Taiwan in the Global Economy
-- Past, Present, and Future

Frank S.T. Hsiao
University of Colorado at Boulder
Mei-Chu W. Hsiao
University of Colorado at Denver

I. Introduction

II. Taiwan is a Large Country in the Global Economy

III. An Overview of Taiwanese History from An International Perspective

IV. The Taiwanese Economy before the 19th Century
   A. The Dutch Period - Global Trade in the 17th Century
   B. The Cheng Period - Continuation of Global Trade
   C. The Ch’ing Period - from Autarky to the Bilateral Trade and Development of
      Taiwanese Capitalism

V. Taiwan in the Global Economy during the Japanese Period
   A. Taiwanese Agriculture in the World Production
   B. Industrial Development - Taiwan in the “Great East Asia Co-Prosperity Sphere”

VI. Postwar Taiwan in the Global Economy
   A. Major Trading Partners
   B. Taiwan, Japan, and the United States Nexus
   C. A Pacific Trade Triangle
   D. On Sustained Growth

VII. Direct Foreign Investment and Economic growth
   A. An Overview of Inward DFI in Taiwan
   B. The Active Role of the Taiwanese in the Global Economy - Outward Direct
      Foreign Investment
   C. Trade and Investment in China

VIII. Taiwan in the Global Economy of the 21st Century
   A. Competitive Indexes
   B. Economics and Politics with China - Some Concluding Remarks

Appendix: Export Promotion Policy May Not Be Sustainable

References, Tables, and Figures
I. Introduction

The spirit of the ‘child of Taiwan’ reveals to us that even though Taiwan, Penghu, Kinmen and Matsu are tiny islands on the rim of the Pacific, the map of our dreams knows no limits. The map extends all the way to the horizon as long as our 23 million compatriots fear no hardship and move forward hand in hand. Long live freedom and democracy! Long live the people of Taiwan!

Thus concluded the inauguration speech of the newly elected Taiwanese President Chen Shui-bian on May 20, 2000. It culminated Taiwan’s “double miracles” in politics and economy during the past century of hard work and struggle.

In this paper, we would like to show that Taiwan has come a long way.

The development of Taiwan’s economic and political events are influenced and shaped by its geographical position as a relatively small island at the center of the northwest side of the Asia-Pacific region\(^1\) (Figure 1). With almost the same altitude as Hawaii, Taiwan is surrounded by several large countries in the world, “large” in one way or another (Table 1). To the west, there is China, the most populous country with the third largest landmass (although one of the lowest per capita GNP countries) in the world. Japan is in the northeast, the world’s second largest country both in terms of its economic size (the GDP level) and its standard of living (the GNP per capita level). To the east beyond the Pacific Ocean, there is the United States, the largest economy with the third largest population, the fourth largest area, and the sixth highest GNP per capita country in the world. In addition to these three great Pacific powers, Indonesia is far down in the southwest, with the fourth largest population in the world. Sandwiched among these giants, those who inclined to the Chinese position of chauvinism and irredentist tend to consider Taiwan is too small to be a country.

-----------------------------

Place Figure 1 here

-----------------------------

Thus, in Section II, we first address the question of whether Taiwan is “small” in the global economy. We have shown that either from the size of population, the GDP level, the GDP per capita level, or from the volume of production and export items, Taiwan ranks very high compared with other countries in the world. Taiwan’s central position in the northeast side of the Asia-Pacific region lured the Europeans, the Chinese, the Japanese, and the Americans to the island. Thus, in Section III we review the Taiwanese history with the emphasis on the interactions among these peoples during the past four hundred years.
Section IV then examines briefly the Taiwan in the global economy before the 19th century. The Dutch as well as the Spanish formally colonized Taiwan from 1624 to 1662 to trade with China and Japan. The Kingdom of Cheng followed from 1662 to 1683, and traded with the Japanese, the English, and others, but not with China and Holland. Ch’ing conquered Taiwan in 1683 and held it until 1895. From 1683 to 1760, Taiwan was virtually under the autarky system, and from 1760 to 1860, Taiwan traded exclusively with China. Taiwan was reintroduced to international trade after 1860, only to be ceded to Japan in 1895.

The modernization of the Taiwanese economy and society came during the Japanese period after 1895. In Section V, we show that Taiwanese agricultural production reached its apex and ranked very high in the world by the end of the 1930s, and massive industrialization started in earnest during that time with the help of resources imported from Japan, China, and Southeast Asia.

Section VI then shows that, after a postwar interruption, Taiwanese industrialization continued, especially after the mid-1960 when the Pacific trade triangle among Taiwan, Japan, and the United States was formed. The trade triangle sustained the rapid Taiwanese economic growth. Rapid economic growth, as shown in Section VII, was also helped by the inward direct foreign investment from Japan and the United States, especially in the 1970s and the 1980s. In the 1990s, Taiwanese outward direct foreign investment rose rapidly, about half of which was invested in China. In Section VIII, we first show that, despite severe setback in the international political arena, Taiwan’s national competitiveness for the future has never been stronger. However, the military threat from China has overshadowed the Taiwan’s bright future. Thus, we also analyze the economic and political relations between Taiwan and China and conclude with some remarks.

Numerous papers have been written on Taiwanese economic development. The most recent and comprehensive reviews are contained in Thorbecke and Wan (1999, 3). To our knowledge, however, few works examine Taiwanese economic development from the historical, geographical, and comparative perspectives. Systematic studies of Taiwanese economy under Japanese colonialism and Japanese influence in the postwar period have not been written. Links between the prewar and postwar economic development, Taiwan-Japan-United States trade nexus, and the changes of inward and outward foreign direct investments after the lifting of Martial Law in 1987, and its consequence of facing complicated relation with China economically and politically also are lacking. This paper brings these topics together with the benefit of our previous works, and provides some overviews of a new area of research. Thus, the paper could supplement the main features left out in Thorbecke and Wan (1999), and help in the future efforts at the new direction of long-run Taiwanese economic development and prediction.
II. Taiwan is a Large Country in the Global Economy

In fact, Taiwan is not a “small” country in many aspects as compared with other countries. Table 1 shows Taiwan’s rankings of area, population, population density, the GDP level, and the GNP per capita level with other 133 countries listed in the 1997 World Development Report published by the World Bank. Although Taiwan’s area is only 36,000 km², ranked 113th, it is about the size of the Netherlands. Its population ranked 39th, at the 71 percentile, and its population density ranked 4th, at the 97th percentile, slightly larger than Malaysia and Australia, and about half of that of Spain and South Korea. Its GDP level ranked 19th, at the 86th percentile. Thus, its aggregate economic activities surpassed any of the ASEAN countries, Portugal, Mexico, Sweden, and Denmark, and are only slightly less than Belgium and Argentina. Few people are aware that Taiwan’s economic size is as much as 80% of that of India, and 75% of that of Russia and Australia. Its GNP per capita ranked 25th, at 81 percentile, and is comparable with some OECD countries like Portugal and Spain. If 55 other “smaller” member countries of the United Nations, not listed in the 1997 World Development Report, are considered, Taiwan’s area and population percentiles will improve to the 40th and 79th percentiles, respectively, and its percentiles for the GDP level and the GNP per capita level will increase to a whopping 90th and 87th percentile, respectively.

----------------------------

Place Table 1 here
----------------------------

In the field of international trade, Taiwan’s achievement is indeed more staggering. The Taiwanese economy advanced steadily from exporting agricultural goods and agricultural processed goods (rice, sugar, canned foods, etc.) to low technology manufactured goods (textile, metal manufactures, machinery), and then to high technology manufactured goods (electronic products, electrical machinery products, information and communication products, etc). In the 1960s, Taiwan was the number one country of exporting mushrooms and asparagus to the world market. In the 1980s, Taiwan could claim more than two dozen of exporting items as "Taiwan as Number One" in the world. In 1983, Taiwan exported 520 million pairs of plastic shoes, one pair for every nine persons in the world; 11 million dozen umbrella, one for every 40 persons in the world; and more than 6 million tennis rackets. In addition, it exported 3.16 million sets of sewing machines, having 80% of world sewing machine exporting market; 240 million units of mini-motor, having 70% of world mini-motor exporting market; 80 million bicycle tires, having 50% of world bicycle tire exporting market.²

By 1986, Taiwan produced the world's largest number of computer terminals, printed circuit boards, monitors, recreational boats, electronic calculators, telephones, etc. (MOEA, 1991, 239). In 1993, Taiwan supplied 76% of the world's exports of handheld scanners for personal computers, 62%
of motherboards, 51% of monitors, and 25% of sewing machine, 29% of ABS fiber, 9% of bicycles. All ranked number one in the world. The achievement is indeed staggering. In that year, there were 10 items ranked number one, including those mentioned above, three items in number two (desktop scanner, PTA, machine mould), and five items in number three (PS petrochemical, personal computers, lighting diode, printed circuit board, and desk-top scanner) in the world export markets.

The most noteworthy achievements in the 1990s are in the area of personal computers and integrated circuits. In fact, in 1995 Taiwan produced more than 10% of world's personal computers, and its production of keyboards and motherboards ranked number one in the world (Nikkei, February 11, 1996). In 1998, the global production shares by volume of the scanner (85%), case (75%), motherboard (66%), SPS (66%), keyboard (65%), mouse (60%), monitors (58%), sound card (49%), video card (40%), notebook PC (39%), graphics card (31%) all ranked number one in the world. There is no ranking of the world share of CD-ROMs (33%) and desktop PCs (16%), but its ranking should also be high. Taiwan in 1998 ranked “the number three producer of information technology world wide, only behind the United States and Japan.” Indeed, as we will explore further later in this paper, Taiwan is certainly a very large country in the world in almost all categories except its land area.

III. An Overview of Early Taiwanese History from An International Perspective

Taiwan’s geographical position also determines its historical relations with the surrounding countries. Before the 17th century, Taiwan was initially inhabited by nine ethnic groups of Malay-Polynesian origin. While some claim that Chinese population on Taiwan may trace back to the third century (230 A. D., the Period of Three Kingdom), a recent study indicates that a reliable Chinese account on Taiwan appeared only in 1349. From the 16th century on, the Han people began arriving in the western part of Taiwan from the coastal area of southern China. They were fishermen, pirates, criminals, or tax evaders. So were Japanese pirates (Vertente, et al., 1991, 49). Most of them made no efforts to settle permanently, and the Ming government of the time never extended its rule on Taiwan (Vertente, et al., 1991, 34; See Figure 2A)). Thus, when the Dutch from the Dutch East India Company in Batavia of Indonesia occupied and settled in the southern part of Taiwan (see Figure 3) in 1624 as the base of entrepot trade with Japan (Su, 1980, 57) and monopolizing its trade with China (Vertente, et al., 1991, 69), the Ming government did not protest nor interfere.
The Dutch built Fort Zeelandia in Tainan area and ruled Taiwan for 38 years from 1624 to 1662. They had shortage of labor and bought in “Han serfs” from China (Su, 1986, 13; 1980, 69–74). Meanwhile, the Spanish in the Philippines felt the threat of the Dutch and tried to expel them from Taiwan. They landed and settled in Santiago near Keelung (see Figure 3) in 1626 (Su, 1980, 79). In the following year, the King of Spain declared that Formosa belonged to the Spanish crown. (ibid., 80). However, the Dutch eventually expelled the Spanish from Taiwan in 1642 and controlled the northern and southern parts of the island (ibid.; see Figure 2B).

The shortest distance from Taiwan to China is only 110 miles, and so Taiwan has been often influenced by events in its neighbor. In 1661, the Manchus overthrew the Ming government, a foreign tribe that invaded China from the north and established the Ch’ing Dynasty. Ming’s defeated general, -kung (Koxinga), fled to Taiwan and drove away the Dutch. The family of Cheng ruled Taiwan and expanded its territory in the southern part of Taiwan (see Figure 3), while fighting with the Manchus, for 23 years from 1662 to 1683 (Vertente, et al., ibid. Chapter 5). During this period, trade with other countries, except China, flourished (see Figure 2C). Taiwan then came under the Ch’ing government, which lasted 212 years in Taiwan from 1683 to 1895.

The Ch’ing government ruled Taiwan with indifference and passivity (ibid, 130), and continued the discriminatory and prohibitive rule of the Dutch colonial system with added “decadent feudalism of -24; 1980, 118-246). By the end of its rule, its territory had expanded to the coastal flatland area of western Taiwan (Figure 3). The government controlled only major cities, and its rule did not extend to the vast mountain area and the eastern part of Taiwan (Figure 3). Being keenly aware of its limitations, for almost one hundred years the Ch’ing government banned immigration and emigration between Taiwan and the mainland lest people should run into the mountains and revolt against its rule. Thus, Taiwan was isolated from China and other part of the world for 78 years from 1683 to 1760 (see Figures 2D and 2E). Despite the precaution, the settlers frequently rebelled against the Manchus. The Taiwanese economy expanded only slowly and its trade was confined exclusively to China. Only after the mid-19th century when the English and France forced open the ports of Taiwan (Vertente, et al., 1991, 136-137),
other European powers followed, and Taiwan re-entered the world trading system (Su, 1986, 34-35; Huang and Chen, 1995, 312, 321).

At the end of the first Sino-Japanese war, China ceded Taiwan and the Pescadores to Japan “in perpetuity” by the Treaty of Simonoseki in 1895. After crashing the short-lived Democratic Republic of Taiwan established by the local people, for the first seven years, the Japanese still had hard time eradicating the sporadic armed rebellion against its rule. Even by 1901, a Japanese government survey drew along the center of Taiwan dividing east and west “the approximate boundary line separating savage district and territory under actual control of Japanese administration.” In fact, it was only in 1930 that the Japanese administration, for the first time in the Taiwanese history, actually controlled and integrated the all of Taiwan with iron fists. By the 1920s, Taiwan had been placed into the Japanese economic domain exclusively (see Figure 2F) and was trading almost entirely with Japan. Ironically, under Japanese colonialism, Taiwan started modern economic and social development, building the foundations for rapid post-war economic growth.

Japanese influence continued even after WWII. Similar to the Cheng Period in the 17th period, the Nationalist Republic of China in China was overthrown by the communist People’s Republic of China in 1949, and the defeated Generalissimo Chiang Kai-shek fled to Taiwan where he established the Republic of China on Taiwan (although he pretended that he was still the ruler of China). China was off-limit for the Taiwanese from 1949 up until the end of the cold war in the late 1980s (Klintworth, 1995, 28). At the same time, China itself was isolated economically and politically from the global economy. As we will see in details below, during this cold-war period Taiwan was able to ally with Japan and the United States (Figure 2G) and to form a trade triangle with these two powerful countries. Thus, it catapulted itself to rapid economic growth.

After the death of Chiang, the authoritarian regime of Taiwan started to thaw, culminated in the lifting of 38-year-old martial law in 1987 (Hsiao, 2000) and the democratic election of the first president in 1996. The termination of the “Period of Mobilization for Suppression of the Communist Rebellion” in 1991 also ended almost the half-century old enmity with China. The event also coincided with China’s reform and open-door period from 1989 until now (Ishida, 2000, 277-279). This stimulated the Taiwanese outward foreign direct investment in China and negotiation between the two countries. When the world experienced the end of the cold war in 1991, Taiwan entered the new era of internationalization and globalization (Figure 2H).

IV. The Taiwanese Economy before the 19th Century

We now examine briefly the position of Taiwan in the global economy before the 19th century. As we have seen in the previous section, while sporadic Han Chinese immigrants and
the aborigines lived on the island before the 17th century, the Dutch, and, for a very short period, the Spanish in the northern Taiwan, formally colonized Taiwan in 1624. The modern Taiwanese economic history should start from the Dutch period.

A. The Dutch Period - Global Trade in the 17th Century

The original purpose of the Dutch and the Spanish in coming to Taiwan was to use it as the trade entrepot between China and Japan. Later, they found that they might also gain by colonizing Taiwan and trading native products with Japan and China. Thus, the Taiwanese economy was already export-oriented in the 17th century.19

As early as the second half of the 16th century, Europeans, Chinese, and Japanese were known to come to Taiwan for either transferring commodities to the third countries20 or for trading with the Taiwanese aborigines with agate, cloth, salt, copper, etc. for buckskin (Nakayama, 1959, 24-25). In order to trade with China, the Dutch colonized the southern part of Taiwan in 1624. Its influence spread to the northern area like Keelung and Tamsui by the 1650s (Su, 1980, 74; Chang, et al., 1996, 48). At the beginning, they traded the daily necessities for buckskin and venison supplied by aborigines. Later, they brought in Chinese agricultural laborers (Han serfs, as characterized by Su, 1986, 13), and encouraged Han immigrants and aborigines to cultivate sugar cane and rice paddy to be refined for exports (Chou, 1957).

The Dutch exported buckskin, venison, dried fish, and sugar to Japan in exchange for Japanese silver. From 1634 to 1661, the magnitude of the exports of buckskin was simply amazing: it ranged from the high of 151,400 pieces in 1638 to the low of 19,140 pieces in 1642. The Dutch then exported Japanese and European silver, along with venison, antlers, rice, sulfur, and dried fish, which were produced in Taiwan, to China in exchange for raw silk, silk and satin, herbal medicine, porcelain, and gold. These precious commodities, along with spices, which were purchased from Southeast Asia, were then shipped to Holland from Taiwan. Some of the raw silk and silk products were also re-exported to Japan (Su, 1980, 78-79; Chou, 1957, 61).

Another important trading partner under the Dutch regime was Persia. To Persia, Taiwan exported tea and much of its sugar output, along with camphor and copper, which were imported from Japan, and Ginseng, which was imported from China. As usual, Han immigrants and native aborigines produced buckskin, sugar, and rice; the Dutch collected the commodities, and monopolized the export business. During the Dutch occupation from 1624 to 1662, the trading activities in Taiwan were very lucrative. In accounting for the total profits in Asia in 1649, the Dutch reported once that, among the 19 trading posts in Asia, the trade with Taiwan alone earned 25.6% of the total Asian profits, only next to the trade with Japan (38.8%) (Su, 1980, 80).
B. The Cheng Period – Continuation of Global Trade

In 1662, after being defeated by the ascending Ch'ing dynasty, the Ming general Cheng Ch'eng-kung and his troop fled to Taiwan, drove away the Dutch, and established the Kingdom of Cheng (Chang et al., 1996) or the Kingdom of Formosa, as was called by the British (ibid., 90). The Cheng government adopted the Dutch economic system. Its major concern was to "return to China," rather than developing Taiwan for the benefits of the Taiwanese. The government welcomed trading with all countries except China and Holland (Chou et al., 1959). The Ch'ing government also closed and banned the coastal area for travel to and trade with Taiwan, although illegal trade relations between Taiwan and China persisted.

Trading with Japan continued to prosper. Every year, eight to fifteen Taiwanese ships sailed to Japan for trade. Taiwan exported sugar, buckskin, silk products, and herbal medicine to Japan, and on the return trip imported copper, lead, weapons, and other military materials (Chang, et al., 1996, 92).

The Cheng government also increased trade with Southeast Asian countries. Every year, one or two Taiwanese ships sailed to Luzon, Indochina, Cambodia, Thailand, Malacca, and Batavia. The British took the place of the Dutch in Taiwan's trade with the Europeans. From 1670 to 1680, the British and the Cheng government had three commerce treaties, and in 1671, the British established a trading house in Taiwan. However, until the end of the Cheng Kingdom in 1683, that business did not flourish (ibid.).

In general, during the Cheng period, Taiwan continued to trade with foreign countries. The government mainly conducted the trade, and the commodities imported were mainly military materials.

C. The Ch'ing Period – from Autarky to the Bilateral Trade and Development of Taiwanese Capitalism

The Ch'ing government conquered the Kingdom of Cheng in 1683. To avoid future insurgence against China using Taiwan as a base, it proclaimed a strict ban of immigration from the coastal cities in China to Taiwan. Trade between both sides of the Taiwan Strait was restricted and discouraged. The policy changed several times after 1732 and was revoked for good only in 1760 (Su, 1980, 128-129; Su, 1986, 26). As a result, Taiwan's economy was forced into an autarky system. It stagnated for a long period as it retreated from the global scene.

From 1760 to 1860, Taiwan traded almost exclusively with China, mostly with people in Fujian. Taiwan exported agricultural products like rice, sugar, jute, rattan, camphor wood to China, and imported manufactured products like cotton fabric and cloth, silk, paper, porcelain (Huang and Chen, 1995, 320), agricultural equipment, and wine. In one account, during 1741, Taiwan produced slightly more than 100 million dans of rice, half of which was exported to China (Oh, 1970, 77).
After 1860, Tamsui and Anping in Taiwan were opened to the Europeans under the Peking Treaty between China and England. The Europeans came to trade with Taiwan, and Taiwan was reintroduced to the global economy. As it might be expected, the openness of trade reduced the importance of China as Taiwan's trading partner, and restructured Taiwan's trade composition. Taiwanese rice lost its competitiveness to Southeast Asian rice in China, and with a rapid increase in Taiwanese population, rice export was greatly reduced (Huang and Chen, 322, 331). Furthermore, Taiwanese sugar was gradually replaced by local sugar in China, and more of it was, instead, exported to Hong Kong, Australia, the United States, Japan, etc.

Meanwhile, Taiwan's tea replaced sugar to become the largest export item. In 1895, more than 81% (16 million pounds) of Woolong tea was exported to the United States (ibid., 331), the rest went to Europe. Taiwan also became the world's largest producer of camphor. In 1868 (and 1895), Taiwan exported 1.6 (and 6.9) million pounds of camphor, 2.6 (and 2.3) times larger than the second largest exporter, Japan (ibid., 334). Coal was one of the new export items, mainly sold to China.

At that time, unfortunately, more than 50% of total imports were opium. Other imports consisted of manufactured goods, like cotton and its products, woolen fabrics, kerosene, metals (especially lead for sealing sugar boxes), matches (100% from Japan), and other miscellaneous goods, which increased importance over the years. However, like the other periods, there had been trade surpluses every year since 1872, and the surpluses increased until the end of the Ch'ing period (ibid., 337-339).

Before 1860, various Taiwanese export associations controlled most of Taiwan's trade with China (ibid., 354; Twu, 1975, 373). After 1860, they lost in competition to foreign traders, especially the British, who set up trading houses in Taiwan. The old-fashioned export associations simply could not compete with the Western management system. Although the profits in coastal trading were very high, about 30 percent per annum on average, due to political instability in China and market fluctuation, the trading was highly speculative and risky, and many ventures went bankrupt (Hao, 1986, 346 and Chapter 10).

As time went by, some Taiwanese merchants were able to learn management practices from the Europeans and started their own trading companies. Toward the end of the 1890s, some Taiwanese trading companies even excelled over the European trading houses. In the tea trade, for an example, in 1874, the export volume of tea by Taiwanese traders exceeded two times of that by foreign traders. By 1881, about 90% of Taiwanese tea was exported by Taiwanese merchants (Huang and Chen, 1995, 361). They also dominated in exporting camphor and sugar, as well as importing opium and textiles (ibid., 361-364). In general, we submit that, before the Japanese occupation in 1895, Taiwan had experienced a Commercial Revolution, which, in England, was considered to be a prelude to “Industrial Revolution.”

Like merchants in England, the sign of transition from the commercial revolution to the industrial revolution in Taiwan had already appeared before the Japanese occupation in 1895. Some Taiwanese
merchants, like the Lin Pun-yuan family of Pangchiao, traded domestically and internationally, and even established local banks and money exchange houses to lend money to tea producers (Huang and Chen, 1995, 364; Su, 1980, 320). Some sugar traders also financed sugar producers (Twu, 1975, 380). In general, by the end of the 19th century the Taiwanese merchants were able to dominate the trade, and to accumulate wealth through the commercial relations with China, England, and the Netherlands. Eventually, the merchants also became moneylenders to the local producers. It was reported that, by 1895, at least four Taiwanese families had wealth of 10 to 40 million taels, and there were 17 Taiwanese millionaire families. Indeed, Taiwan had the makings of a classic "bourgeois-nationalist revolution."

IV. Taiwan in the Global Economy during the Japanese Period

The victory of Japan in the first Sino-Japanese war in 1895 over the Ch'ing government and over Taiwanese uprisings distorted the "natural" development along the path to full-blown Taiwanese capitalism. Japanese capital flooded into Taiwan and suffocated, so to speak, the Taiwanese native capital from creation of large-scale modern banks and factories.

As Japanese capitalism was still in the infant period, the new colonial government at first tolerated the existence of the local Taiwanese capitalists. Except sugar and those commodities under national monopoly (opium, salt, camphor, tobacco, etc.), few restrictions were imposed on the production and distribution of daily necessities (Twu, 1975, 397). At the same time, the government drove away the European and Chinese commercial capital by setting up a discriminatory tariff system, establishing the Bank of Taiwan (1899) to substitute foreign financial control, instituting monopoly system, and helping Japanese merchants to overtake the foreign monopoly of sugar trade (Yanaihara, 1929, 43-48; Azuma, 1941, 93-95; Su, 1980, 338).

By the 1920s, however, Japanese capital flooded into Taiwan, and the larger and modern Japanese-owned firms overshadowed the Taiwanese-owned firms. Led by the sugar companies, all the major, larger firms and banks were held by Japanese private capitalists.

However, small Taiwanese enterprises also flourished. In 1936, there were about 7,000 Taiwanese manufacturing firms. At the end of 1938, some 310,000 to 410,000 Taiwanese farms and landlords produced and sold paddy rice, which was refined into rice by about 3,300 local Taiwanese millers. Among them, 732 firms bought rice for exports. In late 1930s, about 90% of rice exported to Japan were monopolized by four major trading companies (Kawano, 1968, 129). Taiwanese firms remained small and numerous. Similarly, from 1936 to 1937, 127,000 small farms cultivated sugar cane (about 30% of total farmers), which was sold to 49 Japanese sugar factories in Taiwan (ibid., 92). During the same period, four major sugar companies exported nearly 88% of sugar produced in Taiwan to Japan (ibid., 87-88). Thus, the production of sugar and the distribution of sugar and rice, and other exports and
imports, were almost completely under the control of the Japanese. There was little room for the Taiwanese to engage in export businesses. Native development of commercial capitalism gave way to the Japanese.

A. Taiwanese Agriculture in the World Production

Under colonialism, Taiwanese were mostly farmers and toilers. At least until the mid-1930s, the major emphasis in economic development was in agriculture. In fact, Taiwan developed agriculture with handicaps. It is not only small in land, as we have seen in the first section, but also not all of this small land is suited for developing agriculture. Only 31 percent of the area has an elevation below 100 meters. The rest has an elevation either between 100 and 1000 meters (37%), or above 1000 meters (31%) (Chen, 1963, 89). It is "one of the most mountainous islands in the world" (ibid., 87). "There are more than 20 peaks with an altitude of more than 3500 meters … This is very seldom found … in the whole world, considering the small size of the island" (ibid., 88). The arable area, mineral resources, and sites suitable for hydroelectric generation are severely limited. The island is exposed to monsoons, typhoons, earthquakes, and even droughts. Heat and rain washed away nutritive soil elements (like phosphorus and potash), leaving mostly acidic soil. Furthermore, since Taiwan is located in a subtropical zone, plant diseases and bugs are prevalent (Ping, 1947, 64).

Despite these natural disadvantages, Taiwan's subtropical location enables it to produce quite different crops. It is this geographical advantage that made Taiwan unique in the Japanese Empire, and the Japanese saw the comparative advantage of developing agriculture in Taiwan (Hsiao, 1997). To cope with the natural disadvantages, the Japanese developed Taiwanese agriculture by intensive research and development, and organized rural institutions (Ho, 1978, 57-65). They kept systematic and meticulous meteorological records since 1896 (Tang, 1947, 16; Chen, 1963, 121), conducted soil surveys and agricultural experimentation, invested heavily during the 1920s in extensive flood control and modern irrigation systems (Ho, 1978, 36-37), introduced or improved new breeds of plants and crops which withstood weather changes, diseases, and bugs (Tang, 1947, 12-14), used fertilizer extensively (Ishikawa, 1967, 102-105), and improved cultivation methods (Tang, 1947, 14-19).

By 1938, the utilization rate of the arable land in Taiwan was 24% (59,000 hectares), higher than Korea (20%) and Japan proper (17%), but lower than major countries, like Denmark (62%), India (57%), Italy (49%), and England (46%), but much higher than that in any province in China (Tang, 1947, 1). The total area of cultivated land has remained almost constant between the prewar and the postwar periods (TSDB, 2000).

By 1944, 96 field crops were planted in Taiwan (Ping, 1947, 75). The six major crops were paddy rice (41.8% of the value of total agricultural production, the same below), sugar cane (18.1%), sweet potatoes (6.7%), bananas (4.1%), pineapples (2.2%), and tea (1.9) (ibid., 76). Rice, sugar cane, and
sweet potatoes have been consistently the major agricultural produces of Taiwan during the prewar and early postwar periods.

The increase in Taiwan's agricultural productivity was remarkable. Between 1905-1909, per hectare output of Taiwan's agricultural production was only about a half of that of Japan, but it caught up to about 80% by the end of the prewar period, and reached the same amount between 1960 and 1964 (Shinohara and Ishikawa, 1972, 18). By another measure, however, output per farm family of agricultural products in Taiwan during 1935-39 was already about 50% higher than that of Japan (ibid., 19). Through irrigation and agricultural and biological innovation, Taiwan became the most advanced rice producing country in the whole of Asia during the 1930s and the 1950s (ibid., 19; Chang, 1957). Similar statements can be made for other crops.

Rice production increased steadily over the years. In 1938, the maximum amount of production reached six times that of 1900. Similarly, sugar cane production increased 31 times, sweet potatoes nine times, bananas 36 times, peanuts five times, tobacco 66 times, and pineapples 20 times. Note that all crops, except tea, increased steadily, and reached maximum production by the end of the 1930s. After 1940, agricultural production started to level off and decreased giving way to industrial production following Japan's plunge into the Pacific War.

The magnitude of agricultural production was staggering when we compare Taiwan’s achievement with the world. From 1934 to 1938, Taiwan, on average, produced 1.3 million tons of rice per year. This is about 1% of the world rice production, compared with about 8% in Japan, and 34% in China, and ranked about 10th place in the world (ibid., 19). Although Taiwan's production was small if compared with these two large neighboring countries, if we consider the size of Taiwan's area and population, we will find immediately that Taiwan stands out. In 1940, Taiwan produced more than 50 times its fair share of rice in terms of its proportion of total world area, and 3.3 times of its share in total world population.

The international statistics of two cash crops are available, and they are even more staggering. During 1934 to 1938, Taiwan on average produced 2.4% (0.04 million tons) of the world's tea and 2.2% of the world's banana per year. Taiwan's tea production was the sixth largest in the world (next to India, Ceylon, Indonesia, Japan, and China, YS43, 140) and its banana production was the third largest in the world (ibid., 141). This means that Taiwan produced tea and bananas more than 120 times of its share in terms of its area and more than eight times its share of total world population!

Most of the output of rice, tea, and banana was exported. During 1934 to 1938, on average, about 51% (0.7 million tons) of rice per year, and about 62% of bananas was exported to Japan (Chou, 1958, 37, 48). In contrast, about 80% of tea was exported, mostly to countries other than Japan (TEY41, 144-146), and consisted of about 3% to 4% of Taiwan's total exports (SS51, Tables 324, 326). The amounts are awesome if we consider the world export market. Taiwan's exports of bananas (0.15 million tons,
including exporting to Japan) constituted about 5.4% of the world exports in 1937 and 1938, competing for the first or second place in the world banana export market (YS43, 144). Taiwan’s exports of tea (9.7 kilo tons) from 1936 to 1939 were, on average, about 2.2% of total world exports (447 kilo tons) during the same period, competing for the 6th largest tea exporting country in the world (YS43, 139). This pattern of exports continued long after the early postwar period (TSDB, 1985).

Sweet potato, used as a secondary food staple in villages, feeds for hogs, and raw material for producing alcohol, was the third important crop. During 1934-1938, Taiwan produced 1.7 million tons of sweet potatoes, a whopping 3.7% of world production, ranked fourth in the world, next to China, Japan, and the United States (1.8 million tons). Despite large production, most of them were used domestically. On average, only 2.6% of its production was exported to Japan (Chou, 1958, 46). Taiwan’s Sugar production was indeed very impressive. From 1938 to 1940, Taiwan produced, on average, 1.2 million tons of sugar per year, which is almost 7% of the world sugar production during that period (17 million tons), ranked fourth among the sugar producing countries, only next to India (2.9 million tons), Cuba (2.7), and Indonesia (1.5). (YS43, 130).

We note that 70% to 80% of pineapple production in Taiwan was canned (Ping, 1947, 78) and, along with tea, exported to Japan and other countries. From 1936 to 1938, Taiwan produced, on average, 1.2 million boxes of canned pineapple per year, consisted of a whopping 7.5% of the world production (16 million boxes), ranked the third in the world, only next to Java (12 million boxes) and Malaya (2.6 million boxes). (YS43, 145)

During the Ch’ing and Japanese periods, salt production was monopoly of the government and was one of Taiwan's major products and exports. In 1938, Taiwan's salt production was about 0.241 million tons, which was about 0.5% of the world production (37 million tons), and ranked 13th in the world production. Its importance continued even after WWII. In fact, from 1951 to 1960, Taiwan produced on average 0.3 million tons of salt per year: 63% of the output was exported, with 85% exporting to Japan.

Before WWI, Taiwan and Japan were the only two countries in the world producing natural camphor (YS41, 365). From 1891 to 1895, the world annual camphor exports were about 31 kilo tons. Taiwan exported, on average, 56% of the world annual exports (Chen, 1963, 422). After WWI, Germany developed synthetic camphor and Taiwan's production fluctuated and decreased. By 1939, it was estimated that Taiwan still produced about 50% of natural camphor, or 30% of the world production (ibid.; 428), although the importance of its value in Taiwan's total production and exports decreased considerably.

Thus, by the end of the 1930s, Taiwan already was the world's major producing country of bananas (3rd), canned pineapples (3rd), sugar (4th), sweet potatoes (4th), tea (6th), rice (10th), peanuts (10th),
and salt (13th). Unlike many other colonies, Taiwan was by no means a "monoculture" country. To produce so many different agricultural products in so large quantities, the infrastructure of the society, like transportation, communication, and education, must have been built to accommodate such massive development. In the early 1940s, based on this agricultural accumulation and the basis of wealth,[2] the Japanese were able to develop industry in Taiwan quickly and massively, although it was too late.

When the war ended in 1945, Taiwan already had a highly advanced agricultural sector. The war damage to Taiwan's agriculture was minimal (slightly less than 50%) as compared with other industries, and it recovered quickly by 1950 (Kai and Chu, 1951, 61). After 1949, when about 2 million Chinese refugees and soldiers flooded Taiwan, every three Taiwanese farm laborers had to support one Chinese soldier, and every 1.1 farm laborer supported one non-producing Chinese soldier, refugee, or bureaucrat (Hsiao and Hsiao, 1996, 228). The Chinese civil war and refugees induced chaos and extreme poverty during the early postwar era. The misery had nothing to do with Japanese colonialism, although the Chinese contend otherwise. This real burden for the Taiwanese occurred when the Chinese came to Taiwan after WWII. Without prewar development of the agricultural sector as we have stated above, the Taiwanese economy would have collapsed. Elsewhere we have seen the upsurge in agricultural productivity during the early postwar period (Hsiao and Hsiao, 1996, 240-242). We submit that, unlike many other developing countries, the very foundation and potentiality of such a postwar take-off to higher productivity were laid in the prewar period.

**B. Industrial Development – Taiwan in the "Great East Asia Co-Prosperity Sphere"**

By the second half of the 1930s, Taiwanese agriculture had reached its limit: The arable land was exhausted. Agricultural technology and its research and development had also reached their ceilings. At the same time, rapid industrialization, militarization, and scarcity of resources in Japan proper also forced industrialization and a readjustment of Taiwan’s economic structure (Kusui, 1941, 508; 1944, 159-170). It all started after the completion of the Sun-Moon Lake hydraulic power plant in 1934, tripling Taiwan's electricity output to 150,000 kw (Takahashi, 1937, 420). The power plant was followed by the development of an aluminum factory (1935), an iron alloy factory (1935), a shipping yard (in 1936), and other industries like pulp (in 1935), fertilizer (in 1937), and oil and fats (in 1935) (Kusui, 1944, 69-74).

From the mid-1937s on, as the Taiwanese economy entered the war-stage, the emphasis was on metal processing and refinery, machinery (including weapons, airplanes and automobiles), petroleum, chemical and pharmaceutical industries (Kusui, 1944, 158, 168). They are mostly defense-related industries. At the same time, light industries of daily necessities, such as light bulbs, glass, ink, pencils, porcelain, radios, leather, nail, and agricultural machinery, etc., were developed for war-time self sufficiency (Surniya, et al., 1992, 21), independent of Japan proper. Thus, Taiwan entered the import-
substitution phase of economic development, which continued after the war until the mid-1960s. By 1939, the value of industrial output exceeded that of agricultural output for the first time.\textsuperscript{43} Taiwan was no longer an agricultural society.

As we have seen, Taiwan is a natural resource-poor country. The most important mining product was coal (0.22\% of world coal output in 1941), followed by a limited amount of gold (0.06\% of world gold production in 1941), crude oil, and natural gas.\textsuperscript{44} Only those industries producing soda, nitrogen, cement, carbide, glass could manage to use domestically produced industrial salt, limestone, and natural gas (shown in the callout box in Figure 4). To develop heavy and chemical industries as well as machinery industry, Taiwan had to rely on foreign resources. Figure 4 shows the major sources of resource imports. The item in parentheses shows the product that was actually produced during 1939-1940 (Chang, 1980, 109-111), and the items in italic were planned sources of imports (TEY41, 518-19; also Kusui, 1944, 177-178). All of them could be imported “from the ‘Japan-Manchuria-China bloc’ and the Southeast Asian countries close to Taiwan” (TEY41, 519). The figure illustrates the strategic role and the regional position of Taiwan in Japan’s prewar “Great East Asia Co-Prosperity Sphere.” In fact, Japan’s “southward movement policy” would have been inconceivable without Taiwan (Yano, 1975, 149). Taiwan was envisioned as having a lofty mission,\textsuperscript{45} to exploit the rich resources of South China and South Seas (Nanshi Nanyo) for the prosperity of Japan and “all the previously oppressed people” living in the region.\textsuperscript{46}

--IpAddress--

Place Figure 4 here

--IpAddress--

While Taiwan’s prewar industrialization was too late and most industries were just burgeoning, a wide range of light and heavy industries, including all the basic industries for future industrialization, had been established on the island. They stabilized the postwar economy and paving the way for rapid postwar industrial development in the mid-1960s. Since the initial conditions before the economic take-off play an important role in the growth process, as often asserted by the new growth theory, Taiwan was probably one of the few countries that had the most favorable initial conditions among all the developing countries in the postwar period. In this sense, we submit that there is no “miracle” in Taiwanese economic development after the war.

V. Postwar Taiwan in the Global Economy

After WWII,\textsuperscript{47} the Chinese Nationalist (Kuomintang, KMT) Government confiscated and combined Japanese-owned firms and banks, and converted them into 50 or so public enterprises.\textsuperscript{48} Non-Taiwanese speaking Chinese bureaucrats and managers replaced non-Taiwanese speaking Japanese
capitalists. Lacking resources and technical ability to engage in new industries, the government had to rely on the old industrial base left over by the Japanese. At the end of the war, the Japanese left behind basic metal, chemical, and other "heavy" industries, which were relatively capital intensive in those days. As we have seen in Figure 4, most raw materials for these heavy industries had to be imported, and their finished products had a limited market in the war-torn Taiwanese economy. Thus immediately after the war, the KMT government had difficulty in deciding whether to spend scarce capital and precious foreign exchange to restore the war damage and to maintain these white-elephant industries (Lin, C. 1968, 296). However, internal and external political developments around 1949 and 1950 altered the picture virtually overnight. The civilian and military industries built by the Japanese in Taiwan to take advantage of resources in South China and the South Seas to fight the Allied Forces were now utilized by the KMT government to fight Chinese communists in the defense of Taiwan. Essentially the KMT perpetuated the Japanese-controlled wartime economy and industries (Hsiao and Hsiao, 2000a; Twu, 1975, 499), though on a larger scale due to massive U.S. aid which supported the influx of Chinese refugees and 600,000 Chinese soldiers at that time (Hsiao and Hsiao, 1996).

Taiwanese firms remained small and fragmented, and "a broad movement from below upward" was also severely limited. Until the end of the 1970s, banks and financial institutions, insurance, stock exchange, education, transportation, communication, utilities, public media, etc. were either highly or completely restricted. Nowhere could Taiwanese small-and-medium size enterprises enter the businesses of even local transportation, newspapers, shipping, aviation, gas, electricity, etc. But there are important differences in the postwar period. The Japanese had exploited Taiwan’s agricultural and industrial resources without Taiwanese initiative, and capital and technology were almost completely under their control. Nevertheless, when the Japanese left Taiwan in 1945, they also left behind physical plants and the people who assisted them in managing and operating the plants. More importantly they left behind technical know-how, new skills, human capital, and a whole set of social and economic infrastructure. In addition to an extensive irrigation system, effective farm organizations, pervasive educational system, massive electric generating facilities, extensive transportation and communication network (Hsiao and Hsiao, 1996, 219-221), they also left behind the changes of customs and habits for modern industrial society, such as appreciation of manual labor, propensity to innovate, the habit of keeping time and being on time, the concept of law and order, respect for ruling by law and following instructions. In other words, the social, cultural, and psychological environments for economic take-off, despite some of them were undoubtedly coerced by the colonial government for the sake of the mother country and military purposes, were already created in the 1930s and the early 1940s. Using the modern terminology, Taiwan’s “institutional reform” was completed long time before
the end of WWII. The reform enabled the prewar rapid development of agriculture and industry, and also has been essential, but often ignored in the literature, to the postwar rapid economic growth.\textsuperscript{55}

Other important differences are foreign influences and international markets. The U.S. advocacy of free market and free trade, and the U.S. influence on KMT government policies through the U.S. Aid Program, nurtured the Taiwanese small-and-medium enterprises (SMEs) (Hsiao and Hsiao, 1996, 238-239). The rapid rise of postwar Japanese capitalism ironically stimulated the Taiwanese entrepreneurs and helped the Taiwanese SMEs (ibid., 284-285). The postwar technological innovations of product-life-cycle commodities promoted Taiwanese enterprises. In terms of trading practices, however, there is an important similarity to the prewar situation. Until the early 1980s, foreigners, especially Japanese trading companies, have dominated the trading business.

A. Major Trading Partners

Figures 5 and 6 are area diagrams that dramatically characterize major Taiwanese trading partners.\textsuperscript{56} Both figures show that the United States and Japan are the two largest trading partners throughout the post-war period until the end of the 1980s. Figure 5 shows that Japan was the largest export market for Taiwan until 1966. Japan's share in total Taiwanese exports ranged from 60% in 1955 to a mere 8.4% in 1998. After 1967 the United States became Taiwan's largest export market. The U.S. share of total Taiwanese exports ranged from 49% in 1984 to 29% in 1992. Since 1990, Taiwanese exports to Hong Kong, as the entrepot to China, have exceeded exports to Japan. In 1999, Hong Kong's share was 21% and Japan's share only 10%. Up to 60% of Taiwanese exports to Hong Kong was re-exported to China.\textsuperscript{57} Like the United States, Taiwan has a hard time breaking into Japanese domestic markets. Despite Taiwanese efforts in attaining a diversification of trading partners, Figure 5 shows that the relative export shares of Singapore, which is the entrepot to the ASEAN countries, and of West Germany, which is the gateway to Europe, and of others remain almost unchanged, although exports to these countries have accelerated since 1985 (TSDB, 2000). This means that trade with these countries has increased only at the same pace with the trade with Japan and the United States. Throughout the 1980s and the 1990s, Taiwan was one of the most active exporting counties in the world. The total exports in 1980 were about US$ 20 billion, ranking 20\textsuperscript{th} among the 133 countries listed in WDR,\textsuperscript{58} and in 1995 were about US$ 112 billion, ranking 21\textsuperscript{st} in the world.

The major importing partners, however, are just the reverse of the major exporting partners. Figure 6 shows that, prior to 1963, Taiwan imported primarily from the United States. Japan was busy with its economic reconstruction, and the United States was the only major partner helping Taiwan's
reconstruction with the huge aid program. The roles of the United States and Japan were reversed in the mid-1960s when the U.S. economic aid program was terminated. After 1964, imports from Japan have become dominant. Japan's share in Taiwanese imports ranged from 45% in 1971 to 25% in 1982. The U.S. share in total Taiwanese imports ranged from 48% in 1955 to 18% in 1999. It has decreased gradually. Taiwan's total imports in 1980 were US$ 20 billion, ranking 21st in the world, and in 1995, total imports increased to about US$ 104 billion, ranking 15th in the world.59

---

Through the postwar era, imports from the United States and Japan alone ranged from 45% (1998) to 80% (1954) of total Taiwanese imports, while exports to these countries also ranged from 34% (1997) to 64% (1955). Here lies the dependency criticism of Taiwanese economic development.60 Both Japan and the United States constantly played very important roles.

B. Taiwan, Japan, and the United States Nexus

Figure 7 dramatizes Taiwan's trade relationship with the United States and Japan.61 The trade volume and the deficits with both countries from 1952 to 1974 becomes invisible when the scale is in billions of dollars. Thus we have plotted the data from 1952 to 1965 in the units of US$ 10 million (the left panel), and from 1966 to 1975 in the units of US$ 100 million (the middle panel), and after 1975, in the units of US$ billion dollars (the right panel). As shown in the lower part of the diagram, from 1952 to 1999, Taiwan's real imports from Japan (M in the lower part) are consistently higher than Taiwan's real exports to Japan (X in the lower part). This means Taiwan consistently had a negative balance of trade with Japan since 1953 (except 1955). The dark solid bars in the lower part show this.

---

The situation is quite different with the United States. Before 1967, Taiwan also had trade deficits with the United States every year. After 1968, however, Taiwan's real imports from the United States (M in the upper part) have been consistently lower than its real exports to the United States (X in the upper part), bringing about real trade surpluses. The empty bars in the upper part of the figure show this.

After 1968, both deficits with Japan and surpluses with the United States have increased over time with the progress of Taiwan's industrialization. In Figure 7, this is illustrated as an explosion to the two sides of the horizontal axis like a broom. After 1988, exports to the United States slowed down under
the watchful eyes of the U.S. government under the Omnibus Trade Competitiveness Act passed in the U.S. Congress in 1988 (Hsiao and Hsiao, 1995). At the same time, imports from the United States increased considerably, narrowing down the bilateral trade surpluses. With devaluation of the U.S. dollar and upward revaluation of the Japanese yen, Taiwanese exports to Japan jumped up greatly between 1985 and 1988 but ran out of steam and flattened out afterward. Real commodity imports from Japan, however, continued to accelerate, indicating that the more Taiwan tries to increase its exports, whether to the United States or other countries, the more Taiwan has to rely on imports of materials and capital equipment from Japan. Despite almost desperate efforts by the KMT government, Taiwan simply cannot elude its dependency on Japan!

Real trade surpluses with the United States peaked at US$ 17 billion in 1987 and then started to decline, while trade deficits with Japan continued to increase, although with a slower pace. The deficits with Japan reached an all-time high at US$ 19.3 billion (at the 1986 price) in 1999. However, Taiwan still has managed to achieve a huge surplus in its overall real balance of trade every year since 1976. For example, Taiwan had an overall surplus of US$ 11.3 billion in 1999. Figure 7 shows that Taiwan’s real balance of trade, shown as the marked line with circles, tends to move closely with the real trade surpluses with the United States, implying that the latter are the main source of Taiwan’s trade surplus.

C. A Pacific Trade Triangle

From the above discussions, we may derive several characteristics of the Taiwanese economy in the postwar period:

(a) Taiwanese trade relies very heavily on the United States and Japan. Taiwan relies more on the U.S. markets for exports, and on Japan for imports.
(b) In the 1980s, Taiwanese trade with both the United States and Japan bloomed significantly. Its increase in exports to the United States was paralleled by the increase in imports from Japan and, to a lesser degree, from the United States.
(c) After 1968, Taiwan has persistently had real trade surpluses with the United States and trade deficits with Japan, although the overall trade balance with all traded partners is consistently positive since 1976. Despite many serious attempts to reverse the trade deficits with Japan, the Taiwan government has never succeeded. Figure 7 illustrates this point. In real terms, the deficits with Japan have worsened greatly in recent years after the Taiwan government has emphasized the development of high-tech industries in the late 1980s.
(d) From the Figure 7, the following trade patterns emerge. Taiwan imports intermediate goods and raw materials mainly from Japan and exports manufactured goods mainly to the United States. These
triangular relations among Taiwan, Japan, and the United States are the backbone of the rapid growth of the Taiwanese economy.

Elsewhere (Hsiao and Hsiao, 1996, 258-262) we have shown that textile products in the 1960s and the 1970s, as well as machinery products and electrical products in the 1980s and in the 1990s, were the leading export items. Taiwan's industrialization also centered on these three leading commodities. There has been a huge expansion of exports in machinery products and electric equipment. Exports to the United States and imports from Japan are especially dramatic. A less dramatic increases in exports can also be observed for basic metals and articles, and Chemicals. The machinery products and electric equipment are significant in both exports and imports in the 1980s and the 1990s.

C. On Sustained Growth.

Many economists contend that Taiwan was fortunate (meaning the government was wise enough) to adopt export-promotion policy in the mid-1960s, which pushed the economy to rapid growth. However, as we have shown in the Appendix, the export promotion policy itself does not ensure rapid growth. With risk of some repetitions, here is the answer to the important question how Taiwan's outward oriented strategy has been sustained. It is due to special geographical and historical circumstances.
(a) Taiwan was already an export-oriented country under the Japanese regime. The Taiwanese were very much accustomed to the notion of "production for exports" for living and profits. As soon as the Taiwanese economy recovered from war damages and the society recuperated from the terror of the February 1947 Incident, Taiwan started exporting traditional agricultural products like sugar, rice, bananas, tea, and canned foods to Japan. When the KMT government started its export-promotion policy in the mid-1960s, the Taiwanese already had more than two generations of successful experience with exports as a modern business practice.
(b) In the early 1960s, textile products, lumber and timber products, plywood, electrical and machinery apparatus, chemicals, and basic metals were added to rice, sugar, and bananas for exports (TSDB, 1975, 190-191). The postwar rapid economic development is the continuation of the prewar agricultural and industrial development, which was interrupted by WWII and China’s civil war (Hsiao and Hsiao, 1998; ibid., 2000). Much to the dismay of the Chinese bureaucrats in Taiwan (Shi and Li, 1978), the historical tie between Taiwan and Japan persisted and strengthened in the postwar era: First Japan as the number one export market for Taiwan, then as the number one country from which Taiwan imports intermediate goods and capital goods.
(c) One of the major hurdles of an export business is international marketing. A country may produce goods, but may not find a market in which to sell the products. We have seen that, except during the last part of the Ch’ing rule of Taiwan, Europeans and Japanese conducted most of the foreign trade. After
WWII, even during the 1970s and the 1980s when the KMT government encouraged the establishment of local "large trading companies," 60% of total exports was handled by either foreign-owned, or foreign- and Taiwan-jointly-owned, trading companies. Furthermore, the majority of these foreigners were Japanese. The remaining exports were divided almost evenly: 20% by the manufacturers and traders and the government-owned Central Trust, and 20% by 36,000 Taiwanese small trading companies (Yajima, 1986, 107). It was also estimated in 1981 that the Japanese Shoshas66 alone, directly or indirectly, handled 40% to 50% of Taiwanese foreign trade (Liu, 1996, 145). Another government survey in 1984 showed that 75% of total exports (in terms of value) was controlled by foreign businesses. Most of them were Japanese companies (ibid.). Through Japanese joint ventures and trading companies, Taiwanese firms were able to solve most of their marketing problems. The reason is simple. In addition to geographical proximity and historical ties in the early postwar period, many older Taiwanese entrepreneurs spoke and read Japanese. Japanese customs and habits were not completely alien to them. This undoubtedly removed major hurdles67 of technological transfer and facilitated the trade between Taiwan and Japan after the war.68

This venue of marketing through foreign companies also proved successful for conducting trade with the United States and other countries. In 1973, Taiwan replaced Japan in the U.S. shoe market, and in 1976, Taiwan replaced Italy to become the world’s largest exporter of shoes. By 1980, shoe manufacturing was Taiwan’s third largest exporting industry, following only textiles and electronics (Skoggard, 1996, 55-56). However, ten or so foreign branch offices or agencies handles two-thirds of the shoe export business (Liu, 1996, 130).

(d) In a recent paper, Coe, Helpman, and Hoffmaister (1995) have shown that opening trade with industrial countries is effective in increasing the total factor productivity (TFP) of a developing country. They also found that which country is selected is also important. "A developing country whose trade is more biased towards industrial countries that have large cumulative experiences in R&D has higher productivity." And among the developed countries, "The United States has by far the largest domestic capital stock,..., about five times as high as Japan, which is the country with the second largest effect." Thus, by historical coincidence and geographical proximity, as shown in Figure 1, both Korea and Taiwan are indeed very fortunate to be associated with the United States and Japan as their major trading partners, and as we have seen above, Taiwan’s trade with both countries has been about 50% of total trade since 1952.

Factors other than the pacific trade triangle, such as availability of cheap labor, the rise of multinational companies, and international division of labor, the Vietnam War, long prosperity and growth in the world economy, especially in Japan and in the United States, and advocacy and encouragement of free trade and free markets by the world organizations like International Monetary
Fund and the World Bank, government macroeconomic policy and planning, all helped make Taiwan's drive to export a great success. However, we consider that these amenities were of secondary importance since they were also available to all other countries. Thus, we submit that the outward-looking propensity of the Taiwanese people and the Chinese bureaucrats in Taiwan, along with the triangle relationship with Japan and the United States, spurred by the decreasing value of the New Taiwan dollar against the U.S. dollar, have sustained the outward-looking strategy of Taiwan, and made it a success even until today.

VI. Direct Foreign Investment and Economic Growth

Japan and the United States are not only Taiwan's most important trading partners, but also their manufacturers also invested directly and heavily in Taiwan, supplementing Taiwan's domestic investment at the beginning of its industrialization and throughout the postwar period.

A. An Overview of Inward DFI in Taiwan

In the early 1950s, when the newly independent former colonies, and semi-colonies such as China, were still recovering from the horror of exploitation and imperialism, Taiwan was probably the only country in the world that invited much-suspected direct foreign investment (DFI) with open arms. Seeing Taiwan's success, Korea followed suit, along with other developing countries, China and the ASEANs in the 1980s.

Place Figure 8 here

Figure 8 shows the increase of the approved amount of DFI in Taiwan from 1952 to 1999. As in the case of trade statistics, we have converted the data into real terms, using the 1986 wholesale price index as the base. Overseas Chinese investment (IC) is shown in the upper dark band in Figure 8. The rest of the chart shows the (non-overseas Chinese) foreign investment (IF), consisting of investment from Japan, the United States, Europe, and other countries (IF = IFj + IFu +IFe + IFo). IC consists of investment from those overseas Chinese mostly residing in Hong Kong and Japan. Before 1965, IC was an important source of DFI. However, the weight of IC in total DFI decreased after 1965, taken over by IF from the U.S.A. After 1982, IC's weight in total DFI decreased drastically, and became negligible after mid-1980s. IF from the U.S.A. started in 1953, and was superseded by investment from Japan most of the time after 1982 until 1995. In any case, as with trade relations, Japanese and American investments have dominated DFI in Taiwan from 1966 to 1995. While investment from Europe is also increasing, after 1995 “other sources” of foreign investment have exceeded all others.
The main areas in the “other sources” category are British territories in Central America, which include Virgin Island, Bermuda, Belize, and British West Indies. The diagram shows two facts which indicate the resilience of Taiwan in the global economy: the two oil shocks in 1973-74 and 1979-80 eventually spurred, rather than depressed, DFI, and that Taiwan still can attract and even increase continuously the American and Japanese investments despite strong competition from China and elsewhere in recent years. In fact, as shown in Figure 8, the record amount of DFI (IF+IC) was reached just recently in 1999 at US$ 4.23 billion in real value with 1,089 cases. The Taiwanese economy has never been so strong.

Altogether, from 1952 to 1999, 11,111 cases (shown by the solid line with circles in Figure 8) with the amount of US$ 37 billion (in nominal values) of DFI were approved for IF and IC. Among IF, Japan is the largest contributor with 3,230 cases (US$ 8.3 billion), followed closely by the U.S.A., accounting for 1694 cases (8.7b), Europe, for 928 cases (4.1b). Other countries were responsible for 2,562 cases (12b). The bulk of FDI has occurred only recently (TSDB, 2000, 260).

In general, from 1952 to 1999, 26% of Taiwan’s DFI has been in electronic and electric products, totaling US$ 9.4 billion in 1,544 cases. This is followed by other products, 13%, US$ 4.8 billion in 1,927 cases; banking and insurance, 13%, US$ 4.6 billion in 502 cases. None or very few DFI were in agriculture, fisheries and livestock, paper and paper products and construction (TSDB, 2000, 261). Among the foreign investment (IF), the lion’s share goes to electronic and electric products (9.2b/1,339 cases), followed by chemicals (3.7b/470 cases), services (3.2b/1229 cases), foreign trade (2.5b/1,754 cases), and machinery, equipment and instrument (1.6b/431 cases). (ibid.). Indeed, through forward and backward linkages, foreign capital has helped build Taiwan as the kingdom of electronics and computer, and had a significant positive effect on the real growth of Taiwan’s GDP.

B. The Active Role of Taiwanese in the Global Economy - Outward Direct Foreign Investment

As the Taiwanese economy matures, it has started investment in foreign countries. The spurt of outward investment occurred after the mid-1980s, mainly due to dollar depreciation against the New Taiwan dollar and yen, rising wage rates and labor shortage in Taiwan, and the lifting of martial law in 1987 that was followed by acceleration of economic and political liberalization, which in turn invigorated environment protection activities and labor movements. Like Figures 6 to 8, Figure 9 shows Taiwanese outward investment in real values (1986 = base year) by area: American, Asian, European, and other regions. We also added Taiwan’s investment in China, which will be explained in detail in the following section. Taiwan’s outward investment (not including China, same below in this section) was rather irregular and small before 1987, and increased steadily and sharply from a mere US$ 0.1 billion with 45
cases in 1987 to US$ 3.4 billion with 774 cases in 1999, an amount that was the maximum yearly investment in real value (U.S.$ 3.3 billion in nominal value). In 1999, Taiwan’s outward investment was about 80% of its inward direct foreign investment that year.\(^{79}\)

Place Figure 9 here

In fact, Taiwan’s outward investment practically started\(^{80}\) only in 1965, and from 1952 to 1999, total outward investment amounted to US$ 21.9 billion in nominal value\(^{81}\) with 5,426 cases (TSDB, 2000, 262). According to the Investment Committee (2000) report, two-thirds of total outward investment went to the American region (63%), followed by Asia (32%) and Europe (3.3%, mostly in Germany). Oceania (in Australia) and Africa (Liberia and South Africa) consisted of only 1.6%. As high as one-third (32%) of the total outward investment went to British Territories in Central America (6.9b/690 cases), followed by the United States (21%, 4.6b/2,075 cases), Malaysia (6.4%, 1.4b/239 cases), Singapore (5.4%, 1.2b/276 cases), and Hong Kong (4.9%, 1.1b/528 cases). We suspect that most of the larger Taiwanese investment in British territories transferred to China.\(^{82}\) Investment in Japan is very disappointing, consisting of only 1.4% (0.4b/195 cases) of the total. Like exports to Japan, Japanese markets are very hard to break.

By industrial categories, 37% of Taiwanese outward investment goes to banking and insurance (8.1b/830 cases), followed by electronic and electric products (17%, 3.7b/1484 cases), others (8%, 1.7b/712 cases), foreign trade (7%, 1.6b/881 cases), and chemicals (6.1%, 1.3b/211 cases). “Electronic and electric products” was the largest item (26%) of inward direct foreign investment. It appears that the electronic and electric product industry has a dual structure in Taiwan: The high profit margin and high-end part of the industry stay in Taiwan, and the more labor intensive part of the industry moves out to China via British Territories, also to Malaysia, Singapore, and Hong Kong, circumventing the increase in wages in Taiwan.

**C. Trade and Investment in China**

As shown in Figure 2, the enmity between Taiwan and China separated both countries from 1949 to 1987, when the 38-year long martial law was lifted. While China started attracting trade and investment from Taiwan after its implementation of the reform program in 1979, the Taiwanese government lifted its strict restriction on travel to China only in 1987. In 1988 Taiwan granted indirect imports of some 50 Chinese agricultural and industrial raw materials through third countries, and only after 1990 indirect exports and indirect investment were permitted\(^{83}\). Indirect contact with China made official statistical data hard to collect.\(^{84}\)
The columns of the left-hand-side panel of Figure 10 show Taiwanese data on exports to China (X_t/2, filled column) and imports from China (M_t/2, the empty columns) (both figures are divided by 2 so that all the data may be presented in one diagram). The lines show the Chinese data on Taiwanese exports to China (X_c, the dotted line) and Taiwanese imports from China (M_c, lower solid line) for 1980 and 1990 to 1995. The Chinese data consistently underestimate export figures as compared with those of Taiwan, but the import estimates are almost the same. In any case, both data show a very rapid increase in Taiwanese exports to China and a very slow increase in imports from China, resulting in a large trade surplus for Taiwan every year since 1981: The trade surplus in 1997 was US$ 18.5 billion, more than enough to offset Taiwan’s total trade deficits of US$ 17.3 billion that year (TSDB, 2000, 210). Most of the items exported to China were fur and its products, pulp and papers, textiles, printings, chemicals and their products, etc. (Yu, 1996).

The right-hand-side panel of Figure 10 presents Taiwan’s investment in China. The solid line (Cases_t) and the light filled column (Approved_t) on the left side of the three-columns group show Taiwan’s data on approved investment to China in nominal value. We also show the approved investment in real value on the right-hand side of Figure 9. The rather irregular trend of investment in China probably reflects the unpredictable political relation between the two countries, and the large bumps in both the amount approved and the cases in 1993 and 1997 are the results of passing two new laws that set the deadline for Taiwanese firms to register their China investment or face fines (Morrison and Cooper, 1999, 125; Ishida, 1999, 158).

Aside from these two years, Figure 9 indicates that Taiwanese investment in China has been not only increasing alarmingly, but also becoming so large that it consists of almost one-third to more than one-half of the Taiwan’s total outward investment in recent years (see the marked line in the right-hand-side panel, which is measured on the right Y-axis). In fact, the outward investment to China from 1991 to 1999, the period for which Taiwan government has data, consist of 44% of total outward investment from 1991 to 1999. It is more alarming in terms of cases: the approved cases for investment in China from 1991 to 1999 is whopping 83% of the accumulated cases, which was 26,687 cases. More and more small- and-medium sized enterprises in Taiwan are investing in China, and there is a sign that larger enterprises are following suit. Most of the projects went to South China, in the categories of electronic and electric appliances, food and beverage processing, basic metals and metal products, and plastic products, etc. (TSDB, 2000, 264-265). It all started from low-end labor-intensive industries. However, in recent years, more and more capital intensive and high technology industries also move to China. For national security
reasons, the Taiwan government has tried to limit and regulate China investment and to promote the “Southward Policy,” that is, to invest in Southeast Asia.\textsuperscript{87} Even so, in 1999, investment in China still amounted to 28\% (US$ 1.3 billion, 499 cases) of the total outward investment that year.

To show the discrepancies in collecting the data, we also illustrate the Chinese data\textsuperscript{88} on Taiwanese investment in China. The middle empty columns (Contracted\_c) show the contracted investment, which is far larger than the actual investment (Actual\_c in filled dark columns), indicating the potential problem of using “approved” investment statistics of Taiwan. The dotted line (Cases\_c) shows the Chinese data on the (contracted?) cases. The Chinese data may be 1.2 times (1993) to 24 times (1992) greater than the Taiwanese data.\textsuperscript{89} It is not clear why the Chinese data also have a large bump in 1993 and 1997, as the new Taiwanese laws should not affect Chinese statistics. This may cast the reliability problem of Chinese data.

\section*{VII. Taiwan and the Global Economy in the 21st Century}

During the past 100 years, the Taiwanese economy has followed the classical case of development: It developed from the traditional feudal society to modern agricultural development. It went through the typical stages of exports of agricultural and processed goods, and then industrial development through the phases of import substitution, export promotion, and high-tech industrialization.

One of the popular views about Taiwanese economic development is that it started after the war "from a state of extreme poverty and political and social backwardness" (Lai, et. al., 1991, 1), implying that Taiwan's economic success is a case of the "rags to riches" dream in less than forty years. Even a chapter of a book is devoted to this title and theme (Chan and Clark, 1992). Similar views are abundant among many economists. However, according to Maddison’s data (1995), the real GDP per capita of Taiwan measured in 1990 Geary-Khamis dollars reached the prewar highest level of $1,522 in 1942, and then plummeted to $693 in 1944, a year before the end of WWII. According to Maddison’s data, the figure in 1944 was well below\textsuperscript{90} the real GDP per capita in 1904 and 1905 ($712). The change can be perceived roughly from Figure 11, which shows the ten-year moving average of real GDP per capita in 1990 Geary-Khamis dollars for Taiwan, South Korea, and some OECD countries in the logarithmic scale. Apparently, here are the "rags," as the Taiwanese standard of living plunged below its 1904 level! Even in 1952, the real GDP per capita ($1,020) is only comparable to that of 1924 ($1,034). The early postwar poverty, slow recovery, and the deprivation of the Taiwanese were the results of the civil war in China carrying over by the Chinese to Taiwan. It is not a consequence of colonialism. It was a temporary setback for the long-run economic development,\textsuperscript{91} which started in 1895 up to the early 1940s, and was interrupted for more than two decades and then continued only after the mid-1960s.
As we have elaborated in this paper and elsewhere, it is simply unreasonable, if not wrong, to ignore prewar development and consider only the “miracle” of postwar Taiwanese economic development. In fact, according to the same Maddison’s data, Taiwanese real GDP per capita growth rate (1.97%) ranked 3rd or 4th in the world during the prewar period, following Japan (2.64%) and Korea (2.03%), and almost tied with that of Norway (1.98%), as can be seen from the slope of the curves in Figure 11. By the early 1940s, its real GDP per capita level was higher than other Asian countries, except Japan92 and Korea (Figure 2). In fact, the “Taiwan miracle” already started in the prewar period (Hsiao and Hsiao, 2000b). Due to an influx of the Chinese refugees, government mismanagement of the economy, and wartime mobilization to fight against the Chinese communists, the Taiwanese real GDP per capita recovered to the prewar peak only in 1963 (at $1,612).93

After the transition period, the economy took off to steady growth in the mid-1960s. It grew faster than any country in Asia including Japan, and even faster (the lines are steeper) than all of the advanced countries in the postwar period (Hsiao and Hsiao, 2000a; 2000b). Although, compared with Japan, its real GDP per capita decreased after the war until 1970, Taiwan started to catch up with Japan after 1970 (ibid). In terms of real GDP per capita, as shown in Figure 11, Australia and Canada, some of the former British colonies, already caught up with the United Kingdom by 1990. Likewise, by 1990, in terms of nominal GNP per capita, Taiwan came very close to Spain and Portugal, its former colonial powers. Eventually, Taiwan (at US$ 12,333, TSDB, 2000, 332) surpassed Portugal (US$ 10,690) and came very close to Spain ($14,080) in 1998 (World Bank, 2000, 231). If Taiwan continues its current track of progress, it is not inconceivable that Taiwan may even surpass the Netherlands and Japan.94

A. Competitiveness Indexes

After the 1997-1999 Asian financial crisis, we are reasonably optimistic about the future of Taiwan. Figures 12 and 13 show its international competitiveness in global economy as evaluated by two international organizations: the World Economic Forum (WEF) and the International Institute for Management Development (IMD). WEF defines national competitiveness as the capability of maintaining high economic growth rate of a nation for the coming five to ten years. As shown in the lower row of the X-axis of Figure 12, it consists of 179 variables (in 1998), which are classified into eight categories. They are then weighted to derive the national competitiveness index and ranking (Chang, 1998). In 1999, WEF evaluated 59 major trading countries. Taiwan ranked fourth, superseded only by
Singapore, United States, and Hong Kong. Figure 12 also shows that Japan ranked 14, Korea, 22, and China, 32, out of 59 countries (WEF, 1999, 11). The four columns in each category show the ranking of each index from 1996 (the empty column) to 1999 (the darkest filled column). Taiwan’s competitiveness ranking has been improving consistently since 1996 (from 9th to 8th, to 6th, and to 4th).

Taiwan’s 1999 ranking in the eight categories are Labor, 2nd, Openness, 3rd, Technology, 7th, Government, 8th, Finance, 8th, Management, 15th, Infrastructure, 23rd, and Institution, 26th (ibid.). In response to the financial crisis from 1997 to 1998, Taiwan’s openness improved considerably. So also did its finance sector, to some extent. Among the Asian countries, Taiwan is well-prepared for the next phase of the new economy of information technology (EPA, 2000, 105). Its computer hardware production in 1998 ranked third in the world, next only to the United States and Japan (ibid.). As much as 80% of families in Taiwan own cable TVs, even exceeding that of the United States (ibid). Taiwan’s labor performance is consistently the best among the 59 countries, including work ethic (4th), unemployment insurance (5th), social welfare system (6th), etc. (WEF, 1999, 205). This may be the reason that Taiwan can still attract massive inward foreign direct investment even though its wage rate is higher.

Taiwan’s “Institutions” have the worst performance. According to WEF’s national competitiveness balance sheet (ibid., 205), the culprits are product liability (36th), judiciary independence (36th), organized crime (37th), legal corruption (37th), and litigation costs (41st). Although Taiwan’s “Infrastructure” has been improving during the past years, it still ranked 23rd in 1999, mainly due to the lack of private investment in infrastructure (31st), road indicator (41st), and cellular telephones (42nd). Other liabilities include foreign access to capital markets (56th), government influence (58th), and insider trading (58th).

In addition, the WEF also adds four more aggregate indexes (the last four categories in Figure 12). The “growth index (G)” predicts the average growth rates from year 2000 to 2008 based on the experience of the last eight years. Taiwan faired exceptionally well in this prediction: 4.29%, only second to Singapore, 5.02%, among the 59 active countries in the world. In terms of the “market growth index (MG),” which is the predicted growth rate times the size of the economy to measure each country’s contribution to world economic growth, Taiwan ranked 14th. Instead of the competitive Survey of company CEOs, a new index, the “microeconomic competitive index (MICI),” which measures the microeconomic foundations of economic development, was substituted in 1998. For this, Taiwan ranked 19th in 1999. In general, the most important indexes are competitiveness and growth, both of which Taiwan ranked near the very top.
Taiwan’s rankings in the IMD annual reports are somewhat inferior but still respectable. Like WEF indexes, IMD’s Overall Competitiveness index “ranks nations’ environments and analyzes their ability to provide an environment in which enterprises can compete.” (IMD, 1999, 14). It has 288 variables, which are also grouped into eight Competitiveness Input Factors, as shown in Figure 13. Six categories are similar to those of the WEF, and “Labor” and “Institutions” are substituted by “People” and “Domestic Economy,” respectively. The IMD indexes seem to emphasize competitiveness of firms and so reflect more on short-term conditions of the economy. In the case of Taiwan, most of the indexes worsened during 1996 and 1997, and improved in 1999, which are shown by the darkest filled columns.

In 1999, the IMD evaluated 47 industrialized and emerging countries. The overall competitiveness index for Taiwan in 1999 was 18th, still better than most of the active countries, although lower than Singapore (1st), the Netherlands (5th), Hong Kong (7th), Canada (10th), Australia (12th), Japan (16th), but much higher than all the other ASEAN countries and China (29th) and Korea (38th). Its ranking of the eight categories are Management, 9th, Science and Technology, 10th, Government, 11th, People, 15th, Domestic Economy, 20th, Infrastructure, 21st, Finance, 23rd, and Internationalization 27th. Compared with the WEF rankings, both evaluations agree on high rankings in Technology and Government, a similar ranking in Finance, but quite different in five other categories. IMD also has an extensive list of strength and weakness of items in each category (IMD, 1999, 313). In addition, it has added three new Location Attractiveness Rankings in 1999 to “show which countries are the most attractive for locating or relocating Manufacturing, R&D, and Services and Management activities.” (ibid.) In this, Taiwan ranked 18th overall, which consists of Manufacturing, 9th, R&D, 19th, and Services and Management, 19th (ibid., 311). The high ranking on attractiveness of manufacturing activities again substantiates the recent increase of inward foreign direct investment that we have seen in Figure 8.

B. Economics and Politics with China – Some Concluding Remarks

As we have stated in this paper, geography and history determine the economy and politics, and politics and economics are closely interwoven. Examples are trade frictions, tariff negotiations, regulations on inward and outward foreign investments, or even the gunboat diplomacy of yesteryears. For the future of the Taiwanese economy, however, the most urgent problem it faces today is, unfortunately, the basic problem of nation-building, which other countries already experienced a long time ago, and the ensuing military threat from China for “unification.”
We have seen the tremendous growth of Taiwan’s trade and outward investment in China in the 1990s. Taiwanese firms are the second largest foreign investors in China, next to Hong Kong, in the early 1990s, and are probably the largest investors throughout the 1990s if Taiwanese indirect investment through Hong Kong is considered. The growth and magnitude up to now probably indicate complementarities of economic relations between the two countries. As the world competitiveness indexes have shown, while the future prospects of Taiwan in the global economy have been excellent and bright, they hinge greatly, if not crucially, on Taiwan’s political relations with China. Any discussions of Taiwan in the global economy in the future cannot, and should not, avoid its problem with China. The basic problem is China’s territorial claim on Taiwan and the threat of the use of military forces. But China’s territorial claim is tenuous at best, and that both countries would be benefited by a peaceful resolution of the dispute in a civilized manner.

As we have seen in Sections II and III, while it is true that some Han people from China visited Taiwan and some might have settled there, and there were some sporadic but vague records of Taiwan in old Chinese and Japanese literature, no nation claimed Taiwan as its territory until the early 17th century. Despite its proximity, the Ming Dynasty was relieved and content when the Dutch claimed Taiwan, instead of Pescadores, as its territory in 1624. It was the Dutch and the Spanish who introduced Taiwan to world trade as far away as with Southeast Asia and Europe in the 17th century, a prelude to Taiwan’s global position in the 20th century after WWII. The Dutch were replaced by the Kingdom of Cheng, which continued global trade but imposed a trade ban on China. Taiwan then came under the Ch’ing regime after 1683, and became a formal Chinese province only in 1886. The history certainly belies the Chinese claim today that “Taiwan has been ‘an inalienable part of China since ancient times dating back

Ch’ing ruled Taiwan with disinterest and inefficiency. It considered that “Taiwan is a trifling place - taking it would add nothing, relinquishing it would not be a loss.” It ruled Taiwan loosely and its power had never extended to the vast mountainous region of Taiwan. The Japanese saw the strategic position of Taiwan. Thus, Taiwan was ceded to Japan in the 1895 Treaty of Simonoseki after the first Sino-Japanese War. Note that Taiwan was certainly not “stolen from China,” as was claimed in the 1943 “Cairo Declaration.” During the Chinese resistance against the Japanese invasion of China in the 1930s and early 1940s, the Chinese Communist Party and the KMT Government in China was aware of the treaty, and fully supported the independence of “the Taiwanese nationality,” along with the Koreans, before WWII (Hsiao and Sullivan, 1979). The 1928 and 1931 Political Theses of the Taiwanese Communist Party also proclaimed the “national liberation movement” and Taiwan independence, which were supported by the USSR’s Comintern (Communist International), the Japanese Communist Party, and the Chinese Community Party (Hsiao and Sullivan, 1983).
Only after 1943, however, the KMT, and subsequently the People’s Republic of China in 1949, has asserted that Taiwan be “returned” to China in accordance with the “Cairo Declaration” (ibid., 1979). The fact is, the “Cairo Declaration” was merely a news release of the United States Government that was not signed by any Allied leaders, and as such it does not provide the international legal base of the Chinese claim. The peace treaties between Japan and the Allies (1951), and even between Japan and the Republic of China (1952), which formally ended WWII, also did not specify the legal status of Taiwan. Since the People’s Republic of China (PRC) has never governed Taiwan even for one moment, and since Taiwan has its own effective territory, government, army, and the people, Taiwan has never been an integral part of PRC, quite contrary to the Chinese claim. In fact, as we have seen in this paper, Taiwan has thrived when Taiwan was, and is, politically independent from China.

Historical facts aside, it is anachronistic and unacceptable to claim territory by foolishly contending ancestral kinship and geographical proximity. Cooperation or unification between Taiwan and China, if there is any, must be based on the consensus of the people of Taiwan through peaceful and civilized negotiations between the two countries, not by finger wagging or bullying and the threat of force. As we have shown in this paper, while Taiwan may be small in terms of its land mass and population compared with those of China, it is large in many other respects, including its per capita and aggregate GNP, trading prowess, foreign exchange reserves, inward and outward foreign investments, and its national competitiveness, especially in the new-economy fields of information technology. The win-win situation for both Taiwan and China can be achieved only when China recognizes Taiwan as an independent country, which is exemplary for China to achieve its own economic and political miracles in the new century. Whereas for China, as we have just seen above, this recognition is not unprecedented, it will tremendously enhance the position of Taiwan and China in the global economy and politics.

Appendix: Export Promotion Policy May Not Be Sustainable.

The general theme on the literature of Taiwanese economic development is that export-oriented policy works (for an example, see the latest papers in Thorbecke and Wan, 1999). This is not at all true, although the notion is so popular that many economists take it for granted. Here is a simple counter-example. Let the national income model be

\[ Y = C + I + G + (X - M). \]  

where, as usual, \( Y \) is national income, \( C \), consumption, \( I \), investment, \( G \), government expenditure, \( X \), exports, \( M \), imports. Let’s assume the simplest economic behavior:

\[ S = Y - C = sY, \quad I = K', \quad S = I, \quad X' = gX, \quad M = mY, \quad N' = nN, \quad \text{and} \quad Y = AK^aN^{1-a}, \]

where \( S \) is savings, \( K \) is capital, \( N \) is population, \( X' = dX/dt \), etc., and \( s, g, m, \) and \( n \) are positive constants. Then, the model reduces to per capita magnitude as

\[ k' = (s + m)Ak^a - gh e^{\theta-nX} - nk \]
where $k \equiv K/N$, $h \equiv X(0)/N(0)$.

This is Solow’s fundamental equation of economic growth if $g = m = 0$. It shows that, when $t$ is sufficiently large, per capita capital decreases if the growth rate of exports, $g$, is larger than the growth rate of population, $n$ ($g > n$). This condition is satisfied in most of the developing countries, and certainly is the case for Taiwan, Korea, and Japan. Furthermore,

$$\frac{\partial k'}{\partial g} = -hg^{2}e^{(g-n)t} < 0.$$  

Thus, increase in the growth rate of exports ($g$) will decrease capital accumulation at any moment of time. Hence, in this model, export-oriented policy results in decumulation of per capita capital, quoad hoc, decrease in per capita GDP. It is by no means a “common sense” that exports necessarily promote growth.

After all, if that is indeed the case, every country may just do so to achieve economic development. In fact, in the late 1970s, OECD (1979) designated ten Newly Industrializing Countries (NICs) as the fast export expanding countries. In less than two decades, only the four Asian NICs have remained. There is nothing “fortunate” or “wise” about government policy changes in Taiwan (and Korea) in achieving rapid growth. Their economies may decline also.
FOOTNOTES

*We are indebted to Professors Teruo Asamoto, Shinichi Ichimura, Hiroshi Ishida, Chung H. Lee, Ts‘ui-jung Liu, Yuzin Chiautong Ng, Eric D. Ramstetter, Jaw-yann Twu (Muraoka), Henry Wan, Jr., Wen-hsing Wu for generous sharing of their publications at various stages of writing this paper. Our special thanks go to Mr. Pao-Jui Chen for rushing a copy of new TSDB 2000, to Professor Hiroshi Setooka for sending valuable new data, and to Professor John P. Powelson for comments and making the paper more readable. We also appreciate the editor, Professor Peter C. Y. Chow, for his successful conference arrangement, patience, and encouragement. All errors of omission and commission are ours.

1 The distance is mainly taken from a website, “How far is it” http://indo.com/distance/. The original map was taken from Yano, 1990, 685. Also see Klintworth, 1995, 9. Ohsono (1998, 151) uses a similar diagram to show Hong Kong to be the center of East Asia.

2 Duan, 1989, 313. No sources of data are given. Note that this is a Chinese text, which generally say nothing good about Taiwan.

3 Underwood, 1999, 22. Source: Institute for Information Industries, Market Intelligence Center, Taiwan. “Taiwan IT companies produced more than US$19 billion in hardware products in 1998. Adding offshore production, the total reached US$32 billion, an increase of 8.4 percent over 1997.” (ibid.)

4 There are several suggestions on classification. See Su, 1980, 16-17.

5 Wu, 1958, 5. Most politically oriented Chinese adopt this point of view. For details, see Su (1980), 20-35.


7 Figure 2 is an extension and refinement of Figure 1 in Klintworth, 1995, 4. We use a solid line to denote the separation of the two countries, and a dotted line to show weak relations between Taiwan and China. Figure 2 reinforces the false of the Chinese claim that “Taiwan was part of ‘the sacred territory of China since ancient times’” as quoted in Klintworth, 1995, 5.

8 The Dutch gained independence from Spain and established The Republic of Holland in 1579. They “allied themselves with England… in an attempt to wrest hegemony over the European seas from Portugal and Spain, … and sent warships to … the Asian seas, occupying and plundering colonies.” “For this purpose, the Dutch monarch established the Dutch East India Company in 1602. … and … establish(ed) a permanent residence in Batavia …” (Su, 1986, 11).

9 It seems that the description about the events leading to the Dutch occupation of Taiwan is clearer in Su (1980, 58) than that in Vertente (1991, 58 or 74). Su wrote that after eight months of bloody battle with the Dutch, the Ming government agreed on two conditions for peace. If the Dutch retreat from Pescadores, which China considered its territory, the Ming will not interfere Dutch’s occupation of Taiwan, and that the trade with China could be tacitly tolerated. In discussing why the Dutch came to the southern Taiwan instead of the northern part, Ang (1999, 58) did not mention the agreement specifically.

10 Actually, an official peace treaty between Cheng and the Dutch was signed on February 1, 1662 (ibid., 104).

11 According to Hsu (2000), during a period of 212 years from 1683 to 1895, there were 107 rebellions against the Ch‘ing government and at least 51 armed conflicts among the local ethnic groups. The Taiwanese were not known to be submissive to the government authorities.

12 Article II of The Treaty of Peace between Japan and China in 1895 states that “China cedes to Japan in perpetuity and full sovereignty … the island of Formosa, together with all the islands appertaining or belonging to said island of Formosa. …” (Cohen and Teng, 1990, 103). However, in the so called “Cairo Declaration.” November 22-26, 1943, attended by Roosevelt, Churchill, and Chiang, stated that “It is their purpose that … all the territories Japan has stolen from the Chinese, such as Manchuria, Formosa, and the Pescadores, shall be restored to the Republic of China. …” The word “stolen” is a wartime language, which does not reflect the fact. Furthermore, it is worth noting that the “Cairo Declaration” is merely a news release or bulletin of the State Department of the United States and was NOT signed by any of the attending heads of the state. Thus it does not have any legal binding. For a latest discussion, see Chiang (2000).
Vertente, et al., 1991, 154-156. It was the first republic in Asia. For details, see the doctoral thesis by Ng, 1970, and also the Ph.D. thesis by Huang, 1987.


In 1930, when Japan started exploiting mountain resources, the aborigines revolted against the Japanese (the Wushe Incident). It was savagely suppressed, and new policy for the mountain regions and aborigines was put in effect. Vertente, et al., 1991, 159. We submit that the incident was significant for Taiwan’s national “unification.” The fact belies the Chinese claim that “whole” Taiwan was part of China, as the local Chinese government never ruled the mountainous regions of Taiwan even during the Ch’ing period.


The following three sections on the Dutch, Cheng, and Ch’ing periods are taken partly from Hsiao and Hsiao, 1999, 481-489.

Nakayama, 1959, 25; Su, 1980, 77-78. In a 1554 map by Portuguese, Taiwan was called Ilha Formosa (Chang, 1996, 60).

1 dan = 1 hectoliter.

For a specific aspect of globalization of Taiwanese trade through an English company during this period, see Huang (1999).

The Chinese merchants by and large out competed Western traders because of their familiarity with local conditions, their ability to dispense with additional middlemen and their satisfactions with a relatively small profit margin.” (Hao, 1986, 346). The relation and relative influence of local and foreign capital are still unclear, and more research is called for.

Commercial Revolution in the Middle Ages in Europe occurred in the period 950-1350 (Lopez, 1971), that in England, “from the English Restoration to American Independence,” 1660-1776 (Davis, 1967, 3-4), and in China “along the coast from the 1820s to 1883 (Hao, 1986, 338).


From the Marxists points of view, this process is important in the development of capitalism, see USSR, 1955, Vol. I, 87-88; Vol. II, Chapter 12, “Commerce, credit, and Money Circulation.

Twu, 1975, 381. However, there are some conflicting observations on the Taiwanese economy before 1895. Yanaihara observed that until the very end of the Ch’ing period in Taiwan, “no single modern bank, modern corporation, modern factory existed...... All the establishments of capitalist enterprises in Taiwan came only after Japanese occupation” (Yanaihara, 1929, 55). More research is needed.

The Taiwanese Communist Party observed this point in 1928 on the development of Taiwanese capitalism. For detail, see Hsiao and Sullivan, 1983, 278.

This is also the argument presented in the 1928 Political Thesis of the short-lived Taiwanese Communist Party (1928-1931). For references, see Hsiao and Sullivan, 1983. We adopted their line of arguments for different reasons. The thesis is influenced by the political and economic principles of the Japanese Communist Party in the 1920s along the line of the Marx theory of capitalism, which emphasizes the internal (like domestic saving), rather than the external (like commercial), factors of capital accumulation. In Japan, it is known as the Ohtsuka Proposition (Ohtsuka Shigaku), (Kakuyama, 1980, 22-23), and was propagated in early post-war Taiwan by Chang, 1974.

Economic development under the Japanese regime may be divided into five periods (Hsiao and Hsiao, 1998: 1996, 215-221): The initial period (1895-1905); the intermediate period (1905-1931); the quasi-war-stage (1931-1937), which covers the period from the Manchurian Incident to the beginning of the Sino-Japanese War; the first war-stage (July 1937 - 1941), which covers the Sino-Japanese War and the beginning of World War II; and the second war-stage (1942-1945), which covers World War II until the end of the war. The first two periods are based on the classification of Sumiya, et al., (1992, Chapter 1), and are rather well documented. The last three periods are given in Kusui (1944) and correspond to the period of Japanese militarism.

Calculated from Table 1a in Hsiao and Hsiao, 1999a, 495. The existence of small-and-medium size manufacturing enterprises in Taiwan is not at all a postwar phenomenon.
Mizoguchi and Yamamoto (1984) counted that Taiwanese millers consisted of 94% in 1929 and 93% in 1939. Note that, in colonial Korea, unlike Taiwan, the Japanese dominated the rice milling business in 1939 (ibid). We submit that this is the origin of the postwar Taiwanese small-and-medium enterprises (Hsiao and Hsiao, 1999a).

Japanese studies and research on Taiwan started long before their occupation (Wu, 1995), followed by intensive “explorations” immediately after the occupation (Wu, 1997).

The sources of data are not given. We think it is taken form TEY41, 120-124.

From Ping, 1947, 76, which is taken from 1944 Taiwan agricultural Yearbook. Note that the value of total agricultural products includes 9.7% of hog and 2.4% of chicken.

Note that this is different from the comparison of per farm family disposable income (ibid.). Hayami and Ruttan (1970) argues that in Japan, there was a rapid growth in agricultural output and productivity from 1886 to 1920, followed by a much slower growth in the 1920s and 1930s, due to the rice imports from Taiwan and Korea, and decline in technological progress.

In addition to the 8 countries in Table 3, add Korea (3.6 million tons in 1937, YS43, 103). According to YS43, 101, Taiwan's rice production in 1937 was 1.8 million tons, and that of world production was 93.8 million tons. Hence, Taiwan's share was 1.9% of the world production.

In 1940, Taiwan comprised an area of about 0.02% of the world area, and 0.27% (5.7 million) of the world population (Hsiao, 1997, 498). In other data, on average from 1937 to 1940, the percentage of Taiwan’s rice production ranges up to 1.9% of the world rice production (93 million tons), ranked ninth in the world. See YS43, 101.

No data are available for two other major producers, India and Ecuador, see Y91, 206. Thus Taiwan might be either 4th or 5th during 1934-38.

It has been said that industrialization in colonial Taiwan was not so much financed by the large capitalists from Japan proper, but much more by the local saving in Taiwan. TEY41, 81; Ho, 1979, 84.

Kusui, 1944, 157; also see Sumiya, et al., 1992, 21. In real terms, they came very close to each other (NT$ 435 million vs. NTS 412 million) in that year. The proportion for the three industries, agriculture, manufacturing, and services, in real terms were 33%, 31%, and 36%, respectively, in 1939. Wu, 1995, 635.

Kusui, 1944, 287, and various literature published at that Time. The Taiwanese (and the Japanese) activities in Southeast Asia are coming out only recently, see Schneider, 2000. As much as we oppose Chinese military threat on Taiwan, we do not condone any aggression of war. However, the historical facts about Taiwanese activities in the past should not be buried and unrecognized. Just like the Japanese, the Taiwanese have learned that military aggression does not pay. Both learned in the postwar period that without resorting to force, both countries and all people in South China and South Seas can achieve “co-prosperity” by trading, a lesson for China today.

This section is mainly based on Hsiao and Hsiao, 1996, 262-268.


Using these points the Chinese economists tend to “miniaturize” the economic and social development in Taiwan during the Japanese period, see e.g., Chang, 1980, 112, 255; Chou, 1958.

Economists often ignore these points. Other customs and habits include the ban of foot binding for women, pigtail hair dressing for man, cleanliness, and maintenance of private and public hygiene (Wu, 1999). The last change includes “ventilation and lighting of a house, building of a lavatory inside the house, … the habits of bathing, washing hands after relieving, a waste basket and waste disposal arrangement for every house, spittoons and garbage cans in public places, … set a certain date for house cleanings and village cleanings, etc.” See Wu, 1999, 6. Also,
The ban inflicted serious damage to Taiwanese exports and its national economy. As Tokyo also could not wage a trade war simultaneously with the U.S. and the EEC, both sides reached a compromise and the ban on half of the goods were lifted by November that year. For details, see Arnold, 194-196; Aoki, 157.

The following episode is illuminating. In February 1982, to reduce US$ 3.2 billion trade deficits with Japan, Taiwan surprised the world by unilaterally banning imports from Japan more than 1,500 commodities for an indefinite time, and surprised the world by unilaterally banning imports from Japan more than 1,500 commodities for an indefinite time, and.

The calculation of Figure 7 is the same as Figures 5 and 6. Balance of trade (BOT) is commodity exports X (in heavy solid line) minus commodity imports M (in lighter solid line) in Figure 7.

The following episode is illuminating. In February 1982, to reduce US$ 3.2 billion trade deficits with Japan, Taiwan surprised the world by unilaterally banning imports from Japan more than 1,500 commodities for an indefinite time, and heavy trucks and diesel engines for one year. Tokyo threatened to cancel Taiwan's preferential tariff and trade status. The ban inflicted serious damage to Taiwanese exports and its national economy. As Tokyo also could not wage a trade war simultaneously with the U.S. and the EEC, both sides reached a compromise and the ban on half of the goods were lifted by November that year. For details, see Arnold, 194-196; Aoki, 157.

The calculation of Figure 7 is the same as Figures 5 and 6. Balance of trade (BOT) is commodity exports X (in heavy solid line) minus commodity imports M (in lighter solid line) in Figure 7.

The following episode is illuminating. In February 1982, to reduce US$ 3.2 billion trade deficits with Japan, Taiwan surprised the world by unilaterally banning imports from Japan more than 1,500 commodities for an indefinite time, and heavy trucks and diesel engines for one year. Tokyo threatened to cancel Taiwan's preferential tariff and trade status. The ban inflicted serious damage to Taiwanese exports and its national economy. As Tokyo also could not wage a trade war simultaneously with the U.S. and the EEC, both sides reached a compromise and the ban on half of the goods were lifted by November that year. For details, see Arnold, 194-196; Aoki, 157.
In addition to marketing, Sogo Shosha also helps in financing, foreign exchanges, organizing, and consulting (Steven, 1990, 70). There seems no study of their actual operations in Taiwan.

According to a survey, barriers to exporting are cultural, language difference, special customs requirements, market information (particular markets, availability, usefulness, awareness), product design and specification requirements, government policy, etc. Brooks and Frances, 1991, 102.

A Taiwanese president, 46, of a sewing machine company stated that “About forty years ago, Singer set up an affiliate in Taichung. This firm encouraged and helped the local people to build factories to produce sewing-machine parts. In 1972, I started to run this business ... Techniques from Japan and a bunch of brave young people are what made Taichung the sewing-machine capital of Taiwan. Although our technology ... originated in Japan, we’re now totally independent of it, thanks to our own R&D.” Interview by Hwang, et al., 1998, 30.

This subsection is partly based on Hsiao and Hsiao, 1996, 269-272.

China’s unequal treaties ended only in 1943, and Chiang Kai-shek published China’s Destiny "to show the harm they had done to China." (Fairbank, 1967, 62).

We reasoned that this was because the émigré regime of the Republic of China on Taiwan had no roots in Taiwan and wanted to break its isolationism internationally and domestically.

that is, all data are divided by Taiwan's WPI with 1986's wholesale price being taken as 100 (TSDB, 2000, 179, 258, 260).

Investment Commission (2000), April. We suspect that these so called DFI may be Chinese (mainland) capital registered in Central America, and pose a grave security problem for Taiwan.

In terms of nominal values, the maximum amount was reached two years earlier, in 1997, at US$ 4.27 billion (TSDB, 2000, 258).

In real value of 1986 price, the total amount of FDI comes to US$40 billion.

We have examined the effect of DFI on technology transfer, DFI and Taiwan’s television industry in Hsiao and Hsiao, 1996, 273-276, and Hsiao, M. 1992.

In a previous paper (Hsiao, M., 1992, 151), it is shown that, using the 1967 to 1987 data set, when the real growth rate of DFI increases by 1%, it may generate a 0.11% increase in the growth rate of Taiwan's GDP.

For the acceleration of economic and political liberalization after the lifting of martial law in 1987, see Hsiao and Hsiao (2000).

However, according to Se and Asamoto (1999, 175) if outward investment is measure from balanced of payment statistics instead of the approval base, outward investment already exceeded inward foreign investment every year since 1988. For the relation between inward and outward investment using Investment-Development Path analysis for Taiwan, see Van Hoesel (1996) and Se and Asamoto (1999).

The total outward investment for 1952 to 1999 was US$ 21,879 million (TSDB, 2000, 262), and that for 1965 to 1999 was US$ 21,872 million, a difference of about US$ 7 million, which account for the outward investment from 1952 to 1964.

In real value, it is US$ 22.4 billion. The difference is almost negligible.

According to the “Principal Statistics of Approved Direct Mainland Investment via Third Countries,” the total investment in China from 1991 to 1999 is US$ 14.5 billion, 22,134 cases (TSDB, 2000, 264). The difference in the number of cases seems to indicate that, for political and security reasons, most of Taiwan’s private large investment go through the third countries in British Territories or Hong Kong. Ishida, 1999, 169.

Ishida, 1999, 139-140, and Morrison and Cooper, 1999. Yu (1996) divides the trade and investment relationship between Taiwan and China in four periods, the frozen period (1949-1978), the defrosting period (1979-1987), the warming-up period (1988-191995), and period after 1996. The Chinese data in Morrison and Cooper are based on those “supplied by the Chinese Embassy, Washington, D.C.” and the Taiwanese data are from “Taiwan Ministry of Economic Affairs.” We have tried to identify the data from published sources.

There are some discrepancies in trade data and we are unable to make more useful analysis.


Morrison and Cooper (1999, 125), listed up to 1995. We extended the data to 1997 by TSDB, 2000, 264. Both data are also the same as Ishida’s (1999, 158), which is taken from Monthly Economic Statistics of Both Sides of Strait, ibid.

Indeed, history repeats for Taiwan. The problem with Taiwan today is that it has no institutes like Research Institute of People and Culture of the South (Nanpo Jinbun Kenkyujo), which belonged directly to the Governor-General of Taiwan to study Southeast Asia during the Japanese period.

Morrison and Cooper, 1999, 124, Ishida, 1999, 158. Both data sets are consistent.
The Taiwanese data tend to understate as firms may be reluctant to register to avoid government control, and the Chinese data tend to overstate as some foreign firms may register under a Taiwanese name to take advantage of the preferential treatment afforded to the Taiwanese firms in China. Morrison and Cooper, 1999, 120.

Wu (1991) presents the real GDP per capita in New Taiwan dollars from 1920 to 1971, as measured in 1937 prices (Wu, 1991). It increased from NT$ 142 in 1920 to NT$ 213 in 1931, and reached the prewar maximum of NT$ 225 in 1939. It then started decreasing and plummeted to a mere NT$ 45 in 1945. The recovery was very slow. Wu’s data also show that until the mid-1950s, it dipped even below the 1920 level. It recovered to a mere 56% of the prewar level in 1952, still way below the 1920 level.

Using the Perron tests of time-series analysis, we have shown that the plunge of GDP per capita in 1944 was indeed temporary, Hsiao and Hsiao, 1999b.

This is corroborated by actual observations at that time. In a report to the United States Congress, Conlon Associates (1959, p. 139) wrote that “Taiwan did not enter the post war era without advantages. Progress under Japan had been extensive. Prior to World War II, the Taiwanese had a standard of living second only to that of Japan itself in Asian. The people had acquired many industrial and agrarian skills. The years immediately after 1945, however, were years of chaos.”

For the early postwar economic conditions of Taiwan, see Hsiao and Hsiao, 1999, 1998.

We have discussed this in Hsiao and Hsiao, 1998, 1999b.

In fact, we have pointed out that the true “miracle” is that Taiwan achieved rapid economic growth without government protection in foreign economic relations. Hsiao and Hsiao, 1996, 288. Ichimura (1995) discusses economics and politics of Japan extensively. His discussions and suggestions for Japan also apply to Taiwan.

EPA, 2000, 142. In 1998 and 1999, Taiwanese investment in China was exceeded by Hong Kong and the United States, and almost the same, or slightly less than, Japanese investment in China.

In keeping with “One Country, One Party” principle, Comintern recognition, as well as the Chinese and the Japanese Communist Parties’ acceptance, of the “Taiwanese Communist Party” “as an independent communist party in 1931 also provided tacit backing for Taiwan’s eventual political autonomy from China.” Hsiao and Sullivan (1984, 286).

Kintworth (1995, 14) observed that “Taiwan has been under the effective administrative control of a government in Beijing for no more than one of two decades in the last several centuries. Taiwan was China’s for a few years in the 1660s and from 1887 to 1891. For most of the rest of its time in modern history, Taiwan was controlled by the Dutch, the Japanese, or the Americans, or largely neglected by the mainland Chinese.” By the Chinese logic, since China was once a part of the Mongol Empire for 90 years (1279-1368), China should be “inalienable integral part” of the Mongolian People’s Republic.

Kintworth, 1995, 8. Taiwan has been “lucky” by not falling into the fate of China’s Hainan Island in the past 100 years (Ibid., 55; Hsiao, 1987; Hsiao, 1997, 507. Footnote 36). “Agricultural Taiwan, Industrial China” was the future plan for Taiwan by the Nanking Nationalist (KMT) Government in 1946 (Hsiao, 1997, 507; also see Kirby, 1995).

Even China’s “leading scholar” on Taiwan, Li Jiaquan (the former Director of Institute of Taiwan Studies, Chinese Academy of Social Sciences) holds such a view, unable to give one good reason of unification. See the quotation in Kintworth (1995, 265). If “Socialist Theory of Market” is China’s “philosophy of poverty,” the dogma of territorial claim is the telltale of China’s “poverty of philosophy.” Its poverty was just recently demonstrated again fully in Wei (2000), in a vivid contrast to Chiang (2000), the leading article in the same issue of the journal. It is not coincident that China has to resort to force.

This may be a dream, but so were the collapse of the “Great East Asia Co-Prosperity Sphere,” German Nazi, the Soviet Union, and democratization of Taiwan during our life time. If Taiwanese are persistent, the dream will come true. The first sign of thawing and the test of civility should come by China’s blessing of Taiwan’s membership in
the United Nations. When the day comes, its impact on the world economy and politics will far exceed the unification of the two Germanys or the two Koreas.

105 Just consider the fact that, in 1998, the foreign exchange reserves for Japan was US$ 212 billion, China, 141.1 billion, Hong Kong, 88.4 billion, and Taiwan, 84.4 billion, ranking 1st to 4th in Asia (Taiwan Briefs, 1999, 14). Twu (1997, 168) observes that “Taiwanese money” is the reason China wants “unification” with Taiwan under the cover of fanatic Chinese nationalism, and warned that it might rekindle the fear of “yellow peril” in the region.
REFERENCES

STATISTICAL DATA SOURCES:

Fifty-one Year Statistical Summary of Taiwan Province (SS51) (Taiwan Sheng-51 Nianlai Tongji Tiyao), Statistics Department of Taiwan Province Governor-General, December, 1946.


Taiwan Economic Yearbook (TEY4x) (Taiwan Keizai Nempo), Vol. x, 194x (x denotes the year of publication). Taipei: Taiwan Keizai Kankokai.


Yano, K., & Shirazaki, K., Illustration of Japanese National Achievements (YSxx) (Nihon Kokusei Chosa), yearly since 1927 (xx denotes the year of publication).

ARTICLES:


Cohen, Mark J. and Emma Teng (1990), *Let Taiwan be Taiwan, Documents on the International Status of Taiwan*, Washington, D.C.: Center for Taiwan International Relations.


The Taiwanese Experience and Its Implication to China,” (in Chinese), in Proceedings of the Second International Conference on the Future of Taiwan, Xiamen, China, August 1985, edited by Huan-qui Quo and Fu-san Zhao, cosponsored by the Institute of Taiwan Studies, Chinese Academy of Social Sciences, Simon Fraser University, and Institute of Taiwan Studies, Xiamen University. Beijing: China Friendship (Yue-yi) Publication Co., 1987. 69-118.


Huang, Fu-san and Ka-im Ang (1999), Taiwanese Commercial Traditions, Collected Papers (Taiwan Shangyeh Chuangtong Lunwenji), the Preparatory Office of the Institute of Taiwanese History, Academia Sinica. Taipei, Taiwan.


Huang, Hsiu-zheng (1987), Secession of Taiwan and 1895 Resistance against Japanese, Ph.D. Thesis, Institute of History, National Taiwan Normal University, Taipei.


International Institute for Management Development (IMD) (1999), The World Competitiveness Yearbook, Lausanne, Switzerland.


------- (1999), The Structure of Taiwan Economy and Its Dynamics (Taiwan Keizai no Kozo to Tenkai), Tokyo: Ohtsuki Shoten.


Kawano, Shigeto (1968), Taiwan's Rice Economy, 1941, translated into Chinese by Ying-yen Lin, Taiwan Studies No. 102, 1968. Taipei, Taiwan: The Bank of Taiwan.


Kusui, Ryozo (1944), A Study of The War-time Taiwanese Economy (Taiwan Senji Keizairon), Taihoku: Nampo Jimbun Kenkyujo.

----- (1941), “Problems in Taiwan’s Industrialization” (Taiwan Kogyka no Shomondai), Chapter 3 in TEY41.


Nakayama, T., (1959), “Taiwan's Buckskin Production and Its Exports to Japan in the 17th Century,” (translated into Chinese), Volumes on Taiwan Studies, no. 71. Taipei: Bank of Taiwan.

Nampokensha (1943?), Military Songs for Young Cherry Flowers (Wakasakura Gunkashu), Nampokensha: Taipei, Taiwan.


Nikkei, Nikei Sangyo Sinbun (Japan Economic and Industry Daily), various issues.

Oh, Iku-toku (1970), Taiwan, Its History in Agony (Taiwan, Kumon suru sono Rekishi), Tokyo: Kobunsha.


Organization for Economic Cooperation and Development (OECD) (1979), The Impact of the Newly Industrializing Countries, on Production and Trade in Manufactures, Report by the Secretary-General. Paris: OECD.


Shinhara, Miyohei, and Shigeru Ichikawa (1972), Taiwanese Economic growth (Taiwan no Keizai Seicho), Tokyo: Aziya Keizai Kenkyuyo.


Su Bing (1980), *400-Year History of The Taiwanese People* (Taiwanren Subai-nien-shi), Paradise Culture Associates, San Jose, California.


-------- (1997), *Hong Kong, Taiwan, and Greater China, Arrival of the New Century of Three China?* Tokyo: Jiji Tsushin Sha.


Vertente, Christine, Hsueh-chi Hsu, and Mi-cha Wu (1991), The Authentic Story of Taiwan, An Illustrated History, based on Ancient Maps, Manuscripts and Prints. Knokke, Belgium: Mappamundi Publishers, and also Taipei Taiwan: S.M.C. Publishing Inc.


Wu, Chuang-da (1958), Development of Taiwan (Taiwan de Kaihua), in Chinese. Ke-Hsueh Publisher: Peking.


Yano, Tooru (1990), A Cyclopedia of Asia/Pacific, New Regionalism and the Role of Japan (Jiten, Azia Taiheiyo--Atarashii Chiekozoh to Nihon no Yakuwari), Tokyo: Chuou Keizai Sha.


<table>
<thead>
<tr>
<th>Unit</th>
<th>Area 1000 km²</th>
<th>Pop millions</th>
<th>Pop Density person/km²</th>
<th>GDP US$ billion</th>
<th>GNP per capita US$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country</strong></td>
<td><strong>1995 Rkg %tle</strong></td>
<td><strong>mid-95 Rkg %tle</strong></td>
<td><strong>1995 Rkg %tle</strong></td>
<td><strong>1995 Rkg %tle</strong></td>
<td><strong>1995 Rkg %tle</strong></td>
</tr>
<tr>
<td>Taiwan</td>
<td>36 113 16</td>
<td>21 39 71</td>
<td>589 4 97</td>
<td>260 19 86</td>
<td>12,396 25 81</td>
</tr>
<tr>
<td>Singapore</td>
<td>1 133 1</td>
<td>3 114 15</td>
<td>3,000 2 99</td>
<td>84 37 72</td>
<td>26,730 8 94</td>
</tr>
<tr>
<td>H.K.</td>
<td>1 134 0</td>
<td>6 85 37</td>
<td>6,200 1 99</td>
<td>144 28 79</td>
<td>22,990 13 90</td>
</tr>
<tr>
<td>Korea, Rep</td>
<td>99 89 34</td>
<td>45 23 83</td>
<td>454 6 96</td>
<td>455 11 92</td>
<td>9,700 27 80</td>
</tr>
<tr>
<td>Malaysia</td>
<td>330 56 58</td>
<td>20 40 70</td>
<td>61 65 51</td>
<td>85 36 73</td>
<td>3,890 36 73</td>
</tr>
<tr>
<td>Thailand</td>
<td>513 42 69</td>
<td>58 17 87</td>
<td>113 37 72</td>
<td>167 25 81</td>
<td>2,740 52 61</td>
</tr>
<tr>
<td>Philippines</td>
<td>300 61 54</td>
<td>69 14 90</td>
<td>229 20 85</td>
<td>74 41 69</td>
<td>1,050 78 42</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1,905 13 90</td>
<td>193 4 97</td>
<td>101 42 69</td>
<td>198 23 83</td>
<td>980 79 41</td>
</tr>
<tr>
<td>Japan</td>
<td>378 51 62</td>
<td>125 8 94</td>
<td>331 9 93</td>
<td>5,109 2 99</td>
<td>39,640 2 99</td>
</tr>
<tr>
<td>China</td>
<td>9,561 3 98</td>
<td>1,200 1 99</td>
<td>126 32 76</td>
<td>698 7 95</td>
<td>620 93 31</td>
</tr>
<tr>
<td>India</td>
<td>3,288 7 95</td>
<td>929 2 99</td>
<td>283 11 92</td>
<td>324 15 89</td>
<td>340 108 19</td>
</tr>
<tr>
<td>USA</td>
<td>9,364 4 97</td>
<td>263 3 98</td>
<td>28 96 28</td>
<td>6,952 1 99</td>
<td>26,980 6 96</td>
</tr>
<tr>
<td>Netherlands</td>
<td>37 112 16</td>
<td>16 48 64</td>
<td>419 7 95</td>
<td>396 12 91</td>
<td>24,000 11 92</td>
</tr>
<tr>
<td>Canada</td>
<td>9,976 2 99</td>
<td>30 29 78</td>
<td>3 129 4</td>
<td>569 9 93</td>
<td>19,380 15 89</td>
</tr>
<tr>
<td>Australia</td>
<td>7,131 6 96</td>
<td>18 43 68</td>
<td>2 131 2</td>
<td>349 13 90</td>
<td>18,720 17 87</td>
</tr>
<tr>
<td>U.K.</td>
<td>245 67 50</td>
<td>59 16 88</td>
<td>239 18 87</td>
<td>1,106 5 96</td>
<td>18,700 18 87</td>
</tr>
<tr>
<td>Spain</td>
<td>505 43 68</td>
<td>39 25 81</td>
<td>78 57 57</td>
<td>559 10 93</td>
<td>13,580 24 82</td>
</tr>
<tr>
<td>Portugal</td>
<td>92 91 32</td>
<td>10 66 51</td>
<td>108 40 70</td>
<td>102 33 75</td>
<td>9,740 26 81</td>
</tr>
</tbody>
</table>

Sources: Taiwan, from TSDB, 1996. All other countries, from WDR, 1997.
Shaded countries have values (or ranking or percentile) equal to or smaller than Taiwan.
Sources: Population (in million) in the italic, taken from WDR, 1997. Distance (in miles) in parentheses. See Footnote 1 in the text.
Figure 2. International Relations of Taiwan - A Historical Perspective

Before the 20th Century

A. Before 17th Century

B. The Dutch and Spanish Period
   (Dutch, 1624-1662)
   (Spanish, 1626-1642)

C. The Cheng Period
   (1662-1683)

D. The Ch’ing Period, I
   (1683-1760)

E. The Ch’ing Period, II
   (1760-1895)

In the 20th Century

F. The Japanese Period
   (1985-1945)

G. The Cold War period
   (1945-1991)

H. Post Cold War Period
   (1991- )
Figure 3. Han Settlement on Taiwan – A Historical Perspective

The Spanish Period
(1626-1642)

Before 17th Century

The Dutch Period (1624-62)

The Cheng Period (1662-83)

The Ch’ing Period (1683-1895)

Figure 4. Taiwan's Prewar Industrialization and Resources

Taiwan

- Electricity
- Natural gas (Aluminum, glass, (Ammonia sulphate)
- Salt (Explosives, Industrial salt)
- Limestone (Cement, Synthetic rubber)
- Pyrites (Sulfuric Acid)
- Clay (Fire resistant clay)
- Scrap steel (from shipbreaking)

Manchuria
- Alunite (Aluminum)
- Magnesite

Northern China
- Ferrites (Aluminum, Ceramic)

Southern China
- Lead
- Tungsten
- Antimony

Korea
- Magnesite (Magnesium)

Japan
- Iron and steel scrap (Ferroalloy)

Hainan Island
- Tin
- Iron Ore

Burma
- Chloantite (Nickel)

Viet Num
- Iron Ore (Iron)
- Tin

Malaysia
- Rubber
- Lead
- Tungsten
- Antimony
- Tin
- Iron Ore

Indonesia
- Ferrites (Aluminum)
- Bauxite (Aluminum)
- Garnierite (Nickel)
- Petronium
- Tin
- Iron Ore
- Lead
- Tungsten
- Antimony

Philippines
- Micacite (iron)
- Iron Ore
Figure 5. Direction of Taiwanese Exports
Country Shares of Real Total Exports, 1986=Base year

Figure 6. Direction of Taiwanese Imports
Country Shares of Real Total Import, 1986=Base year
Figure 7. The Structure of the Pacific Triangle
Real Exports, Imports, and Balance of Trade

Figure 8. Real Direct Foreign Investment in Taiwan
Cases and Amount Approved
Figure 11. Real GDP per capita of Taiwan, Korea, and Some OECD Countries
Ten-Year Moving Average

Log of GDP per Capita

Year

Australia
Canada
Germany
Italy
Japan
Nthlds
USA
S. Korea
Taiwan
UK
Portugal
Spain

US
Sp
Po
T
K

Ca

En
Ne
Ita
Ger
Jpn

Au
Figure 12. Taiwan's Competitiveness in Global Economy
WEF Data, 1996-1999

Category and Number of Items Evaluated

Figure 13. Taiwan's Competitiveness in the Global Economy
IMD Data, 1995-1999

Category and Number of Items Evaluated