

REAL EXCHANGE RATES AND PATTERNS OF INDUSTRIALIZATION IN EAST AND SOUTHEAST ASIA

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I. A BASIC ISSUE FOR DISCUSSION

WHEN a certain variable in an economy remains constant during the period under study, it is usually assumed in the econometric model formulation that the variable did not affect the fluctuations of the economy in real terms. For instance, the exchange rate of Japanese yen was fixed at ¥360 to the U.S. dollar for as long as twenty-two years from April 1949 until the time of the so-called "Nixon Shock" in August 1972, when the dollar convertibility into gold was abruptly discontinued. It is not possible to derive from the econometric models constructed on pre-shock statistical series whatever impacts the exchange rate might have had on other economic variables. However, the exchange rate in force for a little over two decades is believed to have been undervalued relative to the yen's purchasing power parity (PPP), and therefore one can reasonably presume that the rate, although it remained constant, must have had a profound influence over the substantive performance of the Japanese economy during the period.¹

The present author takes the view that the undervalued rate of ¥360 to the dollar vis-à-vis the purchasing power parity must have been related in no uncertain measure to the sustained high growth of Japan's exports during the period it remained in force. In the Philippines, the fixed exchange rate of 2 peso to the dollar lasted from prewar years until 1962. In contrast to the yen, the postwar Philippine peso remained on the whole overvalued, due to the continued inflation, in comparison with its prewar standard, although the price level fell sharply for a time immediately after the war [14]. One may be able to hypothesize that the overvalued exchange rate of the peso enabled the Philippines to import capital goods at relatively cheap prices and thereby to launch, and make headway in, capital-intensive industrialization earlier than other Southeast Asian countries.

This viewpoint opens a new horizon for the analysis of a series of related phenomena such as industrialization, import substitution, and export promotion which have so far been examined largely within the framework of development stages or developing process. That is to say, the present author holds to the hypothesis that the exchange rate, or the rate deflated by the purchasing power

¹ See [15], which is also included in [16].

parity, had an impact greater than usually supposed on the progress of industrialization and the changing structure of trade. Fortunately, the postwar period is long enough to test the hypothesis, extending over thirty years with 1950 taken, for example, as the base year. A span of a mere ten or fifteen years might not have shown significant changes in the exchange rate, or the "real" exchange rate as adjusted by the purchasing power parity. It is most appropriate to undertake at this time an analysis of industrial and trade structures in terms of the exchange rates. Since the introduction of the floating exchange rate system, many currencies have been subjected to adequate, or even more than adequate, adjustments of their exchange rates. In this sense, one may be able to say that now is the best time to ascertain the impacts imputable to the exchange rates in the 1950s and 1960s by setting the base year, for example, in 1973 or 1975. It is agreed that the exchange rates have become increasingly sensitive in the 1980s to international interest rate disparities and thus less likely to reflect the purchasing power parity. But if 1973 or 1975 is used as the base year for analysis, the present exercise might be able to throw light on this hitherto less-scrutinized facet of postwar economic trends.

The primary objective of the present study is to elucidate the role of PPP-deflated real exchange rates as a factor contributory to changes in industrial and trade structures. Similar studies may have so far been undertaken for individual countries. The present author renews the attempt by extending the scope of study to selected East and Southeast Asian countries for international comparison.

II. EXCHANGE RATE VERSUS PURCHASING POWER PARITY

Calculation of the purchasing power parity is one of the most exacting exercises. That is, the parity rate can be derived from price ratios of individual "tradable" goods between two given countries for a given year and must be shown in a specific rate like ¥240, or 8 peso, to the dollar [4] [8]. However, the more common practice is to select a year in which the trade account is considered approximately balanced and then to extrapolate that year's exchange rate to other years backward and forward using the ratios between price indices of the two countries. It is assumed that this method of calculation can yield adequate PPP rates. The extrapolation normally uses wholesale price indices covering agricultural, mining, and manufacturing products, but some Asian countries unfortunately lack such time series (Hong Kong, Malaysia, Singapore, and pre-1967 Indonesia). Therefore, the present study has to limit the analysis to five countries: Japan, Korea, Taiwan, Thailand, and Philippines. Export price indices are an alternative possibility, but they show ex post prices of exports/imports and not the potential prices as implied by the term "tradable" goods. Accordingly, it was decided to exclude Malaysia from analysis since it only has export and import price index time series.

In limited cases, consumer price indices or GNP deflators are used to calculate the purchasing power parity. The present study, however, rejected this method, because these indices include prices of nontradable goods and services.

It must be remembered, moreover, that the method of selecting the base year by the approximately balanced trade account is not devoid of drawbacks. That is to say, the method implicitly assumes that the exchange rate is determined by the balance of payments, in addition to the premise that the rate ultimately derives from the purchasing power parity. The selected base year of 1973 or 1975 for parity rate calculation in the present study, however, does not mean that the trade account is in fact more or less balanced in the countries under study in the said year. Simply, it is based on the intuitive judgment that the exchange rate in 1973 or 1975 must have reflected the purchasing power parity more closely than the fixed exchange rates during the preceding years.

First of all, the relationship between the exchange rate and purchasing power parity is shown for each of the five countries in Figure 1 (the PPP base year is 1973 for Japan and Taiwan and 1975 for Philippines, Thailand, and Korea). Rates are calculated relative to the U.S. dollar and are not the "effective" exchange rates as weighted by the values of exports/imports with major trade partners. In this sense, the present analysis still has a limitation. Nonetheless, it may be considered a step forward in that the analysis aims at international comparison.

As shown in Figure 1, the exchange rate remained undervalued vis-à-vis purchasing power parity in Japan and Thailand for a considerable period of time after the war. The rate was, on the whole, undervalued in Taiwan as well until 1972, except for the short period 1952-54. The present author has been arguing, with other economists of similar mind, that the extended period of yen undervaluation in terms of purchasing power parity was one of the contributory factors to the sustained growth of exports in Japan. The graph in Figure 1 clearly offers an adequate basis for this thesis.

The Philippines and Korea, in contrast, repeatedly experienced devaluations, some very drastic, in postwar years. In the case of the Philippines, the wholesale price index rose from 100 in 1937 to 895 in 1946 due to the inflation during the war, but it dropped sharply to 443 in 1950 [14, p. 239]. The exchange rate remained unchanged at 2 peso per dollar, even though the wholesale price index rose by 4.75 times during 1937-52.² It is undeniable that the peso was overvalued in the beginning of the 1950s. As shown in Figure 1, the purchasing power parity (1975 base year) stayed at around 2.7-3.0 peso per dollar before 1961 when the fixed exchange rate of 2 peso to the dollar was adjusted downward.

In the case of Korea, the won was radically devalued during the period of 1952-82, with its exchange rate falling from 6 to 731 won to the dollar. The Korean economy underwent rapid inflationary spirals in the last three decades, with its wholesale price index (1975=100) soaring from 2.8 in 1952 to 283.7

² See [17]. In this paper, the present author for the first time explicitly discussed the impact of the fixed exchange rates. However, the author was made aware of the issue more than twenty years ago during an informal conversation with Dr. Shionoya and only recently came to know of the existence of his paper [14]. Dr. Shionoya used in his paper the Manila consumer price index (1937=100) in addition to the wholesale price index of domestic products.

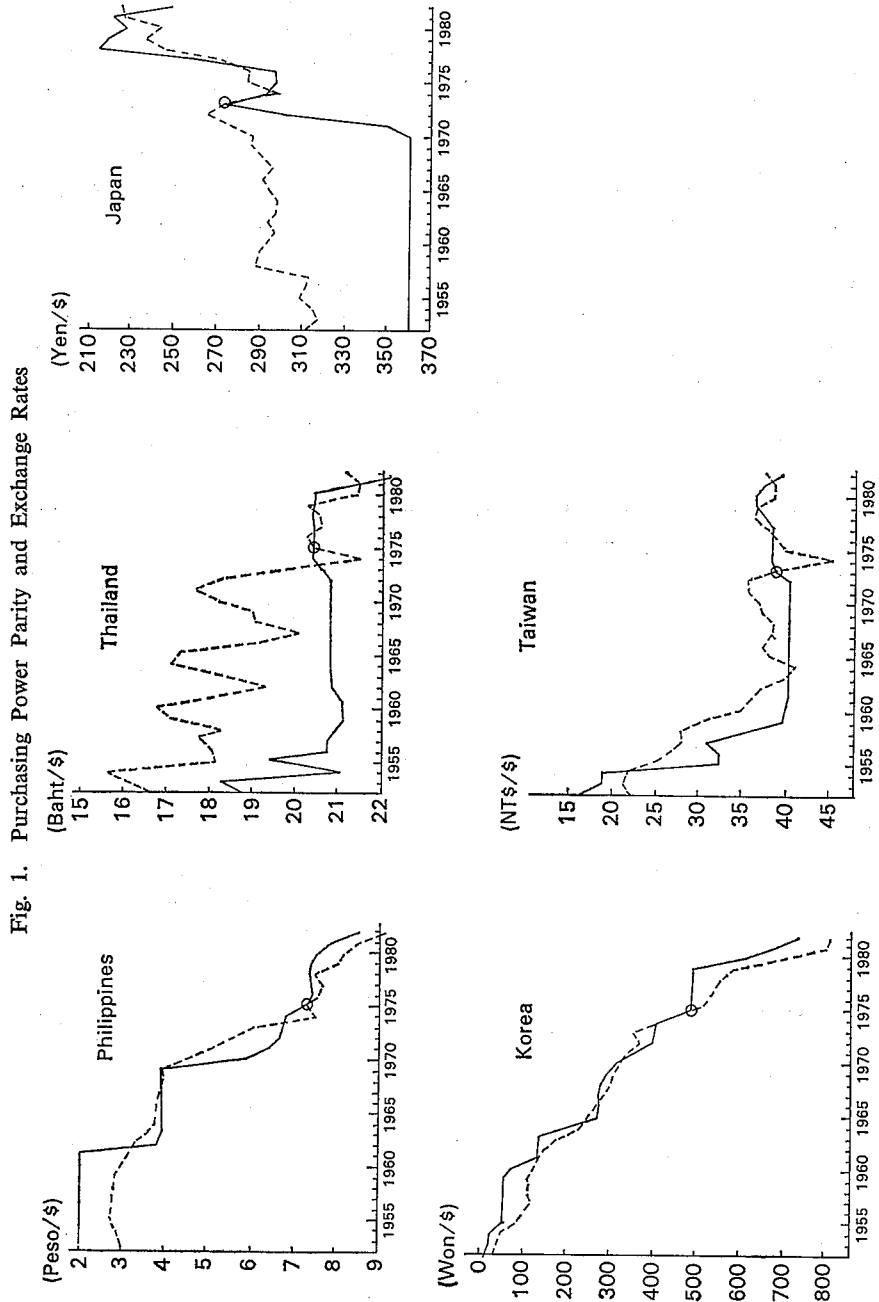


Fig. 1. Purchasing Power Parity and Exchange Rates

Source: Mostly from [7].

Notes: 1. The base year is 1975 for Philippines, Thailand, and Korea and 1973 for Taiwan and Japan.
 2. Exchange rates are denoted by — and the purchasing power parity by - - - - -.

in 1982. The inevitable outcome was that the won underwent repeated devaluations in rapid succession, as seen from the zigzag line of its exchange rate in Figure 1.

III. LONG-TERM TRENDS OF REAL EXCHANGE RATES

Figure 1, however, gives somewhat misleading pictures. Although the graphs for Japan and Thailand indicate at a glance substantial undervaluation of their respective exchange rates relative to the purchasing power parity, those on the Philippines and Korea, because of the spacing of the scale, do not give a clear impression that their exchange rates were significantly overvalued. If a given country underwent changes on a large scale, the "absolute" gap between the exchange rate and the purchasing power parity would not show as much in the graph. Therefore, another figure is prepared to more clearly indicate the "relative" degree of overvaluation or undervaluation: namely, the "real" exchange rate index which is derived by dividing the actual exchange rate index by the purchasing power parity index.

Figure 2 shows changes of these figures for the five countries under study. It is evident that the exchange rates in force remained greatly overvalued in terms of purchasing power parity from 1952 through 1961 in the Philippines and through 1960 in Korea. Their real exchange rates during this period stayed around 0.7 of the actual rates in the Philippines and around 0.5 in Korea, indicating that the degree of overvaluation was more pronounced in the latter country than in the former.

In contrast, the exchange rate in Taiwan was overvalued only until 1954, and afterward remained undervalued most of the time. In a similar but more consistent manner, Thailand's exchange rate stayed undervalued from 1952 through early 1970s.

What should be noted here is that the substantial overvaluation of the exchange rates in Korea and the Philippines due to the inflationary growth of the 1950s implies two probable consequences. One is that the overvalued exchange rates in terms of purchasing power parity enabled these countries to import capital goods at cheaper prices and thus helped expand their relatively capital-intensive industries somewhat out of proportion. Consequently, the share of the industrial sector in their GDP showed a tendency to increase during the period. The other consequence is that the continued inflationary growth strengthened the tendency of both countries to finance industrialization by the inflow of external capital rather than by domestic savings. The outcome was that external debt outstanding tended to accumulate in these countries: namely, the accumulated external debt outstanding at the end of 1982 (including short-term debts) amounted to U.S.\$37.2 billion in Korea and U.S.\$20.7 billion in the Philippines. In contrast, the amount was only U.S.\$9.3 billion in Taiwan and U.S.\$11.1 billion in Thailand at the end of the same year.

Figure 3 illustrates the first consequence of the overvalued exchange rates, by showing the share of the manufacturing sector in GDP (current prices) for six

Fig. 2. Real Exchange Rate Indices

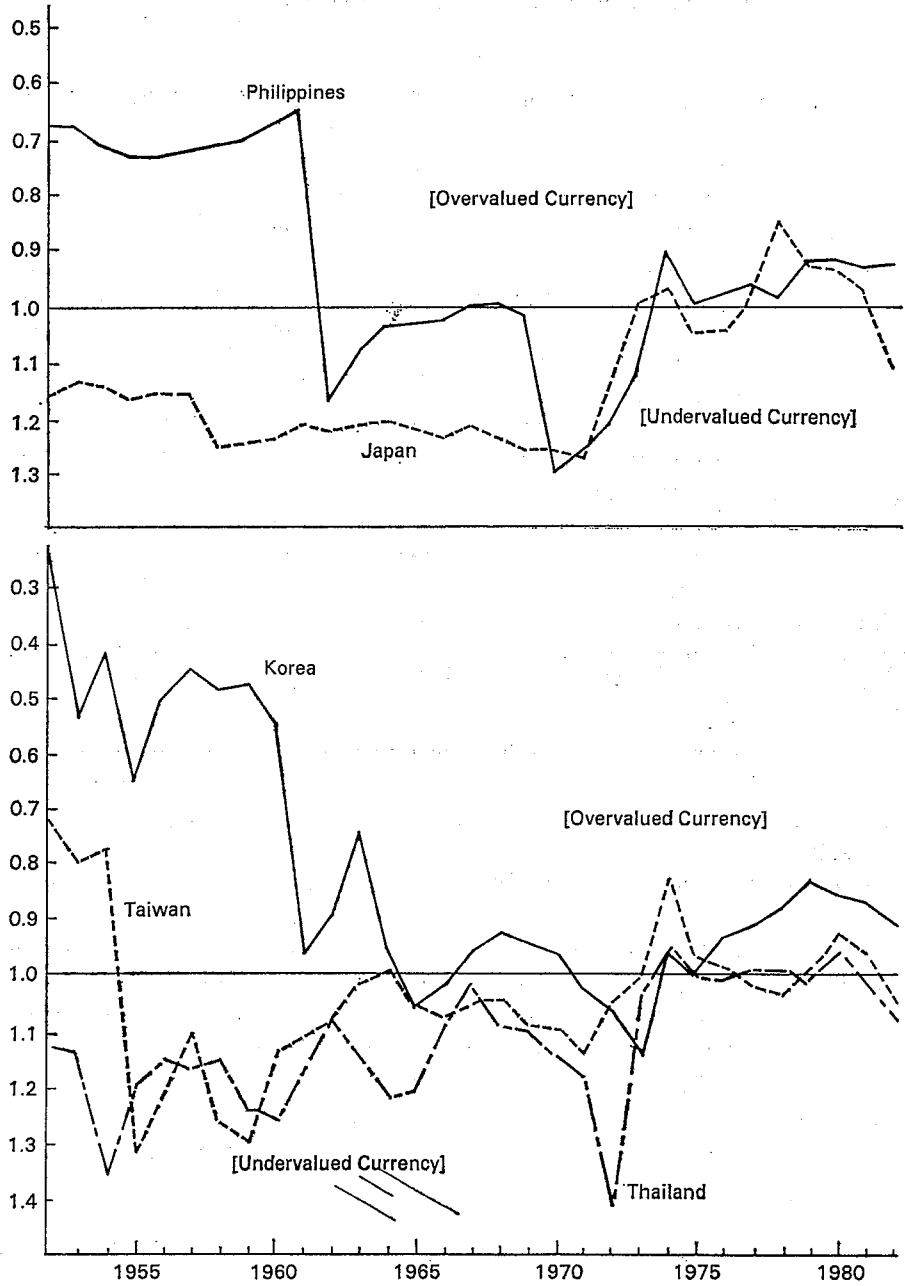
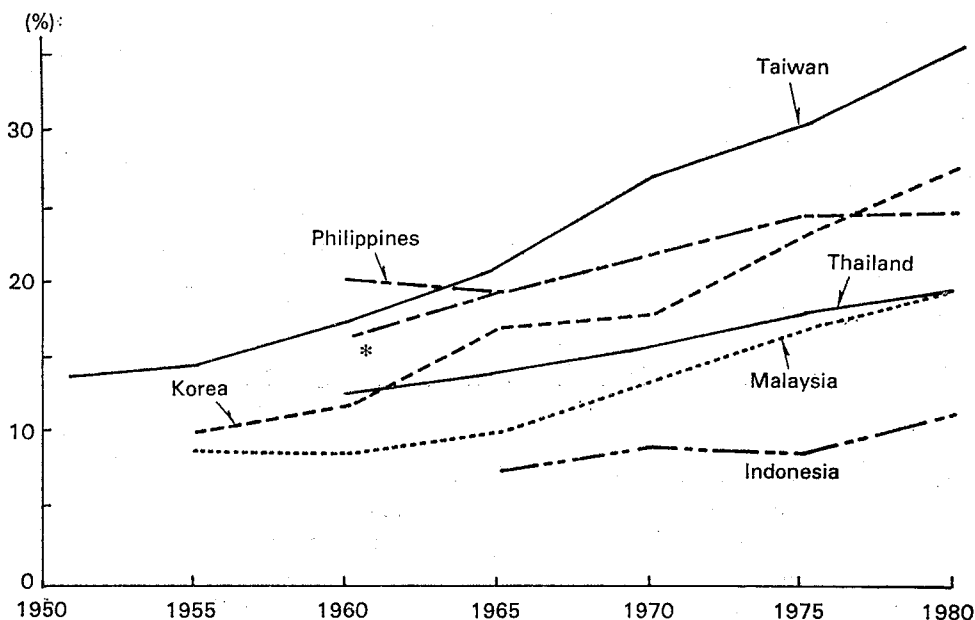


Fig. 3. Manufacturing Share in GDP



Sources: For 1950–75, mostly from [6]; for 1980 from [19]; and for Taiwan from [18].

Note: All shares are computed from current price data, except for Malaysia in 1980, for which 1970 constant price data is used.

* The lower 1960 figure for the Philippines is based on [20].

Asian countries in five-year intervals from 1950 to 1980. One should be aware here that available time-series figures of national accounts in many developing countries are often discontinuous due to revisions in methodology and other reasons. The statistical series compiled by the United Nations are also not free from the same problem. Accordingly, the present study relies on the IBRD's *World Tables* [6] which offer continuous series covering 1950–77. Figure 3 uses the IBRD series for the period from 1950 to 1975 for five countries other than Taiwan. In 1960, the share of manufacturing in GDP was 20.3 per cent in the Philippines, which was distinctly higher than in other countries (12.6 per cent in Thailand, 11.6 per cent in Singapore, 8.7 per cent in Malaysia, and 12.1 per cent in Korea). The United Nations [20] gives the 1960 figure of 16.4 per cent for the Philippines, showing a large discrepancy from the IBRD's. Although there remains the question of which figure is correct,³ even the lower UN figure

³ According to the national accounts series compiled by the Philippine authorities, the GDP share of manufacturing in 1960 is estimated to fall between 16 per cent and 18 per cent. However, the figure in [6] appears to be influenced by the rate of 20.2 per cent from the 1961 input-output table prepared by the Office of Statistical Coordination and Standard. With respect to Taiwan, the present paper does not use [6], which gives larger figures for the GDP share of manufacturing than the percentages obtained from the Taiwanese national accounts statistics (e.g., the share of manufacturing in 1961 is 24.8 per cent by [6] compared with 17.4 per cent by [18]).

shows that the share of the manufacturing sector in the Philippines was higher in 1960 than in Thailand, Malaysia, Singapore, Indonesia, and Korea. In other words, the higher share of manufacturing in the Philippines was closely related to the overvalued exchange rate of the peso, which helped build up relatively capital-intensive industries through cheaper capital goods imports. It must be noted, however, that the share of manufacturing was not significantly high in Korea in the same year despite the overvalued exchange rate. One might surmise that industrialization was then constrained by the aftereffects of the Korean War. Although this point remains to be substantiated, the contrasting effects of overvalued and undervalued exchange rates are undeniably evident in the share of manufacturing, when the Philippines is compared with Thailand.

IV. BACKGROUNDS TO OVERVALUATION OR UNDERVALUATION IN FOUR COUNTRIES

Figure 2 alone is still analytically inadequate to examine the circumstances in which the exchange rates came to be overvalued or undervalued in terms of purchasing power parity. It is necessary to study at some length relevant factors and backgrounds which led to such over(under)valuation. In this section, four countries under study are paired into the Philippines and Thailand, on the one hand, and Korea and Taiwan, on the other, to briefly depict the varying circumstances.

A. *Philippines versus Thailand*

As already discussed in the preceding sections, the fixed exchange rate of 2 peso per dollar, which lasted from the prewar years until 1962 in the Philippines, resulted in the overvaluation of the peso, and enabled imports of raw materials and intermediate and capital goods at artificially cheaper prices (Figures 1 and 2). In addition, international trade and industrial policies during the 1950s, to sum up briefly, were aimed to restrict imports of finished consumer goods and encourage their domestic manufacturing (import substitution), while facilitating imports of intermediate and capital goods needed for industrialization. International trade and foreign exchange were kept under government control for the purpose of coping with trade deficits which were to expand due to the overvalued exchange rate in force. By the end of the 1950s, however, the "nonessential" imports (intermediate and capital goods) came to account for an overwhelming percentage of the country's total imports. In terms of the distinction of producer and consumer goods, the former accounted for 62.7 per cent of total imports in 1949, and its share rose to 86.1 per cent in 1960. Of these producer goods, machinery and equipment made up 9.9 per cent of total imports in 1949 and reached 25.2 per cent in 1960 [2, p. 194].

As a result, the cumulative trade deficits during 1949-59 amounted to U.S.\$1.42 billion, but the cumulative current account deficits were only U.S.\$1.24 billion due to the expenditure by the U.S. military. Nonetheless, the trade deficits are equivalent to one-third of the cumulative exports (U.S.\$4.41 billion) during the

same period, indicating the inevitable outcome of the overvalued peso and the industrial policy which pursued import substitution.

In response to the mounting problem of trade deficits, the Philippine government introduced the multiple exchange rates system, which subsequently functioned in effect to devalue the domestic currency. At the same time, the government restrictions on imports and foreign exchange were gradually removed, and the peso came to be exchanged freely at the going market rate in 1962. In 1965, the official exchange rate was devalued from 2 to 3.9 peso per dollar.

In other words, the import restrictions and the overvalued exchange rate of the early and mid-1950s were replaced with a highly protectionist import tariff system after 1957. According to the estimates by Valdepeñas in 1970, the tariff rates were set at 15 per cent for highly essential goods, 18 per cent for essential consumer goods, 25 per cent for essential producer goods, 30 per cent for non-essential producer goods, and 51 per cent for nonessential consumer goods.⁴

In the postwar Philippines, the share of heavy and chemical industries such as machinery, metals, chemicals, and cement in the total manufacturing value added grew rapidly from a mere 8.4 per cent in 1948 to 23.6 per cent in 1956, 28.1 per cent in 1960, and 29.6 per cent in 1965. The overvalued exchange rate in due consequence encouraged the country's tendency to expand relatively capital-intensive industries in the manufacturing sector, and these less employment-absorptive industries came to assume a relatively larger GDP share in the Philippines than elsewhere. According to the labor force surveys, manufacturing employment grew only 7.7 per cent from 962,000 in 1956 to 1,036,000 in 1960, while the official unemployment rate averaged 7.3 per cent during the period (one estimate gives the figure of 25 per cent, inclusive of underemployment).

As already shown in Figure 1, the Philippine peso underwent drastic devaluations in 1962 and 1970, and its exchange rate continued to decline afterward. Consequently, the export performance which had stagnated during the 1950s began to show gradual upturns, reaching a near boom toward the end of the 1960s. Merchandise exports increased 1.5 times from U.S.\$353 to 529 million during 1952-61, but they doubled from U.S.\$529 to 1,064 million during 1961-70. The share of manufactures (including processed food) in total exports showed a decline from 18.2 per cent in 1952 to 15.9 per cent in 1961, but more than recovered to 20.8 per cent in 1962 and was maintained above 20 per cent during the rest of the 1960s [2, p. 195].

Thailand, which kept its domestic currency undervalued during postwar years in contrast to the Philippines described above, presents a different case. Thailand did, in fact, have import tariffs like the Philippines. However, the difference is that import duties were imposed in Thailand to secure government revenues rather than to protect domestic industries. A far more important characteristic of Thailand is the existence of export tariffs. To put it more conclusively, the point is that Thailand managed to export rice at a price substantially higher

⁴ See [1, p. 7]. The present paper owes substantially to this book for other information. Valdepeñas's work is [21].

than the domestic price by imposing its relatively high export tariff rate and securing government margins. The fact that the domestic price of rice was kept considerably lower than the international market price reasonably suggests the possible undervaluation of the baht in terms of purchasing power parity. Rice accounted for 51.6 per cent of the country's total exports during 1952-57 and 35.8 per cent during 1958-60, and the percentage was still high at 33.5 per cent in 1965. The question is then the exact gap between the domestic and the export price of rice.

Let us quote from the 1951 figures cited by Ingram [5, pp. 89-91]. The export price per ton of white rice (15 per cent broken) was U.S.\$124.30 after taxation, while the price paid to the millers was 1,306 baht per ton. Therefore, the gross profit the Rice Office received per ton of exported rice was as follows:

Export price (U.S.\$124.30 × 12.50 baht)	1,554 baht
Purchase price	<u>1,306</u>
Gross profit	248 baht

Because foreign exchange earnings from rice exports were deposited at the Bank of Thailand, and were sold at the going market rate of about 21 baht to a dollar, there was an additional margin accruing to the Thai government per ton of exported rice as follows:

$$\text{U.S.}\$124.30 \times (21.0 - 12.5 \text{ baht}) = 1,056 \text{ baht}$$

Therefore,

Net price paid to miller	1,256 baht
Export duty	<u>50</u>
Gross price to miller	1,306
Trading profit to government	248
Exchange profit to government	<u>1,056</u>
Total export proceeds	2,610 baht

The export price of 2,610 baht per ton was a little more than twice the domestic price in Thailand in 1951.

Multiple exchange rates were in force in 1951 and lasted until 1955 in Thailand. Since the foreign exchange control was already relaxed in 1947, the free market exchange rate was formed thereafter. According to the estimates by Corden [3, pp. 151-59], the multiple exchange rates relative to the pound sterling in 1951 were as follows:

(i) In the case of rice, 95 per cent of the export earnings were converted at the official exchange rate (£1 = 35 baht) and the remaining 5 per cent at the free market rate (£1 = 53 baht). The average exchange rate thus came to 36 baht per pound sterling.

(ii) For tin exports, 40 per cent were converted at the official rate and 60 per cent at the market rate, and thus the average exchange rate was 46 baht.

(iii) For rubber, 20 per cent of exports were converted at the official rate and 80 per cent at the market rate, and thus the average exchange rate was 49 baht.

(iv) The exchange rate for miscellaneous manufactures, service receipts, and incoming capital was the market rate, i.e., 53 baht to the pound sterling.

(v) The Thai government could gain a margin of 18 baht (53–35) per pound sterling earned by selling it from the official pool in the free foreign exchange market.

The above multiple exchange rates in force in 1951 went through some modifications in subsequent years, and the single exchange rate system was started in 1955 at the going free market rate of 58 baht per pound sterling (or 20.7 baht per U.S. dollar).

As described above, Thailand, with its export tariffs on major commodities and the rice premium system, presents a contrasting case of the undervalued exchange rate vis-à-vis the Philippines. Because of these circumstances, Thailand managed to steadily expand exports of manufactures in addition to traditional commodities. The contrast between the two countries over the last three decades can be summarized as follows:

	(%)		
	1952–61	1961–71	1971–81
Wholesale price increase:			
Philippines	13	96	328
Thailand	15	17	212
Exchange rate devaluation:			
Philippines	1	218	23
Thailand	12	–2	5

As shown above, the rate of inflation was a little lower in the Philippines than in Thailand during the 1950s. This was because the postwar fixed exchange rate in the Philippines contributed to downward adjustment of the prices which had undergone hyperinflation during the war years. Despite this dampening effect on inflationary pressures, the overvaluation of the peso was not sufficiently remedied, and the country was forced to repeat more substantial devaluations during the following two decades. The effect of the inflation during the war lingered in postwar years in the form of the overvalued exchange rate, and thus resulted in a distortion in the country's industrial structure. In contrast, Thailand was able to avoid such consequences due to the undervalued exchange rate of baht. It may be possible to say that this different initial condition enabled the country to maintain favorable export-led economic growth through the early 1980s.

B. *Korea versus Taiwan*

The different characteristics of economic growth which distinguish Korea and Taiwan might be best summarized by the contrast between inflationary and noninflationary growth. During the thirty years from 1952 to 1982, the wholesale prices rose 101 times in Korea compared with only 6.6 times in Taiwan. This overwhelming difference in the rate of inflation brought about the difference in the domestic savings ratios, in particular, personal savings ratios, of the two countries. As a result, Korea had to rely on continued inflows of foreign capital for economic development, while Taiwan attained growth chiefly by mobilizing

capital from domestic sources. Moreover, Korea maintained its investments well above the level of domestic savings, and its growth came to show an imbalance with overemphasis on the investment goods sector. In contrast, Taiwan, less constrained in such a way, managed to evolve a more balanced industrial structure.

As a corollary to this, wide differences emerged in the external sectors of the respective countries. As already mentioned, the most telling difference is found in the great divergence between the amounts of their accumulated external debt outstanding. In addition, the exchange rate of the won underwent tremendous devaluations during 1952–82 from 6 to 731 won per dollar, a reduction in value to less than one-hundredth. In contrast, the exchange rate in Taiwan was merely devalued from NT\$15.6 to 39.1 per U.S. dollar during the same period. Moreover, the Korean won stayed mostly overvalued in the last three decades, particularly during the 1950s, while the domestic currency of Taiwan in contrast remained undervalued most of the time, as already shown in Figure 2. The next question concerns the specific circumstances in which the two countries came to diverge.

First, let us take the case of Korea.⁵ The country was under U.S. military control during the immediate postwar years, and in October 1948 the official exchange rate was set at 0.44 won per dollar, while the so-called "green-back" rate for the U.S. dollar (considered more or less equivalent to the black market rate) was 0.74 won per dollar, or 1.7 times as compared to the official rate. The gap between the official and the black market rate continued to widen in the following years, and the black market exchange rate in August 1953, immediately after the ceasefire of the Korean War, was down to 26.4 won per dollar against the official exchange rate of 6 won per dollar. This fact more than conclusively suggests the overvaluation of the won, and the subsequent 300 per cent devaluation in December 1953 fell short of adjusting the exchange rate to the inflation-reduced value of the currency.

Korea's merchandise exports during 1951–54 were around one-tenth the value of its merchandise imports, and the trade gap was filled by foreign aid and U.S. military expenditure. In 1946, the U.S. military authorities imposed a uniform import duty of 10 per cent, which was then replaced by a new tariff schedule in 1949. The schedule was modified in subsequent years but its basic structure was mostly unchanged throughout the 1950s. The tariff rates at that time were 10 per cent for essential goods for which there was no domestic output and for semifinished products with no domestic output, 20 per cent for semifinished products which were domestically produced, 30–40 per cent for finished products, and 50–90 per cent for semiluxury and 100 per cent for luxury goods.

In addition to import tariffs, postwar Korea introduced the import license system and import quotas on a wide variety of merchandise in accordance with set priority schedules, and also tried import-export linkage as an export incentive. Korea's import restrictions and multiple exchange rates as described above were devised to cope with the overvaluation of the won and the growing trade deficits.

⁵ For information on Korea, the present paper is chiefly indebted to [9].

It must be noted at this point that the 1950s coincided with the period when Korea pursued import substitution in its industrialization drive, and that the country's policy orientation was gradually shifted toward export promotion and an open economy in subsequent years. The point is that the early years of industrialization in Korea were characterized by the overvalued exchange rate. In order to eliminate the unfavorable consequences of this overvaluation, Korea had to radically devalue its exchange rate from 62.5 to 127.5 won per dollar during 1960-61 and again from 130 to 256 won in 1964. In conjunction, the government launched a variety of measures for export promotion during and after the 1960s, such as fiscal incentives, low-interest investment financing, and the establishment of the Korean Trade Corporation (KOTRA). As a result, Korean exports expanded rapidly in later years.

Taiwan provides a contrasting case.⁶ As already shown in Figures 1 and 2, the New Taiwan dollar was overvalued during 1952-55 but undervalued in subsequent years in contrast with the Korean currency which continued to be overvalued during the 1950s. In this sense, the two countries are well-suited for our comparative analysis.

Taiwan experienced hyperinflation immediately after the war, and the exchange rate of the Old Taiwan dollar soared to OT\$240,000 per U.S. dollar in June 1949 shortly before the currency reform. The reform set the official rate of NT\$5 per U.S. dollar, but the continued inflation forced to change the selling rate to NT\$10.3 and the buying rate to NT\$10.25 per dollar in September 1950.

In addition to the above basic rates, the Taiwan government introduced in April 1951 different rates for exchange settlement certificates (ESCs) and a multiple exchange rates system. ESCs were issued by the Bank of Taiwan to exporters and those who received foreign exchange remittances from overseas. Holders of certificates were required to sell the acquired foreign exchange at the official rate to the bank unless they used the exchange for their own purposes. Importers and senders of money to overseas countries were required to submit certificates showing the exact amounts of foreign exchange they needed to buy from the bank. Many importers who did not possess certificates had to buy them from the bank, therefore paying more, by the price asked for the certificates, than the basic buying rate. Exporters in this sense could sell their foreign exchange at that much higher exchange rate.

The exchange rate differed between buying and selling, and the buying rate more or less varied respectively for government enterprises, private companies, and personal remittances. The selling rate was also in some cases subject to slight variation respectively for direct imports by the government and government enterprises, imports by U.S. aid, and remittances. Moreover, the percentage of the foreign exchange backed with ESCs varied among the categories of foreign exchange users, and under the circumstances, the weighted average exchange rate may differ by category. The exchange rate series used in the present paper are taken from IMF's *International Financial Statistics* [7], and it is presumed

⁶ See, for example, [10] [11] [13].

that they were calculated by noting the fluctuations mentioned so far, such as the single exchange rate in 1954, return to multiple exchange rates in subsequent years, and variations of the effective exchange rate due to the different proportions of the ESCs issued to foreign exchange users. The IMF-quoted exchange rates for 1955 and 1956 appear somewhat "cheaper" than the actual rates the present author obtained from other sources. However, assuming that the IMF rates were derived by adjusting some other relevant factors of which the author is unfortunately ignorant, the entire IMF exchange rate series were used to prepare Figures 1 and 2.

Because of the complicated multiple exchange rates system in Taiwan, the working of the exchange rate in force are not explored here in more detail. However, it should be noted that the exchange rate had been substantially devalued prior to 1960 when it was fixed at NT\$40 to the dollar and lasted until 1972. After the reform in November 1958, the multiple exchange rates decisively moved toward a uniform rate, and the ESC rate approached the free market rate. When the Taiwan Sugar Corporation earned a sizable amount of foreign exchange from the soaring international price of sugar in 1963, the government found it opportune to abolish the system of exchange settlement certificates. Throughout the 1960s, the Taiwan dollar was never overvalued, staying more or less undervalued.

With respect to 1955 and 1956, the actual exchange rate might have been NT\$24–26 per dollar instead of NT\$32.24 as quoted by IMF. However, the former rate would only straighten out the dip observed during 1952–59 in Figure 1, and thus would not change the general downward movement of the "real" exchange rate depicted in Figure 2.

V. EXCHANGE RATES, IMPORT SUBSTITUTION, AND EXPORT PROMOTION

It is possible to draw several tentative conclusions from the foregoing study on four Asian countries. By noting the difference between overvalued and undervalued exchange rates, an attempt is made in this section to summarize the backgrounds to over(under)valuation and the mechanisms of and consequences of such over(under)valuation.

A. *Overvaluation of Exchange Rates*

Overvaluation of the exchange rate is liable to take place following generally high-pitched inflation. Many countries which experienced a severe cutdown in production after World War II are cases in point, because the respective governments had to overcome the economic hardships in an inflationary milieu with added reliance on inflows of foreign capital and aid. Overvaluation is also likely to occur in those Latin American countries with built-in long-term inflationary pressures. Under these circumstances, attempts at the required devaluation tend to fall behind the runaway inflation, resulting in an overvalued exchange rate. Likely consequences from such overvaluation are as follows:

(i) On-going inflationary growth is on the whole likely to lead to an overvalued exchange rate. Accordingly, countries could not help relying on foreign capital and aid in order to maintain the level of imports in excess of exports. It is hardly to be expected that such external resources will be sufficiently and indefinitely available, and the normal outcome is the introduction of foreign exchange control and import restrictions, as well as the emergence of the black market and multiple exchange rates. In other words, the overvalued exchange rate generally leads to the evolution of a control mechanism and market interventions thereby. Such steps are necessary to manage the international balance of payments.

(ii) Under these circumstances, the strategy for industrialization largely aims at import substitution. While domestic production of finished consumer goods is promoted through import substitution, needed capital goods, fuels, and raw materials are imported cheaply by taking advantage of the overvalued exchange rate to provide momentum for such industrialization. Moreover, multiple exchange rates are introduced to enable cheaper importation of capital goods. In other words, "supply-side" industrialization policies are put into action. As a result, countries with overvalued exchange rates tend to become forerunners in terms of industrialization and to have their GDP share of manufacturing grow larger than otherwise. Although they manage to be earlier starters in industrialization, their exports are liable to falter in terms of growth due to the overvalued exchange rate. To overcome this dilemma, many of them often find it unavoidable to go through radical devaluations later on.

(iii) At the same time, it should be noted that industrialization through import substitution is often encumbered by imports growing in excess of exports and with the limitation of domestic market. Where the domestic market is small, import substitution industries are not always able to mass-produce goods and thereby realize sufficient cuts in production costs.

(iv) Accordingly, those countries which pursued industrialization through import substitution in the overvalued exchange rate regime eventually found themselves walled in by such inevitable constraints, and had to shift their policy orientation toward devaluations and export promotion. This switch of industrial policy from import substitution toward export promotion was seemingly the only way out, and the process had to be accompanied by the transition from overvaluation to undervaluation of the exchange rate.

B. *Undervaluation of Exchange Rates*

Contrastive are those countries in which the postwar exchange rates were from the start undervalued in terms of purchasing power parity. Japan and Thailand are cases in point, and Taiwan apparently did away with its overvalued exchange rate within a few years after the war. Among the contemporary developed countries, Japan, West Germany, and Italy had their exchange rates set by the occupation authorities, and these rates turned out to be undervalued in terms of purchasing power parity. The balance of payments deficits which these countries experienced for some time in postwar years do not contradict the fact that their

exchange rates were undervalued. As the world economy was gradually normalized, it was entirely possible that the initial balance of payments deficit would turn to a surplus under the same exchange rate, as indeed it did in a number of countries.⁷ The observed consequences from undervalued exchange rates can be summarized as follows:

(i) Although there may be setbacks, off and on, in the short run, countries with undervalued exchange rates may realize export-led growth in the long or medium terms. This pattern of growth is accompanied by the *ex ante* potential tendency for exports to grow in excess to imports. In *ex post* terms, however, the countries expand domestic production or accelerate growth with manageable inflation, which might eventually stimulate the growth of their imports and enable a reduction of the trade surplus. It is sufficiently justified to aver that, even though exports and imports would have balanced off *ex post*, the undervalued exchange rate may have served to create the long-run *ex ante* tendency of trade surplus.

In the case of Japan, the ratio of exports to GNP did not always show a clear upward trend in postwar years. However, it is an undeniable fact that the postwar growth rate of exports was consistently higher in Japan than in other developed countries. In this sense, Japan clearly attained an export-led growth. The fact that the ratio of exports to GNP did not always show an upward trend does not contradict this export-led growth. That is to say, the export-led growth in Japan more than adequately stimulated domestic investments, and the resultant rapid growth of GNP kept the ratio of exports to GNP from growing consistently. As compared to the economies with unmaturing interindustry structure, the repercussive expansionary effect on the domestic ancillary industries may have been much larger in case of Japan where the interindustry linkages have been far greater. Due to the fact that the effect of expanding exports has not leaked as increasing imports of component parts and capital goods, an increase of GNP has been relatively higher. In other words, the Japanese economy was provided with its momentum for growth by expanding both exports and domestic invest-

⁷ Suppose that the undervalued exchange rate has led to a situation in which exports would "potentially" grow in excess of imports. The *ex ante* tendency of trade surplus would be cancelled out by its *ex post* impacts on the following variables: namely, (i) an increase in real income (increased real income would expand the demand for imports), (ii) a rise in domestic price level, (iii) revaluation of the exchange rate, and (iv) a capital outflow due to the international differences in interest rate. During the period when the exchange rate of ¥360 per dollar was in force, Japan did not experience the effect of trade surplus on domestic price as indicated in (ii) above, when considered in terms of the wholesale price index. The fixed exchange rate precluded the possibility of revaluation as in (iii), and, moreover, the foreign exchange control virtually blocked the outflow of capital. In other words, the *ex ante* potential trade surplus under the ¥360 exchange rate regime had the tendency to be balanced off largely by the *ex post* growth of demand for imports as a result of increased real income, as indicated in (i) above. The present author thus does not go along with the negative argument as against the undervalued exchange rate, because exports and imports do balance off in *ex post* terms.

ment.⁸ Japan's growth process was the outcome of the virtuous circle in which expanding exports stimulated dynamic investment and vice versa. In many other countries in East and Southeast Asia, however, both exports and domestic investment grew more rapidly than their GNPs, just because their interindustry structures were still immature and GNP could not increase sufficiently. Their respective ratios of exports and domestic investments to GNP, therefore, show upward trends. In other words, the feedback process between exports and investments was more intense in these countries than in Japan.

(ii) It appears that an undervalued exchange rate in terms of purchasing power parity was one of the necessary conditions for these countries to embark on the industrialization drive through export promotion. Undervaluation alone would not have been sufficient, but the policy switch from import substitution to export promotion apparently required it.

(iii) As already mentioned, industrialization through import substitution is the supply-side approach in which capital goods and other necessary inputs are imported relatively cheaply by taking advantage of overvalued exchange rates. In contrast, industrialization through export promotion approaches from the demand side, by securing a sustained expansion of exports by way of undervalued exchange rates. It is important to note this difference between the supply-side and the demand-side approach to industrialization.

(iv) Industrialization through export promotion under undervalued exchange rates might not preclude the adoption of import restrictions and foreign exchange control. Various restrictive measures were needed during the chaotic years after the war due to the severely reduced levels of production. Many developing countries presumably had to resort to a variety of control to pursue industrial policies for export promotion.

Nonetheless, it can reasonably be said that export promotion industrialization requires fewer import restrictions and less foreign exchange control than an introverted import substitution policy. Moreover, the undervalued exchange rate is a definite advantage when a given country wants to depart from multiple exchange rates to a single rate regime and thereby liberalize trade and the foreign exchange market as much as possible. One might be able to say that the undervalued exchange rate is one of the preconditions for such liberalization. When undervaluation of the exchange rate triggers a potential tendency for exports to grow in excess to imports, it will become possible to reduce import restrictions

⁸ Notably, Dr. R. Minami concludes that Japan's rapid growth was propelled by dynamic domestic investments rather than by the growth of exports in his book [12, pp. 142, 180, 200]. The present author takes the view that both domestic investments and export expansion contributed to the growth of the Japanese economy through the virtuous circle of mutual feedbacks between the two factors. The author thinks it especially important that the growth rate of exports was consistently higher in Japan than in other developed countries and does not agree with the view which concludes that the higher simple correlation between the growth rates of domestic investments and those of GNP indicates lesser contribution to economic growth of the exports, which in terms of growth rates have lower positive correlation with GNP.

and eventually to do away with foreign exchange control and multiple exchange rates.

(v) As long as the continued expansion of the export market ensues, helped by the undervalued exchange rate, growth will not be constrained by the limited domestic market, a constraint which import substitution industrialization often encounters. In this sense, the approach which starts with an undervalued exchange rate has an important bearing on the industrialization strategy through trade promotion.

(vi) An important demarcation in economic logic is involved in the transition from the strategy of inflation→overvalued exchange rate→import substitution industrialization to that of industrial development through export promotion. Under the initial given condition of the undervalued exchange rate, however, the demarcation line would appear less clear-cut, and the transition would be far more continuous. Expanding domestic manufacturing through import substitution would easily redirect itself to export-oriented production, and thus follows the "wild-geese-flying-pattern" (*gankō-keitai*) of industrial development. Under the overvalued exchange rate regime, this process of transition would be much more discontinuous and involve more stops and starts and sidestepping, so to speak.

In summary, it is possible to distinguish two streams of postwar development. One tends to follow the course of inflationary growth→overvalued exchange rate→industrialization through import substitution→trade and foreign exchange controls with a multiple exchange rates regime. The other treads the course of noninflationary growth→undervalued exchange rate→industrialization through export promotion→trade and foreign exchange liberalization. Korea and the Philippines which pursued the first alternative are now confronted with a mounting external debt outstanding and high debt-service ratios, while Taiwan and Thailand which chose the second course are still free from burdens of equivalent proportion. In fact, the latter countries have so far managed relatively favorable economic performances and past the period of havoc which was triggered by the two oil crises. This observation, the author believes, has important implications for evaluating inflationary growth.

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