

Strategies for Economic Growth in an Era of Rising Globalization

Lawrence J. Lau, Ph. D., D. Soc. Sc. (hon.)

Kwoh-Ting Li Professor of Economic Development

Department of Economics

Stanford University

Stanford, CA 94305-6072, U.S.A.

October 30, 2002

Phone: 1-650-723-3708; Fax: 1-650-723-7145

Email: LJLAU@STANFORD.EDU; WebPages: WWW.STANFORD.EDU/~LJLAU

An Overview

- ◆ The Causes of Rising Globalization
- ◆ Implications for the World Economy
- ◆ Taiwan's Comparative Advantage
- ◆ Short-Term Adjustments

The Causes of Rising Globalization

- ◆ Falling barriers (legal, technical, and institutional) to movements of goods, services and factors (particularly capital, but also human capital)
- ◆ Falling costs of (international) communication and transportation
 - ◆ The rise of English as a global medium of communication
- ◆ Falling transactions costs in terms of both money and time (coordination and monitoring) and expanding span of control, brought about by the information technology and communication (ITC) revolution
- ◆ Rising capacity for deverticalization or fragmentation (global subdivision of the supply chain)
- ◆ The entry of new players on the global market (China, Russia and India)
- ◆ Greater global competition

Falling Barriers to Movements of Goods, Services and Factors

- ◆ Reduction and/or elimination of tariff and non-tariff barriers
- ◆ WTO, European Union, NAFTA, ASEAN Free Trade Area, other free trade areas
- ◆ Non-tradable services become increasingly tradable (back offices, call centers, wholesale and retail distribution)
- ◆ Foreign direct investment (FDI) and national treatment
- ◆ Globalization of the capital market

The Entry of New Players on the Global Market (China, Russia and India)

- ◆ Re-alignment of comparative advantages
 - ◆ Both existing and new players can benefit
 - ◆ Comparative advantages will change
 - ◆ Adjustments will be necessary
 - ◆ There should be sufficient gain for everyone to more than compensate all the losers
- ◆ There will be increased demands for goods and services (aircrafts, cell phones, computers and tourism services)
- ◆ There will be little upward pressure on the wage rate of unskilled labor for many years to come

Implications of Rising Globalization

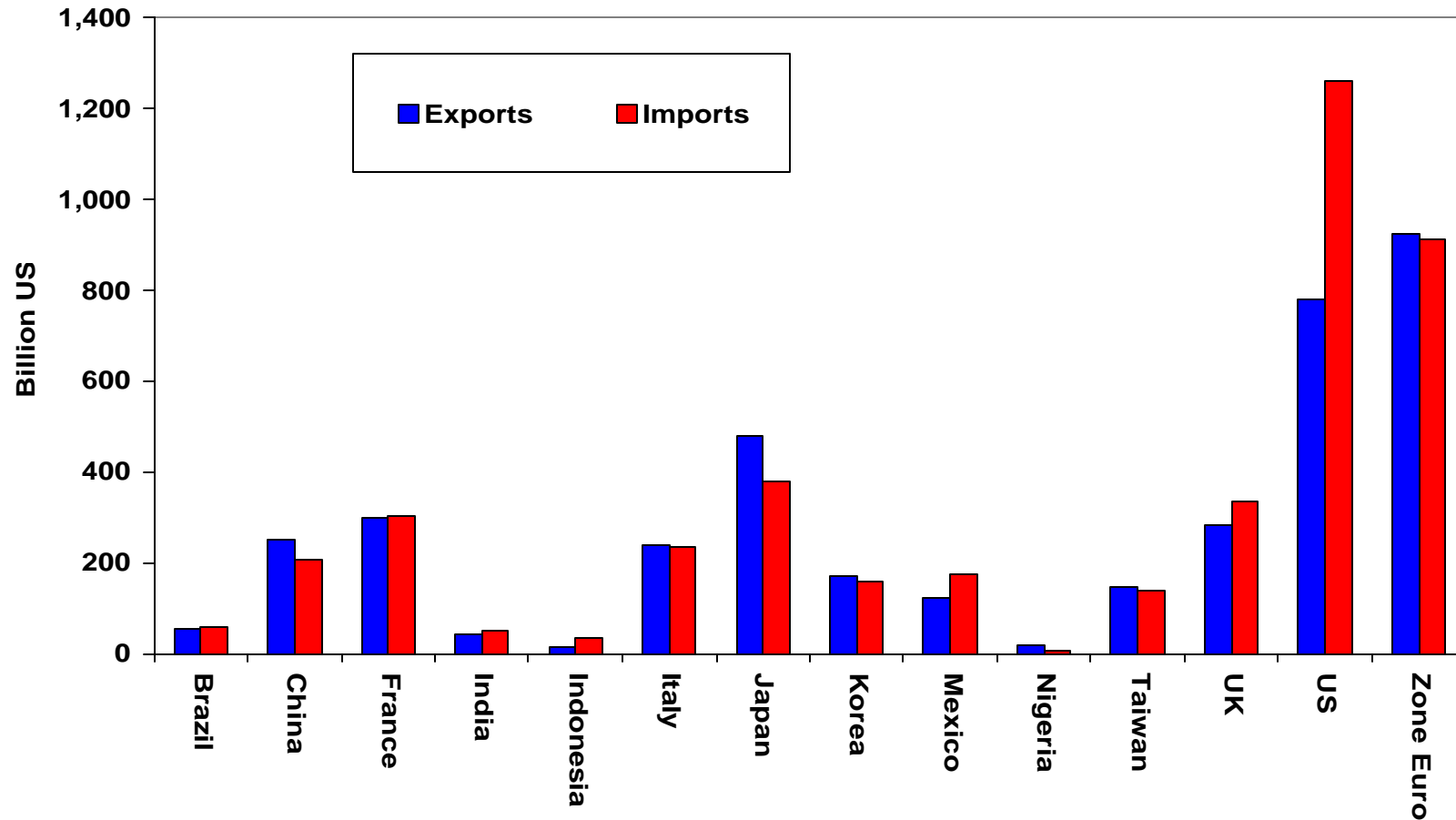
- ◆ Specialization in tasks rather than products by firms—finding a niche in the global supply chain that maximizes value-added; higher-value-added parts of the supply chain have much less competition (Intel, Microsoft, TSMC)
- ◆ Specialization in tasks enables the realization of economies of scale—It is more efficient for firms to expand horizontally (to supply multiple customers) rather than to integrate vertically
- ◆ The non-durability of industries and firms
- ◆ The necessity of reduction of fixed costs
- ◆ The necessity of government assistance to facilitate adjustments--a credible and sustainable social safety net; training and re-training of displaced workers
- ◆ Changing the relative returns between tangible and intangible capital in favor of intangible capital—the rising importance of flexible skills, intellectual capital (patents and copyrights), and reputational capital

Implications of Rising Globalization

- ◆ The importance of large markets
 - ◆ Leveraging intangible capital--economies of scale in the utilization of intangible capital implies that the rate of return depends on reaching as large a market as possible
 - ◆ Standardization and standard setting and establishment of brand names generate market economies of scale (the higher the market share, the higher the profit margin)
 - ◆ Leaving large markets alone gives potential competitors an opening to establish themselves
- ◆ The importance of openness—global subdivision of the production process implies that an economy must be ready to take any link or links of the global supply chain in which it has a comparative advantage—sometimes a product may have to go in and out of the same economy four or five times undergoing different processing before being shipped to the final consumers (import quotas and arcane country of origin rules have much to do with back and forth movement of goods in process across economies). A free trade policy on both the export and the import side helps enterprises rationalize and optimize their position(s) in the global supply chain.

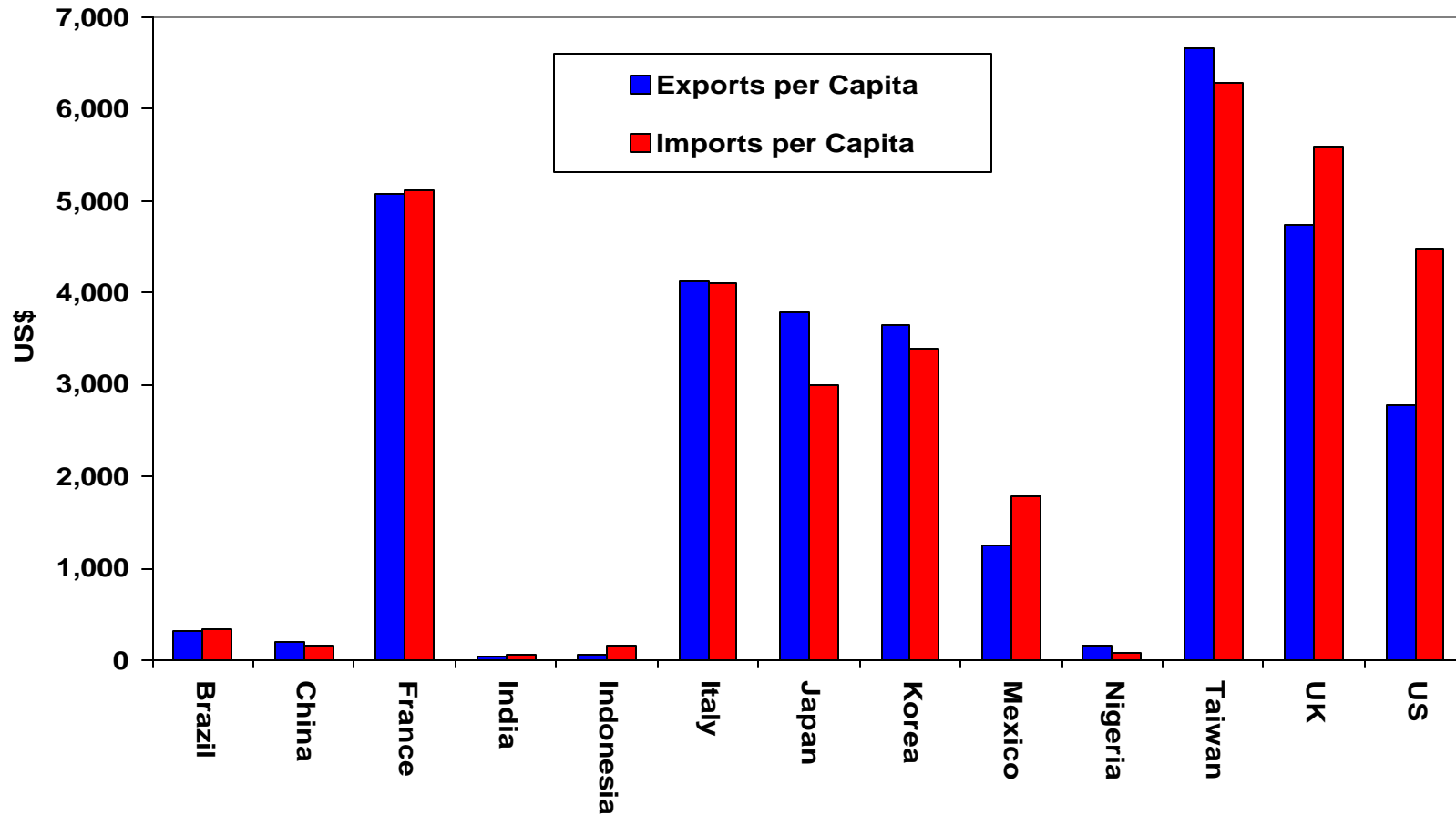
Exports and Imports (US\$): Selected Countries and Regions, 2000

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

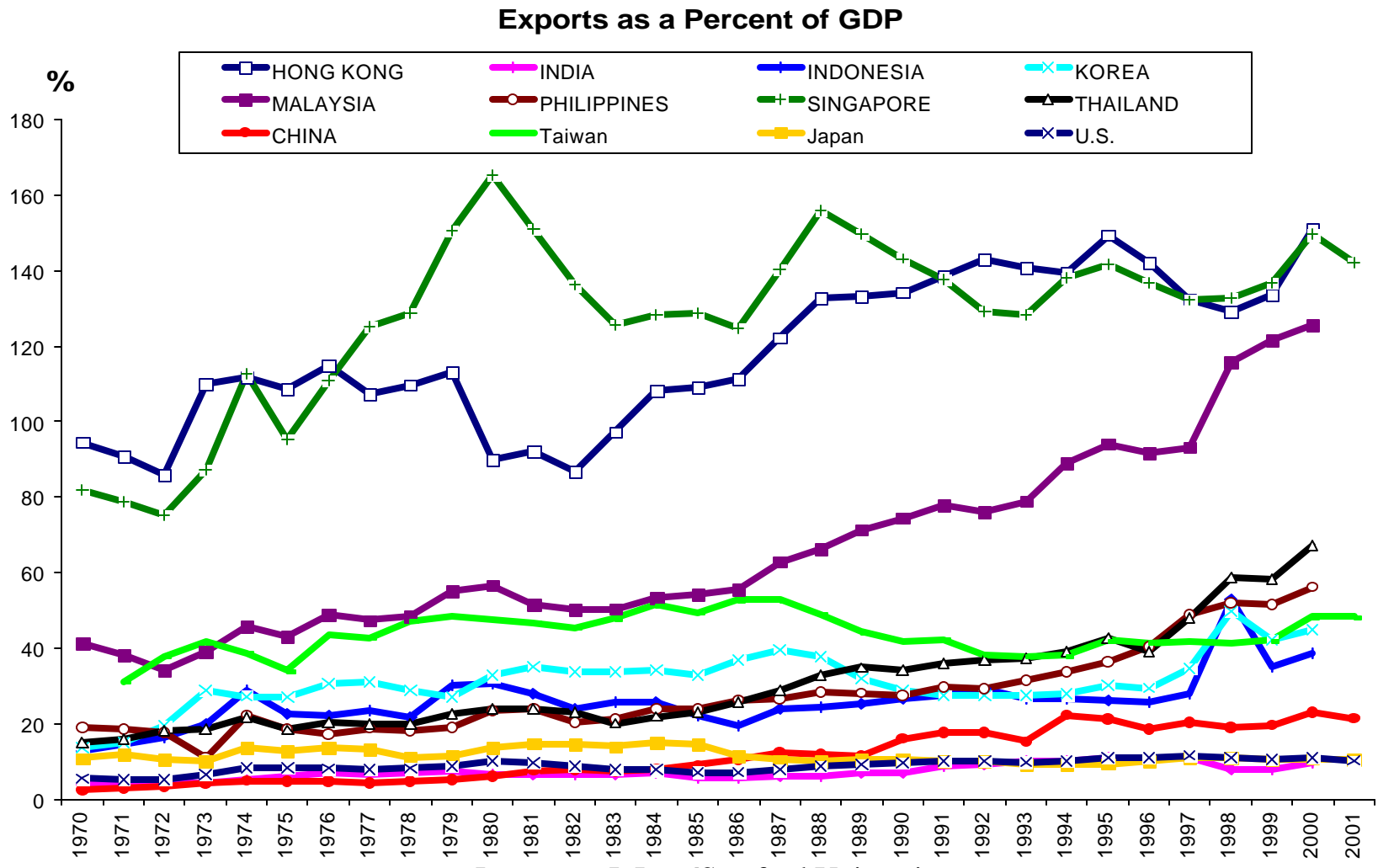


Exports and Imports per Capita (US\$): Selected Countries and Regions, 2000

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

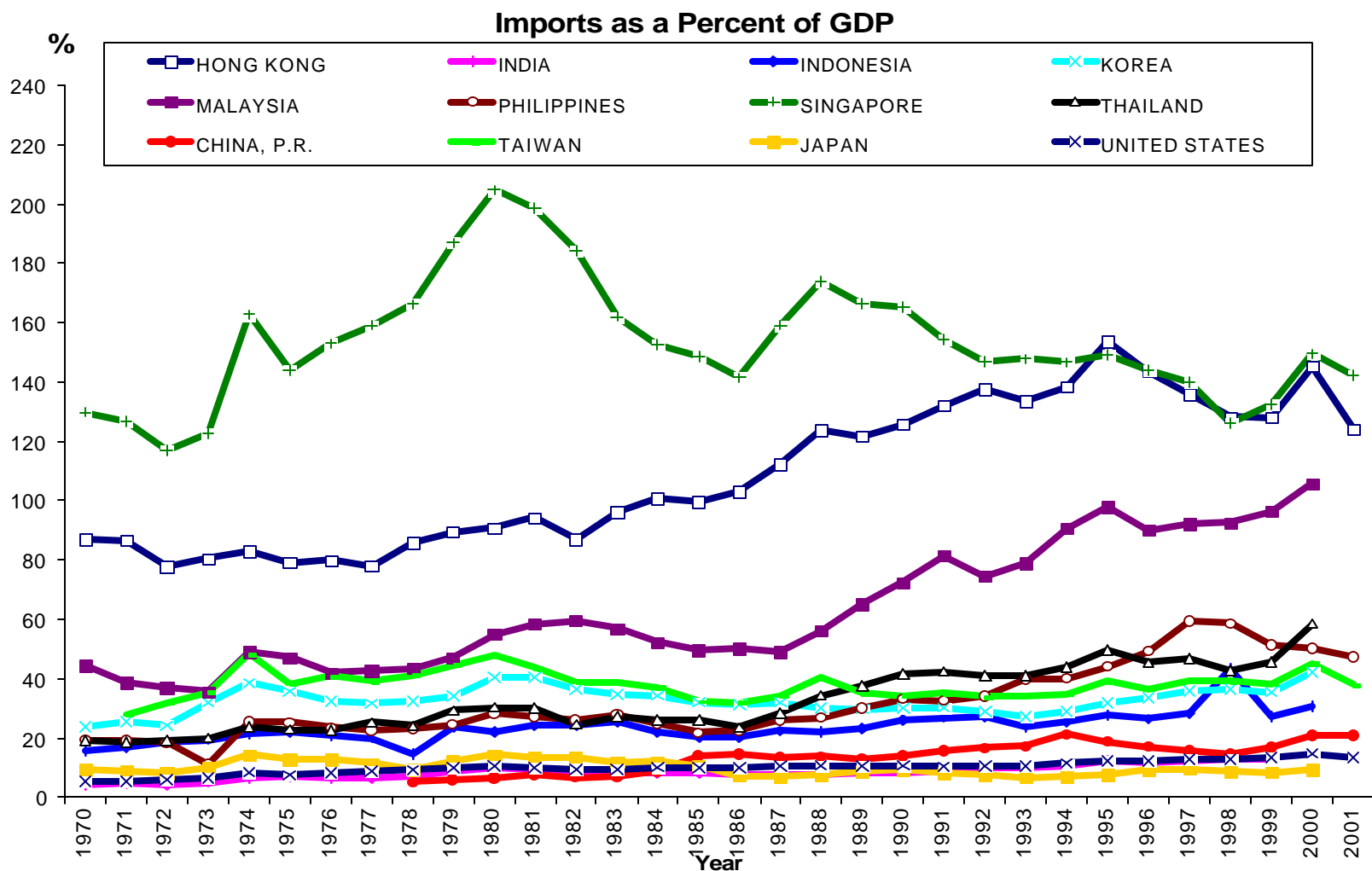


Exports as a Percent of GDP: Selected East Asian Economies and U.S.



Lawrence J. Lau, Stanford University

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



Lawrence J. Lau, Stanford University

Taiwan's Transition from Tangible Capital to Intangible Capital-Based Economic Growth

- ◆ From shoe-maker to global contractor
- ◆ Backward integration from assembly operations into higher value-added parts of the supply chain (e.g., production of chips and LCD displays)
- ◆ From OEM (original equipment manufacture) to ODM (original design and manufacture)
- ◆ From intellectual “pirate” to innovator
- ◆ The role of the public education system
- ◆ The role of public research and development (R&D) institutions such as Industrial Technology Research Institute (ITRI)
- ◆ Establishment of the Hsin-Chu Science-Based Industrial Park by the government, the world's first, and one of the very few successful ones.
- ◆ The role of venture capital (CDIB, formerly CDC)
- ◆ The role of returnees from the U.S. and elsewhere--networks of human capital
- ◆ Firms such as Taiwan Semiconductor Manufacturing Corporation and United Microelectronics Corporation invest a significant proportion of their revenue, approximately 15%, in R&D

Transition from a Manufacturing to a Service Economy

- ◆ The transition from a manufacturing to a service economy, with a focus on high value-added activities, is inevitable. Just as it was discovered that Taiwan could not become rich by remaining in agriculture half a century ago, Taiwan cannot become richer by remaining in manufacturing alone.
- ◆ The industrialized Group-of-Seven (G-7) countries have shown the way, with significantly more than half of their GDPs originating from the service sector.
- ◆ The Silicon Valley is the prime example of a successful transition—very little manufacturing is done in Silicon Valley today--it has indeed been “hollowed out—only the higher-value-added parts remain: R&D, design, prototype development, and headquarters functions such as finance and venture capital, but real wage and income per capita has continued to remain high.
- ◆ What made the success of Silicon Valley possible is the successful out-sourcing of production to elsewhere in the United States (Colorado, New Mexico, Oregon) and the rest of the World, including East Asia (and Taiwan in particular) where the costs are much lower and to firms specializing in manufacturing—Solectron, Flextronics, etc.

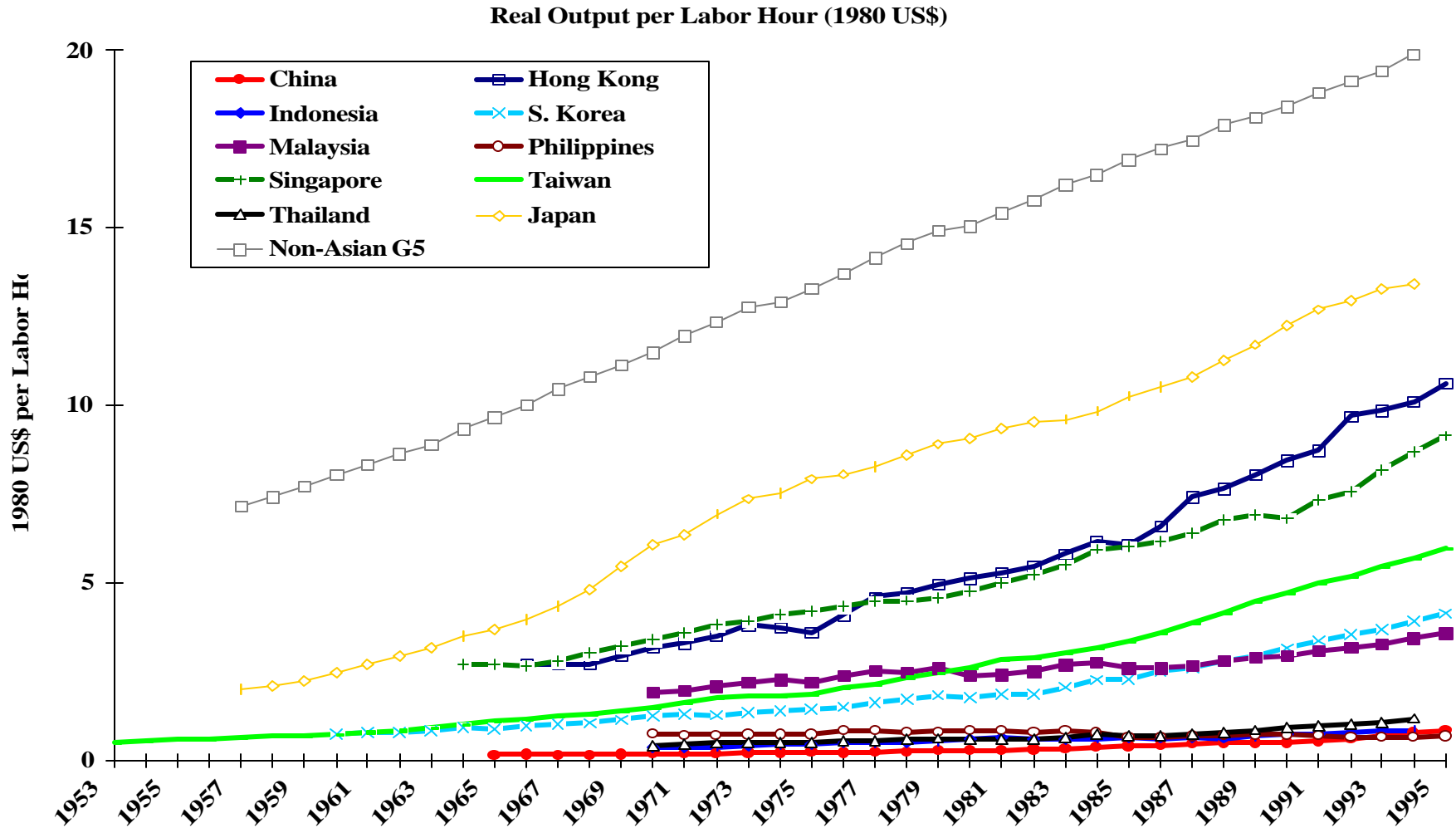
Transition from a Manufacturing to a Service Economy

- ◆ As Taiwan moves up the higher-value-added part of the supply chain, it too must out-source the lower-value-added activities in order to survive the global competition and to enhance the value that Taiwan is able to capture. Out-sourcing enables Taiwan firms to maintain and enhance their competitiveness.
- ◆ Nike and Dell are the prime examples of a successful transition at the microeconomic level—neither of them do any manufacturing, but both have continued to prosper. They control intangible capital—brand name, management organization and methods, logistics, marketing, quality assurance, etc.
- ◆ The higher-value-added part is not necessarily always the upstream part, it can also be a downstream part. That is why it is important to have relatively open trade on both exports and imports, especially on intermediate goods.

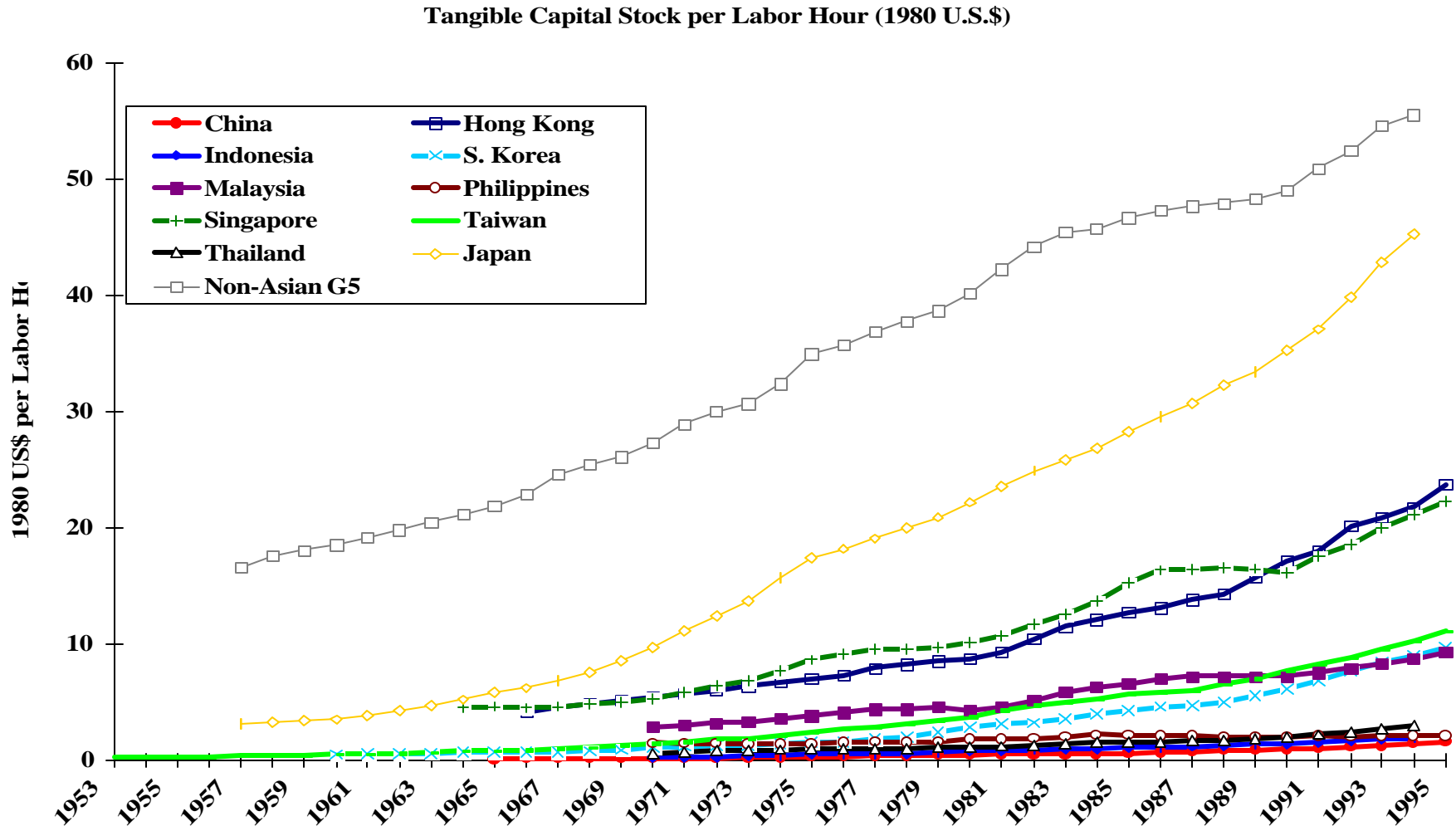
Taiwan's Comparative Advantage

- ◆ Taiwan's comparative advantage vis-à-vis the rest of the world:
 - ◆ Human capital
 - ◆ R&D capital
 - ◆ Experience (learning by doing) capital and
 - ◆ Network capital
- ◆ Taiwan's comparative advantage no longer lies in light manufacturing or simple OEM manufacturing.
- ◆ Taiwan should invest in and capitalize on its intangible capital for the future.
- ◆ Taiwan's investment in R&D capital has been rising; so has the R&D capital stock and the annual number of patents granted in the U.S. Note the higher efficiency of patent production relative to the R&D capital stock when compared to South Korea and Singapore.
- ◆ Investment in tangible capital is still needed as a complementary input to intangible capital.

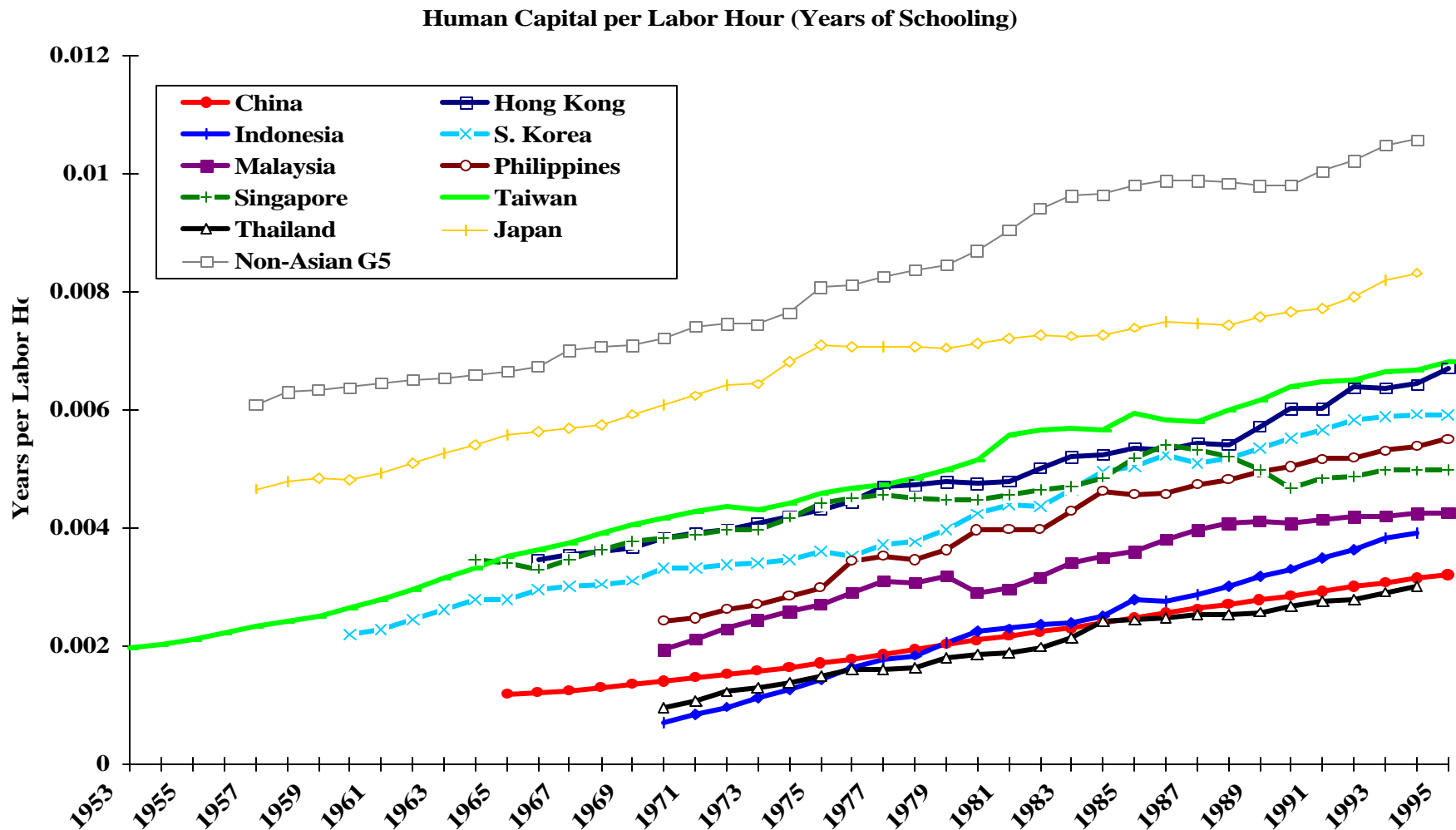
Real Output per Labor Hour (1980 US\$)



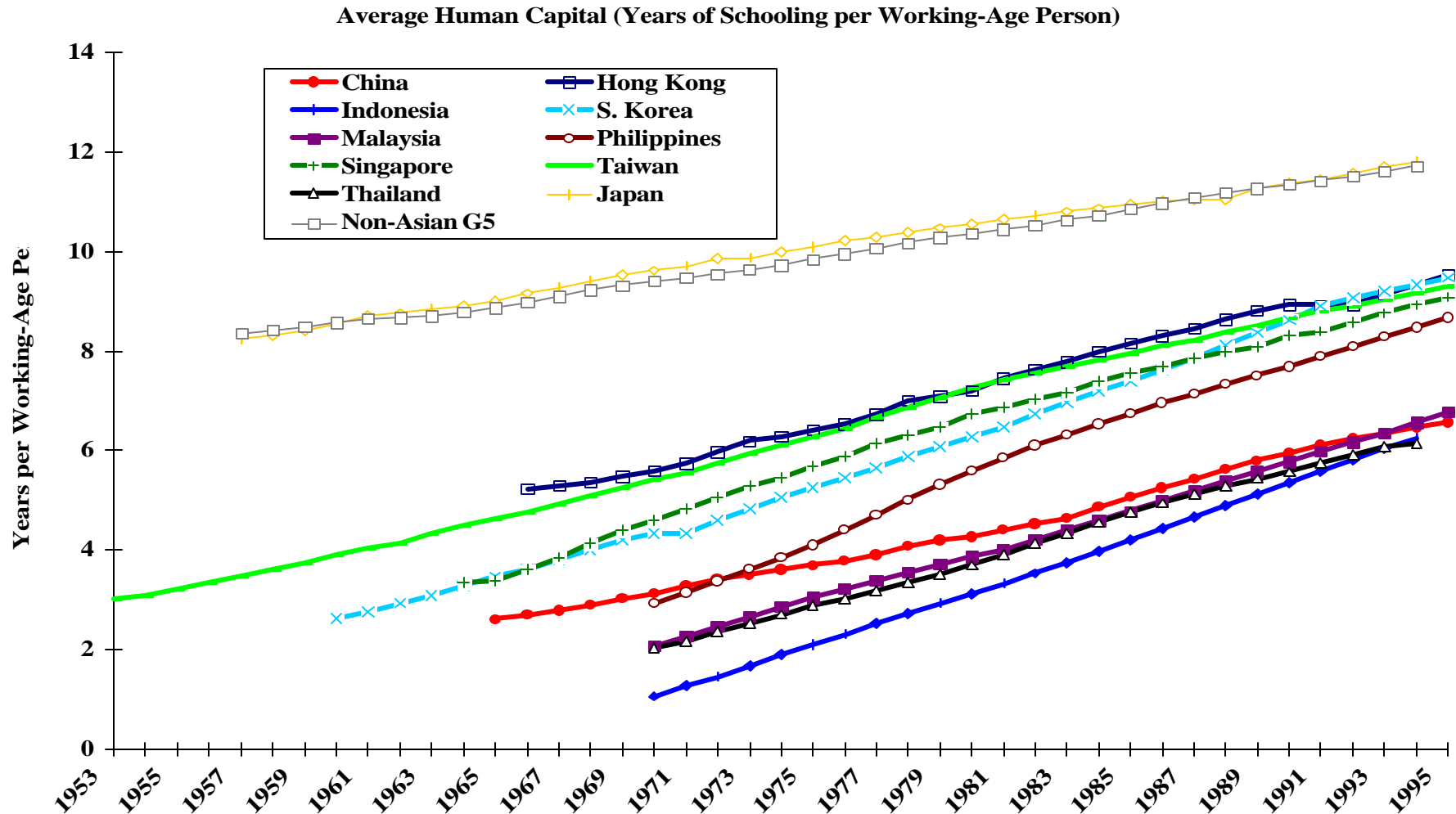
Tangible Capital Stock per Labor Hour (1980 US\$): Selected Economies



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

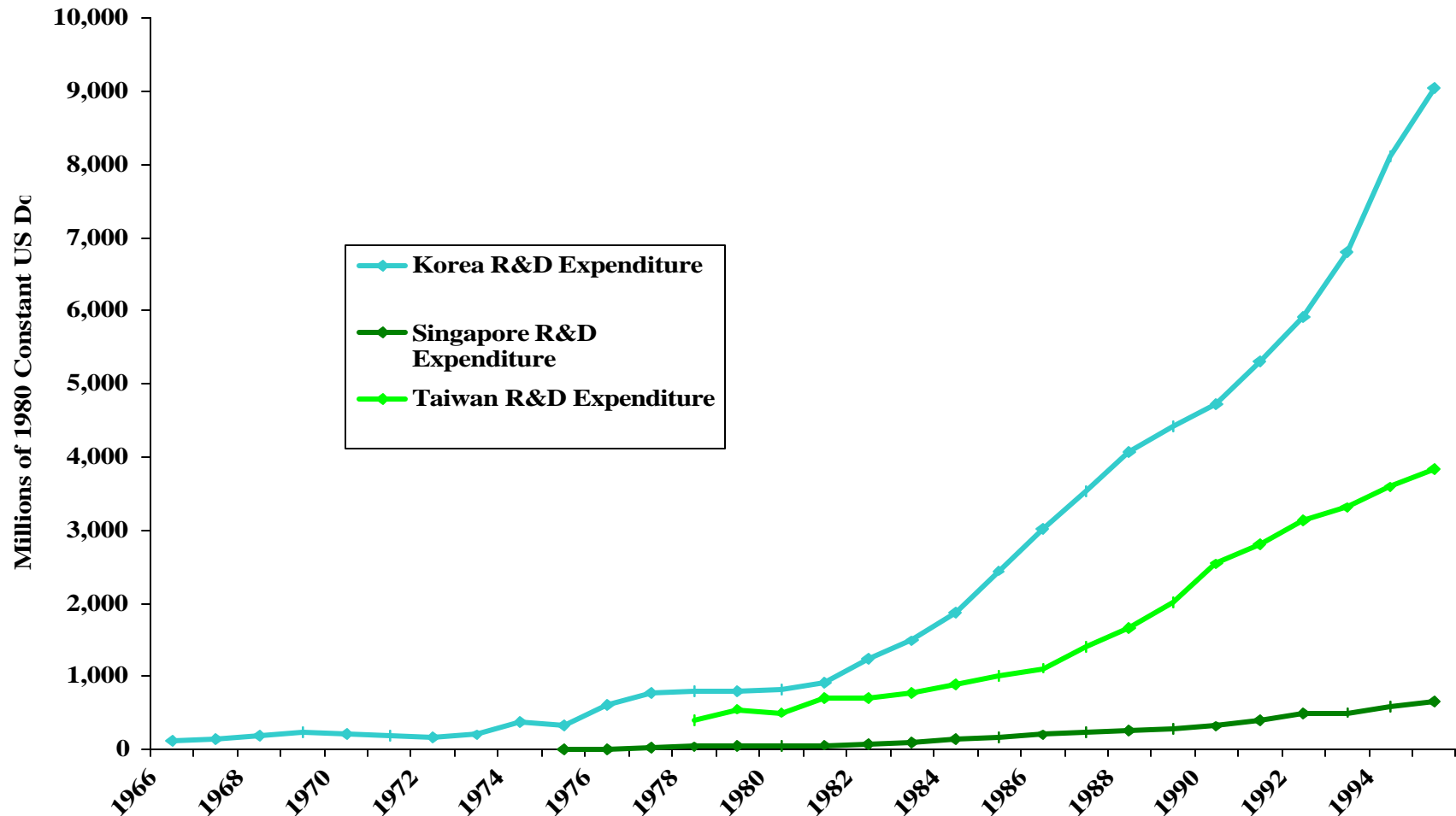


Average Human Capital: Selected Economies



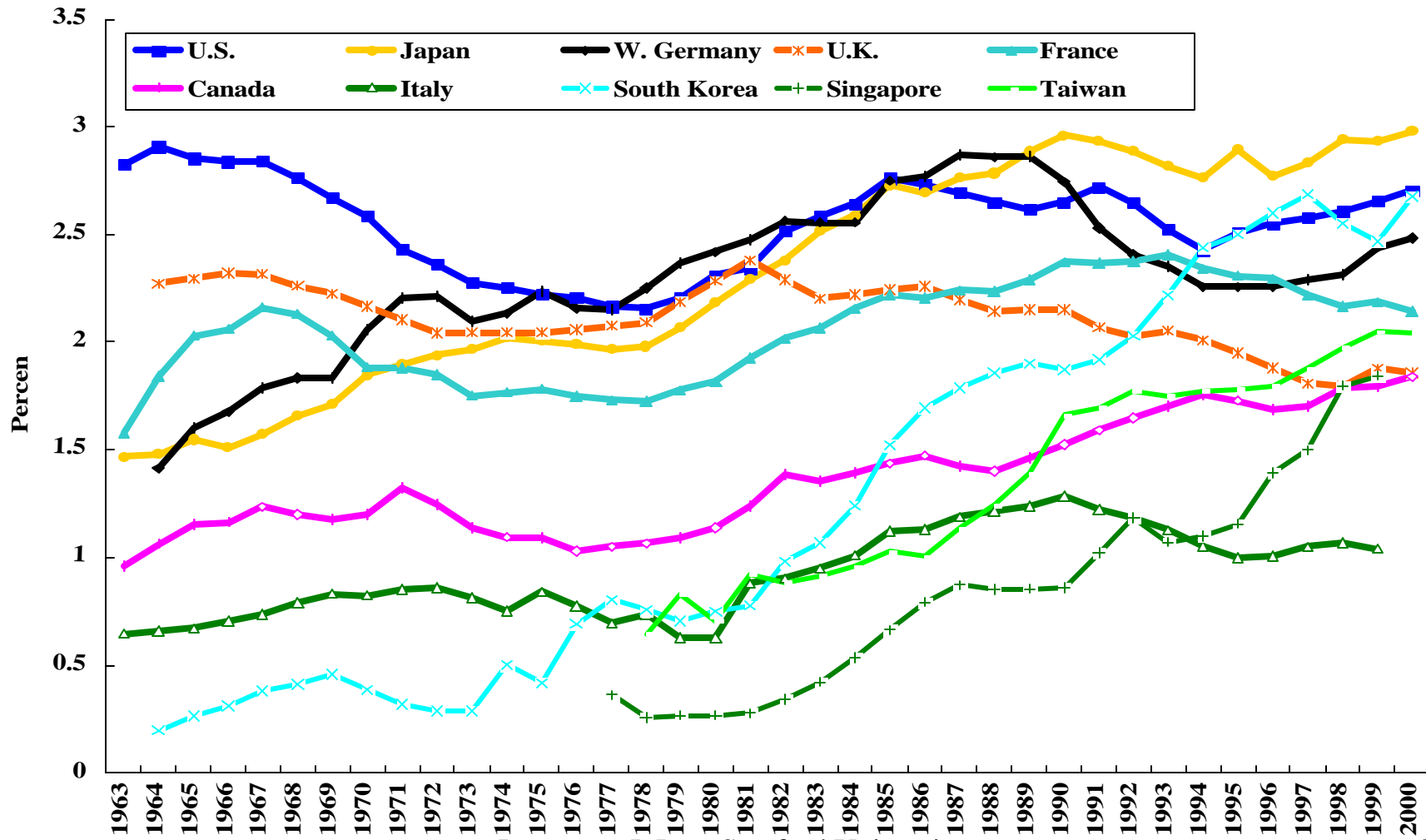
R&D Expenditures: 3 East Asian Newly Industrialized Economies

Real R&D Expenditures (3 NIEs)



R&D Expenditures as a Ratio of GDP: G-7 Countries and 3 East Asian NIEs

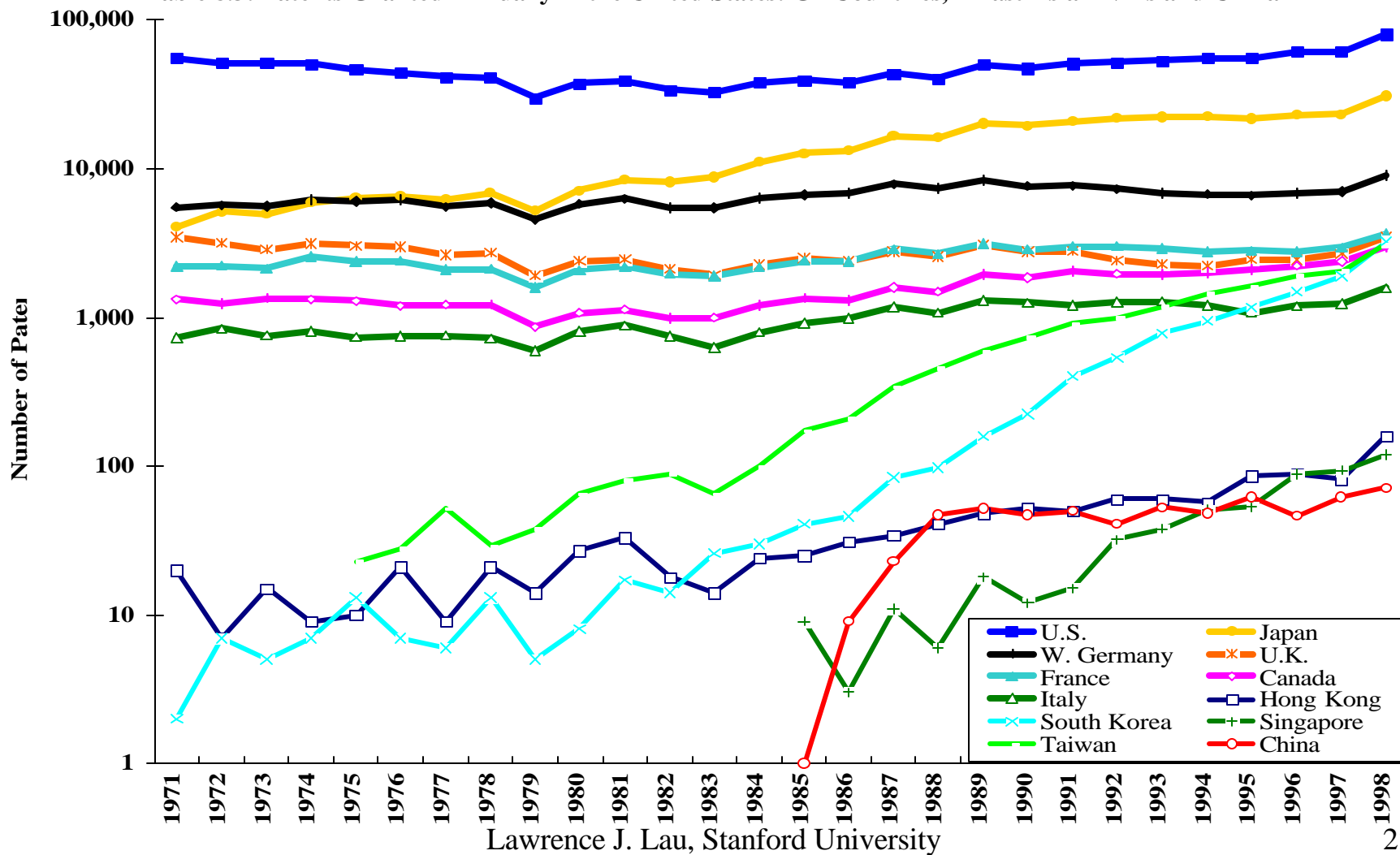
Figure 8.1: R&D Expenditures as a Percentage of GDP: G-7 Countries and 3 East Asian NIEs



Lawrence J. Lau, Stanford University

Patents Granted in the United States: G-7 Countries and East Asian Developing Countries

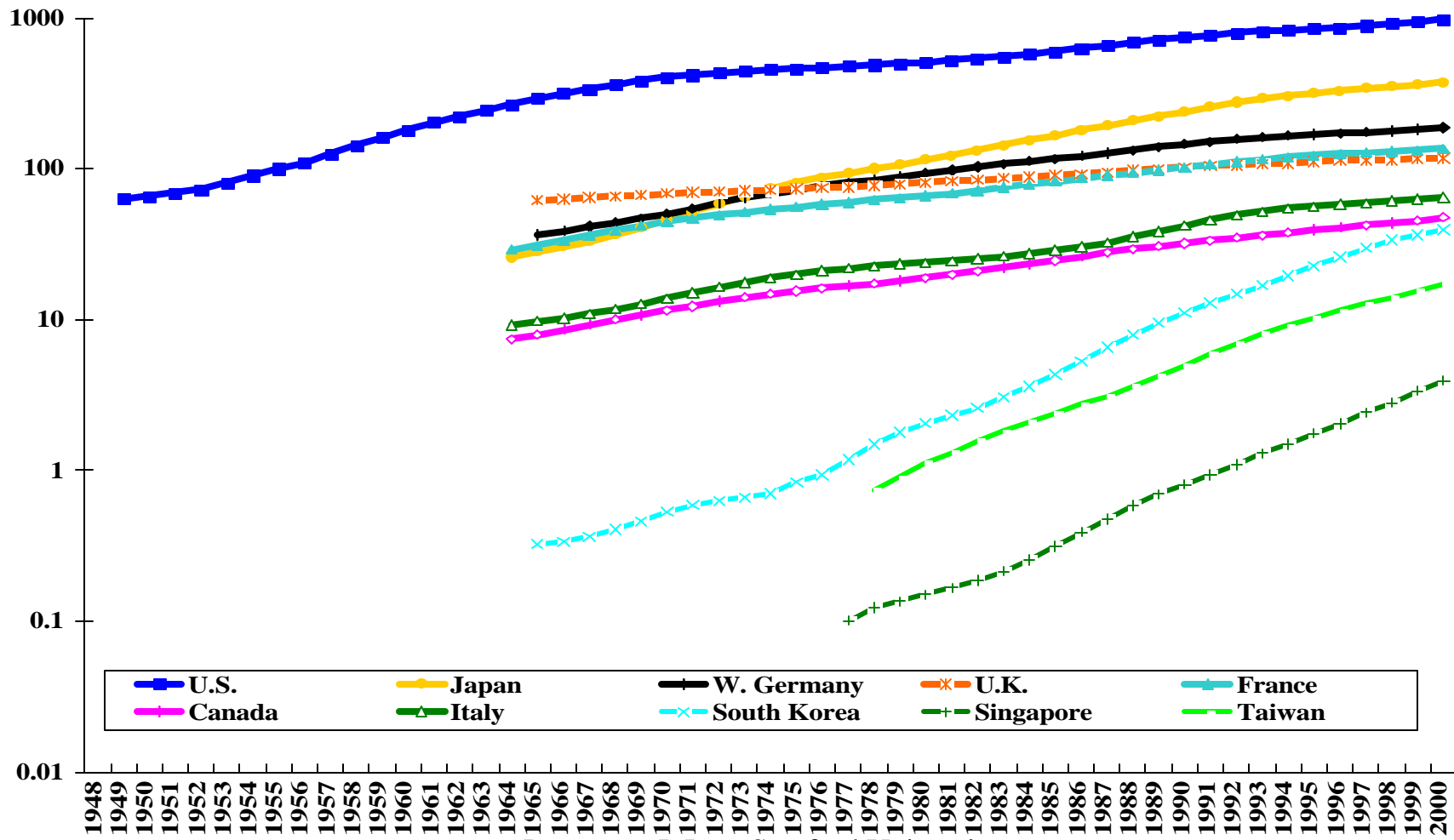
Table 8.3: Patents Granted Annually in the United States: G-7 Countries, 4 East Asian NIEs and China



Lawrence J. Lau, Stanford University

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

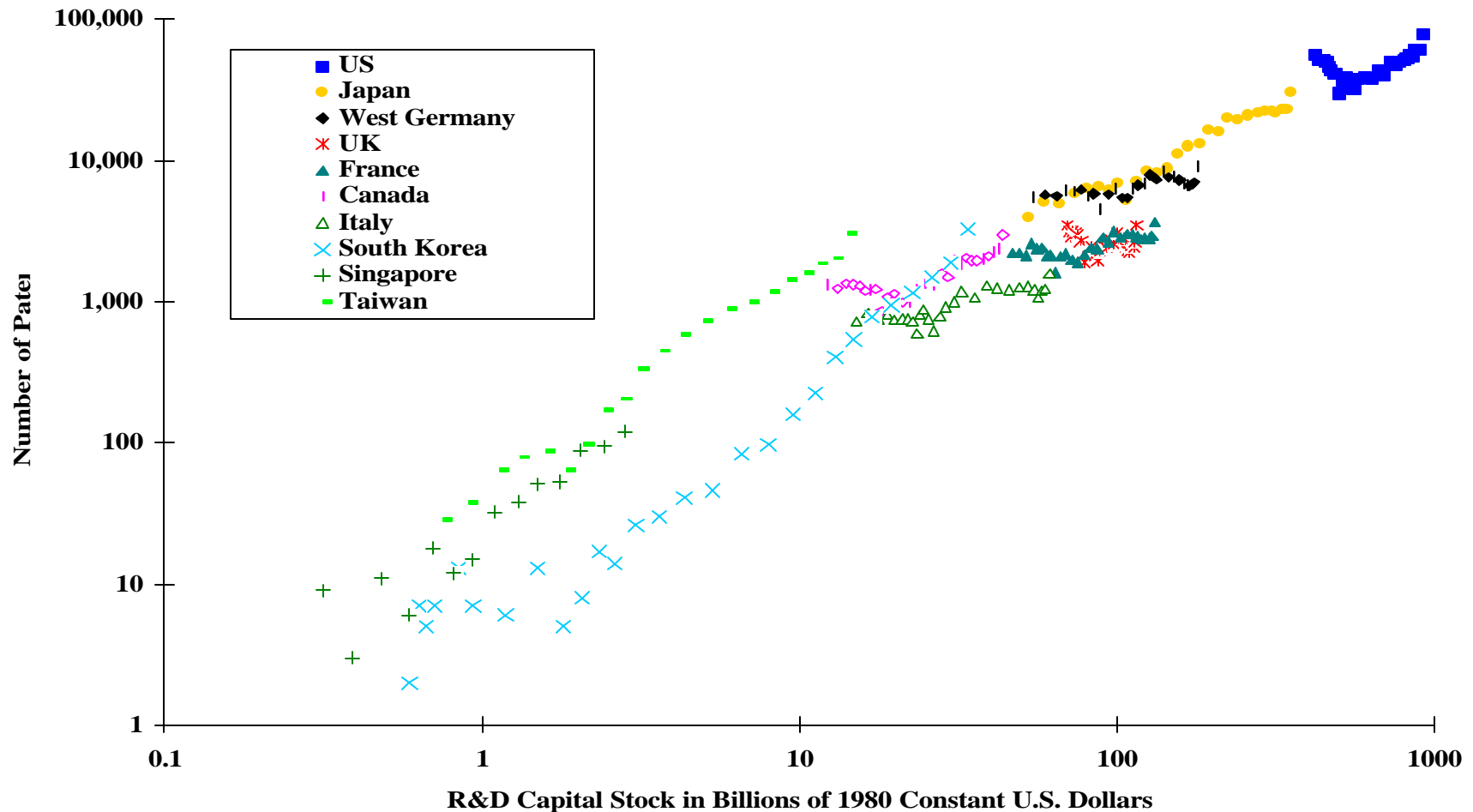
Figure 8.2: R&D Capital Stocks in Billions of 1980 U.S. Dollars



Lawrence J. Lau, Stanford University

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

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



The Risk of “Hollowing Out”-- De-Industrialization

- ◆ The Silicon Valley example shows that “hollowing out” is not something to be feared but the result of upgrading of economic and technological capabilities.
- ◆ If a good cannot be “made in Taiwan”, better that it is “made by Taiwan” than by elsewhere (the value-added resides with the branding and the reputation of the firm, not in the physical place of manufacture).
- ◆ The distinction between GNP and GDP—it is much more important to increase GNP rather than GDP.
- ◆ Focus on value-added—Intel, Microsoft, Dell—rather than gross value. Malaysia is the world largest exporter of semiconductors; it is also the largest importer of semiconductors; but the value added in Malaysia is minimal.
- ◆ With or without the entry of Mainland China into the global market, it is still in the economic interests of Taiwan to upgrade its industries—to move up on the value-added chain. Subcontracting the lower-value-added parts of the global supply chain, either to other firms in Taiwan or elsewhere, enhances Taiwan’s competitiveness in the higher-value-added parts of the global supply chain.

Cases from Other Economies

- ◆ Apple versus Microsoft
 - ◆ Apple not only designs but manufactures and markets the entire Apple computer
 - ◆ Microsoft concentrates on the operating system (DOS and windows) and applications software (Word, Excel) and is content to become the monopoly supplier to other personal computer (PC) firms.
 - ◆ The result is that the Microsoft Windows operating system-based PCs now have 95% of the market and Apple has only 5% and is barely surviving.
- ◆ The diversified investment strategies of global firms in small economies: Nestle (Switzerland), Nokia (Finland), Philips (Netherlands)—they invest and subcontract worldwide, where the markets are and where the costs are lowest.
- ◆ Focus on the high-value-added part of the supply chain (Nike, Dell (Legend))

The Challenge of Chinese Economy

- ◆ The adjustment of Taiwan to rising globalization is necessary with or without the opening of Mainland China
- ◆ Mainland China is more complementary than competitive (as opposed to, say, South Korea or Singapore). There is also, in general, relatively little overlap in the goods exported by Mainland China and Taiwan, except during a short period of transition, e.g., Taiwan, which used to be the largest exporter of shoes in the world, no longer exports shoes whereas Mainland China has become the largest shoe exporter in the world, mainly through Taiwan-invested firms in Mainland China. There was a short period of transition during which Taiwan shoe manufacturers relocated themselves on the Mainland, principally in Guangdong.
- ◆ Mainland China presents an opportunity because of its own vast domestic market, and because of its almost unlimited supply of low-cost labor—it is thus not only an export base, but a market in itself

The Challenge of Chinese Economy

- ◆ The large and rapidly growing domestic market enables the realization of economies of scale, and the possibility of amortization of significant investments in innovation and brand name building, standard setting, and other forms of intangible capital. E.g. Kangsifu's success in brand building in the Mainland; Acer could have become No. 1 on the Mainland; Mainland China is potentially a large enough market for Linux-based software to challenge the Windows operating system of Microsoft; and for a global mobile phone standard to emerge--GSM of Europe versus CDMA of the U.S. versus the TDCDMA of China itself; and for determining the relative success of Airbus versus Boeing.
- ◆ Taiwan firms have a comparative advantage over the firms of other countries and regions because of cultural, ethnic and linguistic affinities.
- ◆ Leading Taiwan firms cannot afford to leave a large and rapidly growing potential market alone because a large enough market may nurture in time a major competitor.

Economic Relations with Mainland China

- ◆ If China were to become the World's Factory, it is far better for Taiwan to be the World's Factory's Operator than for others
- ◆ Even if Mainland China were completely unrelated to Taiwan, it is still in the long-term economic interests of Taiwan firms to invest in the Mainland so that Taiwan firms are not marginalized.
- ◆ Exports of intermediate goods follow direct investment--Taiwan's large export surplus vis-à-vis China would not have been possible without the direct investments from Taiwan.
- ◆ Whether Taiwan invests in Mainland China or not, at the current time, is unlikely to affect the course of the Mainland Chinese economy one way or the other. Annual Taiwan investment in Mainland China is a small percentage of aggregate annual domestic investment in Taiwan, and a small percentage of aggregate annual foreign direct investment in Mainland China, which is in turn approximately 10% of aggregate gross domestic investment in Mainland China.

Economic Relations with Mainland China

- ◆ Despite the rising share of Taiwan exports destined for Mainland China, the risk of Mainland China using embargo of Taiwan exports as a potential threat is low:
 - ◆ Taiwan exports to Mainland China consists mostly of intermediate as opposed to final goods, to be used in Taiwan-invested factories in Mainland China for further processing and manufacture and eventually perhaps to be exported. By banning imports from Taiwan, these factories will have to be shut down, reducing real output, income, and employment in Mainland China. Thus China cannot do damage to the Taiwan economy without damaging itself economically.
 - ◆ Taiwan should focus on being the supplier of upstream and critical components and the quality controller and assurer, if not the marketer downstream. It can only do so in the long run by staying ahead both technologically and in management methods.
- ◆ Tourists from the Mainland and direct transportation of freight and passengers between Mainland China and Taiwan should be allowed and encouraged—it is actually much easier to control direct trade and direct travel than indirect trade and indirect travel. The government in Taiwan can even benefit by collecting additional tax revenue on direct shipping and direct transportation.
- ◆ In the longer-run, creating a more balanced two-way economic interdependence is in Taiwan's interests—allowing more imports, direct investment, and tourists can only be beneficial to Taiwan, not only in economic terms, but also in terms of enhancing the mutual understanding of the people on both sides of the Taiwan Strait.
- ◆ The co-variance between the Mainland Chinese and the U.S. economies is low—thus expansion of trade with Mainland China provides the diversification of risks for Taiwan and reduces the dependence of Taiwan on U.S. and other economies. The re-export part of the Mainland Chinese economy is still going to be affected by external developments; however, the domestic demand part is unlikely to be significantly affected by what happens in the rest of the world.

The Role of Government

- ◆ Maintenance of an open and competitive environment
- ◆ Investment in human capital
 - ◆ General human capital rather than firm- or industry-specific human capital
 - ◆ Providing training or re-training of displaced workers
- ◆ Investment in R&D, especially basic research
- ◆ Provision of infrastructure
- ◆ Facilitating the adjustment
 - ◆ Providing a social safety net
- ◆ Commitment and focus on economic development--self-fulfilling expectations

The Short-Term Adjustments

- ◆ Focus on increasing aggregate demand and increasing employment, especially of low-skilled workers
- ◆ Increasing aggregate demand in geographically localized service sectors—tourism, shipping services, logistics—sectors that cannot be relocated elsewhere
 - ◆ Collection of fees from direct shippers of freight in return for a waiver of the requirement of a stop at a third country/region such as Okinawa or Hong Kong—everyone is better off except for Okinawa and Hong Kong port operators
 - ◆ Mainland Chinese tourists can boost demand for localized services in Taiwan, greatly increasing employment of low-skilled workers
 - ◆ Signaling effect in turning around expectations—opening direct shipping of freight and welcoming Mainland Chinese tourists (whether through direct flights or indirect flights) sends a signal to the market that the government intends to be pragmatic and is committed to the improvement of the economy
- ◆ Screening and re-evaluating whether jobs held by foreign guest workers can be held by domestic workers

The Short-Term Adjustments

- ◆ Investment in human capital—short-term government-financed training and re-training of displaced workers with living stipends if necessary; temporary government subsidies (say for six months to a year) for employers employing newly retrained workers in newly established positions to encourage on-the-job training.
- ◆ Establishment of Taipei and Kaohsiung as hubs for air travel and shipping into Mainland China. Taiwan has unique advantages over other competitors as the hub, the gateway to major Chinese cities, especially provincial capitals, and ports for not only residents and firms of Taiwan but also for the traders, investors and tourists of other countries and regions because of
 - ◆ its geographically central location
 - ◆ its efficient logistics, communication and port services and
 - ◆ Its large base load from both passenger and freight traffic originating from Taiwan itself, e.g., airlines are less likely to fly directly from Seoul or Tokyo to Nanjing because there is little base traffic between these cities but there is significant domestic traffic between Taipei and Nanjing—Taiwan airlines will have a significant comparative advantage in operating these routes, thus establishing Taipei as a potential hub for access to Mainland China and elsewhere from other points of origination in the Asia/Pacific region

The Long-Term Strategy

- ◆ Investment in human capital to raise the skill level of Taiwan workers—a long-term policy.
- ◆ Establishment of a sustainable retirement (pension), health care and unemployment financing system that is consistent with individual incentives. Singapore's Central Provident Fund, with suitable modifications, can be a useful model for Taiwan.
- ◆ Institution of worldwide taxation of Taiwan firms so that profits earned by Taiwan firms elsewhere, regardless of whether they are repatriated, will be subject to income taxation in Taiwan; simultaneously, tax treaties or agreements should be concluded with other countries and regions so as to avoid double taxation of Taiwan firms.
- ◆ The three links question should be resolved pragmatically—the more important policy decision is to allow two-way interaction and traffic in both trade, investment and tourism, enhancing the economic interdependence, which in turn will greatly reduce the probability of a military conflict in the future.
- ◆ A well-articulated, realistic, long-term vision of the economy, coupled with a credible, unambiguous and concrete plan for implementation, is essential for changing the expectations of the investors and consumers in Taiwan. Uncertainty about the policy directions is the most important cause for the lack of business investment in Taiwan in recent years.

Growth with Equity

- ◆ During the period of the most rapid economic growth, approximately from 1965 to 1985, the distribution of disposable income has become more equitable, contrary to the prediction and expectation of most development economists at the time.
- ◆ The principal instruments used are the creation of employment in the non-agricultural sector and the investment in education.
 - ◆ The creation of employment was mostly through the private sector.
 - ◆ Universalization of education, first nine years and then twelve years.
- ◆ The distribution in income in Taiwan is improved by improving the distribution of tangible wealth, through land reform, and intangible wealth (human capital), through massive government investment in education. It was not done through the direct redistribution of income.
- ◆ Giving people human capital rather than income, so that they can seek employment rather than welfare, helps to encourage self-reliance and preserve individual dignity and reduces moral hazard.
- ◆ Complementarity between tangible capital and human capital--investment in one type of capital enhances the rate of return of the other type of capital, and vice versa.
- ◆ The distribution of income in Taiwan has worsened significantly in recent years. This can be redressed, in the longer term, by increasing investment in human capital once more. Tertiary education should be made available to all who are willing and able, without regard to financial need. However, it should also be oriented towards imparting professional and technical knowledge and skills that enhance potential employability.

The Distribution of Income

The Distribution of Disposable Income in the Republic of China on Taiwan

