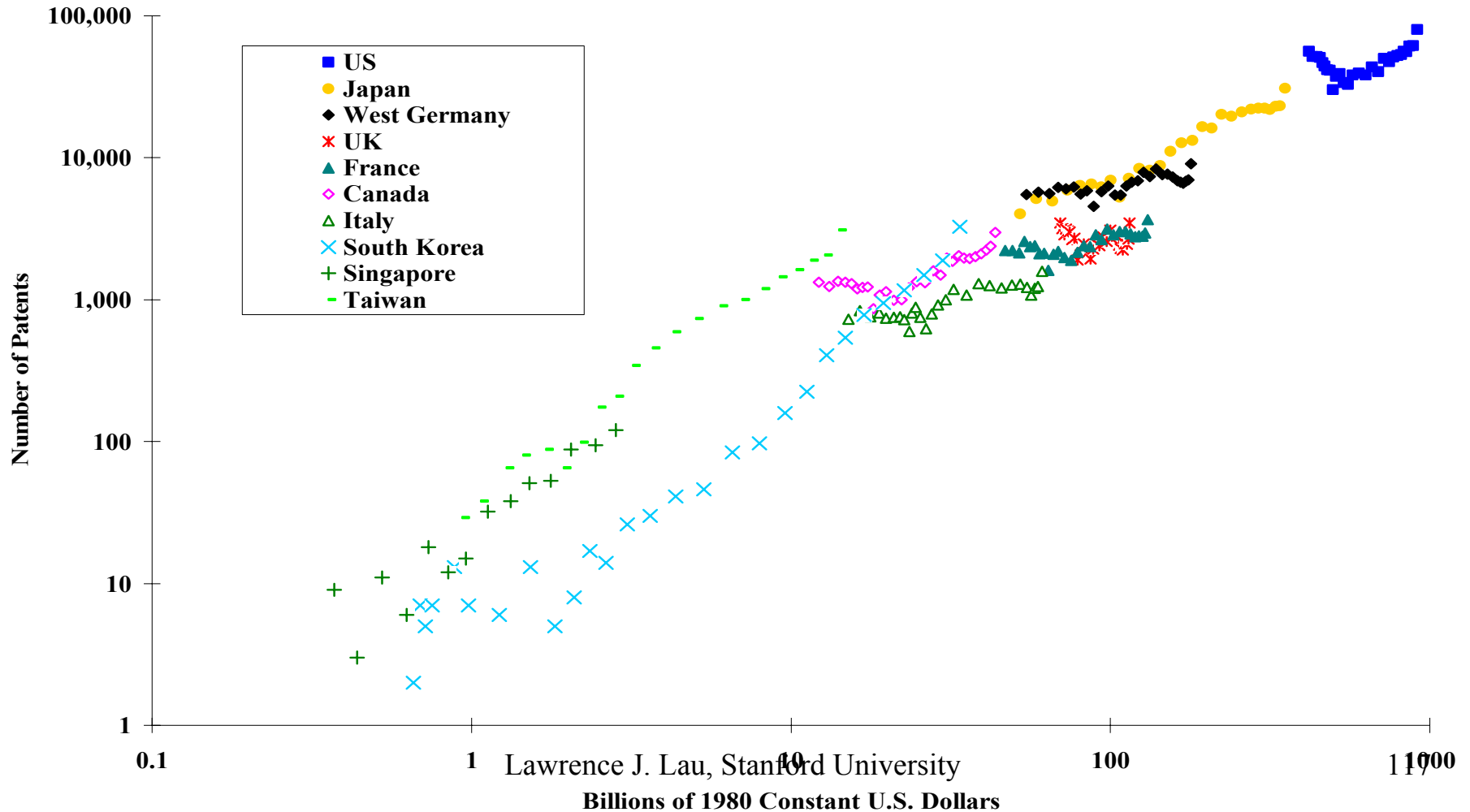
Patents Granted in the United States: G-7 Countries, 4 East Asian NIEs & China

Figure 8.3: Patents Granted Annually in the United States: G7 Countries, 4 East Asian NIEs and China



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

Figure 8.4: The Number of U.S. Patents Granted Annually vs. R&D Capital Stocks



Real Outputs and Inputs—4-Inputs (Tangible Capital, Labor, Human & R&D Capital) Case

Table 8.1: Average Annual Rates of Growth of Real Output and Inputs (R&D Sample Period), percent

	Sample Period	Output (Real GDP)	Tangible Capital Stock	Utilized Tangible Capital	Employment	Total Labor Hours	Average Years of Education of the Working-Age Population ¹	Total Years of Education of the Working-Age Population ¹	R&D Capital Stock	Average Share of Labor Earnings to GDP
South Korea	67-95	8.81	13.12	13.35	3.12	3.42	3.32	5.93	14.90	0.39
Singapore	77-95	7.82	8.62	8.88	3.24	3.60	2.20	4.11	12.03	0.42
Taiwan	78-95	7.40	9.39	9.43	2.22	1.63	1.80	3.68	15.21	0.50
Japan	64-94	5.06	7.95	7.66	1.09	0.45	0.94	1.92	8.55	0.62
Canada	64-94	3.64	4.64	4.57	2.35	1.74	0.96	2.85	5.56	0.60
France	64-94	2.93	3.92	3.97	0.39	-0.40	1.30	2.09	4.82	0.64
West Germany	65-94	2.65	2.89	2.67	-0.02	-0.42	1.03	1.59	5.37	0.66
Italy	64-94	3.15	4.57	4.73	0.02	-0.31	1.34	1.87	6.10	0.72
United Kingdom	65-94	2.14	3.65	3.46	0.07	-0.30	0.89	1.15	2.00	0.66
United States	49-94	3.13	3.03	3.30	1.71	1.31	0.81	2.06	5.89	0.66

Sources of East Asian Economic Growth with 4 Inputs and Technical Progress

Table 8.4 Growth Accounts: Contributions of the Sources of Growth (Percent)
(Four-Input Model with Human Capital and R&D Capital)

	Sample Period	Tangible Capital	Labor	Human Capital	R&D Capital	Technical Progress
South Korea	67-95	60.12	14.23	1.75	23.90	0.00
Singapore	77-95	50.44	23.90	1.30	24.35	0.00
Taiwan	78-95	55.85	11.25	1.14	31.76	0.00
Japan	64-94	42.40	5.24	0.72	17.08	34.56
Non-Asian G-7 Countries	65-94	32.52	3.72	1.16	14.90	47.69

Why is There No Measured Technical Progress in East Asian NIEs? (1)

- ◆ (1) Low level of investment in intangible capital (human capital, R&D capital, knowledge capital and other forms of intangible capital)
 - ◆ The effects of technical progress in these production function studies are essentially captured by the estimated parameters of the time trend, which is supposed to reflect the influence of the changes in the omitted or unmeasured inputs, such as human capital, R&D capital, R&D capital, knowledge capital, land or more generally the natural endowment of resources, and other intangible "investments" such as software and market development.
 - ◆ However, since the developing East Asian economies, until very recently, have invested relatively little in intangible capital (e.g., R&D, especially in basic research), such omitted or unmeasured variables are actually unlikely to be important in them.

Why is There No Measured Technical Progress in East Asian NIEs? (1)

- ◆ Thus the indigenously generated improvements in technology have been quite scarce in developing East Asian economies other than Japan.
- ◆ By contrast, the industrialized economies invest a significant percentage of their GDP in R&D and even greater amounts in innovation and other productivity-enhancing activities.
- ◆ Thus, it should not be surprising that technical progress, or the "residual", is much larger in the industrialized economies than in the developing East Asian economies.
- ◆ Moreover, utilization of other countries' intangible capital is not costless--royalties, license fees, maintenance and service contracts, cross-licensing, full pricing of capital goods
- ◆ Complementary indigenous investment is required, e.g., the new rice varieties of the Green Revolution

Why is There No Measured Technical Progress in East Asian NIEs? (2)

- ◆ (2) The distribution of "Innovation Rents" (quite properly) favors the innovators and investors
 - ◆ The industries in the developing East Asian economies typically employ mature technologies with limited innovation possibilities but the capital goods and technology for which, mostly imported, have been fully priced (i.e., the acquisition as well as royalty costs fully reflect the possible efficiency gains and the amortization of R&D and other developmental costs) in the international market, so that there may be little or no net increase in value added, over and above the normal returns to the factor inputs. In other words, the "innovation rents" have been largely captured by the inventors, manufacturers and distributors of the new equipment or intermediate inputs in the industrialized economies in markets that are only very imperfectly competitive.

Why is There No Measured Technical Progress in East Asian NIEs? (2)

- ◆ The "rents" can also take the form of royalties and licensing fees paid to the foreign technology licensors by the developing East Asian economies, or through transfer pricing by foreign direct investors, reducing correspondingly the domestic part of the real value-added.
- ◆ Monopolistic pricing of capital equipment, technology licenses and critical components (e.g., systems integration capability for aircraft manufacturers; plastic lens for cameras), and the control over marketing through the establishment of brand names limit the value added by manufacturers/assemblers in developing East Asian economies, e.g., notebook computers
- ◆ Monopsonistic pricing for OEM manufacturers--the benefits of learning-by-doing on the part of the OEM manufacturers accrue mostly to the owners of brand names, designs, and marketing organizations
- ◆ Consequently, even if a new technology were adopted, its effect might not be reflected in the form of a higher real value-added, holding measured factor inputs constant.

Is Economic Growth Sustainable?

Krugman's Worry about East Asia

- ◆ If the major source of economic growth is the growth of tangible capital, then given the diminishing marginal productivity of tangible capital, as more and more tangible capital is accumulated, each additional unit of tangible capital will be less productive than the unit before it. Eventually economic growth must slow down and then stop altogether.
- ◆ The former Soviet Union was used as an example where a great deal of tangible capital was accumulated but failed to be productive, as was Mainland China before the economic reforms of 1979
- ◆ Boskin and Lau (1990) found that tangible capital and technical progress (intangible capital) are complementary—at the microeconomic level, this phenomenon is manifested in the form of capital-skill complementarity
- ◆ Investment in intangible capital can enhance the productivity of tangible capital because of its complementarity with tangible capital and retard the decline in the marginal productivity of tangible capital and hence counteract the “Krugman effect”

Is Economic Growth Sustainable?

Was East Asian Economic Growth a Bubble?

- ◆ Past economic growth neither a miracle nor a mere bubble
 - ◆ Economic growth experience replicated in different East Asian economies
 - ◆ Sustained economic growth over decades
 - ◆ Recent crisis due to many factors, of which “irrational exuberance” is only one
 - ◆ Economic fundamentals remain sound--high savings rates, investment in human capital, and more recently in R&D capital, entrepreneurship, market orientation
- ◆ Past economic growth tangible input-driven rather than intangible input or technical progress-driven--it is attributable to growth in tangible inputs, particularly the efficient and rapid accumulation of tangible capital
- ◆ However, East Asian economies lag far behind in both tangible and intangible capital per unit labor.
- ◆ There is therefore still considerable room for continuation of rapid tangible input-driven economic growth in the future--tangible capital per unit labor in East Asian economies, with the exception of Japan, still lags significantly behind the developed economies.
- ◆ Intangible capital per unit labor, e.g. R&D capital, lags even further behind, offering additional opportunities for investment

Is East Asian Economic Growth Sustainable?

- ◆ Prospects for continued economic growth in East Asia remain good—room for continuation of tangible-inputs-driven growth
- ◆ Fundamentals are sound—high savings rates, priority for education, private-enterprise market economy
- ◆ The experience of developed economies, especially that of Japan, suggests that investment in R&D capital and other forms of intangible capital has high returns
- ◆ Because of its complementarity with tangible capital, investment in intangible capital can retard the decline in the marginal productivity of tangible capital and counteract the “Krugman effect”
- ◆ There is also evidence of positive technical progress in the more recent period
- ◆ The people of East Asia are entrepreneurial, hard-working, and thrifty--all they need is a good, market-friendly, predictable and stable environment

Is East Asian Economic Growth Sustainable?

- ◆ The attractiveness of investment in intangible capital depends on the protection of intellectual property rights, which in turn depends on whether a country is a producer of intellectual property--some of the East Asian economies, e.g., Hong Kong, South Korea, Singapore and Taiwan are ahead of other East Asian economies with the possible exception of Japan on this score
- ◆ Intangible capital is different from tangible capital in three important aspects:
 - ◆ Intangible capital is freely mobile across countries
 - ◆ Intangible capital is simultaneously deployable in different locations without diminution of its effectiveness (increasing returns in the utilization of intangible capital)
 - ◆ Intangible capital enhances the productivity of existing tangible capital whereas additional tangible capital diminishes the productivity of existing tangible capital

Prospects for Future Economic Growth Remain Good

- ◆ Investment in intangible capital, e.g., R&D investments, has begun to increase in the East Asian NIEs
- ◆ There is also evidence of positive technical progress in the more recent period in South Korea, Singapore and Taiwan, reflecting their increased investment in intangible capital
- ◆ Prospects for continued economic growth in East Asia remain good—room for continuation of tangible-input-driven growth
- ◆ Fundamentals are sound—high savings rates, priority for education, market-oriented economy
- ◆ The experience of developed economies, especially that of Japan, and that of the East Asian NIEs in the more recent period, suggest that investment in R&D capital and other forms of intangible capital has high returns once a level of tangible capital per unit labor has been achieved

Long-Term Economic Growth: Three Paradigms of Chinese Economic Growth

- ◆ Domestic demand-driven growth--the domestic market paradigm a la the United States in the 19th century. China is a large continental economy--International trade will never be as important as other, smaller countries and China must rely on internal demand for further economic growth. Value-added from exports constitutes only 7.5 percent of Chinese GDP.
- ◆ The "wild-geese-flying pattern" metaphor of East Asian industrial migration over time can apply to Chinese provinces and regions
- ◆ Privatizing the economy without privatization--shrinking the state sector through the growth of the non-state sector in the absence of explicit privatization--the experience of Taiwan and South Korea
- ◆ What does it take?
 - ◆ Availability of infrastructure (transportation and communication, including the internet)
 - ◆ Continued marketization of the economy
 - ◆ Maintenance of a domestically open economy (the equivalent of the "interstate commerce" clause of the U.S. constitution)
 - ◆ Affirmation of tangible and intangible property rights and the rule of law (a national commercial and tax court?)
 - ◆ Maintenance of an internationally open economy--the role of the "open door" (WTO)

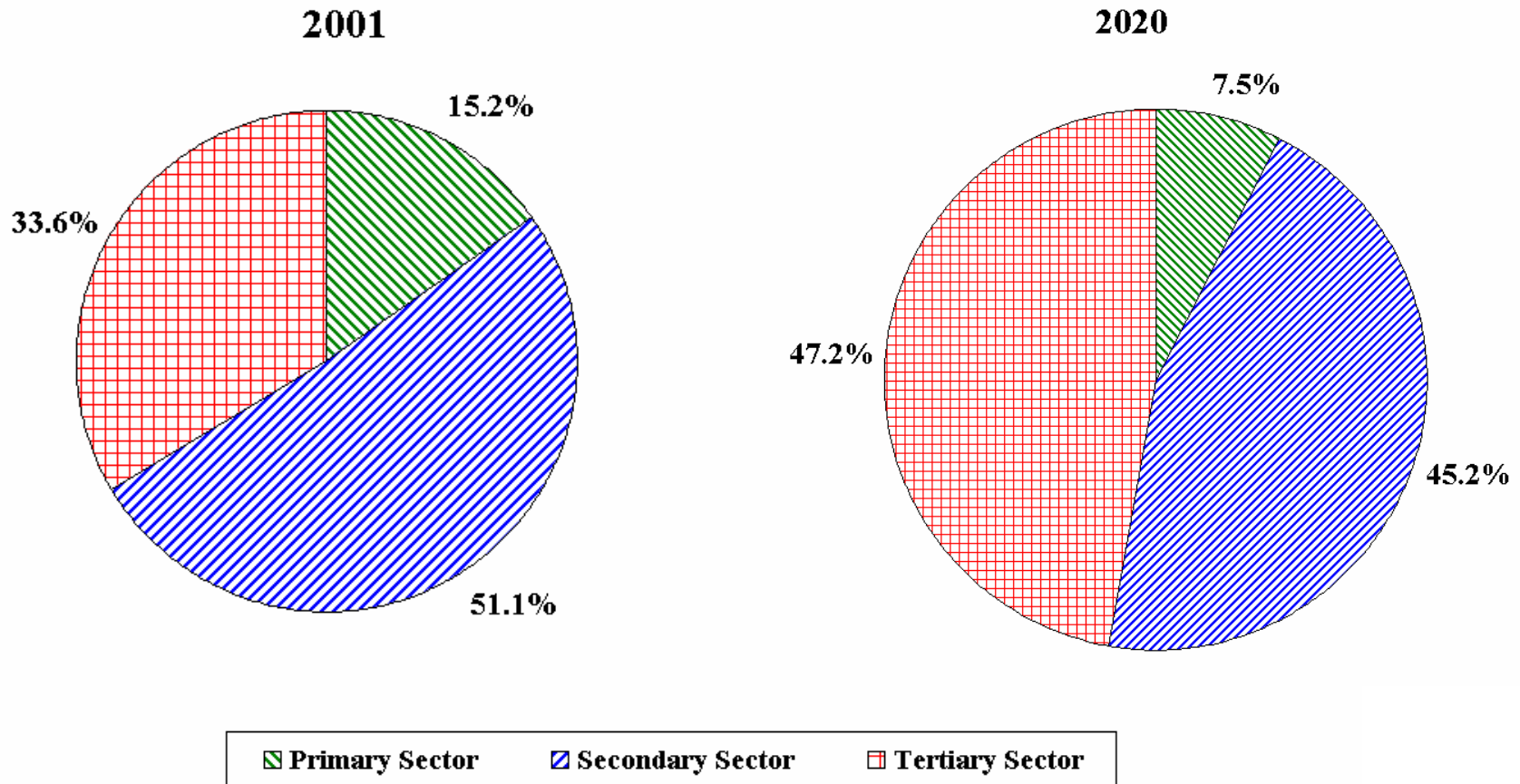
Long-Term Economic Trends

- ◆ Aggregate GDP
 - ◆ The Chinese economy is likely to continue to grow, more or less independently of what happens in the rest of the world, over the next several decades at an average annual rate of approximately 7%
 - ◆ The source of this growth will come primarily from tangible capital accumulation, supported by a national savings rate of 40%, human capital accumulation, and economies of scale, and to a lesser extent on the growth of intangible capital (for example, R&D capital) and improvements in efficiency
 - ◆ By 2020, aggregate Chinese GDP will exceed the aggregate GDP of Japan (and approximately half of aggregate U.S. GDP)
 - ◆ By 2035, aggregate Chinese GDP will reach the same level as aggregate U.S. GDP
- ◆ Per capita GDP
 - ◆ However, Chinese GDP per capita will only reach US\$10,000, or approximately 20% of U.S. GDP per capita, in 2035
 - ◆ Chinese GDP per capita will approach the level of U.S. GDP per capita only beyond 2050
- ◆ Population
 - ◆ By 2035, India will have overtaken China as the most populous nation in the world
- ◆ The currency
 - ◆ The Renminbi will in time become one of the strongest currency in East Asia and a quasi-reserve currency like the Euro

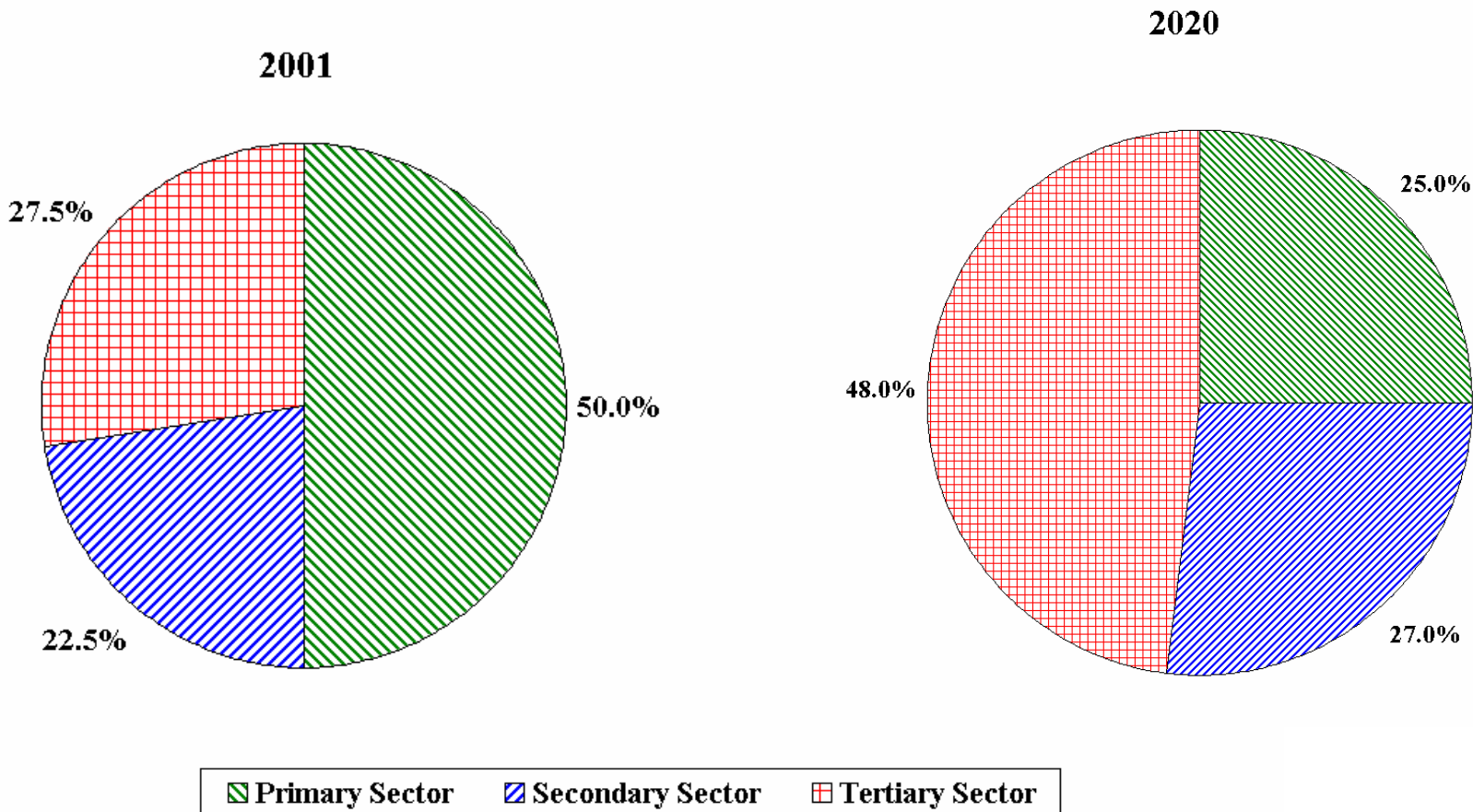
Long-Term Projections

	2002	2010	2020
	US\$ (2002 prices)		
Real GDP	1.25 trill.	2.25 trill.	4.5 trillion
Real GDP per capita	980	1,750	3,400

The Structure of the Economy: GDP



The Structure of the Economy: Employment



Sources of Growth of Aggregate Demand: Affordable Owner-Occupied Housing

- ◆ Huge pent-up demand for new affordable owner-occupied residential housing and rebuilt and renovated residential housing—a housing boom that can last for decades
- ◆ Promotion of affordable owner-occupied residential housing investment for and by the domestic population is one of the few alternative new and durable sources of growth of aggregate demand
 - ◆ Simultaneous adjustment of salaries and rents, providing purchasing power for employees not currently provided housing
 - ◆ Establishment of properties (transfer) rights to residential housing similar to those already available in the rural areas
 - ◆ Provision of long-term, preferably fixed rate, mortgages; development of secondary markets for such mortgages to avoid maturity mis-match; adoption of “safe-harbor” rules to overcome “reluctance to lend”
 - ◆ Institution of urban zoning and land use laws; absorption of land costs but maintaining fairness through land leases adjustable upon renewal
 - ◆ Development of mass urban transit
- ◆ Housing reform has taken root in major urban centers except Beijing

Sources of Growth of Aggregate Demand: Affordable Individual and Mass Transportation

- ◆ Huge pent-up demand for new affordable automobiles—annual domestic demand now estimated to be in excess of 2 million units.
- ◆ In 2003Q1, production of automobiles increased 120% YoY to almost 400,000 units; production of all motor vehicles increased 54% to 1.05 million units.
- ◆ In 2003/H1, production of passenger automobiles reached 903,000 units; production of all motor vehicles reached 2.126 million units, an increase of 32.2% YoY.
- ◆ Automobile assembly lines are now operating in 23 provinces, autonomous regions and municipalities.
- ◆ Huge need for mass transit in both old and new cities.

Sources of Growth of Aggregate Demand: Promotion of Science and Education in China

- ◆ Investments in information technology
 - ◆ Leap-frogging traditional development in telecommunication (the experience of the wireless phone)
 - ◆ E-commerce among enterprises
 - ◆ New models of marketing, distribution and sales
 - ◆ A PC in every classroom (in every urban home)
 - ◆ Set-top boxes on television sets with point and click device and numeric pad can link 400 million households to the internet
 - ◆ New modes of education and information dissemination
 - ◆ The Chinese language is uniquely suited to communication based on a graphic interface (the experience of the fax machine)
- ◆ Extension of compulsory education to 12 years
- ◆ Investments in tertiary education and in R&D

The Development of the Great West: Reducing Regional Inequalities

- ◆ Even though all regions benefited from the economic reform since 1979, the coastal regions benefited much more than the inland regions—there is an estimated 6 to 1 or even 8 to 1 ratio between the per capita GDP of the richest and poorest province/region.
- ◆ Interregional income inequality has risen, resulting in:
 - ◆ Dissatisfaction and restiveness
 - ◆ Deterioration of social services, especially education and health care
 - ◆ Massive illegal migration from the inland regions to the coastal regions, creating huge pressure on social and physical infrastructure
- ◆ Relaxation of rural-urban migration (mostly controlled by the local authorities)
- ◆ Transfer payments from the central government
- ◆ Raising agricultural incomes
- ◆ Urbanization in situ

The Development of the Great West: Reducing Regional Inequalities

- ◆ Moving jobs to where people are, not people to where jobs are
- ◆ Urbanization through the creation of new towns and cities, not the growth of existing towns and cities
- ◆ Developing a truly unified national market
- ◆ Education and investment in human capital is the most effective means for reducing income inequality
- ◆ Maintaining long-term competitiveness without devaluation; WTO accession can help by putting pressure on enterprises to move inland to lower their costs and maintain competitiveness
- ◆ Opening a new “Silk Road”—a direct land bridge to Europe and the relocation of the capital from Beijing to a city in the Western region of China can significantly accelerate the development of the Great West

The New Economy and China: The Advantages of Backwardness and Size

- ◆ The possibility of leap-frogging--there are no vested interests to protect; no existing businesses to be cannibalized; there can be “creation without destruction”
 - ◆ e.g., facsimile machines instead of telexes; video compact discs instead of VCRs; a new keyboard layout; mobile and wireless telephones instead of fixed lines; debit and credit cards instead of checks
- ◆ The possibility of influencing/setting standards--the markets are potentially large enough in China for the benefits of economies of scale to be realized and for it to have a significant influence on future standards and on the distribution of royalties and license fees
 - ◆ e.g., Linux operating system; 3G mobile telephone standards (TD-SCDMA); digital TV; digitization of audio-video signals (AVS as a substitute for MPEG-4)
- ◆ The possibility of local adaptation--taking advantage of local conditions
 - ◆ e.g., the Legend story—language; local supply and demand conditions, e.g., stability of the voltage of the electric power supply
- ◆ Transformation of the “Old Economy” through the information and communication technology

The New Economy Levels the Playing Field between Large and Small Firms

- ◆ Small firms can have access to services and supplies heretofore only available to large firms
 - ◆ E.g., by bringing down the cost of securities trading, Charles Schwab and E-trade benefit small investors proportionally much more than large investors
 - ◆ Rapid delivery services and warehousing facilities, e.g., Federal Express, are available to both large and small firms
- ◆ Small firms can also become more accessible to their customers and potential customers through the Internet with only marginal expenditures on advertising and public relations
- ◆ Small firms have access to large firms as potential suppliers in a global supply chain
- ◆ The Chinese economy with its high and potentially even higher concentration of smaller firms and more primitive information infrastructure (and thus the potential for leap-frogging) may benefit much more from the new economy than other more developed economies
 - ◆ E.g., B2B dot.coms seem to have relatively greater success in East Asia than in the United States

Prospects for Economic Growth

- ◆ Chinese economic growth during the next five years, indeed the next decades, will depend mostly on internal factors and be largely unaffected by the policies of other countries or events outside of China (a disruption of the oil supply may be an exception).
- ◆ There are numerous serious problems confronting the Chinese economy—however, these problems are not intractable.
- ◆ On the margin, foreign involvement in the Chinese economy will make some, but not a critical, difference; but it can be mutually beneficial for both China and the foreign countries.
- ◆ Chinese GDP and GDP per capita will remain low relative to the industrialized economies (G-7) for at least three or more decades.
- ◆ The share of Chinese GDP produced by the non-state-owned sector will rise from 65% to 80% in another decade.
- ◆ There is significant complementarity between the Chinese and G-7 economies--the G-7 economies do not export anything that China exports (and have not done so for decades) and China does not export anything that the G-7 exports. It is this complementarity that maximizes the potential gains from free trade between the two sides.

Projected Rates of Growth of Real GDP and Inflation (% p.a.), 2003-4

Projections of Rates of Growth of Chinese GDP and Inflation, 2003-4, % p.a.

Organization	2003				2004				
	Pre-SARS		Post-SARS		Revised Post-Sars				
	GDP	CPI	GDP	CPI	GDP	CPI	GDP	CPI	
National Bureau of Statistics, China	>7.0		>8.0						
People's Bank of China							1-2		
Development Research Center, China	7.0-8.0								
Chinese Academy of Social Sciences	8.6		8						
Asian Development Bank	7.5		7.3						
International Monetary Fund					7.5		7.5		
The World Bank			7.2						
Citicorp.	7.6		6.7						
Credit Suisse Frist Boston	7.9		7.3		8.6				
Goldman Sachs	7.5		7		8.1		8.4		
J. P. Morgan Chase	8		7.4		8				
Merrill Lynch			8		8.5		8		
Morgan Stanley	7		6.5						
UBS Warburg	7.3		7.3		8		7.5		
Lau	7.5	1	7.5	1			7.5		1

The Economic Development and Reform Agenda of the New Administration

- ◆ Continuation of the twin policies of reform and openness.
- ◆ Economic reform to be focused on four areas:
 - ◆ Reform of state-owned enterprises (separation of the functions of ownership, regulation and supervision, and management)
 - ◆ Formation of the State-owned Assets Supervision and Management Commission (SASMC) to oversee 196 large enterprises with over US\$830 billion of assets in March 2003
 - ◆ Reform of the financial sector
 - ◆ Restructuring of the state-owned banks
 - ◆ Enhancing the capital markets
 - ◆ Reform of the agricultural sector
 - ◆ Relaxation of regulations on internal migration
 - ◆ Reform of the governmental institutions (substitution of indirect macroeconomic control and the market mechanism for direct microeconomic control; enhancement of the social security system)

Tasks Ahead

- ◆ Maintaining and increasing employment (moving labor from agriculture to industry and services)
- ◆ Implementing Chinese commitments under the accession agreement to the World Trade Organization (WTO)
- ◆ Establishing a credible and sustainable social safety net
- ◆ Socialization of basic social services such as education and healthcare
- ◆ Reform of the state-owned enterprises (SOEs)
- ◆ Reform of the banking and financial systems
- ◆ Integrating and unifying the domestic market
- ◆ Controlling corruption

Difficult Issues

- ◆ Domestic stability—domestic stability can be maintained as long as the economy performs well and the gap between the have's and have-not's does not become too large. The agricultural procurement program, the establishment of the social security fund, the Western Development Initiative, and the renewed focus on education are all intended to address these issues.
- ◆ Acceleration of urbanization and industrialization (building new cities or enlarging old cities?)
- ◆ Centralization versus decentralization—power to raise and collect taxes, to issue debt, to regulate provincial and local commerce, to adjudicate and enforce the law (interstate commerce clause, national commercial and tax court)
- ◆ The reliability of information (e.g., GDP statistics, SARS)

Potential Risk Factors

The Economic Impacts of SARS

- ◆ In 2003/Q2, real GDP grew at 6.7% YoY, brought down principally by the slowdown in the service sector, which grew only 0.8% YoY compared to 6.9% in 2002/Q2 (retail sales only grew 6.7% YoY compared to 9.2% in 2003/Q1).
- ◆ In 2003/H1, gross fixed investment grew 31.1% YoY, retail sales grew 8% YoY, and industrial value-added grew 16.4% YoY.
- ◆ In 2003/H1, exports grew 34% YoY, showing little impact of SARS.
- ◆ The SARS epidemic is finally over. The World Health Organization removed China from the list of SARS-affected areas in late June. A total of approximately 8,400 individuals were infected with SARS, out of which slightly more than 900 died.
- ◆ There was a relatively rapid recovery of the service sector.
- ◆ In 2003/H1, actual foreign direct investment (FDI) reached US\$30.3 billion, an increase of 34.3% YoY; committed FDI reached US\$51 billion, in increase of 40.3% YoY. However, the rate of increase of actual FDI was only 2.5% in 2003/M6, reflecting the effect of the SARS epidemic.

The Lessons from the SARS Epidemic

- ◆ Medical and public health practices
 - ◆ Isolation of patients and potential patients at dedicated facilities
 - ◆ Free treatment and free testing (to encourage early identification, diagnosis and treatment)
 - ◆ Protection of medical and health care personnel
 - ◆ Promotion of good personal hygienic practices (The SARS virus actually does not transmit that easily)
- ◆ Emergency preparedness
 - ◆ Nationwide medical teams
 - ◆ Stockpile of necessary equipment and medicine
- ◆ The importance of information availability, accuracy, and transparency
 - ◆ The policy makers needs to have timely, multi-channel and independent information
 - ◆ Public education and awareness. Self-preservation and self-protection are the keys to stopping the transmission. That is why accurate, transparent and timely information is critical.

Can China Deal with Another SARS Epidemic?

- ◆ The SARS virus does not transmit easily.
- ◆ With isolation of patients and potential patients, protection of medical personnel and individual exercise of personal hygiene, transmission can be reduced to a minimum.
- ◆ Early and widespread warning is the key.

The Critical Path for Continuing Economic Reform (1)

- ◆ In order to reform the Chinese commercial banking sector, the non-performing loans (NPL) problem of the state-owned commercial banks must be resolved.
- ◆ In order to resolve the NPL problem of the Chinese commercial banks permanently, it is necessary not only to take care of the outstanding stock, but also to stop the continuing flow.
- ◆ In order to stop the flow, it is necessary to restructure the borrower enterprises, so that they are independently viable without relying on new loans afterwards.
- ◆ In order to insure the viability of the restructured SOEs, most of the existing obligations of the SOEs must be assumed by the central and local governments, i.e., “socialized,” or by the individual employees themselves.

The Critical Path for Continuing Economic Reform (2)

- ◆ Socialization of these obligations requires, in turn, the creation of a credible social safety net--a viable social security and pension system (including unemployment “insurance”) to take care of both the inherited historical problems and the future--and the provision of social services by the local governments instead of the SOEs.
- ◆ Provision of social services by the provincial and local governments instead of the enterprises requires an independent source of revenue, through either the sharing of revenue with the central government, the division/sharing of tax bases, and direct and indirect central government subsidies (e.g., through tax preferences).
- ◆ Thus, continued economic reform must start with the creation of a social safety net and the division/sharing of social responsibilities and revenue/tax bases.

Non-Performing “Loans” of the State-Owned Commercial Banks

- ◆ The four major state-owned commercial banks account for 67% of all deposits (approximately 20 trillion Yuan) and 61% of all loans (15 trillion Yuan) and 90% of the loans of the state-owned enterprises (SOEs). The total volume of loans at the four major commercial banks amounted to 8 trillion Yuan (or US\$967 billion).
- ◆ Non-performance is no surprise to either the lenders or the borrowers
- ◆ In terms of flows, they amount to 2-3% of GDP, comparable to government budget deficits in many countries
- ◆ In terms of stocks, they range from approximately a quarter of the outstanding loans, or approximately 2 trillion Yuan (US\$240 billion) (People’s Bank of China (PBOC)) up to US\$500 billion; in June 2003 (22.19% according to the China Banking Regulatory Commission (CBRC), down 4.02% from year end 2002), Moody’s Investors Service estimates that the level of non-performing loans can be as high as 45% or 3.6 trillion Yuan (US\$430 billion) (IHT, June 27, 2003) and Standard and Poor estimated these non-performing loans to be US\$750 billion (IHT, 6/24/2003). Standard and Poor also estimated the NPL ratio to have declined from 50% at year end 2001, to 48% at year-end 2002 and 44-45% at year-end 2003 (WSJ, 9/9/2003). As a percent of GDP, these estimates range between 20 and 60%.
- ◆ Average loan loss reserves are approximately 6% of total loans and hence approximately 13% of the non-performing loans.
- ◆ In the mid-1990s, four asset management companies (AMCs) were formed to assume 1.4 trillion Yuan (US\$169 billion) of NPLs from the four major state-owned commercial banks

Non-Performing “Loans” of the State-Owned Commercial Banks

- ◆ Assuming that only 25% of the NPLs are ultimately recoverable, the bad debt provision required ranges between 15 and 45% of the current GDP of 10 trillion. (Auctions for the NPL portfolios have been held successfully recently with a recovery ratio of approximately 25%. Goldman Sachs used a recovery ratio of 40%.)
- ◆ More recent experience indicates that the recovery ratio may well be higher—the People’s Bank of China reported in October 2002 that the four asset-management companies have disposed of a total of US\$28.1 billion of non-performing loans and recovered US\$10 billion, or slightly more than 30%. Hua Rong Asset Management Company, which was formed to handle the non-performing loans of the Industrial and Commercial Bank of China (ICBC), sold US\$5.3 billion of non-performing loans and recovered US\$2.6 billion, or almost half. Similarly, Agricultural Bank of China, Bank of China, and the Construction Bank of China sold respectively US\$10 billion, US\$4 billion and US\$9 billion worth of non-performing assets.
- ◆ The recovery rate is not independent of the criteria used for the classification of the NPLs. It is reasonable to use a higher recovery rate if the estimated NPL ratio is higher.
- ◆ In May 2003, LIU Mingkang, Chairman of the China Banking Regulatory Commission, indicated that non-performing loans have been reduced from 26.12% of the total to 24.13% of the total as of year-end 2002. They are likely to be further reduced to 20-21% at the end of 2003. (The China Construction Bank recently announced that its NPL ratio was down to 12.91% at the end of 2003/H1.)

Non-Performing “Loans” of the State-Owned Commercial Banks

- ◆ The loans should be regarded as indirect loans to the central government which also owns all of the major banks, i.e. public debt.
- ◆ Outstanding Chinese national debt is approximately 18% of GDP (compared to 60-70% for the United States, 140% for Japan, 75% for Zone Euro and 160% for Belgium).
- ◆ Total public debt, assuming the conversion of all non-recoverable non-performing loans into public debt, may be estimated to be approximately 35-55% of Chinese GDP.
- ◆ Vice Minister LOU Jiwei estimated that state assumption of the NPLs would have raised the public debt/GDP ratio by approximately 20 percentage points.

Exchange Rate Mechanism: The Chinese Trade Surplus vis-à-vis the United States

- ◆ The Chinese trade surplus in goods and services vis-à-vis the United States is large and growing.
- ◆ Official U.S. data overestimate the Chinese surplus and official Chinese data underestimate the Chinese surplus because of their different treatments of re-exports through Hong Kong and other trans-shipment points.
- ◆ despite the large Chinese trade surplus vis-à-vis the U.S., the overall Chinese trade surplus with the World as a whole has become relatively small, especially after Chinese accession to the World Trade Organization (WTO). It is projected to be approximately US\$10 billion for 2003, or 1.5% of total Chinese international trade.
- ◆ China will have a trade deficit with the rest of the World, which is projected to be on the order of US\$70 billion, for 2003. The trade surplus vis-à-vis the U.S. is projected to be in the US\$80 billion range.
- ◆ In contrast, Japan has a large trade surplus both with the U.S. and the World as a whole. For 2002, Japan has a trade surplus of US\$62 billion with the U.S. and a trade surplus of US\$80 billion with the World as a whole.
- ◆ The continuing growth of the Chinese trade surplus with the U.S. is a direct consequence of the shifting of the location of final assembly/finishing of many goods from these East Asian economies to China. The finished goods are considered to have originated from China when they are exported to their final users from China.
- ◆ As a result, simultaneous with the rise of the Chinese trade surplus with the U.S., the trade surpluses of these other East Asian economies vis-à-vis the United States decline, or stop growing, and the trade surpluses of these economies with China rise. In other words, a significant part of the trade surpluses that these economies once had with the U.S. have been shifted to and “inherited” by China.
- ◆ The Chinese trade deficit in goods and services vis-à-vis the rest of the World may be expected to continue to rise in the future because of the rapid growth of oil imports (driven by rapidly increasing domestic demand for automobiles) and outbound tourism.

Alternative Estimates of U.S.-China Merchandise Trade Balance (billion US\$)

Table 1: Estimate of U.S.-China Trade Balance, f.o.b., Adjusted for Re-exports, Re-export Markups and Services (billion US\$)

Year	Our estimate of U.S. imports from China fob adjusted for re-exports and re-export markups (Official U.S. data)	Our estimate of U.S. exports to China fob adjusted for re-exports and re-export markups (Official U.S. data)	Estimate of U.S. exports of services to China (Official U.S. data)	Estimate of U.S. imports of services from China (Official U.S. data)	Our estimate of U.S.-China trade balance of goods and services (Official U.S. data)
1995	33.7	16.0	2.5	1.7	-16.9
1996	38.7	17.1	3.2	1.9	-20.3
1997	48.2	18.0	3.6	2.2	-28.8
1998	56.3	18.9	4.0	2.3	-35.7
1999	65.1	17.7	3.9	2.7	-46.2
2000	80.3	21.4	4.6	2.8	-57.1
2001	83.5	24.7	5.3	3.0	-56.5
2002	104.0	27.4	5.3	3.0	-74.3

U.S. Trade Balance (billion US\$) with the World and Selected East Asian Economies

Table 2: U. S. Balance of Trade				
Billions of US\$	2000	2001	2002	2003H1
World	(\$487)	(\$448)	(\$509)	(\$268)
China	(\$90)	(\$90)	(\$111)	(\$54)
Japan	(\$85)	(\$72)	(\$73)	(\$32)
Hong Kong	\$3	\$4	\$3	\$2
S. Korea	(\$14)	(\$14)	(\$14)	(\$5)
Taiwan	(\$15)	(\$15)	(\$14)	(\$7)

Chinese Trade Balance (billion US\$) with the World and Selected East Asian Economies

Table 3: Chinese Balance of Trade				
Billions of US\$	2000	2001	2002	2003H1
World	\$43	\$23	\$30	\$3
U.S.	\$30	\$28	\$43	\$23
Japan	\$0	\$2	\$6	(\$7)
Hong Kong	\$35	\$37	\$26	\$27
S. Korea	(\$12)	(\$11)	(\$11)	
Taiwan		(\$12)	(\$36)	(\$18)

Official U.S. and Chinese Merchandise Trade Data (billion US\$)

Table 1: Official U.S. and Chinese Merchandise Trade Data (billion US\$)

Year	Official U.S. exports to China (U.S. data)	Official Chinese imports from the U.S. (Chinese data)	Official U.S. imports from China (U.S. data)	Official Chinese exports to the U.S. (Chinese data)	Official U.S.-China trade balance (U.S. data)	Official U.S.-China trade balance (Chinese data)
1995	11.7	16.1	45.6	24.7	-33.8	-8.6
1996	12.0	16.2	51.5	26.7	-39.5	-10.5
1997	12.8	16.3	62.5	32.7	-49.7	-16.4
1998	14.3	17.0	71.2	38.0	-56.9	-21.0
1999	13.1	19.5	81.8	41.9	-68.7	-22.4
2000	16.2	22.4	100.0	52.1	-83.8	-29.7
2001	19.2	26.2	102.3	54.3	-83.1	-28.1
2002	22.1	27.2	125.2	70.0	-103.1	-42.8

Exchange Rate Mechanism: The Chinese Trade Surplus vis-à-vis the United States

- ◆ However, the exports have mostly originated from foreign-invested enterprises and are the direct consequences of the rapid expansion of global out-sourcing made possible by the revolution in information and communication technology..
- ◆ The domestic value-added content of Chinese exports to the U.S. is low—it may be estimated at 20%. (Equivalently, the import content of Chinese exports to the U.S. is a high 80%.) Chinese exports to the World is not quite 30% of Chinese GDP. Chinese exports to the U.S. may be estimated to be less than 10% of Chinese GDP. Thus, the Chinese GDP attributable to Chinese exports to the U.S. is no more than 2%. The Chinese GNP attributable to Chinese exports to the U.S. is most likely smaller because most of the profits from such exports accrue to the foreign shareholders and owners of the exporting enterprises.
- ◆ Most of the exports operations consist of “processing and assembly”—the final finishing of products using intermediate inputs produced elsewhere. What used to be exported from Japan, Hong Kong, South Korea and Taiwan are now finished and exported from China. They are considered Chinese exports—Thus, the trade surpluses of Japan, Hong Kong, South Korea and Taiwan vis-à-vis the United States have fallen at the same time that their surpluses vis-à-vis China have risen, and the Chinese surplus vis-à-vis the United States has risen. It is due mostly to the shifting of the location of the final finishing of the product. (E.g., Dell, Nike).

Exchange Rate Mechanism: The Effects of Global Out-Sourcing

- ◆ Global out-sourcing strengthens the competitiveness of U.S. firms in their home markets and helps them to not only maintain their existing markets but also open new markets for U.S. products in the rest of the world.
- ◆ For examples, Dell may not have been able to compete with Acer without the cost savings resulting from the final assembly of its personal computers in China; Motorola may not have been able to compete with Samsung without its production and export base for mobile telephones in China; and Hewlett-Packard may not be able to compete with Epson without manufacturing overseas. Competition is worldwide today and not just limited to U.S. markets.
- ◆ Samsung has been shifting its production of personal computers to China. If other personal computer firms do not do so, they risk losing competitiveness. But the Chinese value-added is very low because almost all components are imported.
- ◆ The bulk of the jobs won by Chinese workers as a result of global out-sourcing were from the other East Asian economies, and not from the U.S., which lost those decades ago.
- ◆ More generally, the global outsourcing enables U.S. firms to both maintain their domestic market shares and expand their global market shares and thereby maintain, create and expand better-paying job opportunities in the U.S.

Exchange Rate Mechanism: The Relative Value-Addeds from Exports

- ◆ The domestic value-added content of Chinese exports to the U.S. is only 20 percent. The domestic value-added content of U.S. exports to China is much higher. (The top 5 U.S. exports to China in 2002 are: 1. Aircraft and associated equipment; 2. Thermionic, Cold Cathode and Photocathode Valves; 3. Telecommunication Equipment; 4. Oil Seeds and Oleaginous Fruit; and 5. Measuring/Checking/Analysing Instruments.)
- ◆ The adjusted Chinese exports to the U.S. is approximately US\$105 billion, f.o.b. and the adjusted U.S. exports to China is approximately US\$27.5 billion, f.o.b. If we assume the U.S. domestic value-added content is 60 percent, then the domestic value-added of Chinese exports to the U.S. is US\$21 billion and the domestic value-added of U.S. exports to China is US\$18.5 billion. These two numbers are not that far apart and 60% may well be an under-estimate of the domestic value-added content of U.S. exports to China.
- ◆ In terms of value-added created in each country, the gains from trade between U.S. and China seem not to be too inequitably distributed. In addition, the U.S. has a surplus in trade in services vis-à-vis China of more than US\$ 2 billion, and in trade in services the domestic value-added content is almost 100%.

Exchange Rate Mechanism: Will Revaluation Work?

- ◆ The low domestic value-added content, 20%, of Chinese exports to the U.S. implies a high import content, 80%. Thus, a revaluation of the Renminbi, while it raises the cost of processing and assembly in China, also lowers the cost of the imported intermediate inputs, which constitute 80% of the total cost of the product, at the same time. A 10% revaluation will therefore increase the cost of Chinese exports to U.S. importers by approximately 2%. It is therefore unlikely to have a significant effect in reducing Chinese exports to the U.S.
- ◆ The postwar Japanese experience is not encouraging-- The Japanese Yen appreciated from 360 Yen/US\$ in the early 1960s to its current 115 Yen/US\$, but the revaluation did not seem to have reduced the Japanese trade surplus vis-à-vis the United States.
- ◆ Mere revaluation of an exchange rate seldom works and will not in this case. It is far more important, and effective, to change the mercantilist mindset prevalent in China.

Exchange Rate Mechanism: Will Revaluation Work?

- ◆ Moreover, there are both macroeconomic and microeconomic reasons why a revaluation of the Renminbi will not reduce the U.S. trade deficit:
 - ◆ Savings-investment imbalance
 - ◆ Diversion of processing and assembly activities to third countries with similarly low costs
- ◆ Far more effective in increasing U.S. exports and reducing the U.S. trade deficit is a revaluation of the currencies of countries that compete directly with U.S. exports. China competes with the U.S. in very few export markets. For third countries like China, it is not the values of their exchange rates vis-à-vis the U.S. Dollar that determine whether they will buy from Airbus or Boeing, it is the Euro/US\$ exchange rate.
- ◆ A precipitous revaluation of the Renminbi may lead to a flight from the US\$ by Chinese nationals, possibly driving up the rate of interest in the United States.
- ◆ Both Dr. Glenn Hubbard, a former Chairman of the Council of Economic Advisers, and Dr. Gregory Mankiw, the current Chairman of the Council of Economic Advisers, have said that a revaluation of the Renminbi is unlikely to be very effective in reducing job losses in the U.S.
- ◆ Standard and Poor, the rating agency, supports the decision of China not to revalue the Yuan on the grounds that a floating of the currency will damage China's credit rating.

Exchange Rate Mechanism: Will Revaluation Work?

- ◆ Revaluation of the Renminbi, even unaccompanied by the removal of outbound capital control, is also likely to pose some risks to the financial institutions and enterprises in China because of the requirement of “marking to market”. For example, the People’s Bank of China (PBOC), the central bank, holds approximately US\$360 billion of foreign exchange reserves, with perhaps more than 70% of which denominated in US\$. It will have to take a massive write-down in Renminbi terms upon revaluation. It has been estimated that an additional US\$150 billion are held by Chinese enterprises and households as deposits at Chinese commercial banks. A full-fledged banking crisis may ensue if Chinese commercial banks have to write down their currency losses.
- ◆ It is probably counterproductive for the United States to demand that China do something that is costly to China but does not do the United States any good. Forcing China to revalue does not really help the U.S. solve its job problem fundamentally.

Exchange Rate Mechanism: Equilibrium in the Foreign Exchange Market

- ◆ There actually has been a cumulative real exchange rate appreciation of the Renminbi versus the U.S. Dollar of approximately 15% since January 1, 1994.
- ◆ The Chinese current accounts are at the present time approximately balanced vis-à-vis the World as a whole despite large surpluses vis-à-vis the United States, with only a small surplus of approximately US\$10 billion. This implies Chinese trade deficits with many other countries, in contrast to the Japanese situation.
- ◆ However, the Chinese overall balance of payments is in disequilibrium with a significant surplus, mostly because of the large capital inflow on account of the inbound foreign direct investment (FDI), currently running at a rate of US\$60 billion a year.
- ◆ But the capital accounts are in surplus also because of controls on capital outflows. Only inflows of capital but no outflows of capital are permitted (with some exceptions) in China. Thus, while it is true that the Renminbi exchange rate is not “market-determined” by spot supply and demand, whatever exchange rate that may emerge from simply eliminating the government intervention in the foreign exchange market is not a truly market-determined exchange rate either, because many potential buyers of foreign exchange and sellers of Renminbi have been excluded.

Exchange Rate Mechanism: Equilibrium in the Foreign Exchange Market

- ◆ If capital controls are lifted to-morrow, it is not clear that the Yuan will appreciate. Dr. Nicholas Lardy of the Institute for International Economics, Dr. Stephen Roach of the Morgan Stanley, and Dr. Weijian Shan, a General Partner of Newbridge Capital all seemed to believe that the value of the Yuan in terms of U.S. Dollars will go down, not up, if capital controls are lifted. (I personally do not share their view.)
- ◆ However, lifting capital controls abruptly is extremely risky--it may trigger a massive financial crisis in China. If Chinese depositors withdraw their deposits from the Chinese commercial banks and exchange them into U.S. Dollars en masse, the commercial banks may be faced with an illiquidity and insolvency crisis, because of the extraordinarily high proportion of non-performing loans in their portfolios.

Exchange Rate Mechanism: Can Anything be Done to Reduce the Chinese Surplus?

- ◆ The disequilibrium in the Chinese overall balance of payments can be corrected through quantity adjustments rather than price adjustments.
 - ◆ Increasing the imports of goods and services (as opposed to decreasing exports);
 - ◆ Promoting outbound direct and portfolio investment;
 - ◆ Financing inbound direct (and even portfolio) investment with Renminbi-denominated loans (with appropriate collateral or guarantees).
- ◆ Changing the mercantilist/fish-trap mindset
 - ◆ China can afford to and should run a trade deficit as long as it has a large net surplus on the capital account.
 - ◆ China can also afford to have regulated orderly outflows of not only direct but also portfolio investments.
 - ◆ It is not the money or the foreign exchange that China really needs from the foreign direct investors, it is their technology, know-how, markets, organizations, business methods and models.

Exchange Rate Mechanism:

China Can Import More from the U.S. and Elsewhere

- ◆ China can import more from the United States
 - ◆ In effect, Chinese firms exchange goods for greenbacks, pieces of paper that can be printed at virtually zero cost; they sell the greenbacks to the Chinese central bank for Renminbi; and the central bank in turn exchanges the greenbacks for other pieces of paper, call bonds, which can also be printed at virtually zero cost. It is high time that the Chinese should turn back the pieces of paper for some real goods.
 - ◆ Given the levels of Chinese exports and imports and external debt levels relative to its GDP, there is no need for the Chinese central bank to accumulate more foreign exchange reserves
- ◆ Promotion of U.S. exports of goods to China
 - ◆ Specialty exports such as Harley-Davidson motor cycles, Corvette cars
 - ◆ Expedited processing for applications of export control waiver by the U.S.
- ◆ Promotion of invisible/intangible “exports” of services—China has really opened up tourism in a big way (US\$5,000 per person per trip, individual passports, individual tourism is now a legitimate reason for traveling abroad)
 - ◆ Promotion of tourism, education (more Chinese students for universities and graduate schools), and healthcare (medical treatment) in the United States
 - ◆ Logistics and distribution activities by U.S. and other foreign firms
 - ◆ Sports exhibitions, movie rentals, and other service imports from U.S. and elsewhere
- ◆ Enhanced intellectual property rights protection can greatly augment U.S. export revenue from China.
- ◆ Building strategic reserves of oil and other minerals and natural resources.

Exchange Rate Mechanism: Direct and Portfolio Investments and Loans

- ◆ Outbound foreign direct investment, especially strategic foreign direct investment, should be promoted and encouraged. For example, Chinese firms may be encouraged to invest in oil reserves and other natural resources overseas. For another example, Chinese textile firms may be encouraged to invest in the U.S. textile industry. There may well be complementarities and synergies between industries on the decline in one country but on the rise in the other. Many of the benefits and costs of international trade can be internalized. In particular, the potentially displaced workers can be compensated by the potential beneficiaries of the trade, firms that can, in turn, pass the cost to the general public by charging slightly higher prices. Chinese firms should also be encouraged to make strategic investments in listed and unlisted companies in the U.S. and elsewhere.
- ◆ Tax treaties can be concluded between China and the U.S. and other countries to facilitate Chinese outbound foreign direct investment.
- ◆ China can make it easier for foreign direct investors to repatriate their principal and profits.

Exchange Rate Mechanism: Direct and Portfolio Investments and Loans

- ◆ China can afford to have regulated orderly outflows of portfolio investments, e.g., through closed-end outbound mutual funds (e.g., indexed funds based on U.S. market indexes (S&P 500 funds?)) and China Depositary Receipts issued by foreign (including U.S.) publicly listed companies and listed on the Chinese Stock Exchanges, and “qualified domestic institutional investors (QDIIs)”. These vehicles have the characteristics that they still require approval so that the Chinese Government can control both the timing and the volume of these flows. In addition, with the exception of the QDIIs, the other vehicles only generate a one-time outflow of foreign exchange and does not create potentially disruptive back and forth flows of foreign exchange.
- ◆ China can permit foreign firms and multilateral organizations to raise funds in either Renminbi or in U.S. Dollars in the domestic Chinese capital markets. Funds raised in Renminbi, can, at the option of the issuer, be converted into U.S. dollars through the People’s Bank of China at the time that the funds are raised.
- ◆ Instead of floating the shares of good Chinese companies overseas, they should be floated domestically (China no longer needs the foreign exchange) but can open up to foreign portfolio investors to invest in the Chinese market.
- ◆ Increased foreign aid and foreign loans to multilateral organizations and to low-income developing economies—e.g., loans repayable in the local currency.

Exchange Rate Mechanism: Promising Directions

- ◆ Acceleration of World Trade Organization (WTO) commitments on tariffs, market access and opening.
 - ◆ Telecommunications, transportation, logistics, financial services, e-Commerce
- ◆ Import tariffs on the part of the U.S.—probably not permitted under WTO rules

Exchange Rate Mechanism:

Alternatives--Voluntary Export Taxes

- ◆ Voluntary Export Taxes (VET)—this is permitted under WTO rules (either vis-à-vis the U.S. or vis-à-vis the rest of the World). An export tax is better for China than a revaluation because while it raises the terms of trade in the same way as a revaluation, it does not lead to losses for holders of the U.S. dollars, e.g., the People's Bank of China or other commercial banks and enterprises that may have to recognize the foreign exchange losses.
- ◆ It also does not generate windfall gains for the holders of the Renminbi and thus does not reward currency speculators or encourage continuing currency speculation.
- ◆ Moreover, an export tax can be easily lifted if and when the balance of payments conditions so warrant.
- ◆ An export tax has the same effects as the reduction in the rebate of the value-added tax in discouraging Chinese exports but it is much easier to implement and does not treat different industries discriminatorily. A uniform export tax is neutral in its effect across industries.
- ◆ For the U.S. and other importers of Chinese goods, a revaluation and an export tax is equivalent (an export tax of 2% is equivalent to a revaluation of 10%).
- ◆ A voluntary import subsidy also has the same effects on trade flows as a revaluation or an export tax. However, from a fiscal point of view, an export tax is better because it generates revenue whereas an import subsidy requires expenditure.

Exchange Rate Mechanism: A Wider Band

- ◆ Volatility in exchange rate is not conducive to long-term trade and investment relations—long term effective hedges are hard to find and expensive.
- ◆ A wider band of fluctuation is a good idea but should be introduced and implemented only when expectations of future exchange rates are more neutral and diffuse. If expectations are all one-sided, introducing a wider band does not help because the top of the band will be reached immediately, possibly leading to expectations of even further movements in the same direction.
- ◆ The dynamics are such that if China revalues now, it will encourage continuing speculation and pressure to revalue. Moreover, a revaluation now may make it more difficult to devalue when a devaluation is warranted as devaluation is likely to face much more opposition than a revaluation.
 - ◆ The U.S. may object, assuming that it continues to be in a net deficit position.
 - ◆ Objections and competitive devaluation by other exporting economies competing in the same markets can be expected with a devaluation but not with a revaluation.
 - ◆ Finally; the perception of the domestic population may become an obstacle because the currency is also regarded as a store of value and devaluation may be regarded as a sign of weakness of the economy or mismanagement.
- ◆ When the long-term value of the currency is uncertain, as is the case for the Renminbi, it is better to stay put rather than revalue or devalue.

Exchange Rate Mechanism: Adjusting the Exchange Rate

- ◆ Given that exports contributes less than 10% of the Chinese GDP in terms of value added, adjusting the exchange rate constantly in response to external fluctuations of exchange rates that may not be based on fundamentals is like letting the tail wag the dog.
- ◆ The best strategy is to focus on achieving a Chinese overall balance of payments of approximately zero, and not on the method for achieving it. The choice of instrument, or combination of instruments, should be left to China. The U.S. has advised the Japanese Government to revalue the Japanese Yen quite a few times during the past several decades, which it dutifully did each time, but the revaluations never achieved the desired outcome—a reduction or elimination of the large Japan-U.S. trade surplus or even the Japan-World trade surplus--the trade surplus only became bigger. The U. S. should have simply asked the Japanese Government to reduce the overall balance of payments surplus, in whichever way that it thinks it can.

Exchange Rate Mechanism: Long-Term Prospects

- ◆ Chinese economic policy makers are committed to the gradual evolution to a market based exchange rate determination mechanism.
- ◆ The most important task is to lay the groundwork for the orderly and regulated liberalization of the controls on the different types of capital outflows, with the objective of achieving an equilibrium in the overall balance of payments.
- ◆ It is desirable for the continued stable development of both trade and foreign direct investment, outbound as well as inbound, to maintain the real exchange rate more or less constant.
- ◆ It is desirable if a system of stable relative parities can be devised for the currencies of the East Asian developing economies, including China, Indonesia, Malaysia, Philippines, Thailand and Vietnam. “Beggar thy neighbor” policies can be avoided only through cooperation.
- ◆ Such a system of stable relative parities can be the beginning of an Asian currency “snake” and wider monetary cooperation among East Asian economies.

The Taiwan Straits

- ◆ Taiwan is the only issue on which there is little flexibility for any movement.
- ◆ A war in the Taiwan Straits will have disastrous consequences for all.
- ◆ However, the status quo can be maintained with careful management.