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The Hong Kong Model of Industrialization

by James L. Riedel

CONTENTS:

- Hong Kong is an interesting case study of economic development for two reasons: (1) the Colony is one of the few successful cases of industrialization and economic development among contemporary less developed countries; and (2) it closely resembles and is in fact a last remnant of the laissez-faire economy.
- This paper describes the pattern of industrialization in Hong Kong and its economic rationale in terms of the theory of international comparative advantage. The special features of industrialization in the Colony, taken together, constitute what is called the "Hong Kong Model of Industrialization." The "model" is found to be a pure case of industrialization through exploitation of comparative advantage.

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The Hong Kong Model of Industrialization

The Hong Kong economy should be of particular interest to academic economists for two reasons: it is one of the few successful cases of industrialization and economic development among contemporary less developed countries (LDC's); and, it closely resembles, and is in fact a last remnant of the textbook model, laissez-faire economy¹. It is precisely because of the laissez-faire nature of governmental economic policy that it is difficult to document Hong Kong's economic performance. National income accounts, balance of payments and industrial production statistics are nonexistent in the Colony. However, available official statistics, combined with estimates of gross domestic product (GDP) and capital formation, indicate the magnitude of economic growth in Hong Kong (see Table I). The Colony has enjoyed an enviable combination of growth factors - rapid growth in employment, trade, public finance, the money stock and GDP, and slow growth in population and price inflation. Real GDP per capita recorded a compound annual growth of 9 per cent in the 1960's.

During the first one hundred years of Hong Kong's existence her wealth was derived from entrepôt trade. World War II marked the end of this era. The massive influx of refugees foisted a burden upon the Colony which could not have been supported by her long standing occupation, entrepôt trade, even if this line of endeavor had not been curtailed by the Korean War. Four million people living on a small barren rock have few options; for their income they must rely on activities which conserve physical resources and which employ human resources intensively. As has often been suggested, Hong Kong had no alternative but to industrialize.

The lack of an alternative to industrialization does not make Hong Kong unique among third-world countries; what does is the success with which she has achieved this goal. The compelling question posed by the Hong Kong experience is why has Hong Kong succeeded where so many nations have failed. This paper will provide only a small part of the explanation by describing the pattern of industrialization in Hong Kong and its economic rationale in terms of the theory of international comparative advantage.

At present, most countries attempting to industrialize adopt well defined strategies, such as import-substitution. Employing a strategy for industrialization, explains H. J. Bruton, implies belief in one (or both) of two things: (1) "that by some twist or torment of the economy, or by some gimmick, the underdeveloped stagnant

Remark: This paper is a slightly ammended version of Chapter Two of my Ph. D. dissertation, *The Industrialization of Hong Kong*, University of California, Davis, 1972 (published in "Kieler Studien", forthcoming). It is presented here as a working paper to the "Import Substitution and Export Diversification in the Industrialization Process of Selected LDC's" project, Kiel Institute of World Economics (Institut für Weltwirtschaft).

¹ For a discussion of the laissez-faire nature of the economy, see Nicholas Owen, "Economic Policy", in: *Hong Kong: The Industrial Colony*, Ed. by K. Hopkins, London, 1971. - Bruce Glassburner and James Riedel, "Government in the Economy of Hong Kong", *The Economic Record*, Vol. XLVIII, Melbourne, 1972, pp. 58 sqq.

economy can be set in motion"¹, or (2) that the entire nature of the economy must be modified before sustained growth is possible². It should become clear in the ensuing discussion that neither of these concepts applies to Hong Kong. The growth of industry has taken place strictly within the framework of competitive free enterprise. Economic decisions have been coordinated only by the common goal of businessmen to make profits. The only "strategy" which has been followed - perhaps a more appropriate term is ideology - has been to allow businessmen to have the full scope of freedom, with as little governmental intervention or red-tape as possible.

Despite the lack of guidance, a distinct pattern to the industrialization process in Hong Kong is discernible; this will be described in the following section. Section II will briefly survey each of the major manufacturing industries. In the final section, an attempt will be made to discover the theoretical rationale behind the Hong Kong "model" of industrialization.

I. The Hong Kong Model

Trade patterns. In order to live, Hong Kong must import. Table IV describes the composition of retained imports (total imports less re-exports) by end-use. By far the largest category of imports is raw materials, in 1970 constituting 44.4 per cent of the total. Consumers import an almost equivalent amount, half of which consists of food-stuffs (19.2 per cent). The Colony also relies on foreign supply for most capital goods, which in 1970 accounted for 12.9 per cent of total imports. The changing percentage composition of imports - away from foodstuffs and favoring raw materials and capital goods - is a reflection of the export boom of recent years.

To pay for imports, Hong Kong manufactures consumer goods for export. The commodity composition of exports is described in Table II. The composition of exports is highly concentrated in four commodity categories - clothing, textiles, miscellaneous manufactured goods (largely plastics and wigs) and electronics³ - which together in 1970 accounted for over 75 per cent of total exports. These four commodity groups, according to a recent pilot census of manufacturing, accounted for almost 70 per cent of gross manufactured output (see Table VI). The remaining 30 per cent represent output from a variety of other industries, ranging from canning, furniture, printing and chemicals to shipbuilding, machinery, etc., none of which in themselves constitutes a significant proportion of the total. Clearly five industries dominate the economy.

A more precise measure of each industry's contribution to total output is value-added. Unfortunately, the Department of Census and Statistics did not ascertain this data in its recent pilot census. Moreover, in the case of textiles, export figures do not even provide a measure of gross value of production, since more than half of total textile sales are domestic. Textiles are unique, however; over 90 per cent of the sales of other leading industries are to overseas buyers.

¹ Henry J. Bruton, "The Import-Substitution Strategy of Economic Development: A Survey", The Pakistan Development Review, Vol. X, Karachi, 1970, p. 125.

² Ibid.

³ "Electronics" and "Electrical machinery" are used synonymously in this paper because of the high concentration (over 90 per cent) of production in transistor-radios and computer components.

The markets for Hong Kong's exports and the sources of its imports are detailed in Tables III and V. Asia has remained the major source of imported goods; however, within Asia, Japan has overtaken China as the largest supplier. China is still Hong Kong's major source of food, but with the growth of manufacturing, the Japanese have come to the fore in supplying intermediate goods and raw materials. Imports of consumer goods, for which the demand is income elastic, originate in Europe and America.

The market composition of exports has undergone radical reorientation over the last two decades (see Table III). Figures for 1954 and 1957 refer to total exports and are thus not comparable to those of latter years (which refer to domestic exports). Nevertheless, the reorientation of export markets is clearly revealed by these figures. In 1954, North America and Western Europe accounted for a mere 14 per cent of total exports, HK\$ 338.4 million¹. Since total domestic exports in 1954 were estimated to be HK\$ 860 million, the share of total domestic exports taken by America and Europe could not have accounted for more than 40 per cent of total domestic exports, assuming that Hong Kong directed all domestic exports to the West and all re-exports elsewhere. The shift away from Asian markets continued during the 1960's as Asia's share of total domestic exports fell from 24 to 12 per cent from 1960-1970, while the United States increased its share from 26 to 42 per cent over the same period.

Certain features of Hong Kong's industrialization are evident; Hong Kong (1) specializes in the manufacture of standardized consumer goods (2) for export (3) to high income countries in the West, and at the same time, the Colony (4) relies on Asian countries for the provision of raw materials and (5) on Western countries for capital goods. Another essential feature is the method of marketing exports. Hong Kong relies on manufacturers, wholesalers and large retail chain-stores in Europe and America to market her products². This feature, combined with the fact that the goods manufactured are highly standardized, requiring little "research and development," means that Hong Kong entrepreneurs are left free to do what they can do best: produce. These features, taken together, constitute what shall be called the "Hong Kong model of industrialization."

Integral to the working of the model is the role of local import-export firms. These firms fulfill a coordinating function between Hong Kong manufacturers and the outside world in both supplying raw material input and marketing output. This function is particularly vital to small scale operators. It is typical for local import-exporters to purchase raw materials in large quantities and then sell them either to manufacturers directly or through wholesalers. These firms also procure the bulk of the production orders for small concerns. The typical procedure would be for a local import-export firm to receive a copy of a fast selling item from a European importer, requesting the Hong Kong price. The Hong Kong exporter would then give the copy to a local manufacturer, asking for his costs and the quantity he would be able to supply. After adjusting for his profit margin, the Hong Kong exporter relays the information to the European importer³.

¹ Free market exchange for U. S. dollars fluctuates around U. S. \$ 1 = HK \$ 6.

² J. L. Epsy, *The Growth Strategy of Chinese Firms in Hong Kong*, unpublished D. B. A. dissertation, Harvard Business School, 1970.

³ This procedure was described to the author by the owner of a medium size import-export firm, Mr. M. Gidumal, General Merchandise Corp. Ltd., in March 1972.

Stability. Built into the Hong Kong "model" and essential to its successful performance is a high degree of flexibility. The openness of the economy to the vicissitudes of international politics and economics, and the vagaries of fashion require the ability to react quickly to changing market conditions. Brief surveys of the growth of each major industry, in the following section, will provide some indication of the adaptability of the industrial structure. Flexibility of the economy can also be examined by looking at the stability of export earnings over time.

The common belief that fluctuations in export will generate domestic instability has led many LDC's to reject trade as a viable engine for growth. However, it is the general consensus in the literature on the subject that there is no direct relationship between trade dependence per se and export instability. The commodity concentration of exports is the only factor which has been almost unanimously found to be statistically associated with instability, and the degree of significance attributed to this factor varies from study to study. Geographic concentration of exports, contrary to a priori thinking, is found to bear a negative association with instability¹. Moreover, Massell, in a recent study finds that the proportion of primary production in total exports is negatively associated with instability, leading him to conclude that instability is demand caused². MacBean, on the basis of a study of five countries, found that instability was the result of "quite specific factors, often local and political"³. Michealy argues that the degree of instability of exports is due to the nature of commodities exported⁴.

In examining the stability of Hong Kong's exports, an approach similar to Massell's will be taken⁵. Assuming that exports grow exponentially, the following semi-logarithmic function has been estimated,

$$\text{Log}_e X_t = a + b t + e_t,$$

where X_t is the value of exports in year t and e_t is the unexplained residual. The standard deviation of the residuals, e_t , $t=1, \dots, n$, provides an index of instability which allows for the growth trend of exports.

Instability indexes derived in this manner, for the years 1948-59, 1954-70 and 1959-70, are presented in Table VII. Comparison of these indexes suggests a steady increase in stability of export earnings over time. Comparing export commodity and market concentration in Hong Kong with those of LDC's and developed countries (DC's) yields some interesting results⁶. In the last decade, Hong Kong's exports have grown more steadily than those of either LDC's or DC's, while the commodity concentration of Hong Kong's exports is only slightly below that of LDC's and much higher than DC's; geographic market concentration of exports is higher than either LDC's or DC's.

¹ Albert O. Hirschman, *National Power and the Structure of Foreign Trade*, Publications of the Bureau of Business and Research, University of California, Berkeley, Los Angeles, 1945.

² Benton F. Massell, "Export Instability and Economic Structure", *The American Economic Review*, Vol. LX, Menasha, Wisc., 1970, p. 629.

³ Alasdair I. MacBean, *Export Instability and Economic Development*, Foreword by Edward Mason, London, 1966, p. 56.

⁴ Michael Michaely, *Concentration in International Trade*, Contributions to Economic Analysis, 28, Amsterdam 1962.

⁵ Massell, op. cit.

⁶ LDC's and DC's are averages of 36 less developed countries and 19 developed countries, reported in Massell, op. cit.

These findings substantiate the general conclusion that instability does not result from trade dependence per se. They also verify that geographic concentration of export markets is positively correlated with stability. The fact that Hong Kong has enjoyed a high degree of stability in the export of a small number of commodities, lends credence to Michaely's conclusion that instability is due to the nature of the commodities exported and not concentration per se.

Terms of trade. An additional fear associated with trade dependence is that of deteriorating terms of trade. Terms of trade are of vital importance since they determine the purchasing power derived from a given amount of exports. Unfortunately, the discussion of whether LDC's inherently suffer deteriorating terms of trade vis-a-vis DC's, has been prolonged due to the imprecision of the concept¹. No attempt will be made to join the debate here; nevertheless, it is important to assess the pattern of terms of trade in Hong Kong as an additional feature of the "model" of industrialization.

Unfortunately, published import and export price indexes are available only from 1968 to 1971. Prior to this period, the only data available are unpublished estimates for 1964-1968, provided by the Department of Census and Statistics. These data are presented in Table IX. It appears from the data that Hong Kong has experienced relatively stable terms of trade over the period 1964-1970. However, in 1968, both import and export prices began to rise rapidly. The close correlation between import and export prices is the natural consequence of the high import content of raw materials, intermediate goods and capital goods which go into the manufacturing process. In addition, Hong Kong consumers imported consumer goods at inflated world prices, thus giving rise to demands for higher money wages.

The pattern of terms of trade over time depends upon the price and income elasticity of demand for exports and imports. The constancy of the trend (if one is allowed to regard eight years as a trend) could presumably be explained by the price-elastic, income-inelastic nature of the demand for the bulk of the exports (low-priced consumer goods) and imports (food and raw materials). If Hong Kong's export demand is price elastic, as one would a priori presume it to be, then the Colony is extremely sensitive to price competition. The recent emergence of South Korea and Taiwan as competitors presents some serious problems for Hong Kong. At the same time, Hong Kong's exports are extremely sensitive to input costs. The nature of the goods in which Hong Kong specializes constrains her ability to pass off increased production costs in terms of higher product prices. Drastically rising export prices during the past three years did not adversely affect demand, since countries importing Hong Kong's goods were experiencing inflation exceeding the price increases of Hong Kong exports. However, Hong Kong's exports are labor intensive and if labor increasingly becomes a constraining factor, resulting in rising wages, then the present "model" may not be appropriate in the future. There are signs that Hong Kong is in a stage of transition. The industry surveys presented in the next section suggest that Hong Kong is systematically moving into more sophisticated products.

¹ The issues are well summarized by Gerald M. Meier, *The International Economics of Development, Theory and Policy*, A Rev. and Expanded Ed. of *International Trade and Development*, New York, London, 1968.

II. Industry Surveys

Textiles¹. Textiles were the foundation of Hong Kong's industrialization. Cotton weaving, which was the first sector of the industry to develop, was started in the 1920's by local Cantonese weavers on a traditional handicraft basis. Early weaving factories produced primarily low quality, heavy grey cotton yardage for domestic consumption and export to Southeast Asian markets. The so-called "Cantonese sector" has persisted to the present, as distinguished from the more modern sector developed after World War II. However, as a result of economic pressure-competition from the domestic modern sector and from Southeast Asia importing countries - Cantonese weavers have had to improve production techniques and to seek broader markets.

The foundation of the modern cotton weaving sector as well as the textile industry as a whole, was laid by Shanghai industrialists who, in 1947-1950, brought their machinery and skills from China. Particularly fortunate was the fact that, at the time, many Shanghai industrialists had new machinery on consignment - in some cases stored in Hong Kong godowns awaiting delivery to Shanghai. As a result, the textile mills established by these men in the early fifties were equipped with the most modern machinery.

Trade in cotton textiles has been subject to a multiplicity of trade restrictions and controls. The first severe blow to rapid growth of textiles came in 1959 when the Lancashire Pact was imposed to stabilize cotton textile exports to the United Kingdom. Shortly thereafter, in 1961, Hong Kong agreed to the GATT Long Term Cotton Textile Agreement, by which exports to the United States were limited by a quota². These constraints have had a significant impact on the industry.

Trade restraints have particularly affected the structure of the industry. First of all, many small scale and relatively inefficient operations were eliminated as a result of the industry slowdown. It has been argued that this was not an altogether undesirable result³. Rapid growth over the 1950's led to excessive competition and overexpansion, often resulting in unfilled orders and shoddy workmanship, which hurt Hong Kong's international reputation. The slowdown reportedly allowed the industry to consolidate and improve general operative procedures. The second effect of the imposed slowdown was to induce forward linkages with the finishing and garments sectors.

The development of the weaving sector also generated backward linkages. Prior to 1947, no spinning mills existed in Hong Kong. However, immigrating Shanghai industrialists understood the advantages of vertically integrated industries and they had the capital to set them up. By 1971, 31 spinning mills were operating 825,916 spindles. Not only has the number of spindles grown prodigiously, but spindle utilization in Hong Kong is the highest in the world⁴. The linkage between the local spinning and weaving sectors is witnessed by the relatively small share of yarn output which is exported (see Table VI).

¹ This section draws heavily on Textiles Hong Kong, Hong Kong, 1965, and Ching Heng Mok, The Development of Cotton Spinning and Weaving Industries in Hong Kong, 1946-1966, unpublished M. A. thesis, Hong Kong University, 1969.

² According to this agreement textiles were limited to an annual level not lower than that for the previous 12 months ending June 30, 1961.

³ Mok, op. cit.

⁴ Asian Textile Survey, 1967-68, Ed. by Kayzer Sung and P. H. M. Jones, Hong Kong, 1968.

As a result of growing world demand and increasing trade restrictions on cotton textile trade, the Hong Kong industry has moved increasingly into the production of cotton/synthetic and synthetic yarns and fabrics. While this development has been of only recent origin - starting in 1966 - its growth has been rapid. It has been estimated that in 1970 alone, Hong Kong invested more than HK\$ 500 million in new synthetic textile machinery¹. However, the non-cotton textile agreement concluded with the United States in October, 1971, will effectively impede further development of this sector of the industry. As of October, 1971, exports of non-cotton textiles to the United States will not be allowed to grow at a rate higher than 7 1/2 per cent per annum. The impact of this act can be seen when it is noted that exports of non-cotton-textiles in 1970 increased 42 per cent, of which over 40 per cent went to the United States. It has been predicted that as a result of this agreement, Hong Kong stands to lose more than HK\$ 500 million in potential export earnings².

The slowest sector of the textile industry to develop has been the finishing sector. Not until 1960 did this sector begin to expand. The primary reasons for its slow development are (1) heavy capital requirements and (2) the high degree of expertise necessary. However, with the growth of unfinished textile exports impeded in the early 1960's, incentive was provided to increase domestic value-added and thereby increase the return under the imposed quota. Nevertheless, by 1970, the finishing sector was still a relatively small part of the textile industry, accounting for only 14 per cent of the total value of industry's output - of which 37 per cent were exported.

Clothing. The 1970 pilot manufacturing census revealed that the clothing industry is the largest producer and employer in the Colony. Moreover, the clothing industry has played a dominant role in the economy throughout the period under consideration (see Table II). This has been accomplished despite mounting restrictions on trade in textiles and clothing.

The clothing industry has kept pace with the rest of manufacturing only through continual adjustment to changing market conditions. In the early 1950's the bulk of Hong Kong's clothing (largely to the United States) were of low quality knitwear. However, the imposition of quotas in the early 1960's provided an incentive for local manufacturers to up-grade quality and increase value-added in order to maximize their return under the quota. The effect of this has been a steady shift to higher quality garments.

Trade restrictions have also stimulated a move to synthetics within the clothing industry. Between 1969 and 1970, exports of clothing made of synthetic fabrics increased 42 per cent, while cotton and woolen clothing exports declined by 4 per cent and 1 per cent respectively. Because of the slow growth of the domestic textile finished sector and the only recent development of domestic synthetic fabric production, Hong Kong has relied largely on Japan for the supply of fabrics. However, increasing protectionism in the United States may stimulate even further integration between the clothing and textile industries.

Of course, the clothing industry will have to continue to diversify its line of production, but even more important may be the necessity of diversifying its export markets. At present the United States takes 40 per cent of total clothing exports. With the recent

¹ T. D. Sorby (Director of the Department of Commerce and Industry), South China Morning Post, Hongkong, October 16, 1971, p. 1.

² Ibid.

signing of the non-cotton textile agreement, exports of the fastest growing clothing sector will be constrained to 7 1/2 per cent per annum. It is, therefore, improbable that the clothing industry will be able to maintain its present share of total exports in the future¹.

Plastics. The first plastics factory was established in Hong Kong in 1947. Since then, the industry has kept pace with the growth of the economy. As Table II indicates, throughout the 1960's plastics maintained a relatively constant share of total exports; however, as is also apparent from the table, there has been a steady shift away from plastic flowers and foliage and toward plastic toys and dolls. By 1970, Hong Kong had established itself as the world's second largest toy producer and exporter. This shift is part of an overall move within the plastics industry to more sophisticated products.

In addition to artificial flowers and toys, the plastic industry produces household decorations, household utensils and polyethylene bags. According to the 1970 pilot census (see Table VI), these "other" articles accounted for 34 per cent of total output - of which only 62 per cent were exported. In addition to local demand for plastic household articles, an important share of polyethylene bag and sheeting production is used domestically in the packaging of manufactured commodities. Artificial flowers and plastic toys and dolls, on the other hand, are almost totally exported (over 90 per cent). The major market for these items is the United States, which in 1969 absorbed 62 per cent of total plastic exports.

Raw material inputs for the industry - mainly polythene and polystyrene - presently come from Japan (over 75 per cent), however, this has not always been the case. In the early 1960's Japan's domestic demand for plastic raw materials was too great to allow her to supply Hong Kong, and as a result, the United States and the United Kingdom were major suppliers. The distribution and sales of raw materials follow the traditional Hong Kong pattern, with importers selling directly to larger molders in the industry and to smaller establishments².

The plastics industry is unique among other manufacturing industries in Hong Kong in that it employs locally produced machinery. It has been claimed that "virtually all the many hundreds of simple hand-operated 1/2 to 2 ounce injection molding machines are made in Hongkong"³. In 1968, it was established that production of machinery for the plastics industry accounted for more than 50 per cent of the total value of domestic production⁴. The local supply of molds, at costs below those in many other countries, has contributed to the competitiveness of plastics industry.

Electronics⁵. One of the most rapidly growing industries in the 1960's was electronics. Prior to 1959 the industry was virtually non-existent, but by 1970 it had grown to account for 10 per cent of total domestic exports and 9 per cent of manufacturing employment. Moreover, development of the industry came at a time when

¹ Peter Cook, "Sackcloth and Ashes", *Far Eastern Economic Review*, Vol. LXVI, Hongkong, 1969, pp. 336 sqq.

² Deborah Trenerry, "Hongkong's Plastic Industry", *ibid.*, Vol. XXXVII, 1962, p. 301.

³ *Ibid.*, p. 305.

⁴ Report of a Survey on the Machinery Industry in Hong Kong, Hong Kong Productivity Centre, 1970, p. 8.

⁵ Discussion in this section draws heavily on Edward Kwan-yin Chen's "The Electronics Industry of Hong Kong, An Analysis of its Growth", unpublished M. A. thesis, Hong Kong University, May, 1971.

the economy was facing increasing difficulties - primarily from trade restrictions on textiles. Thus, the growth of the electronics industry presents yet another illustration of the adaptability of Hong Kong industry.

The electronics industry was initiated in Hong Kong with the establishment of transistor radio assembly plants. This activity was particularly well suited to Hong Kong as it requires (1) relatively low capital investment, (2) little technical know-how, (3) little floor space or overhead and (4) large amounts of labor willing to undertake tedious work. Moreover, at the turn of the decade, world demand for low-cost transistor radios was particularly strong, while at the same time, the world's leading supplier, Japan, was shifting to higher priced sets. The local development of an electronics industry was given added stimulus by pressure from the United States on Japan to voluntarily constrain its export sales to the United States. As a result, Hong Kong was given an excellent opportunity to develop an electronics industry.

Before 1965 household products - primarily radios - dominated electronics production. However, in recent years electronic components have come to the fore. The component sector was stimulated to develop in 1962 when, as a result of the great success of Hong Kong-assembled radios in foreign markets, Japan imposed an embargo on the export of components to Hong Kong. The ban was soon lifted, however, when the Japanese component suppliers experienced a severe recession and when it was realized that Hong Kong could manage without Japanese supply. By 1968, the component sector of the industry accounted for 52 per cent of total output, of which as much as 60 per cent were domestically consumed¹.

Within both the household product and component sectors, diversification has taken place. Prior to 1964, the only product manufactured was the transistor radio; however, in recent years the production of television sets has begun, and is expected to increase. Moreover, the quality and sophistication of transistor radios is being improved upon as a result of stiff competition from Taiwan and South Korea. Components have also been diversified in recent years with the production of television parts and, since 1968, computer components.

The United States is Hong Kong's largest electronics market, accounting for about 72 per cent of total exports. The reason for this stems in part from the fact that U. S. firms have participated heavily in joint venture operations in the industry. In this respect the electronics industry is distinct from other manufacturing industries in Hong Kong which have relied very little on direct foreign capital participation.

Wigs. The growth of the wig (hair products) industry exemplifies the versatility of Hong Kong manufacturing. The wig industry was first established in the early 1960's, but until 1965 accounted for an imperceptible share of total exports. However, in the latter half of the decade the swing of fashion turned to wigs and other hair pieces, creating a great demand. The rapid rate of growth of wig exports from 1965 to 1970 attests to Hong Kong's ability to react to changing market conditions. By 1970, Hong Kong was exporting HK\$ 937 million worth of wigs (8 per cent of total domestic exports) primarily to the United States (60 per cent).

¹ See Chen, *op. cit.* - J. Ling, "Omens in Electronics", *Fas Eastern Economic Review*, 1965, pp. 527 sqq., estimates that only 40 per cent are domestically consumed.

Competition in the international wig market is intense, however. Japan and South Korea are Hong Kong's chief competitors, although, it has been claimed that they cannot match Hong Kong for quality¹. Those competitors who do produce wigs of comparable quality - West Germany, France and Italy - retail their products at prices 30 per cent higher than Hong Kong's².

One important reason for Hong Kong's competitiveness in the wig industry is the close proximity of the essential raw material, human hair. China accounts for over 80 per cent of Hong Kong's total human hair imports. Moreover, Chinese hair is considered to be ideal for the production of wigs, being coarse and thus able to hold a set³. In 1969 and 1970 fashion took another swing, this time away from wigs of human hair and towards those made of synthetic fibers. In 1970 and early 1971, 85 per cent of all exports of wigs were made of synthetic materials.

The sharp decline in demand for human hair wigs in 1970 had a disastrous impact on the industry. In 1971, exports of wigs registered only HK\$ 527 million, a decline of 44 per cent from the previous year. The slump in the wig industry was aggravated by a shortage of suitable synthetic fiber with which to meet the changing demand. Nevertheless, according to a survey by the Department of Commerce and Industry, in 1971 "the demand for quality synthetic wigs at acceptable prices was maintained"⁴.

III. Comparative Advantage

Why has Hong Kong's industrialization taken the form it has? The most obvious place to look for the answer would be in orthodox trade theory. According to the neo-classical Heckscher-Ohlin trade theory, the basis of international trade is international price differences, which, in turn, are the result of international differences in relative abundance of the factors of production, labor and capital.

In addition to the usual neo-classical assumptions, the Heckscher-Ohlin trade theory assumes that all trading countries share a common production function. This assumption, the strong factor intensity assumption, insures that a ranking of industries by factor intensity will be the same from country to country, and thus patterns of trade can be explained in terms of relative factor intensity of imports and exports.

Tests of the theory have followed the method initiated by Leontief, in which the direct and indirect capital and labor requirement of exports and imports are computed using input-output data⁵. Hong Kong, of course, lacks an input-output table. However, if as the preponderance of empirical evidence suggests, the strong-factor intensity assumption is valid, then the input-output data of another country can be used to calculate the relative factor intensity of Hong Kong's imports and exports. There are serious

¹ Christine Holgate, "Fair Hair", *Far Eastern Economic Review*, Vol. L IV, 1966, p. 697.

² *Ibid.*

³ *Ibid.*

⁴ Director of Commerce and Industry, *Hong Kong Annual Departmental Report for the Financial Year 1970-71*, Hong Kong, p. 45.

⁵ Wassily Leontief, "Domestic Production and Foreign Trade: The American Capital Position Re-Examined" and "Factor Proportions and the Structure of American Trade: Further Theoretical and Empirical Analysis", in: *idem*, *Input-Output Economics*, New York, 1966, pp. 68 sqq.; 100 sqq.

qualifications to this procedure, however. First, the Heckscher-Ohlin theory is incapable of dealing with primary products, which, in the case of Hong Kong, account for a considerable proportion of imports. Second, most of the manufactured goods Hong Kong imports are domestically non-competitive - not produced at all domestically. Many of these goods could not be produced in Hong Kong, regardless of relative factor abundance, owing to limited availability of land and water.

Restricting the analysis to manufactured goods, and assuming that all manufactured goods imported are domestically producible, a Leontief-type test of Hong Kong's trade pattern has been undertaken using the 1951 United States input-output data. The direct and total requirements of capital and labor for Hong Kong's 1970 exports and imports of manufactures are presented in Table X. Notice that the factor requirements computed are not the actual requirements, and only reflect the relative factor intensity of the two categories of goods. The ratio of exports's capital/labor to imports's capital/labor is .45 for direct requirements and .78 for total requirements, indicating, that Hong Kong's trade pattern conforms to that expected of a labor-abundant, capital-scarce country¹.

Leontief's original study discovered the now famous paradox that the U.S. shares a comparative advantage in relatively labor intensive goods with low-income, labor-abundant LDC's. This paradox is resolved, however, once the neo-classical assumption of homogeneity of the factors of production is dropped². If labor is measured in terms of efficiency units rather than in terms of men or man-hours, then it will be found that the United States is actually a relatively labor-abundant country. Because direct capital requirements are not as high in manufacturing as in other activities, because labor is less mobile internationally than capital, and because generations of experience and education may be required to build a skilled labor force, it is argued that differences in the availability of skills form the basis of trade in broad classes of manufacturers³. The factor intensity of Hong Kong's trade flows, presented in Table X, according to the reformulated factor proportions trade theory, indicates that Hong Kong finds its comparative advantage in exporting unskilled-labor-intensive manufactured goods and importing goods which embody relatively more skilled labor.

The neo-classical theory cannot provide a complete explanation of Hong Kong's trade pattern, however. Ohlin, in a recent article, states, "... in my opinion the simple models in basic (Heckscher-Ohlin) theory - although leading to formally precise conclusions - can contribute to nothing more than a vague knowledge about the nature of international trade"⁴. He argues that attention should be placed more on "the influence

¹ According to the Leontief test, if the ratio of export's capital-labor ratio to import's capital-labor ratio is greater (less) than unity for a capital abundant (scarce) country, then the theory is confirmed.

² This argument has been propounded by Donald B. Keasing, "Labor Skills and Comparative Advantage", *The American Economic Review*, Vol. LVI, 1966, pp. 249 sqq. - Peter B. Kenen, "Nature, Capital and Trade", *The Journal of Political Economy*, Vol. LXXIII, Chicago, Ill., 1965, pp. 437 sqq.

³ Donald B. Keasing, "Labor Skills and International Trade: Evaluating Many Trade Flows with a Single Measuring Device", *The Review of Economics and Statistics*, Vol. XLVII, 1965, p. 287. - The assumption necessary to make this a reformulation of the Heckscher-Ohlin theory is that there is substitutability between skill classes without reversing skill intensity rankings from country to country.

⁴ Bertil Ohlin, "The Business Cost Account Approach to International Trade Theory", *The Swedish Journal of Economics*, Vol. LXXII, Uppsala, 1970, p. 12.

on cost accounts and trade of other cost elements than the payment to the various factors of production"¹. In the case of Hong Kong, where the major markets are thousands of miles away, ignoring transportation cost is absurd. Hong Kong manufactures goods for which the ratio of unit value to unit transportation cost is relatively high, regardless of factor endowment. Moreover, social legislation which affects the cost of labor - such as minimum wages, length of work week and other forms - affects the basis of trade. Governmental policy on international commercial relations, domestic taxation and the provision of social overhead capital also affect the competitiveness of exports and competing import industries.

The Heckscher-Ohlin theory and its revised version, imply a one-way causal relationship between trade and factor abundance. However, countries also use trade to improve their supply of factors of production; thus factor inflow to Hong Kong should be considered. Moreover, part of the influence attributed to relative abundance of skills should be credited to lags and leads in technology. Recently it has been suggested that patterns of trade can be explained by the "product cycle" of commodities². Countries which have the resources for market research, inventions and innovation, will specialize in the production of commodities still in the early stages of product formation. As the product becomes more popular and production moves to a larger scale, other advanced countries capable of achieving economies of scale in the production of the commodity will join in. As time goes on, the product becomes standardized and producers will look to the least cost area of production, normally the labor-surplus, low-wage, less developed country. According to this less general theory of trade, Hong Kong's comparative advantage lies in the production of goods in the final stage of the "product cycle."

IV. Conclusion

Hong Kong has been successful because she has done well what she can do best. The Colony has been able to exploit its international comparative advantage because product and factor markets have operated efficiently, producing rational prices. The efficiency of product and factor markets in Hong Kong is in no small part attributable to the resistance of Government to interfere in the market. The absence of labor unions and monopsonistic power have permitted wages to accurately reflect supply and demand conditions in the labor market. In the 1950's, shortly after Hong Kong was inundated with over two million refugees from China, wages were very low; however, surplus labor was rapidly (within five years) absorbed in the manufacturing sector. In the 1960's demand for labor increased unabated as real wages rose at 7 per cent compounded annually. This condition, mistakenly called a "labor shortage," is the ultimate objective of economic development.

Would economic policy of the Hong Kong type produce similarly successful results if practiced in other developing countries? Reasons why this question should be answered

¹ Ohlin, op. cit., p. 14.

² Raymond Vernon, "International Investment and International Trade in the Product Cycle", *The Quarterly Journal of Economics*, Vol. LXXX, Cambridge, Mass., 1966, pp. 190 sqq. - William Gruber, Dileep Mehta, and Raymond Vernon, "The R&D Factor in International Trade and International Investment of United States Industries", *The Journal of Political Economy*, Vol. LXXV, 1967, pp. 20 sqq. - M. V. Posner, "International Trade and Technical Change", *Oxford Economic Papers*, N. S., Vol. XIII, 1961, pp. 323 sqq.

negatively come readily to mind. First, laissez-faire policy is appropriate only when factor and product markets operate efficiently, which is not the case in many LDC's. Second, entrepreneurship, which is integral to the Hong Kong "model," has been identified as the binding constraint in most LDC's. Third, most LDC's, unlike Hong Kong, are plagued with a low-productive, lagging agricultural sector, which government is compelled to support if for no other reason than because it is the sector which supports the majority of the population. Finally, social and cultural obstacles to growth predominate in many LDC's, where they do not in Hong Kong. Hong Kong is a country composed of immigrants, for whom economic gain was a consideration in coming to the Colony in the first place. This factor, when combined with the legendary industriousness of the Chinese people, should not be underestimated.

On top of these reasons, it must be recognized that the economic and social goals toward which the Hong Kong Government directs its policies are radically different from those of most LDC's. Hong Kong exists outside of the mainstream of national movements and world politics. Economic growth, which must be identified as the overriding goal of the Hong Kong Government, if not society, is but one of several competing goals in most other countries. Moreover, it has been previously suggested that Hong Kong's preoccupation with growth and economic efficiency has entailed a cost in terms of distributive justice¹. This is a price which many countries declare they are unwilling to pay. However, distributive justice notwithstanding, people of few nations have enjoyed the material gain that the people of Hong Kong have, and few have worked as hard to achieve it.

All of this skepticism must be qualified by the recent experience of several LDC's, notably Taiwan and South Korea, which have achieved rapid economic growth along the lines of the Hong Kong "model," and just as in Hong Kong, only after having liberalized their internal and external economic policy. Clearly, where conditions are appropriate, the industrialization of Hong Kong is a paradigm to be followed.

¹ Cf. Owen, op. cit. - Riedel, op. cit., Chapter Four.

Table I - Selected Indicators of Growth in Hong Kong, 1953 - 1971

Indicator	Compound Rate of Growth			1971 Level	
	1953-1960	1960-1971	1966-1971	Number	Units
Population					
Estimated total at mid-year	4.50	2.52	1.72	4,045,300	persons
Births registered ^a	5.41	-3.37	-3.73	76,818	persons
Deaths registered	.70	.53	1.53	20,253	persons
Employment					
Manufacturing establishments registered	7.77	11.77	13.34	17,474	number
Manufacturing employment in registered establishments	7.73	8.76	9.77	566,979	number
Manufacturing real wage rate movements	n. a.	n. a.	6.8	148	1964= 100
International Trade					
Domestic exports	.70 ^a	14.26	17.51	13,749.85	millions of HK\$
Imports	5.89	11.26	13.96	20,256.23	millions of HK\$
Re-exports	n. a.	10.54	12.30	3,414.39	millions of HK\$
Industrial Production					
Textiles					
Cotton yarn	14.83 ^b	6.37 ^c	2.83 ^d	327,439 ^e	'ooo lbs
Cotton & Cotton-mix Fabric	23.93 ^b	6.10 ^c	5.78 ^d	853,417 ^e	'ooo sq yd
Cement	12.21	11.13	14.55	511,827	metric tons
Electricity	13.42	13.42	11.76	4,891.28	millions of kwh
Prices					
General consumer price index	n. a.	n. a.	3.65	132	1964= 100
Retail price index	0.00	2.49	n. a.	n. a.	
Public Finance					
Revenue ^f	9.99	12.72	13.11	3,071	millions of HK\$
Expenditure ^f	12.46	10.65	7.69	2,452	millions of HK\$
Money and Banking					
Bank deposits	15.34	17.69	16.04	18,785	millions of HK\$
Currency in circulation	2.72	9.65	9.15	2,932	millions of HK\$
National Income					
Gross domestic product (GDP), nominal	9.6	13.6	15.8	24,655	millions of HK\$
GDP per capita, nominal	5.1	11.1	14.0	6,095	millions of HK\$
GDP per capita, real	5.1	8.6	10.3	-	-
Gross domestic capital formation/GDP, average annual percentage	14.3	19.0	16.6	-	-

^aThis figure refers to total exports; re-exports are published only after 1959. - ^b1955-1960. - ^c1960-1970. - ^d1966-1970. - ^e1970 level. - ^fBecause years 1959/60 and 1965/66 are the only years since 1947 that Government budget has been in deficit, 1960/61 and 1966/67 have been used instead.

Source: Hong Kong Statistics, 1947-1967, Hong Kong, 1969. - Hong Kong Monthly Digest of Statistics, January, 1972.

Estimates of GDP and GDCF were obtained from: Edward Szczepanik, Economic Growth of Hong Kong, London, 1958, p. 177. - K. R. Chou, The Hong Kong Economy: A Miracle of Growth, Hong Kong, 1966, p. 84. - E. R. Lim, A General Equilibrium Model of an Export Dependent Economy, Ph. D. dissertation, Harvard University, 1969. - C. P. Haddon-Cave, Budget Speech, 1972, South China Morning Post, March 2, 1972, p. 7.

Table II - The Commodity Composition of Domestic Exports for Selected Years, 1954-1970
(percentage of total domestic exports)

Items	1954 ^a	1957 ^a	1960	1963	1965	1967	1969	1970
Clothing	26	31	36	36	35	35	36	35
Textiles	33	30	19	17	17	14	11	10
Miscellaneous manufactured goods	7	8	14	16	20	22	24	25
Artificial flowers	-	-	5	6	5	4	3	3
Plastic toys & dolls	-	-	4	6	6	8	7	7
Wigs	-	-	-	-	1	3	6	8
Electrical machinery & appliances	-	-	2	3	6	9	10	10
Footwear	6	6	4	4	3	3	3	2
Metal manufactures	6	5	4	4	3	3	3	3
Others	22	20	21	20	16	14	13	14
Total domestic exports (millions of HK\$)	900	1,300	2,867	3,831	5,027	6,700	10,518	12,347

^aHong Kong trade statistics before 1959 do not distinguish domestic exports from re-exports. Figures for 1954 and 1957 are the author's estimates.

Source: Annual Report, Hong Kong, selected years, 1954-1970.

Table III - The Market Composition of Domestic Exports for Selected Years, 1954-1970
(percentage of total domestic exports)

Market	1954 ^a	1957 ^a	1960	1963	1965	1967	1969	1970
North America	4	8	29	28	37	41	45	45
U. S. A.	3	7	26	25	34	37	42	42
Western Europe	10	16	28	35	33	30	30	29
United Kingdom	7	11	20	23	16	17	14	12
Federal Republic of Germany	1	1	4	6	6	6	7	8
Asia	71	60	24	15	14	14	12	12
Japan	5	8	3	3	3	3	3	4
Singapore	14	12	8	7	3	2	2	2
Malaysia	14	12	8	7	6	1	-	-
Others	15	16	19	22	16	15	13	14
Australia	2	2	3	2	3	3	3	3
Africa	7	8	8	7	6	4	5	4
Total domestic exports (millions of HK\$)	2,417	3,016	2,867	3,831	5,027	6,700	10,518	12,347

^aTotal exports.

Source: Annual Report, Hong Kong, selected years, 1954-1970.

Table IV - Commodity Composition of Retained Imports^a for Selected Years, 1960-1970
(percentage of total retained imports)

Commodity	1960	1963	1965	1967	1969	1970
Foodstuffs	25.8	24.6	24.3	26.2	21.7	19.2
Fuel	4.4	4.2	3.6	4.2	3.4	3.0
Consumer goods	19.0	18.9	20.4	18.5	20.1	20.3
Raw materials	43.0	43.3	41.4	41.6	44.3	44.4
Capital goods	7.7	9.0	10.3	9.5	10.5	12.9
Total retained imports (millions of HK\$)	4,790.6	6,248.2	7,458.7	8,369.6	12,214.0	14,715.0
Total imports (millions of HK\$)	5,863.7	7,411.9	8,964.8	10,449.0	14,893.0	17,607.0

^aPrior to 1959, trade data do not allow differentiation of retained imports from total imports.

Source: Hong Kong Statistics, 1947-1967. - Hong Kong Review of Overseas Trade in 1970.

Table V - Principle Sources of Retained Imports for Selected Years, 1954-1970
(percentage of total retained imports)

Area	1954 ^a	1957 ^a	1960	1963	1965	1967	1969	1970
Asia	52	54	54	54	56	55	55	54
Japan	14	15	16	17	17	19	23	24
China	20	22	20	20	26	22	18	16
Taiwan	1	1	2	2	2	2	3	5
Western Europe	28	27	23	24	22	21	21	22
United Kingdom	11	13	11	12	11	9	8	9
Federal Republic of Germany	5	3	3	3	3	3	4	4
Switzerland	3	3	2	2	2	2	3	3
North America	10	11	14	12	12	14	14	14
U. S. A.	8	10	13	11	11	12	13	13
Other	10	8	9	10	10	10	10	10
Total imports (millions of HK\$)	3,435.4	5,149.5	4,790.6	6,248.2	7,458.7	8,369.6	12,214.0	14,715.0

^a Figures refer to total imports.

Source: Hong Kong Statistics, 1947-1967. - Hong Kong Review of Overseas Trade in 1970.

Table VI - Total Value of Output and Exports of Major Manufacturing Industries, 1970

Industry	Output	Exports	Export as per cent of output
	millions of HK\$		
Clothing	4,725.9	4,325.1	92
Garments except knitwear	2,844.9	2,609.6	92
Knitwear from yarn	1,212.9	1,112.5	92
Other wearing apparel	668.1	603.0	90
Textiles	3,470.7	1,679.5	48
Spinning	1,045.8	337.3	32
Weaving	1,276.2	705.6	55
Knitting	343.6	227.3	66
Finishing	498.1	181.9	37
Made-up textiles	307.0	227.4	74
Plastics	1,761.2	1,454.1	83
Flowers	297.6	266.6	90
Toys	858.5	792.6	92
Others	605.1	374.9	62
Electronics	1,236.4	1,095.9	89
Wigs	735.1	678.5	92
Footwear	287.3	233.6	81
Metal manufactures except machinery	474.1	240.4	51
Total of major industries	12,690.7	9,707.1	77
Total of all manufacturing	18,048.7	11,722.8	65

Source: 1971 Census of Manufacturing Establishments, Census and Statistics Department, Hong Kong, January, 1972 (unpublished) These dates are not comparable with trade statistics published in the Annual Report.

Table VII - Estimated Regression Coefficients and Instability Indexes^a Over Selected Periods
 $(\text{Log}_e X_t = a + b t + e_t)$

t	a	b	t-statistic	R ²	D. W.	Instability index ^a
1948-59	5.41	.1814	12.50	.969	1.2871	.173
1954-70	6.55	.1668	29.29	.991	1.2416	.115
1959-70	7.54	.1485	24.95	.992	.7247	.071

^aInstability index is the standard deviation of residual errors. See Text.

Source: Hong Kong Statistics, 1948-1970.

Table VIII - Export Concentration and Instability

Group	Export instability index	Commodity ^a concentration index	Geographic ^b concentration index
Hong Kong ^c	.071	.401	.450
19 DC's	.095	.241	.337
36 LDC's	.142	.491	.421
55 Countries (excluding Hong Kong)	.126	.408	.389

^aCommodity concentration is the Hirschman-Gini coefficient,

$$100 \sqrt{\sum_{i=1}^{n=4} \left[\frac{X_i}{X} \right]^2}$$

where X_i is total value of exports of commodity i and X is total exports. - ^bGeographic concentration index also is the Hirschman-Gini coefficient, where X_i is exports to country i . - ^cInstability index is for 1959-1970, the commodity concentration and geographic concentration indexes refer to 1969.

Source: Massell, op. cit.

Table IX - Export and Import Unit Value Indexes^a 1964-1971 (1964= 100)

Year	Export unit value	Import unit value	Terms of trade
1964	100	100	100
1965	98	96	102
1966	96	97	99
1967	96	96	100
1968	101	102	99
1969	109	108	101
1970	116	112	103
1971	123	114	108

^aPublished figures for 1968-1970 are linked to unpublished figures for 1964-1968.

Source: 1964-1968: unpublished data provided by the Hong Kong Government Department of Census and Statistics. - 1968-1971: Hong Kong Monthly Digest of Statistics, October, 1971, p. 66. - Hong Kong Review of Overseas Trade in 1971.

Table X - Direct and Total Capital and Labor Requirements for Hong Kong Exports and Imports Based on United States Input-Output Data, 1951

Items	Exports per million HK\$ of total exports	Imports per million HK\$ of total imports	Direct requirements of exports		Direct requirements of imports		Direct and indirect requirements of exports		Direct and indirect requirements of imports	
			capital	labor	capital	labor	capital	labor	capital	labor
			HK\$	man years	HK\$	man years	HK\$	man years	HK\$	man years
Manufactured goods by material										
Leather and leather mfgs., n. e. s.	0.000511	0.007846	69.49	0.004413	1,066.27	0.067711	226.51	0.068003	3,475.78	0.104352
Rubber manufacturings, n. e. s.	0.000341	0.004431	107.62	0.005877	1,398.87	0.077188	418.28	0.010653	5,436.84	0.138469
Wood and cork manufacturings	0.001619	0.006185	385.48	0.035748	1,472.65	0.136565	1,674.05	0.064274	6,395.29	0.245545
Paper and paperboard mfgs.	0.001449	0.040524	889.11	0.015823	24,865.53	0.442522	2,251.75	0.035356	62,974.30	0.988786
Textile yarn, fabrics & articles	0.108820	0.278040	33,875.67	2.071933	86,553.85	5.293882				
Non-metallic mineral manufacturing, n. e. s.	0.008181	0.114004	3,575.10	0.142022	49,819.75	1.979109	11,960.62	0.247884	166,673.85	3.455321
Iron and steel	0.004516	0.42832	4,857.00	0.055592	46,065.82	0.527262	13,258.98	0.137286	125,754.75	1.302093
Non-ferrous metals	0.002386	0.024924	1,808.59	0.017990	18,892.39	0.187927	6,680.80	0.065376	69,787.20	0.682918
Manufactures of metal, n. e. s.	0.029400	0.018831	15,708.42	0.470400	10,061.40	0.301296	499,774.20	1.008420	31,880.88	0.645903
Machinery and transport equipment										
Machinery other than electric	0.007924	0.089449	4,300.90	0.097874	48,543.97	1.104695	8,836.38	0.243296	99,735.64	2.746084
Electric machinery and appliances	0.110183	0.139204	33,969.42	1.359658	42,916.59	1.717777	145,000.83	3.591966	183,192.46	4.538050
Transport equipment	0.005880	0.038678	2,279.68	0.059035	14,995.46	0.388327	9,967.80	0.202272	65,172.43	1.330523
Miscellaneous Manufactured Articles										
Plumbing, heating & lighting fixtures	0.014913	0.004062	8,199.17	0.284093	2,233.29	0.077381	24,069.58	0.518972	6,556.07	0.141358
Furniture	0.007414	0.003600	1,601.42	0.165925	777.60	0.080568	7,851.43	0.300267	3,812.40	0.145800
Clothing	0.369578	0.025662	4,242.76	7.074185	2,946.00	0.496303	377,708.72	14.561373	26,226.56	1.011083
Footwear	0.025735	0.004892	2,658.43	0.563597	505.34	0.107135	16,290.26	0.923887	3,096.64	0.175623
Instruments, optical goods & clocks	0.018406	0.080864	10,710.45	0.404932	47,054.76	1.779008	24,185.84	0.681022	106,255.30	2.991968
Miscellaneous manufacturings, n. e. s.	0.282659	0.075880	75,356.89	4.115087	20,229.61	1.115436	341,734.73	9.610406	91,738.92	2.579920
Total	0.999916	0.999908	204,595.60	16.944184	420,399.15	15.880082	1,041,890.76	32.270713	1,058,165.31	23.223796

Source: Export and import figures are for 1970 and are based on: Hong Kong Review of Overseas Trade in 1970. - Capital and labor requirements are based on U. S. input-output data: Leontief, "Factor Proportions and the Structure of American Trade: Further Theoretical and Empirical Analysis", op. cit.