THE DEVELOPMENT OF TEXTILE INDUSTRY IN INDONESIA DURING THE NEW ORDER, A STUDY WITH CATCHING-UP PRODUCT CYCLE APPROACH *

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Abstract

This paper attempts to examine the pattern of textile industry development in Indonesia during Soeharto Era (1968-1998) using catching-up product cycle model constructed by Kiyoshi Kojima, who derived the model to explain the experiences of Japan's industrial development. This paper will feature that development pattern of textile industry in Indonesia in aggregate level has quite similar pattern with that of Japan's. So far, in comparison to Japan's textile industry development, textile industry in Indonesia has experienced three stages of development: introductory stage, import substitution stage, and export stage. The writer would show the main characteristics in each stage and mechanisms underlying the shift from one stage to the next by applying characteristics and mechanisms described by Ippei Yamazawa.

I. Introduction

Textile industry is one of the first modern industries built in the initial industrialization process in Indonesia. In its three decades of development during the New Order (1968-1998), textile industry gave some significant impacts for Indonesian economy. With its great contribution in boosting manufacture growth, increasing export revenues and absorbing a large number of labor, this industry (encompassing fibre, fabrics and garment) is of great importance for Indonesia.

Indonesia can be categorized as a late-industrializing country in developing modern textile industry. The modern fibre, fabrics and garment industry are relatively new in Indonesia.[1] Nevertheless in other countries, textile industry

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[1] Mari E. Pangestu, 1997, "The Indonesian Textile and Garment Industry: Structural Change and Competitive Challenge," Mari E. Pangestu and Yuri Sato (ed.), *Waves of hange in Indonesia: 's Manufacturing Industry*, Institute of Developing Economies, Tokyo, p. 29

played a critical role in the early stage of industrialization, for examples in Britain, parts of North America, Japan and more recently in the East Asian economies. Hongkong, Republic of Korea and Taiwan relied heavily in their textile and clothing export from the 1950s to the mid of 1980s. Just since two decades ago, several ASEAN countries including Indonesia and China have become large producers and exporters of textile industry products. Their steps had been followed by South Asian countries, namely India, Pakistan, Bangladesh and Srilangka, which emerged as significant textile and clothing exporters in the last few years[2].

The development of textile industry in the East and Southeast Asian countries is very often related to the development of textile industry in Japan[3]. One of the relations can be seen in the activities of Japan's direct foreign investment (DFI) in textile industry in these countries. Table 1 below shows that in the period of 1955-1974 East Asian and ASEAN countries had 40 % and 28 % shares of total Japan's DFI projects in textile industry, respectively. The number of projects of Japan's DFI in textile industry increased sharply after the second half of 1960s to 1974 when Japan lost its comparative advantage because of wage raise and labor shortage. By the fact, direct foreign investment was undertaken by Japan's textile companies during the period of export expansion and the subsequent slowdown of production in Japan. In turn, this contributed to the textile industry development in the East Asia and ASEAN countries.[4]

This paper examines the experiences of textile industry development in Indonesia especially in the period of New Order. The writer would more emphasize the analysis in modern sector, particularly in large and medium textile industries because these industries show the biggest contribution to Indonesian economy and are more open to the influences of the development of modern textile industry from East Asian countries, especially from Japan.

The writer's objective is to find the answers of the following three questions. With the existence of Japan's DFI in textile industry in Indonesia since early New Order, did the development of textile industry in Indonesia follow the Japan's industrial development pattern? If Indonesian textile industry had similar pattern

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[2] Yongzheng Yang and Chuanshui Zhong, 1998, "China's Textile and Clothing Exports in A Changing World Economy", *The Developing Economies*, XXXVI-1, March, p. 3

[3] Textile industry in those areas is often called as "flying geese industry" from Japan. This was said by Sadrel Reza in his paper "Policy Reform in Promoting Trade in Developing Countries", *Asian Development Review*, Vol. 12, No. 2, 1994, Asian Developing Bank, Manila, p. 87; and Mitzuo Ezaki in his paper "Growth and Structural Changes in Asian Countries", *Asian Economic Journal*, Vol. 9, No. 2, 1995, p. 125-128.

[4] Ippei Yamazawa, 1990, *Economic Development and International Trade, The Japanese Model*, East West Centre, Hawai, p. 84

with that of Japan's, what characteristics or mechanisms which determined the pattern of development textile industry in Indonesia? What implications from those characteristics might bring to Indonesia's textile industry?

Table 1. Direct Foreign Investment by the Japanese Textile Companies in East Asia and ASEAN countries, 1955-1978 (number of projects)

Period	*Production stage*	*East Asia*	*ASEAN*
1955-1964	U	0	1
	M	4	4
	D	2	6
1965-1969	U	5	2
	M	17	18
	D	31	5
1970-1974	U	3	9
	M	29	38
	D	51	19
1975-1978	U	0	0
	M	2	5
	D	7	0
Total		151	107

Note: U. M. and D denote the upstream. midstream. and downstream stages of synthetic fiber textile production

Source: Tran (1985) in Yamazawa (1990). p. 85.

For this purpose, the writer will borrow Kiyoshi Kojima's model of "catching-up product cycle development" (hereinafter, CPC development) as analysis approach. CPC development is recognized as a model to explain Japanese industrial development which describes an industry development through the interaction of trade and production. Yamazawa (1984), Pasha (1987) and Chen (1989) extended Kojima's CPC development model to capture the transfer of modern industries through DFI to East and Southeast Asian countries.

This study will adopt a framework analysis of Ippei Yamazawa (1990) which analyzed the development of crude steel production and synthetic fabrics industry in ASEAN developing countries in 1990 and beyond. His study supports the role of CPC development of two industries in these countries. According to Yamazawa, CPC development is an appropriate strategy of industrial development for a late-starting industrializing country with a domestic market of a certain size and potential comparative advantage in industrialization. Although there are differences in initial conditions, geographical, socio-political, economic environment as well as international circumstances between Japan and the late-industrializing countries in East Asia and ASEAN countries, the CPC

development model can still provide a useful framework by which the development performance of individual industries can be assessed.[5]

II. Catching-up product cycle as model of industrial development

It was Kaname Akamatsu (1943 and 1961) who first used the term "flock formation of flying geese pattern" of industrial development to describe the development of modern industry in Newly Industrialized Economies (especially Japan). This pattern typically begins with the import of new product from more advanced countries, followed by import-substituting production, and finally progresses to production for export market. Kiyoshi Kojima (1973) renamed the pattern as the "catching-up product cycle" (CPC) after its association with "product cycle" model of Raymond Vernon (1964). There are five development stages in Kojima's CPC model: (1) introductory stage, (2) import substitution stage, (3) export stage, (4) mature stage and (5) reserve import stage. Two extensions to Akamatsu's original CPC model are developed to explain the new problems arising in Japan after World War II. First, with many Japanese industries reaching the export stage after World War II, there was concern over what stage should come next. International specialization grew beyond the confines of commodity trade to include technology transfer and direct foreign investment. Second, the CPC model could spread to East and Southeast Asian countries because there are differences in industrial development stages.[6] CPC development then enabled their rapid industrialization over the past three decades and encouraged the growth of reserve imports in Japan.[7]

This study adopts Yamazawa's framework because it provides detailed characteristics of each development stage and conveys more precisely the mechanism of industrial development. Distinguishing the five stages by their main characteristics as conducted by Kojima's CPC model is useful in describing the life cycle of an industry, as described below by Yamazawa[8] :

- At the introductory stage, one product is introduced to domestic market via import from advanced countries and the domestic consumption of the product increases gradually. Domestic product cannot compete with the imported

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[5] Ibid,1990, p. 231-233

[6] The differences on the stages of industrial development between Asian countries was stressed by Edward K.Y. Chen, 1992, in his paper "Asia and Pacific Economic Cooperation in Trade and Investment in A Changing International Economic Environment," *Foreign Investment, Trade and Economic Cooperation in the Asian and Pacific Region*, Development Papers No. 10, Economic and Social Commission for Asia and the Pacific, United Nations, Bangkok, p. 16

[7] Ippei Yamazawa, *op.cit.*, p. 28-29 and p. 84

[8] Ippei Yamazawa, *op.cit.*, p. 30-32

product because of the inferior quality and high production costs of domestically produced goods.

- In the import substitution stage, domestic product increases rapidly, which encourage production to expand at a faster rate than demand, thereby decreases the share of imports in the domestic markets. Production technology is standardized and large-scale production becomes possible, with the domestic product gradually replacing the imported one. Product quality improves and the price falls below the price of the imported product.
- In the export stage, the domestically produced good begins to be exported. The growth of domestic demand slows down, but with an increase in export growth, the increase in production can be maintained.
- In mature stage, both domestic demand and exports slowly decrease, preventing further expansion of production. Exports begin to decrease when domestic product fails to compete with similar products from late-starting countries.
- Finally, in the reserve import stage, products of late-starting countries, which are cheaper and of no less inferior quality, begin to be imported and gradually replace domestic products in the domestic market, which contributes to the accelerated decline of domestic production.

The mechanism underlying the shift from one stage to the next is described below :

At the introductory stage, the learning-by-doing effect in both consumption and production plays an important role. As consumption of the new product grows, market conditions are right for domestic entrepreneurs to begin production. As production experiences accumulate, domestic producers gradually improve quality and reduce costs. Factors common to both the import substitution and export expansion stages help to make the shift from one to the other a continuous process. In particular, the growth of domestic and foreign demand for the good enables substitution of the domestic product (import substitution) initially, and then in foreign markets (export expansion). Decreasing unit costs are later realized through operating on larger scale, adoption of better technology and accumulated experience in both labor and management, all of which are made possible through the expansion of production and increasing capacity investment.

The shift from the export to the mature stage is caused by stagnant demand growth, which discourages capacity investment and further cost reductions. As long as export growth steadily increases, it will offset stagnant domestic demand and lead to the further expansion of domestic production, thus postpone the mature stage. However, producers often lack knowledge of market condition abroad, and their decision to invest in capacity investment tends to be influenced

by domestic demand. As import-substitution occurs in late-starting countries, the domestic demand of these late-starting countries begins to fulfilled by their own production and the exporting countries will have to decrease their production of the good. The process of decreasing exports will continue to the point when exports cease altogether. Imports will begin again, initiating the reserve import stage. These last two stages are continuous and are moved by a common factor, which is a decrease in competitiveness resulting from the entry of products from late-starting countries into the domestic markets of exporting countries.

Yamazawa (1990) wrote further that the government policies can affect CPC development. They can either accelerate or decelerate CPC at each stage of its development. During the introductory stage, government encourages local or foreign firms to initiate new industries by means of subsidies or tax exemptions. In the import substitution stage, import substitution is promoted through government policies that restrict imports or subsidize domestic producers. This is typically done to protect infant industries. During both the export and mature stages, government's ability to affect the CPC is reduced. Some governments promote the initiation of new product exports with subsidies, but continuing export subsidies indefinitely is costly. Thus, the main mechanisms for these stages in CPC development are market forces such as growth in demand and decreasing costs. During the reserve import stage, government assists domestic production by slowing the inflow of or restricting imports or by subsidizing production. In this case, protection is usually implemented to avoid the high social and economic costs of adjustment in declining industries.

In order to see the progress of the Indonesian textile industry during New Order, the writer attempts to incorporate the Indonesian modern textile industry situation into Yamazawa's schematic outline of the Catching-Up Product Cycle model. Panel A in Figure 1 (see appendix) illustrates the CPC model of a modern industrial product with four growth curves representing import (M), domestic production (S), domestic demand (D) and export (X). Theoretically, the growth of domestic demand leads CPC development. Statistically, domestic demand is defined to be production plus import minus export (D = S + M - X). The four growth curves determine the basic pattern of catching-up product cycle development for a particular industry.[9]

Yamazawa's key ratios, the import/demand ratio (M/D) and the export/production ratio (X/S), can also be used to see the process of catching-up product cycle development of a particular industry. The two key ratios are often used to measure the progress of import substitution and export expansion, respectively. As shown in Figure 1 Panel B (see appendix), the decline in import dependence signals the advent of import substitution. On the other hand the rise in

[9] Ippei Yamazawa, *op.cit.*, 1990, p. 29-30.

the export/production ratio indicates the development of the export stage. When the export/ production ratio exceeds the import/demand ratio, the industry becomes a net exporter.

Panel C in Figure 1 illustrates the CPC development with single growth curve that represent the production/demand ratio (S/D). Five development stage stages — introductory, import substitution, export, mature and reserve import — are distinguished by the specific values of S/D ratio, namely, 0, 0.5, 1.0, the maximum and, again, 1.0. Although the values are arbitrary, Yamazawa argued that distinguishing the stages remained useful in describing the life cycle of an industry.[10]

III. The structure of Indonesian textile industry

The Indonesian modern textile industry which will be discussed here is grouped in to three main sectors. The first sector is upstream industry consisting of fibre (including synthetic fibre), yarn and spinning industry. This sector is capital intensive, high technology, large scale and uses automated machine. The second sector is midstream industry, consisting of weaving, knitting and finishing industry. This midstream sector is usually capital intensive, highly dependent on technology outside textile specific technology and absorbs more labor than the first sector. The third sector is downstream industry, consisting garment industry. This sector is commonly labor intensive but not capital intensive.[11]

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[10] Ippei Yamazawa, *op.cit.*, 1990, p. 18 and 29-30.

[11] The general structure of Indonesian textile industry is according to Hall Hill, 1997, "The Garment and Textile Industries," *Indonesia's Industrial Transformation*, ISEAS, Singapore, p. 85; Mari E. Pangestu, 1997, "The Indonesian Textile and Garment Industriy: Structural Change and and Competitive Challenge," Mari E. Pangestu and Yuri Sato (ed.), *Waves of Change in Indonesia's Manufacturing Industry*, Institute of Developing Economies, Tokyo, p. 30; LP-UI, 1998, *Final Report : Studi Penyusunan Blue Print Industry TPT Indonesia, Menghadapi Integrasi AFTA ke dalam WTO tahun 2005 (The study on Blue Print of Indonesian Textile Industry Facing AFTA Integration in the WTO 2005)*, LP-UI, Jakarta, pp. 5; Sonia Prabowo, 1996, "Perkembangan Industri Tekstil, Pakaian Jadi dan Alas Kaki" (The Development of Textile, Clothing and Footwear Industries), Mari Pangestu, Raymond Atje, and Julius Mulyadi (ed.), *Transformasi Industri Indonesia dalam Era Perdagangan Bebas (Indonesia's Industrial Transformation in the Free Trade Era)*, Centre for Strategic and International Studies (CSIS), Jakarta, p. 147.

For simplification, the upstream sector consists of ISIC 32111, 32112 , 32113 and 32160 or in term of SITC is SITC 26 except SITC 269 plus SITC 651. Hereafter is called "yarn and fibre". The midstream sector consists of ISIC 32114, 32115, 32116, 32117, 32122, 32123, 32129, 32130, 32151, 32152 and 32190 or SITC 65 except SITC 651. Hereafter is called "fabrics industry or fabrics". The downstream sector is ISIC 32220 and 32290 or SITC 84. Hereafter is called "garment industry or garment". The conversion between SITC and ISIC is based on the SITC-KLUI conversion table made by Loso Judiyanto, Inter University Center for Economics Studies, Gadjah Mada University.

Apart from the Indonesia's modern textile industry, there should be added traditional textile industry, such as small scale weaving activity, batik production or household garment. The latter type of textile industry still exists to date but is separated from the structure of modern textile industries because of the differences in both technology and production capacities.[12]

IV. Textile industry before the New Order

Textiles and clothing making have a very long history in Indonesia. From the inscriptions founded in Bali, we know that in the ninth century and beyond Balinese made textiles and clothing for both social status and economic matter. Textile trade in Bali increased as a result of "regional trade boom" in South China Sea and Hindia Ocean.[13] In Celebes Island (now Sumatra) in the seventeenth century, there was a large area of cotton field in the southern part of Padang to supply the demand of West Sumatra traditional textile industry. This cotton field was destroyed by the Dutch in 1660s to reduce competition with Dutch cotton imported from Benggala, Bombay and Koromandel. The effect of cotton monopoly by the Dutch was eroded after Britain came into West Sumatra in the mid of eighteenth century. Then, trade of West Sumatra textiles increased after the Penang port in Malaya was opened up and the cotton fields were re-opened.[14]

In Central Java, traditional clothing such as batik spread out of *keraton* to common people areas and became an important economic activity in the nineteenth century. A large size of batik production became possible after revolutionary change in production techniques, as seen in Laweyan, Surakarta, in 1840s and 1870s.[15] The change in production technique and coloring batik methods of Central Java batik were quite unique and it also brought competitive side against imitation batik from Japan and European, but the cambrics was largely dependent on import from India, British and Netherlands.[16] The volume of imported textiles of Netherland Indies was estimated about 66.000 tons in 1880 and reached

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[12] Andrew Macintyre, 1992, "The Textile Industry and the Conflict Over Import Monopolies," *Business and Politics in Indonesia*, Allen & Unwin, Australia, p. 67

[13] I Wayan Ardika, 1997, Textiles in Ancient Bali, paper presented in International Conference of Dunia Batik, Yogyakarta, p. 2-7

[14] Akira Oki, 1986, "Catatan Mengenai Sejarah Industri Tekstil di Sumatera Barat," Akira Nazumi (ed.), *Indonesia dalam Kajian Sarjana Jepang*, Yayasan Obor Indonesia, Jakarta, p. 116-129

[15] Takashi Shiraishi, 1997, *Zaman Bergerak : Radikalisme Rakyat di Jawa, 1912-1926*, Pustaka Utama Grafiti, Jakarta, p. 30-35

[16] Terruo Sekimoto, 1997, Innovation, Change and the Modern Traditions : A Historical Look at The Batik Industry, paper presented in International Conference of Dunia Batik, Yogyakarta, p.7

103,000 tons in 1900.[17] This import was precisely including bleached and unbleached cotton goods, cambrics and greys.[18]

The increased value of imports of lower priced Europeans textile products could indicate progress in batik production and export during the period 1905-1913. At another side, those imports could be blamed as the cause of the gloomy and decline in Indonesian spinning and weaving in the years 1870-1913. Even so, indigenous woven products did not entirely disappear. Although weaving was women's activity alongside work in the agricultural sector, domestic woven products had one major advantage over imported goods, i.e. greater durability.[19]

During the First World War, Netherland Indies textile industry did not further develop. Batik industry suffered from a rise in costs of imported raw materials which resulted in sharp decline in batik production, since Indonesian could no longer afford batik at the higher price at that period. Having realized the Netherlands Indies' dependence on the rest of the worlds, Governor-General A.W.F. Edinburg set up in 1915 Comission for the Development of the Factory Industry in the Netherlands Indies. The objective of this commission was to investigate the desirability of and potential for establishing industries in Netherland Indies that could meet the domestic demand for the manufactured goods. The influence of the Comission to promote factory industry decreased particularly when the Industry Division established in 1918 with its goal to promote small scale industry. Under the Factory Act, the registered small firms rose from around 2,400 in 1923 to 3,764 in 1929. However, the Comission's work did not fail at all as could be seen that during the 1920s there was a growing number of factories established to supply domestic market. At weaving industry, European factory producing for the domestic market, the Van Houten Steffan, established in 1922. There were also few large scale batik firms both unmechanized and mechanized power which the later were mainly non-Indonesian (especially European) enterprises.[20]

The Industry Division did succeed in establishing a number of important organizations, namely the batik research station at Yogyakarta in 1929 and the Textile Institute of Bandung in 1921. This school invented ATBM (*Alat Tenun Bukan Mesin*) or improved hand looms that could replace *gedogans* or primitive

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[17] P. van der Eng, 1996, "A Revolution in Indonesian Agriculture ? A Long-Term View on Agricultural Labour Productivity," J.Th. Linblad, ed., *Historical Foundations of a National Economy in Indonesia, 1890s-1990s*, KNAW, Amsterdam, p. 357

[18] W.A.I.M. Segers, 1987, *Manufacturing Industry 1870-1942, in Changing Economy in Indonesia A Selection of Statistical Sources Materials from the Early 19th Century up to 1940, Volume 8*, P. Boomgard (ed.), Royal Tropical Institute, Amsterdam, p. 19.

[19] W.A.I.M. Segers, *op.cit.*, 1987, p. 19.

[20] W.A.I.M. Segers, *op.cit.*, 1987, p. 23-26. The definition of large factory is factory employed more than 5 workers.

looms. Improved handlooms together with the applications of mechanized looms encouraged weaving industry to expand its production. This success gave the government a very important pioneering role in modernizing the weaving industry.[21] The region where weaving industry grew rapidly was Majalaya, West Java, whose output reached over fifty percent of Indonesia total production in 1930s. The availability of local skills, local cotton and abundant labor became the region comparative advantages.[22]

The Great Depression of the 1930s appeared to have had few repercussions on the number of textile manufacturing firms registered under the Factory Act. The main branch of textile industry, i.e. weaving, experienced the most prominent development in manufacturing industry. The number of weaving mills increased in 1930s from 2 mills in 1930 to 19 and 65 mills in 1935 and 1938, respectively. The aggregate number of textile, wearing apparel and leather industries was estimated to increase from 110 factories and workshops in 1930 to 131 and 306 in 1933 and 1940 respectively. [23]

The active role of the government was behind the development of weaving industry, this is especially seen in introducing two measures removing the obstacle to growth in this branch of industry. During the first half of 1930s the government removed the import duties on undyed cotton and/or artificial silk weaving yarns from the end of 1932 and this action was followed by introducing import quotas for *sarungs* and other multi-coloured woven materials in 1933. The aim of this quota, among others, was to protect the Dutch industry as well as the Netherland Indian industry facing the rise of Japanese import penetration after 1929. The government also encouraged the enlargement of production capacity in weaving industry by distributing improved handlooms. The results was the fast expansion of the weaving industry, which forced the government to apply Industrial Regulation Ordinance in 1934. This regulation initially aimed to preventing the destructive competition in a particular industry, but its objective expanded to controlling the rate of growth of a particular industry. Apart from weaving industry, the Industrial Regulation Ordinance finally revised in 1940 to be applicable to all weaving, spinning, knitting and textile printing mills.[24]

Comparing to weaving industry, spinning industry and man-made fibre industry relatively underdeveloped. These industries had existed in Indonesia for a long time before 1930s, used imported fibre and usually small scale or house hold

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[21] Ingrid Palmer and Lance Castles, 1965, " The Textile Industry," *Bulletin of Indonesian Economic Studies*, No. 2, September, p. 34-35; W.A.I.M. Segers, *op.cit.*, 1987, p. 27.

[22] Joan Hardjono, 1990, *Development In Majalaya Textile Industry*, Institute of Social Studies, PPLH-ITB, PSP-IPB, March Bandung, p. 3

[23] W.A.I.M. Segers, *op.cit.*, 1987, p. 30. 35

[24] The industrial regulation of these branches of industry was organized in *the Indisch Staatsblad 185* 1940, No. 518, as cited from W.A.I.M. Segers, *op.cit.*, 1987, p. 30, 35.

activity. In 1939 there was the establishment of spinning factory.[25] Larger fibre and spinning industry had been owned by government until early 1960s.[26]

In order to asses to which the industrialization of the 1930s benefited the Indonesian population economically, it is important to reveal that the smaller scale batik industry which was hardly mechanized, was not really able to benefit from the growth of textile market in the second half of the 1930s. The dominance of woven and batiked *sarungs* was of less importance in 1939-1940 in nearly all Netherland-Indian textile market. By contrast, in 1940 the larger (mainly mechanized) companies mainly European and Chinese weaving mills were estimated to contribute three-quarters of weaving output. According to the rough estimate total wages in weaving industry in 1939-1940 were higher than those in batik industry.[27] In addition, weaving industry also had a significant contribution in labor absorption comparing to the other textile industry.[28]

After Indonesia's independence from colonial rule, economic policies during President Soekarno Era were directed to release Indonesian economy from the colonial economic structure which was dominated by Dutch, Chinese and foreign businessmen. The government launched several programs to raise indigenous enterpreneurs by, among others, stretching protection walls, flowing credits and issuing import license for them. As a result, a few small scales weaving industry, with 1-25 power looms, grew in early 1950s. There were also several strong indigenous entrepreneurs who got the opportunities to spread their textile business, such as Rahmat Tamin who owned PT Ratatex in Surabaya, Dasaad who operated the largest textile factory in Indonesia namely PT Kantjil Mas. There was a group of Indonesian batik producers who set up GKBI (Gabungan Koperasi Batik Indonesia) and received the monopoly of imported cambrics. However, the large part of indigenous entrepreneurs were not lucky due to lack of either political connection or foreign exchanges to import. The idealistic program to promote indigenous entrepreneur was not successful in the end, where a large number of government-financed indigenous entrepreneurs misused the credits and their businesses went to bankruptcy. In late 1950s, there were only foreigner entrepreneurs who remained in business and again dominated the industry.[29] Domestic textile industries were hurt severely in the last years of President Soekarno's government, due to direct intervention on textile inputs allocation,

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[25] Ingrid Palmer and Lance Castles, *op.cit.*, 1965, p. 37

[26] Hall Hill, *op.cit.*, 1997, p. 36

[27] W.A.I.M. Segers, *op.cit.*, 1987, p. 31, 36.

[28] Hall Hill, op.cit., 1997, p. 35; Mari E. Pangestu, op.cit., 1997, p. 30

[29] Richard Robison, 1986, *Indonesia : The Rise of Capital*, Allen & Unwin, Australia, p. 43-56

limitation of foreign exchange and market contraction when Indonesian economy worsened.[30]

V. The stages of Indonesian textile industry development

The catching-up product cycle development approach makes us possible to draw charts the values of production, export, import, and domestic demand during the New Order to examine the development of textile industry in Indonesia. Figure 1 (see Appendix) charts the CPC development of Indonesian textile industry in aggregate level which also shows the interaction among the values (in 1983 constant price) of production, trade and domestic demand.

In order to show the development of Indonesian textile industry in disaggregate level by regarding the structure of textile industry, the writer also tries to chart the CPC development of yarn and fibre industry (as upstream industry), and fabrics industry (as midstream industry) and garment industry (as downstream industry) in Figure 2, 3 and 4 respectively.[31] The main obstacle to draw the entire charts during the New Order is the lack of published statistics, particularly the data before 1975. So, the charts are intended to show the CPC development of Indonesian textile industry after the mid of 1970s. Disregarding such product type, quality and price differentials in Indonesian textile industry, the quantitative data used here is avoided from simple summation. Weighted indices in 1983 price based on price indices of textile products was constructed and used to deflate the value of output, export and import.[32] The data used here is mainly compiled from official published statistics of Indonesia's Central Bureau of Statistics, such as *Statistik Industri* (Industry Statistics), *Statistik Indonesia* (Indonesia's Statistics), *Indikator Ekonomi* (Economic Indicators) and *Statistik Perdagangan Internasional* (International Trade Statistics).

Figure 2 shows us that in period of 1975-1997 Indonesian textile industry in aggregate level experienced import substitution stage and export stage. As we know that textile import had penetrated into Indonesia before ninth century and extended in early decades of twentieth century, we can make a conclusion that the

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[30] Peter Mc Cawley, " Pertumbuhan Sektor Industry," in A. Booth, ed., *Ekonomi Orde Baru*, LP3ES, Jakarta, p. 81; Palmer and Castles, op.cit., 1965 p. 46;

[31] To draw the charts of CPC development, textile industries which are classified as textile's upstream, midstream and downstream industry is according to the definition which has been explained in past section of this paper.

[32] For textile export's price indices before 1982 use general index of export commodities excluding petroleum, and in 1982 onwards uses manufacture of textile's wholesale price index of export commodities. For textile import's price indices and textile output price indices before 1972 are estimated with average price index of textile in Java and Madura. For textile output's price indices after 1972 use wholesale price index of manufacture of textile. Data's sources are *Indonesia's Economics Indicator*, Central Bureau of Statistics, several editions.

introductory stage had happened before the New Order took over the power. It was likely that the part of introductory stage still existed in the early years of the New Order.

The discussion will focus on the Indonesian textile industry experiences in its contemporary development after 1975. Applying Yamazawa's schematic diagram of CPC development of an industry (see Figure 2 in Appendix), Indonesian aggregate textile industry by 1975 has reached its import substitution stage (t2). It can be seen from the domestic production which exceeded the half of domestic demand. Indonesian aggregate textile industry began to start its export stage (t3) since domestic production met domestic demand in 1984. This industry experienced significant slow down in export growth in the period of 1993-1994 and in domestic production growth in the years of 1994-1995. The monetary crisis in Indonesia which started in the second half of 1997 discouraged the growth of textile industry as there were sharp decline in export and domestic production in 1997, while the decline of import and domestic demand growth was also significant.

The curves of key ratios of CPC development give the same results with the four growth curves. Figure 3 illustrates that Indonesian textile industry in aggregate level had left for import substitution stage by 1975 as indicated by the import/domestic demand ratio which was below a half. This figure shows that Indonesian aggregate textile industry shifted from import substitution stage to export stage in 1984, when the export/production ratio had surpassed the import/domestic demand ratio. Figure 4 depicts that domestic production/domestic demand ratio of Indonesian aggregate textile industry has exceeded 1.0 as a signal of starting year for export stage period.

In disaggregated level, we can see in Figure 5 that Indonesian yarn and fibre industry was achieved import substitution stage in 1978 (t2). This industry remains in import substitution stage in 1997. It can be seen from domestic production curve which had not been surpassed domestic demand yet since 1978. This conclusion is supported by the charts of key ratios of CPC model (Figure 6 and 7). The import/domestic demand ratio has been declining to below 0.5 since 1978, while the export/production ratio tends to increase, but the latter does not exceed the former yet in the period 1978-1997 (Figure 6). The ratio of production/domestic demand is still below 1.0 as shown in Figure 7. This can be a indication that Indonesian yarn and fibre industry was still in import substitution stage in period 1978-1997.

Indonesian fabrics industry, on the other hand, had left for its import substitution stage by 1975 (t2), about three years earlier than Indonesian yarn and fibre industry (Figure 8). Fabrics industry showed more progress than the yarn and fibre industry because it could start its export stage in 1983 (t3). This

achievement can also be seen in Figure 9 when export/domestic production ratio surpassed import/domestic demand ratio in 1983. From the charts in Figure 8, 9 and 10 it seems that fabrics industry entered mature stage in 1997. The next section will discuss the disagreement from textile expert that Indonesian fabrics industry has achieved mature stage.

Figure 11 depicts the development of garment industry in Indonesia only in the period 1989-1997. The negative domestic demand for garment industry in 1979-1993 based on Indonesia's Central Bureau of Statistics data, makes the garment industry's CPC development curves difficult to draw entirely. So, by borrowing the textile industry statistics from Indonesia's Department of Industry and Trade, it is possible to examine the values of production, trade and domestic demand of garment industry in recent years.

As can be seen in Figure 11, garment industry domestic production was oversupplying domestic demand in the period 1989-1997. This is a very clear signal that Indonesian garment industry during that period was in export stage, as well as indicated by its value of production/domestic demand ratio that over 1.0 in Figure 13. However, the slowing of Indonesian garment export growth after 1992 seems to influence the growth of domestic production. Indonesian garment industry experienced a stagnant domestic production in 1993-1996.

The following part is a closer examination of Indonesia's experiences in developing modern textile industry in each stage of development.

- *Introduction stage, 1968-1974*

Textile industry was one of industries which got special attention from the government in the industry development in early New Order. The government supported the development of textile industry and some other industries as a part of import substitution industrialization by launching Foreign Investment Law in 1967 which followed by Domestic Investment Law in 1968. The government also set up a policy in order to protect the industry from foreign competitors, such as prohibited low quality textile entering domestic market and protected assembled sewing machines industry.[33] Another objective of these protection policies was to encourage the rise of local entrepreneurs. Due to protected domestic market could create higher profit, many textile importers changed their business from textile importers to producers and they enjoyed government facilities in textile industry.[34]

As the result of government policy to open the domestic economy, foreign investment played important role in Indonesian textile industry in early New

[33] Soedrajad Djiwandono, 1981, "Masalah Perlindungan Pengusaha Nasional," dalam KOMPAS (ed.), *Mencari Bentuk Ekonomi Indonesia, Perkembangan Pemikiran 1965-1981*, Gramedia, Jakarta, p. 181

[34] Peter Mccawley, *op.cit.*, p. 109-111

Order. The share of foreign investment in textile industry reached around 46,6% of the total foreign investment during 1967-1973, compared to 39.8% of domestic's in manufacturing sector.[35] Japanese firms led entry into textile industry from the late 1960s.[36]

Under such conducive environments, there was significant improvement in production of textile industry in Indonesia in period of 1968-1974. The volume of domestic textile production had no progress during 1961-1968, but it grew 172.5 % from 373 million meters in 1968 to 1.017 million meters in 1975/76. Meanwhile, the growth of volume of domestic weaving yarn production increased from 103.2% to 242.6% in 1961-1968 and 1968-1975/76, respectively. The few state-owned spinning mills of the early 1960s have given way to a rapidly expanding yarn sector.[37] The increase of textile output in early New Order did not capture all domestic consumption yet. For this reason, the government still allowed to import raw materials, i.e. weaving yarn and higher quality textile, i.e. shirting and colored fabrics. In 1969-1974 both weaving yarn and colored fabrics import decreased , however, weaving yarn still dominated the total import of textile products in the same period.[38]

Table 2 below shows the volume of textile industry output in the first stage of textile industry development in Indonesia.

Table 2. Textile industry output in Indonesia, 1961-1975/76

Output	1961	1968	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	Growth (%) 1961-68	1968-975 76
Weaving yarn (Thousand bales)	64	130	182	217	238	262	316	364	445	103.1	242.6
Textile (Million meters)	374	373	449	598	732	852	927	974	1017	-	172.5

Source : Departement of Finance, *Nota Keuangan* 1978/1979, p. 299-300 as quoted from Heidjrachman Ranupandoyo, "Prospek Industri dalam Pelita III: Tinjauan Kebijaksanaan", *Prisma*, No. 1, January 1979, p. 65.

The development of textile industry in early New Order was occured by price distortion which caused capital-intensive bias. Investment law No. 11 was launched in 1970 and explicitly mentioned the types of investment preferred by government, i.e. large scale and capital-intensive investments, the one which

[35] Thee Kian Wie, 1997, *Pengembangan Kemampuan Teknologi Industri di Indonesia*, UI Press, p.134.

[36] Hal Hill, 1992, "Manufacturing Industry", in Anne Booth (ed.), *The Oil Boom and After: The Indonesia Economic Policy and Performance in the Soeharto Era*, Oxford University Press, Singapore ibid, p. 235.

[37] Hal Hill, 1992, ibid, p. 216.

[38] *Economic Indicators*, 1976, 1981, Indonesia's Central Bureaue of Statistics, Jakarta.

adopted new technology and the one which reduced foreign exchange expenditures.[39] For these purposes, government gave lower interest rate credits which caused capital cost cheaper than labor cost. Small firms or them which were in rural area in textile industry less enjoyed this credits for production because government policy could not reach them.[40] The government had tried to encourage foreign investors to build joint ventures with indigenous entrepreneur, but this attempt had no impact due to foreign textile industry, for example, Japanese's, did not want to offer financial assistance to their indigenous partner.[41]

The modern sector of textile industry in Indonesia was built at the expense of traditional textile industries. This sector was unable to withstand the competition and rapid expansion of power looms in the new liberalized environment after 1966, probably because inferior in quality and higher price and therefore it retreated to peripheral production of a few specialist product lines.[42]

The decline of traditional textile industry, for instance weaving industry, in Indonesia in early New Order can be illustrated below. Large hand looms sector (mostly located around Bandung-Majalaya) dominated textile industry in Indonesia until the mid-1960s.[43] The hand looms sector and the power looms contributed around 65% and 35%, respectively, out of total weaving industry output in 1964. In 1974, however, the role of hand looms sector sharply decreased to only around 6% out of total weaving production.[44] During 1968-1975 there was a decrease in the number of operated handlooms from 125,000 in 1968 to 66,000 in 1975.[45] The number of actual handloom establishments in Java island were only 30 % out of total establishments and 39 % in outer islands. The number of operated handlooms dropped to 36 % throughout Indonesia, as well as in Java and outer islands in 1975. The worst declining textile region at that time was West Java province, which lost its textile establishments until 89%, number of operated handlooms until 85%. It made 391,000 people lose their jobs in weaving industry alone in 1974.[46]

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[39] Richard Robison, *op.cit.*, 1986, p. 186.

[40] Kosuke Mizuno, 1996, *Rural Industrialization in Indonesia A Case Study of Community-based Weaving Industry in West Java*, Institute of Developing Economies, Tokyo, p. 3-25

[41] Kosuke Mizuno, ibid, p. 25

[42] Hill, 1983, as quoted from Hal Hill, 1992, "Manufacturing Industry", in Anne Booth (ed.), *The Oil Boom and After: The Indonesia Economic Policy and Performance in the Soeharto Era*, Oxford University Press, Singapore, p. 214-215.

[43] Palmer, 1972, as quoted from Hal Hill, 1992, "Manufacturing Industry", in Anne Booth (ed.), *The Oil Boom and After: The Indonesia Economic Policy and Performance in the Soeharto Era*, Oxford University Press, Singapore, p. 214.

[44] P. McCawley quoted data of Hal Hill's Ph.D dissertation (ANU), in A. Booth, *Ekononi Orde Baru*, LP3ES, Jakarta, p. 111.

[45] Hal Hill, op.cit., 1980, p. 87

[46] Kozuke Mizuno, *op.cit.*, 1996, p. 25

- *Import substitution stage, 1975-1983*

Domestic textile products increased in Indonesia's market by the second half of 1970s, followed by the decreasing price of domestic textile products and improving quality. New investment of low quality textile was had banned in Java by the government by 1974. However, not all of domestic textile demand could be supplied by domestic production. For instance, Indonesia's levels of imported inputs for textile industry in 1974 were 99 percent for cotton, 100 percent for synthetic fibres, 50 percent for yarns, 95 percent for textile dyes, 99 percent for textile machinery and 95 percent for spare-parts.[47] It means that Indonesian textile industry structure was very weak at the initial import substitution stage.

There was a government policy which had been launched in 1974 to develop backward linkage in textile industry by giving a priority for investments in fully integrated mills. This policy got positive response and textile producers ran expansion on production capacity and restructured their technology. Total spinning capacity risen rapidly from 500,000 spindles before 1970 to 1.7 million spindles in 1979 and reached 2.5 million spindles in 1985. Total weaving capacity increased from 35,000 power looms in 1970 to 82,000 power looms in 1984. For synthetic fibre, total production expanded from 4,000 ton a year in 1973 to 200,000 ton a year in 1985.[48] There were some modern sectors of Indonesian textile industry which started to appear in import substitution stage, such as bleaching, dyeing and printing, and garment industry. Garment industry first emerged as a factory activity in late 1970s.[49]

The establishment of such upstream to downstream industry led to improvement in Indonesian textile industry structure. The modern sector textile industry also really began to flourish from mid 1970s onwards. As a result of those rapid growth in import substitution stage, in disaggregated level, textile industry in Indonesia left for export stage in 1984 and the fabrics industry in 1983. However, the yarn and fibre industry development lagged long behind the fabrics and the entire textile industry development.

There were several mechanisms behind the import substitution achievement. *First*, domestic demand increased after some improvement in Indonesia economy and, in turn, it caused people's income raised and induced demand for textile. Because the domestic market before the New Order had been open to textile import for a relatively long period Indonesian people were familiar with domestic import substitution textile. It made domestic market also ready to absorb domestic production, which could offered in low price.

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[47] Richard Robison, *op.cit.*, 1986, pp. 185

[48] Andrew Mcintyre, *op.cit.*, 1986, p. 68

[49] Hal Hill, *op.cit.* 1997, p. 88

The second mechanism was government intervention to develop import substitution industry. The government promoted domestic production and encouraged private entrepreneurs by protecting local producers, restricting import and relaxing investment regulations. To support these kinds of investments, there were tax holiday, low import tariff for equipment and low interest rate credits.[50]

The third mechanism was the important role of large and medium-size private sector sectors in Indonesia textile industry. The government also supported joint ventures between strong domestic businessmen (especially Chinese) and foreign businessmen (especially Japanese).[51] They played role in both capital accumulation and learning-by-doing in production in early development of Indonesian modern textile industry.

- *Export stage in Indonesian textile industry, 1984 - present*

The CPC model illustrates that the export stage of textile industry in Indonesia in New Order started in 1984, and for fabrics industry in 1983. Even as a new industry in Indonesia, garment contributed a significant export earlier in 1980s (Table 5).

In the decade of 1980s export became the main source of growth in Indonesian textile industry.[52] As we can see in CPC development chart in Figure 2, export growth of the entire textile industry in Indonesia had a positive trend during 1984-1992. However, domestic demand was also important in absorbing Indonesia's domestic textile production. CPC development for Indonesia's fabrics industry (Figure 8) illustrates that demand of domestic market for fabrics products was larger than its export, as well as domestic demand for yarn and fiber (Figure 5). Figure 11 for garment industry shows that in the period of 1989-1993 garment export exceeded its domestic demand. As reported by study held by LP-UI, Indonesia domestic market for textile products is one of the fastest growing market in current years.[53]

Based on export value, in the period of 1980-1993 Indonesia's annual average growth of textile and garment export were 32 % and 37 % respectively. By 1993 Indonesia had appeared as the 13th largest textile exporter and come into the list of the world's leading exporters of textile, along with Hongkong, South Korea, Chinese Taipei, China, Pakistan and India. Indonesia also appeared in the list of leading exporting countries for garment, similar to Hongkong, South Korea, Chinese Taipei, China, Thailand and India. The share of Indonesia's

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[50] Peter Mc Cawley, *op.cit.*, p. 109-111.

[51] Kozuke Mizuno, *op.cit.*, 1996, p. 25.

[52] Hal Hill, *op.cit.*, 1997, p. 100-103

[53] LP-UI, 1998, *Final Report : Studi Penyusunan Blue Print Industry TPT Indonesia, Menghadapi Integrasi MFA ke dalam WTO tahun 2005*, LP-UI, Jakarta, p. 100

export in the world's total textile and garment export reached 2.6 percent % for both textile and garment. Data of imports of textile (SITC 65) and garments (SITC 84) into EU. USA and Canada in the period 1986-1992 revealed that Indonesia -- as well as China. India and Pakistan - was increasingly important as exporter of textile and garment for these markets.[54]

There are several mechanisms behind the high performance of Indonesia's export stage in textile industry. First. the devaluation in 1978 became an incentive for domestic production to enter the foreign market. Second. the adoption of outward looking policy and deregulation in trade and investment in the mid of 1980s favored the export orientation strategy of Indonesian textile industry. By easing investment regulations. liberalizing import and improving export administrations. the government have created sufficient investment climate for domestic product expansion. The third mechanism is the declining cost of production in Indonesian textile industry. In the era of high protection. Indonesian textile industry was handicapped by high tariff of raw materials from abroad. Import liberalization after 1985 has eliminated nominal and effective rate of protection. Nominal rate of protection for textile dropped from 32 % in 1987 to 12 % in 1992 and for effective rate of protection from 102 % in 1987 to 34 % in 1992.[55]

Table 3. Effective Rate of Protection in Manufacturing Industries, 1987-1992

	NRP(%)			ERP(%)		
	1987	1990	1992	1987	1990	1992
Manufacturing	17	13	12	68	59	52
Food, beverage, tobacco	14	13	12	122	126	120
Textiles	32	12	12	102	35	34
Woods products	2	15	-5	25	33	33
Nonmetals products	17	14	13	57	49	44
Engineering	40	38	28	152	139	82
Miscellaneous	40	26	26	124	79	80

Notes : NRP is nominal rate of protection and ERP is effective rate of protection
Source : World Bank estimates, in Hiroshi Osada, 1994, p. 486

The decline of unit labor cost in Indonesia's textile and garment products during 1980-1990 also became an important mechanism in export expansion. According to a study held by ICRIER (1995), during 1980-1990, Indonesia's

[54] Indian Council for Research on International Economic Relations (ICRIER), 1995, *Sectoral Impact of the Uruguay Round Agreements: Export of Textiles from Asian Developing Countries*, UNIDO, p. 17-21

[55] Hiroshi Osada, 1994, "Trade Liberalization and FDI Incentives in Indonesia : The Impact on Industrial Productivity", *The Developing Economies*. XXXII-4, December, p. 479

textile and garment export expansion developed labor-intensive strategy and enjoyed comparative advantage with cheap labor. In that period, unit labor cost for Indonesian textile (ISIC 321) decreased from 29.28 % in 1980 to 19.63 % in 1990. Garment's (ISIC 321) unit labor cost dropped significantly from 55.56 % in 1980 to 32.32 % in 1990. The cheaper labor wage for textile and garment commodities in Indonesia compared to East Asian countries and more developing ASEAN countries, such as Thailand and Malaysia, made Indonesia gain comparative advantage in world market, but Indonesian textile export got stiff competition from the South Asian countries who had cheaper labor than Indonesia, particularly Srilangka and Bangladesh.[56]

It is important to note that during 1980-1990 Indonesia enjoyed raising productivity in textile industry. Several authors drew attention to technological revolution in textile industry production, for example McCawley 1984, Hill 1983, Poot et al. 1990. Recent studies, for examples Karseno (1994) and Dewi (1997) revealed that there was high increase productivity in Indonesia textile industry without total factor productivity improvement. A valid reason for productivity increase is the emergence of institution of 24 hour-4 group or three-shift operating schedule in spinning and weaving industries, which were also easy to find in most of garment factories in Bandung, West Java.[57] Adam Szirmai's study (1994) shows that during 1975-1990 absolute labor productivity for Indonesian textile industry has increased four times. In comparison to USA's, relative labor productivity of Indonesia for the period of 1975-1990 was two times for textile mills product and three times for wearing apparel.[58] (Table 9).

The fifth mechanism in Indonesia's export stage is the increasing role of foreign direct investment, especially from East Asia, in textile industry export activities. After mid 1980s, a large amount of East Asian countries relocated their

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[56] ICRIER, *op.cit.*, 1995, p. 1

[57] The role of technology in Indonesia manufacturing productivity during 1977-1992 has been studied by Arif Ramelan Karseno, "Efisiensi Manufaktur dan Peran Teknologi di Indonesia", in 1994 (unpublished). Using Total Factor Productivity analysis, Karseno's study revealed that textile industry has grew without improvement in TFP or technical efficiency. It means, large increases in productivity in Indonesian textile manufacturing were due to large increases in labor productivity. His finding is supported by report of LP-UI on textile, *op.cit.*, 1998, p. 17-21; and Verdi Yusuf's field research report, 1991, *Pembentukan Angkatan Kerja Industri Garment untuk Ekspor, Pengalaman Bandung-Jawa Barat*, Project Working Paper Series No. B-13, Institute of Social Studies, PPLH-ITB, PSP-IPB, February, Bandung. An empirical study held by Karyani Laksmi Dewi, "Keterkaitan Perdagangan Internasional dan Investasi Asing Langsung terhadap Pertumbuhan TFP Sektor Industri Tekstil (ISIC 32) di Indonesia 1980-1995" held in 1997 also found that direct foreign investment in Indonesian textile industry did not improve TFP growth.

[58] Adam Szirmai, 1994, "Real Output and Labor Productivity in Indonesian Manufacturing". *BIES*, Vol. 30, No. 2, p. 75

textile industry in Indonesia due to elimination of comparative advantage in labor intensive textile manufacturing in their countries, while their both domestic demand and export market on textile industry products were still large. East Asian countries' export oriented multinationals in Indonesian industries increased significantly from 31 percent of total approved projects to 60-70 % in 1990, particularly in textile, paper and chemical sectors.[59]

From CPC development figures, we can see that the export of textile industry in Indonesia, in general, slowed down after it peaked in 1992 which in turn discouraged domestic production in 1994-1995 (Figure 2). The garment export peaked in 1993, after which it noted a negative growth until 1995 (Figure 11). The export of fabrics industry also peaked in 1992 and then experienced drastic negative growth onwards (Figure 8) On the other hand, Indonesia's yarn and fibre export reached its top in 1996 (Figure 5).

The charts in Figure 5 shows that domestic production of yarn and fibre industry in 1997 could not still cater its domestic demand, so this upstream sector continued to rely on external sources. The problem why Indonesia's textile producer was heavily dependent on imported raw materials was caused among others by the high price of domestic product, as a consequence of high tax to purchase domestic yarn and fibre. It caused some domestic producers preferred export market for their yarn and fibre than domestic one. There was also a kind of monopoly and cartel which controlled the price of yarn and fibre in domestic market.[60]

There are several explanations for decreasing growth of Indonesian aggregate textile export in 1993 onwards. *First*, a report launched by Industrial and Trade Department of West Java informed that slower growth of textile export since 1993 is an implication of inefficiency in production, high price of (domestic) raw materials and *red-tape* activities in textile industry.[61] This industry is reported

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[59] As quoted by Hiroshi Osada (1994) from M. Watanabe, 1991, "Japan's and Asian NIEs's Investment in Thailand and Indonesia and Industrialization", in H. Kohama (ed.), *Foreign Direct Investment and Industrialization*, JETRO. For export activities, Prof. Pasuk Phongphaicit in her book The New Wave of Japanese Investment in ASEAN wrote, although did not mention Indonesia's case specifically, in ASEAN member countries, Japanese companies took great role enhancing ASEAN export to penetrate external markets. The success of export oriented firms is influenced by their past history of cooperation with the Japanese, usually in assembly and distribution operations targeted at domestic market, or such firms which had already been through the learning process of working with the Japanese, and had business contacts already in place.

[60] As said by Benny Soetrisno, now the chairman of Association of Indonesian Textile Producers, quoted from Republika, 3 July, 1995.

[61] Kantor Wilayah Departemen Perdagangan Jawa Barat, 1995, Evaluasi Pelaksanaan kebijakan Komoditi Aneka Industri (Pakaian Jadi), 1995, p. 36-38

to be injured by hundreds of *red-tape* along its activities.[62] *Second*, there has been an increasing competition in foreign market, particularly in non-quota market, as a result of the emergence of potential competitors from South Asia. The South Asia countries have more comparative advantage in labor price than Indonesia which in recent years could not avoid the increase of labor minimum wage (UMR) accompanying stagnant productivity.[63] *Third*, textile industry investors from East Asian countries (Japan, Hongkong, South Korea and Taiwan) seem to reduce their investment in labor intensive textile industry and they are now shifting away to more capital intensive one in their country. This phenomenon becomes clearer eventhough they have been doing this since the mid of 1980s smoothly.[64]

- *Indonesian textile industry in the period of monetary crisis, 1997-1998*

In early monetary crisis in Indonesia, Indonesia's textile producers lost their financial intermediaries. Their commercial banks were liquidated by the government in November 1997 due to their insolvent performances caused by monetary crisis. These banks used to be the intermediary institution of textile producers for export and import transactions.[65] Their international transactions worsened because letter of commerce from Indonesian banks were accepted no more as a result of the decreasing confidence of international business on Indonesia's political and economic stability.[66] The monetary crisis caused uncertainty in business environment, raised interest rate and exchange rate along with cost of productions. The main problem faced by textile producers was probably the soaring price of raw materials, as they were still largely dependent to imports. A large number of textile firms which could not cover all cost of monetary crisis collapsed or bankrupted, particularly the domestic oriented producers whose market contracted as soon as real income of their domestic consumers fell down drastically.[67]

V. Structural transformation in the Indonesian textile industry

In this part of paper the writer would like to discuss the structural transformation in long term development of Indonesian textile industry in New Order more

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[62] A number of 257 of red-tape in 1998 have been informed by Indonesian Textile Producer Association, as reported by BERNAS daily, April 20, 1998.

[63] Mari E. Pangestu, *op.cit.*, 1997, p. 49.

[64] Yongzheng Yang and Chuanshui Zhong, 1998, "China's Textile and Clothing Exports in A Changing World Economy", *The Developing Economies*, XXXVI-1, March, p. 6

[65] BERNAS Daily, November 6, 1997.

[66] KOMPAS Daily, March 3, 1998

[67] Bisnis Indonesia daily, April 5, 1998.

briefly. In development economics literatures, the vintage of structural transformation recognizes two components of the economic core of transformation: capital accumulation and sectoral composition.[68] The writer wants to focus the analysis on sectoral composition particularly in production and trade.

- *Capital accumulation in Indonesian textile industry*

In the initial process of accumulation in Indonesian textile industry, the New Order regime realized the saving rate and foreign-exchange as two of primary constraints to build the industry. So, in line with open economic policy, the government promoted good investment climate that was suitable for the need of both domestic and foreign investors to invest their non-shiftable capital in Indonesia.

Capital accumulation in Indonesian textile industry was contributed by three parties, i.e. private national investors, government and foreign investors. Table 19 shows in the period 1985-1995 the largest contributor of capital is private national investors, followed by foreign ones (in term of direct foreign investment) and then the government. During 1985-1995, private national capital accumulation in textile industry as counted with total value of cumulative investment in textile industry achieved US 81,831 million dollars or captured 93.2 % of total capital accumulation in that period. In the same period the rest of capital was shared by foreign and government, in the amount of US 4,447 million dollars and US 1,497 million dollars respectively. In the first half of 1990s the level of capital accumulation in Indonesian textile industry dropped drastically, except from foreign one, from their level in the second half of 1980s. However, it did not bring a significant impact in ownership structure of textile industry's establishment; since 1986 private national investors has been dominating the composition of ownership in Indonesia's textile industry establishment (Table 11).

As we can see in Table 12, the major contributors of active foreign direct investment in Indonesia textile industry were East Asian countries, especially Japan which first made investment in Indonesian textile industry in 1969. In the period 1969-1973 alone, foreign investment in this industry was dominated by Japanese investors, with proportion around 84.3 % of the total. There were 13 Japanese companies in Indonesia's textile sector in period of 1969-1973. They tended to come into import substitution and labor intensive industry.[69] Apart from Japan, other countries which planted their DFI to Indonesian textile industry in the period of 1969-1973 were Singapore, Hongkong, India, Britain, Panama and some

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[68] Moshe Syrquin, 1988, "Patterns of Structural Change," Hollis Chenery and T.N. Srinivasan, eds., *Handbook of Development Economics*, North Holland, Amsterdam, p. 211

[69] Pasuk Phongpaichit, 1990, *The New Wave of Japanese Investment in ASEAN*, ISEAS, Singapore, p. 29-30

other countries which set up joint ventures.[70] The flow of foreign investment decreased after a massive protest against foreign investment in 1974, which was responded with restrictive investment policy until 1984.[71] Deregulation in foreign investment set up in 1985, induced investment inflow into Indonesia again. There was a large amount investment flow from Hongkong, South Korea and Taiwan which influenced the growth of textile industry in second half of 1980s.[72]

- *Output composition of textile industry in Indonesia*

Since the mid of 1970s, large and medium firm activities have become increasingly dynamic in Indonesian textile industry. The small and household firm have outperformed the large and medium textile firm in gross output, value added, and person engaged. (Figure 13, 14 and 15). However, household and small firms have been increasing in absorbing labor (Table 15). The difference of gross output among the different size of firms in textile industry was very sharp and can be seen clearly after mid 1980s. It seems that the rapid increase of gross output and value added in large and medium textile manufacturing took place on account of more openness on Indonesian economy. Such openness, however, has supported the growth of small and household establishments (Figure 16).

There was significant composition change in production of Indonesian large and medium textile industry during New Order. In broader product category, eventhough fabrics was the largest contributors in value of good produced in Indonesian textile industry during 1975-1997, its share in total textile production decreased. In period of 1975-1977, fabrics's share was 74.8 % of total good produced in textile industry. It declined sharply to 48.5 % in period of 1993-1995 and to 47.3 % in 1996-1997. Change of shares on yarn and fibre output and garment output occurred in opposite direction to fabrics' output. The shares of yarn and fibre output and garment output gradually increased from 23.9 % and i.0% in 1975-1977 to 1.0 29.8 % percent and 22.9 % in 1996-1997, respectively (Table 20 and Figure 17).

With a closer look on four main contributors in Indonesian textile industry (i.e. spinning, weaving, knitting and garment) we can examine changes in the structure of production during 1975-1997 (Table 16 and Figure 23). Weaving dominated total production of these four industries in period of 1975-1979 by share 62.22 % and spinning followed behind by share 32.57 %. In the same period, knitting and garment shares were only 3.87 % and 1.34 % of the total

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[70] Christianto Wibisono, Thomas Wibisono and Rut Jernih A. Sianturi, 1991, *Multinational Conglomeration in Indonesia, A Profil of Multinational Companies Presence in Indonesia*, PDBI, Jakarta

[71] Kosuke Mizuno, *op.cit.*, 1996, p. 26

[72] Hiroshi Osada, op.cit., 1994, p. 487

output of four main industries in textile. But in the period of 1990-1994 and 1995-1997. the share of weaving and spinning decreased while the share of spinning, garment and knitting increased. Their respective shares in period 1995-1997 were 33.39 %. 7.23 % and 23.57 %.

Value added in Indonesian textile industry has been improving since the past two decades. Table 8 illustrates that in 1990 Indonesia was ranked in the forth on creating value added in textile industry after Hongkong, Turki and China. Weaving and spinning contributed the largest value added of total Indonesia's textile industry value added during 1976-1996. Spinning positions by 1990 had been taken over by garment. Indonesia is the best producer of *blended yarn*, which is the yarn made from USA, Egypt and India's high-count yarns mixed by low count yarns of India and Pakistan. The result is gray fabrics which has comparative advantage in Asia. Actually Indonesia gains comparative advantage in made-of fibre thanks to abundant wood as its raw materials available in the country, especially for making rayon which is close substitute for cotton.[73]

- *Export composition of textile industry in Indonesia*

Change in export composition also occurred during development Indonesia's modern textile industry. While shares of fabrics and garment in total export of textile were declining, shares of yarn and fibre export increased. The respective export shares of yarn and fibre, fabrics and garment in period of 1975-1977 were 6.8 %. 34.3 % and 58.9 % respectively. In the period of 1996-1997 the export share was 16.4 % for yarn and fibre. 28.8 % for fabrics, and 54.8 % for garment. As shown in Table 18 and Figure 21. in the period of 1975-1977 garment dominated total export of Indonesian large and medium textile industry, and this domination remain unchanged in 1996 -1997. It shows that Indonesia's textile industry export remained to exploit its unskilled labor.

Most of Indonesia's textile and garment exports are produced in Java island, with West Java province in the lead. followed by Central Java and East Java. After rapid growth over the industry over the past decade. labor wage in some areas of Java especially West Java began to increase. At the same time rental costs for land increased has been escalating and exerting pressure for textile industry production facility to leave for Central Java and East Java, where labor wage are still low. Given great variations in labor costs in different regions in Indonesia, it will take a considerable time for an overall labor shortage in Indonesia to emerge. In this current years Indonesia faces similar experience with China in this matter. Compared to China. Indonesia also has a large pool of unemployment and underemployment in most rural areas which will provide virtually unlimited labor resources on which the high cost areas can draw. High density of population and

[73] LP-UI, op.cit., 1998, p. 106

industry in the cities would be major constraints for textile industry relocation in Java island. A policy for tapping Indonesia's shortage of low labor wage and cheap land for the future is to improve infrastructure further, give tax exemption or quota for production in outer islands to attract textile factory relocation out of Java. This will reduce both the increasing costs of production in Java and income inequality between outer islands-Java.

- *Import composition of textile industry in Indonesia*

As shown in Table 19 and Figure 22, changes were evident in textile industry's composition import, owing to declining import shares of yarn and fibre as well as garment and increasing share of fabrics import during the period of 1975-1997. In period of 1975-77, shares of yarn and fibre industry and garment industry were 75.9 % and 2.1 % of total Indonesia's textile import respectively. By period of 1996-1997, the respective shares of yarn and fibre import and garment import have declined to 58.5 % and 1.3 % of total textile import. On the other hand, share of fabrics climbed from 21.9 % of total textile import in period of 1975-1977 to 40.2 % in period of 1996-1997. A large amount of Indonesia's fabrics import was in term of printed fabrics, on account of domestic printing industry that faced high interest rate for capital investment. In the opposite, almost the entire of Indonesia's fabrics export is in term of gray fabrics.

Figure 19 depicts the value of textile import during 1975-1997 that tended to increase which fibre and yarn was dominating total value of Indonesia's textile import. Indonesia has a weakness in domestic supplier of cotton. Its cotton import was the second largest after China. This weakness among others led to high price of domestic yarn because raw materials costs reached 32-51 % of total cost production of yarn. The high dependency on importing textile brought serious impact on the trade balance. Indonesia's trade balance of textile commodities became negative in the period of 1975-1979 and 1980-1985. This trade balance became positive for the period of 1985-1989 onwards because of increasing textile export, in particular fabrics and garment. On the other hand, yarn and fibre trade had created negative trade balance in fibre and yarn trade during the period of New Order.

V. Concluding remarks

Long term development of Indonesian textile industry during New Order shows us that this industry have experienced several stages of development similar to that of Japan's textile industry development. Japanese textile industry fully experienced five stages of development according to catching-up product cycle approach. Comparing to Japanese experiences, there were three out of five stages which

occurred in Indonesian textile industry e.g., introductory stage, import substitution stage, and export stage.

Applying Kojima's catching-up product cycle development approach and borrowing Yamazawa's frame work to analyze Indonesian textile industry development, the writer find that introductory stage of Indonesia's textile development has occurred before the New Order period until around 1974. The import substitution stage was in around 1975 to 1984, and the export stage was in 1984 onwards. In disaggregated level of textile industry, each stage occurred in different time that it reflected different process of catch-up. Fabrics industry left from import substitution stage in 1983, one year earlier than the entire textile industry, and in export stage 1983 onwards. Garment industry also still in export until now. Yarn and fibre industry, after started import substitution in 1979, is still lagging behind the other sector and now is still in import substitution stage. So, this Indonesian upstream textile industry story presents an example of industrial development without catch-up. In general, these empirical results showing that Catching-up Product Cycle approach is quite well to explain Indonesian textile industry development during New Order.

As a consequence of catching-up development in Indonesian textile Industry, there were structural changes in production, export and import of Indonesian textile industry during New Order regime. Increasing share of garment production and domination of this industry in textile industry's export earnings conformed with Indonesia's comparative advantage in labor abundance. But it would bring an obstacles for further development when this industry faces increasing labor cost and stiff competition in export market from less industrializing countries. Relatively underdeveloped upstream textile industry as well as textile finishing industry caused a constraint for product expansion to cater the growth of domestic market and exploit niches market in industrialized countries. This study finds that long term development in Indonesian textile industry during the New Order did not enhance its high performance on industrial structure. The trade structure were also weak, depending on higher value added textile import, for example, printed textile, and exporting lower value added one such as gray fabrics or garment.

According to Yamazawa's theory about the mechanism of catching-up product cycle, the slowing down on Indonesian textile export growth since 1992 can be one of indications that the industry would enter the mature stage in near future. Is it the recent case of Indonesia? Japanese textile expert, Kozuke Mizuno, argued that Indonesia's condition now is still far from mature stage. In the mature stage, low value added goods lose the competitiveness in the market abroad. Highly-value added export goods has to be more highly-valued in the mature stage. Factory producing relatively low-valued goods will be relocated to the

foreign countries where production cost, especially labor cost is cheaper. Low value added goods began to imported from late developing countries. This is the case of mature stage in Japan, South Korea and Taiwan.

Kozuke said that in Indonesia, for the case of fabric industry for example, even after 1992-1993, highly value added goods, like printed fabric, are imported, and low value added goods, gray fabric are exported. Here he said import substitution process in the Indonesian fabric industry is not completed. What happened in Indonesia since 1992 is the failure of further export development. Late comer of textile exporter, like South Asian countries and Vietnam started to threaten the low value added goods of Indonesia in the market abroad, on the other hand Indonesia can slightly threaten the relatively highly value added goods from the countries, like Thailand and South Korea. This process probably has brought about the stagnation/decrease of Indonesian textile exports. The turning point of Indonesian export to the mature stage could be met at higher level of export and production than the level of 1992.

From this study therefore we must pay more attention because this industry has been playing a strategic role in Indonesian economy in generating export revenues, employment and income for many Indonesians. If the history of Japan and other East Asian countries' textile industry development can become a guide, Indonesia must think about to enhancing the value added of its textile industry products, relocating its textile factories to more comparative advantage regions/provinces, improving the quality of its products and labor, and making better improvement in industrial structure as well. It is also very important to recommend to the Indonesia new regime to giving attention to small and traditional textile industry in its industrial policy.***

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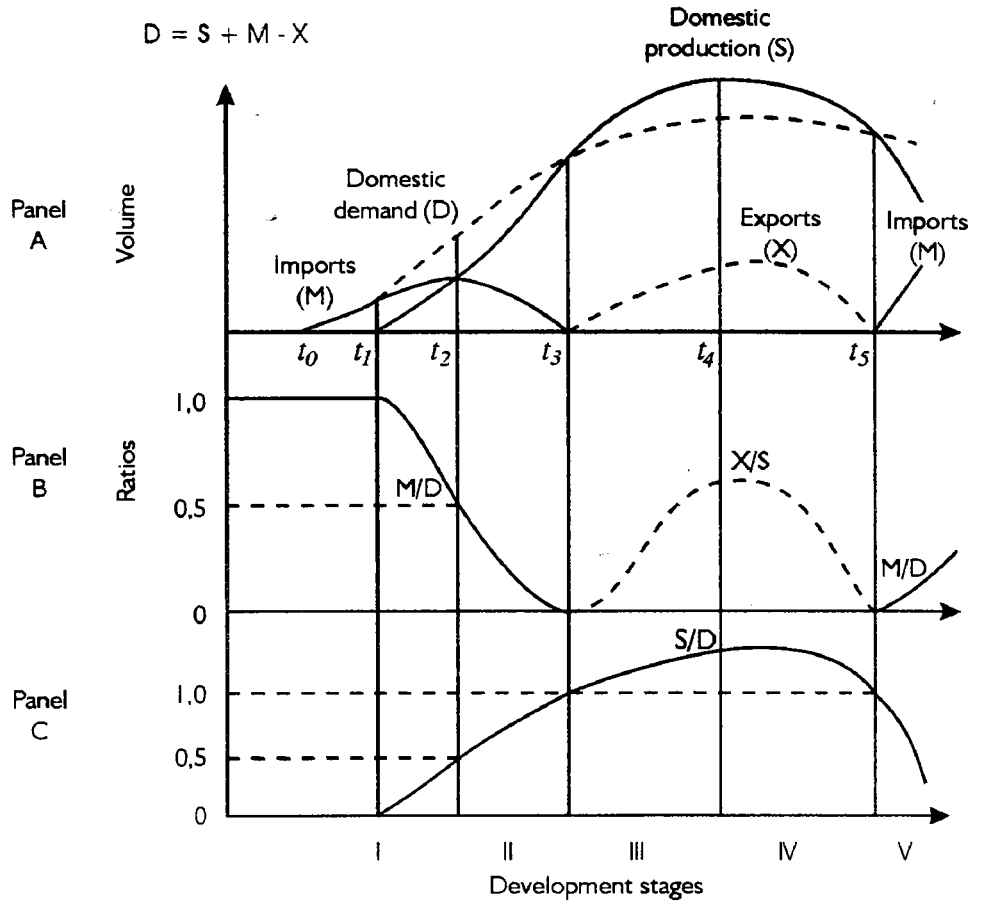
Figure 1 Schematic diagram of Catching-Up Product Cycle (CPC) Development

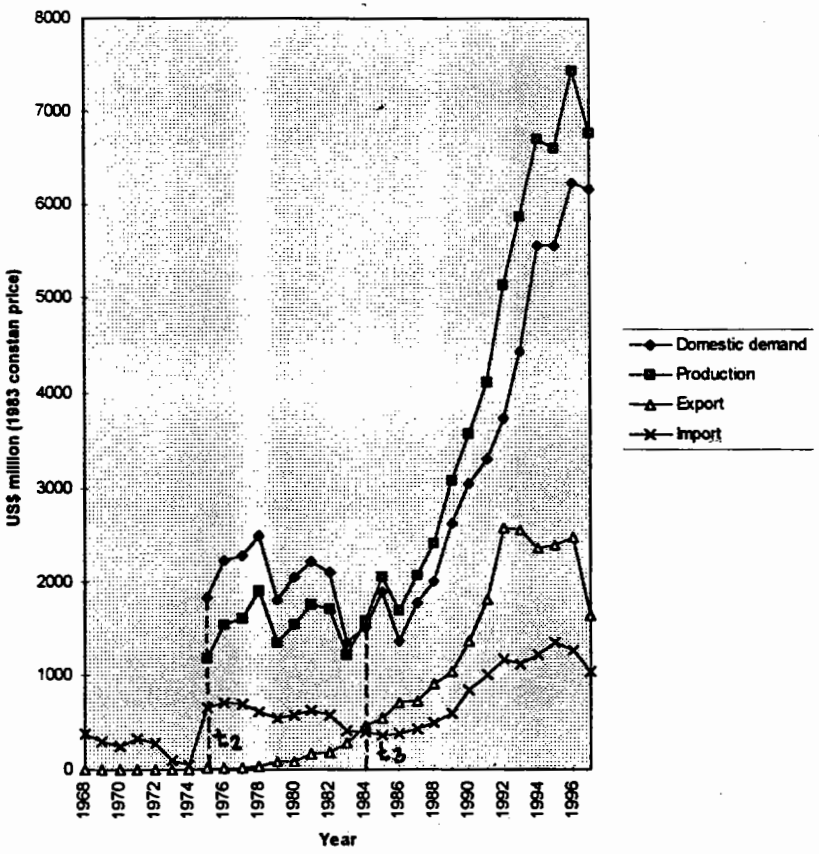


Five development stages
- I introductory
- II import substitution
- III export
- IV mature
- V reverse import

M/D = Import/demand ratio.
X/S = Export/production ratio.
S/D = Production/demand ratio

Figure 2.

Catching-up product cycle development of textile industry in Indonesia, 1975-1997



Notes: Production of textile industry is calculated from output value of good produced. Export data refers only to large and medium firms. except the period of 1968-1973. Export fabrics in the period of 1968-1973 was embroidery goods. Export and import value encompass SITC 26. 65 and 84.

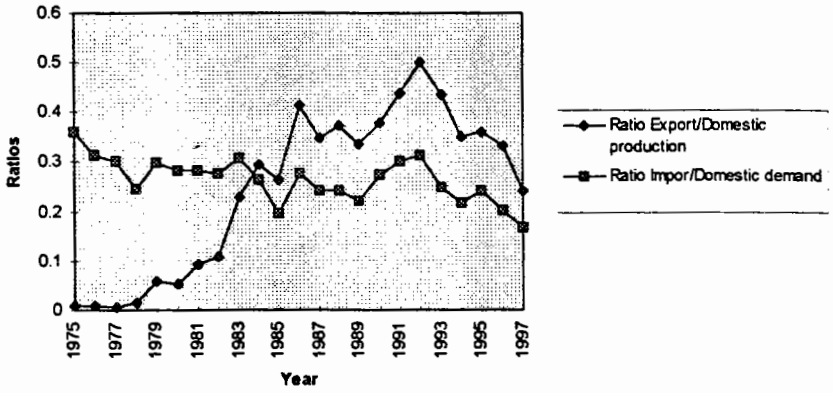
Export and import are calculated from value of export f.o.b and value of import c.i.f. Domestic demand estimated from total output value of good produced plus textile import minus textile export. All data are in 1983 constant price.

Data calculated by Ratih Pratiwi Anwar, 1999.

Sources: CBS Indonesia. *Industrial Statistics* and *Indonesian Foreign Trade Statistics*, several editions.

Figure 3

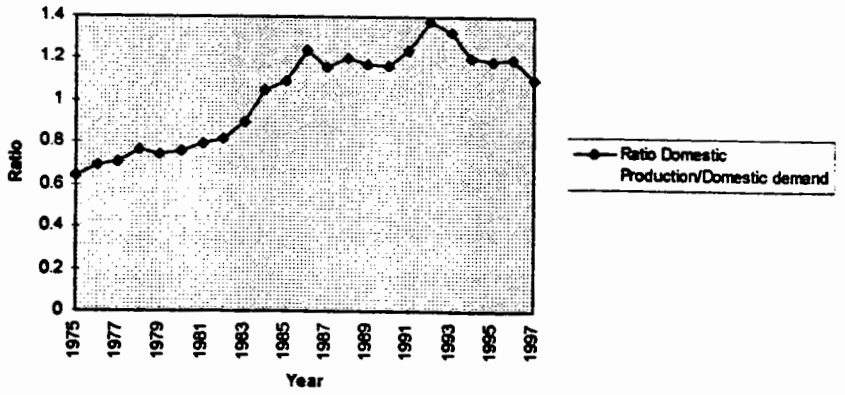
Catching-up product cycle development of textile industry in Indonesia, 1975-1997



Source: CBS. Indonesia
Calculated by Ratih Pratiwi Anwar. 1999

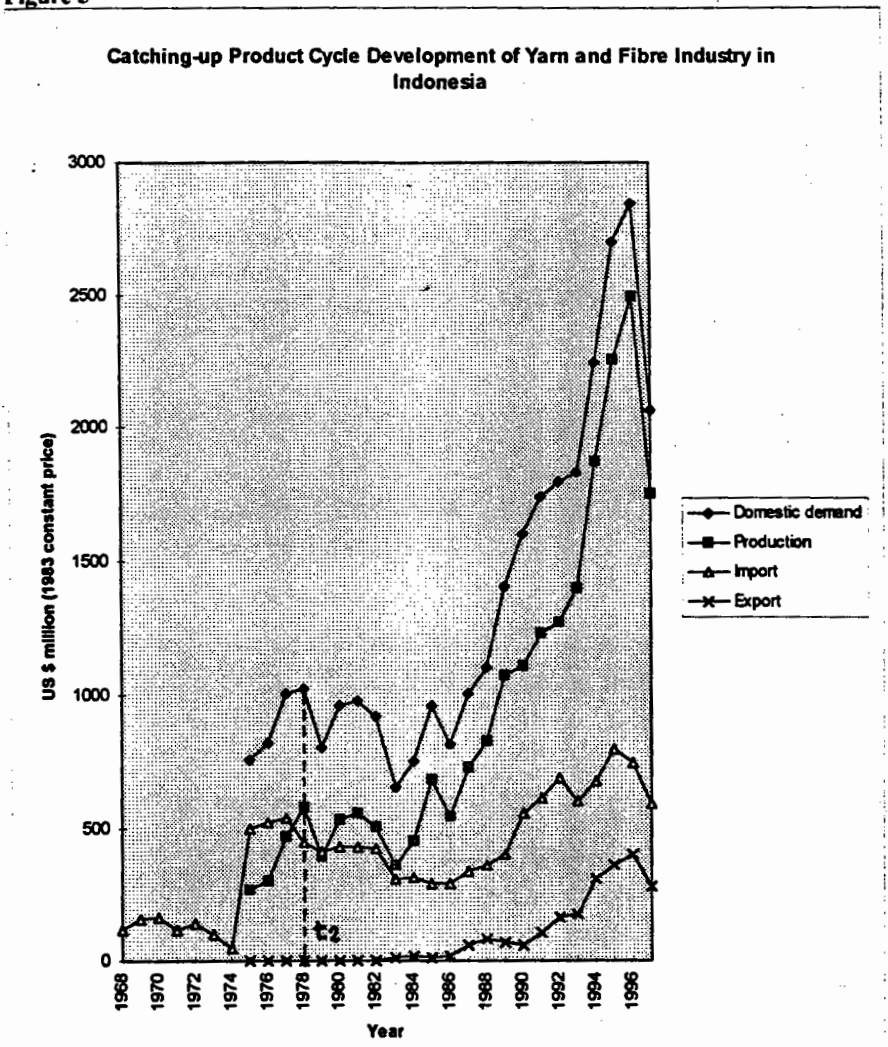
Figure 4

Catching-up product cycle development of textile industry in Indonesia, 1975-1997



Source: CBS. Indonesia
Calculated by Ratih Pratiwi Anwar. 1999

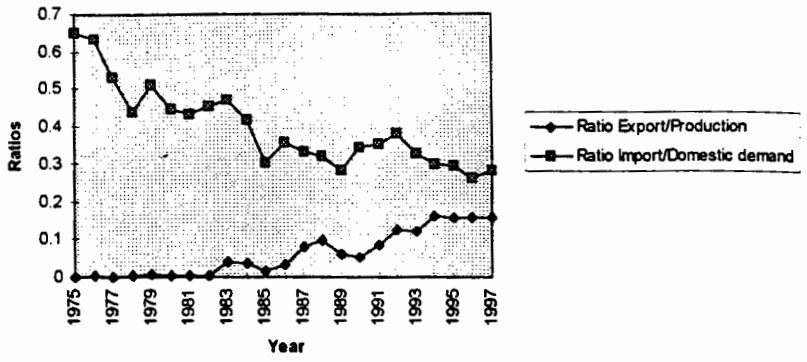
Figure 5



Notes: Yarn and fibre industry here consists of ISIC 32111. 32112 . 32113 and 32160 or in term of SITC is SITC 26 except SITC 269 plus SITC 651.
Data calculated by Ratih Pratiwi Anwar. 1999.
Sources: CBS Indonesia. Industrial Statistics and Indonesian Foreign Trade Statistics. several editions.

Figure 6

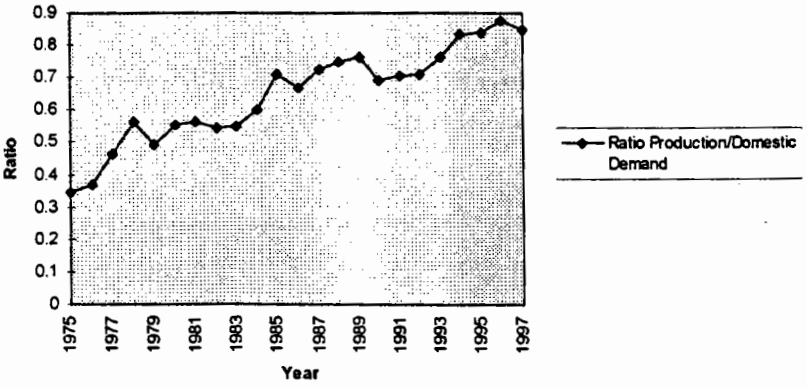
Catching-up product cycle development of yarn and fibre industry in Indonesia, 1975-1997



Source: CBS. Indonesia
Calculated by Ratih Pratiwi Anwar. 1999

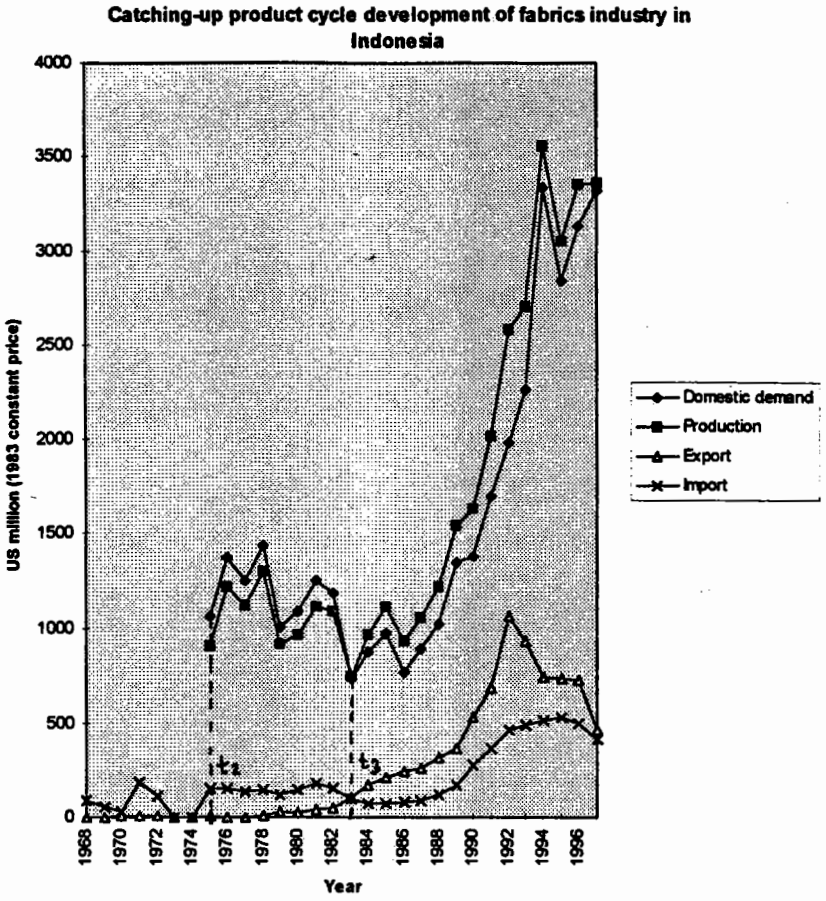
Figure 7

Catching-up product cycle development of yarn and fibre industry in Indonesia, 1975-1997



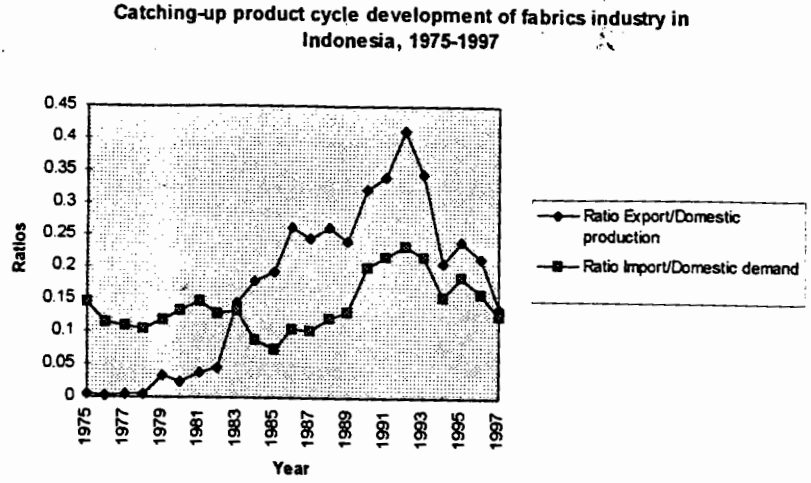
Source: CBS. Indonesia
Calculated by Ratih Pratiwi Anwar. 1999

Figure 8



Notes: Fabrics industry here consists of ISIC 32114. 32115. 32116. 32117. 32122. 32123. 32129. 32130. 32151. 32152 and 32190 or SITC 65 except SITC 651.
Data calculated by Ratih Pratiwi Anwar. 1999.
Sources: CBS Indonesia. Industrial Statistics and Indonesian Foreign Trade Statistics. several editions.

Figure 9



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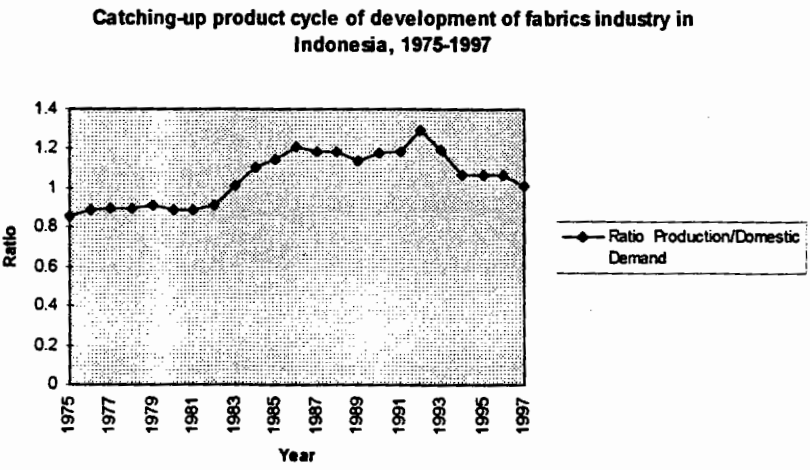
Calculated by Ratih Pratiwi Anwar. 1999

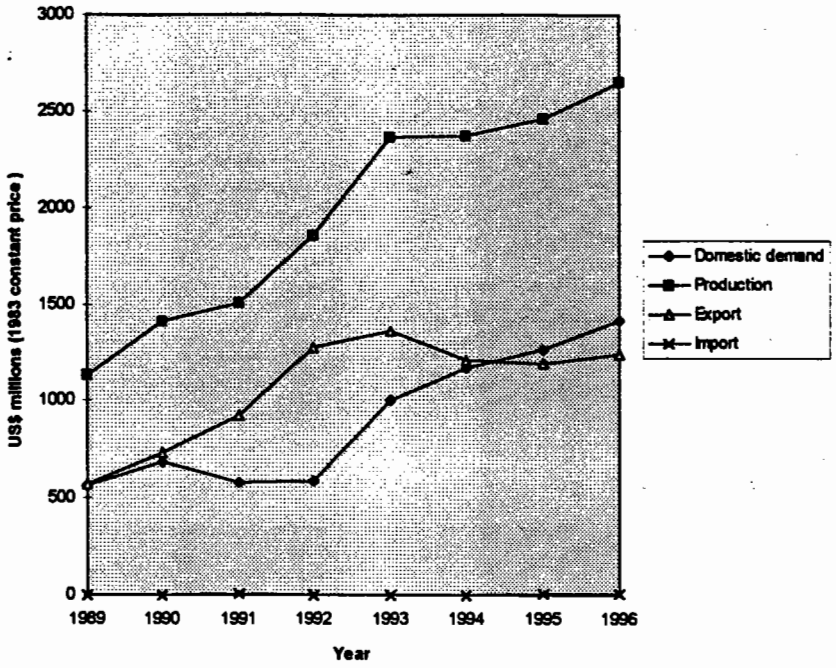
Figure 10



Source: CBS. Indonesia
Calculated by Ratih Pratiwi Anwar. 1999

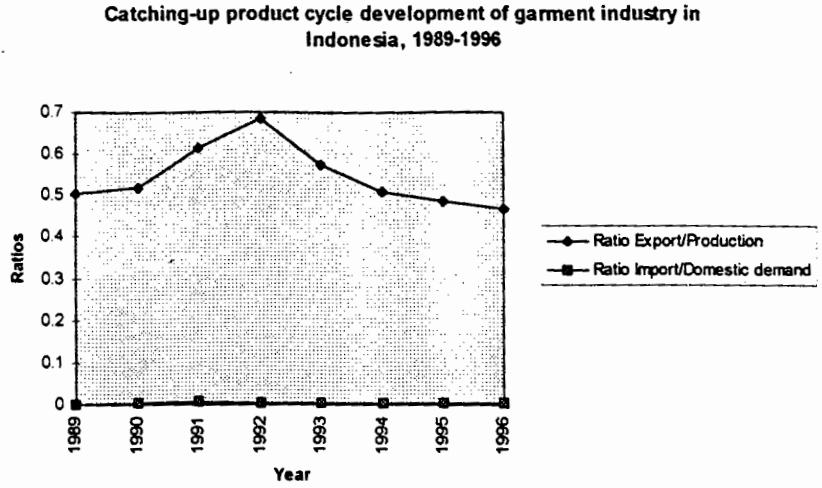
Figure 11

Production, trade and domestic demand of garment industry in Indonesia, 1989-1996



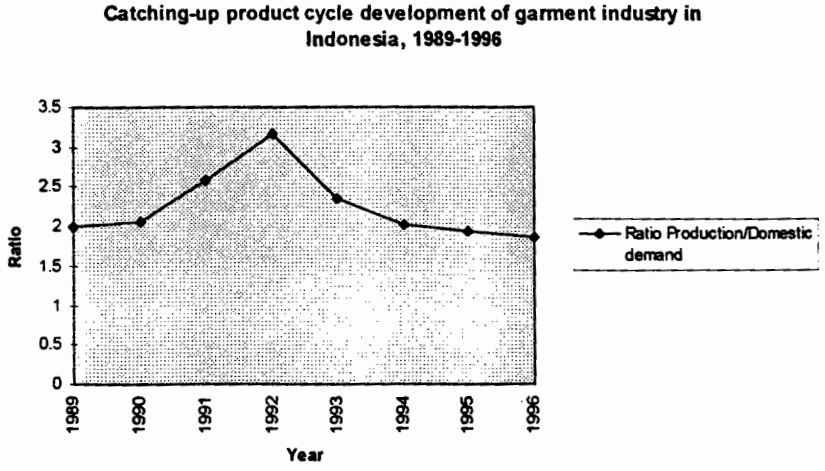
Notes: Garment industry here consists ISIC 32220 abd 32290 or SITC 84.
Data calculated by Ratih Pratiwi Anwar. 1999.
Sources: CBS Indonesia. Industrial Statistics and Indonesian Foreign Trade Statistics. several editions.

Figure12



Source: CBS. Indonesia
Counted by Ratih Pratiwi Anwar. 1999

Figure 13

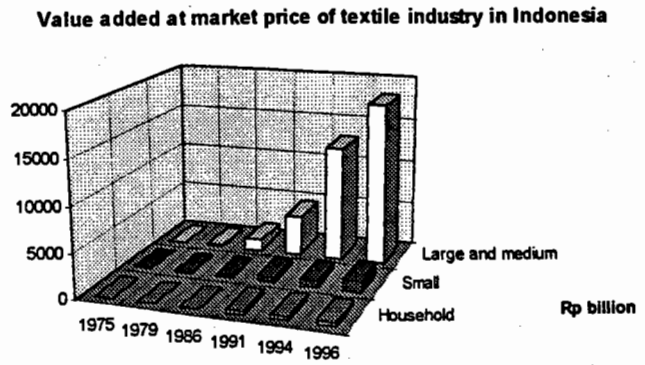


Source: CBS. Indonesia
Calculated by Ratih Pratiwi Anwar. 1999

Figure 14

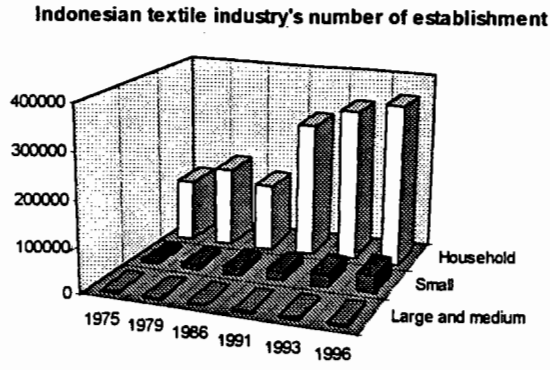
Source :CBS, *Indonesian Statistics*, several editions.

Figure 15



Source : CBS, *Indonesian Statistics*, several editions. Counted by author.

Figure 16

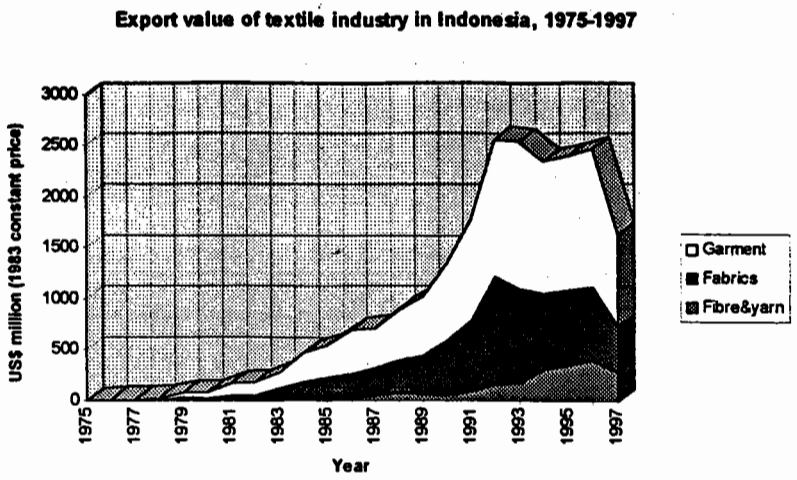


Source : CBS, *Indonesian Statistics*, several editions

Figure 17

Source : CBS, *Industrial Statistics*, several editions
Counted by Ratih Pratiwi Anwar, 1999

Figure 18



Source : CBS, *Indonesian Foreign Trade Statistics*, several editions
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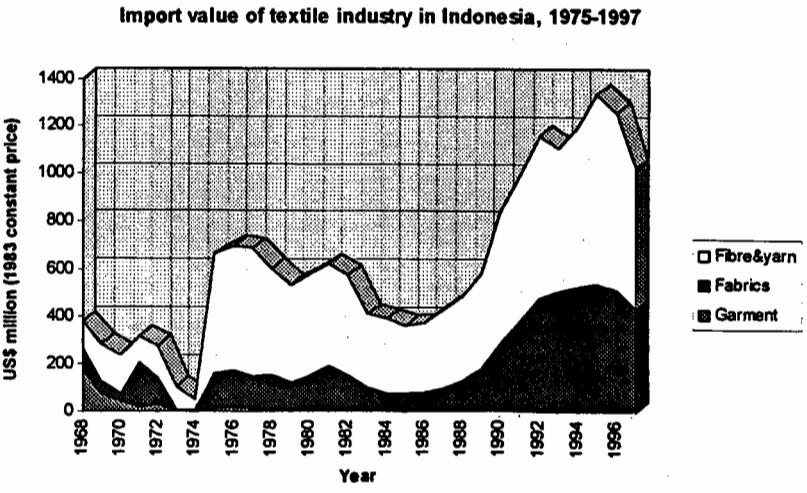
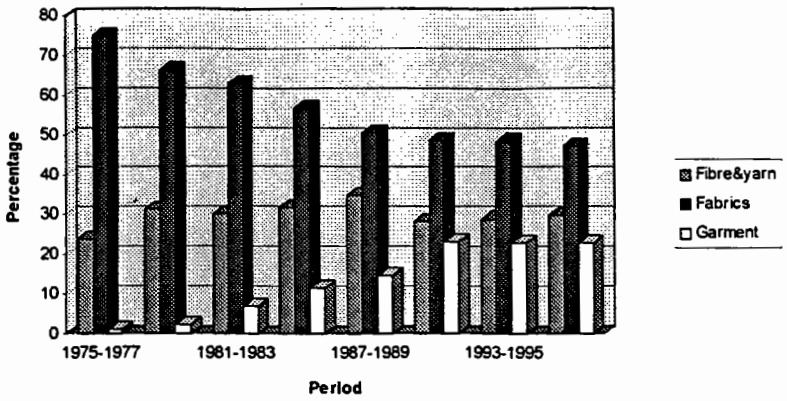
Figure 19



Source : CBS, *Indonesian Foreign Trade Statistics*, several editions
Counted by Ratih Pratiwi Anwar, 1999

Figure 20

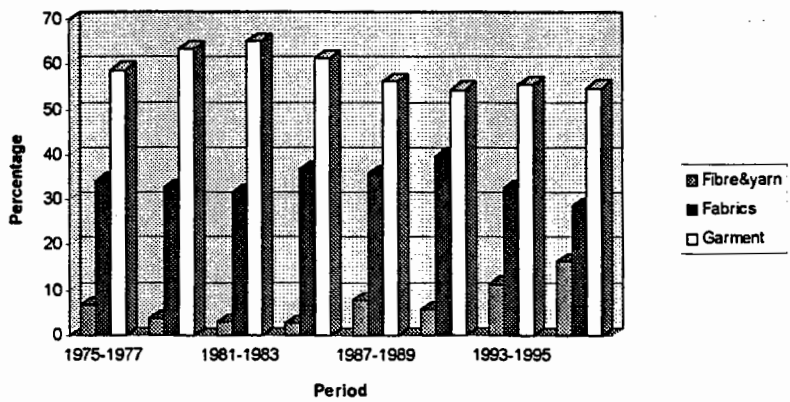
Output composition change in Indonesian textile industry, 1975-1997



Source : CBS, *Indonesian Industrial Statistics*, several editions
Counted by Ratih Pratiwi Anwar, 1999

Figure 21

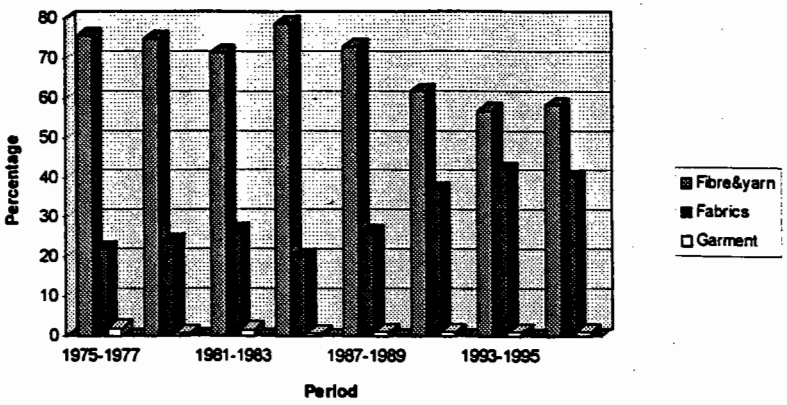
Export composition change in Indonesian textile industry, 1975-1997



Source : CBS, *Indonesian Foreign Trade Statistics*, several editions
Counted by Ratih Pratiwi Anwar, 1999

Figure 22

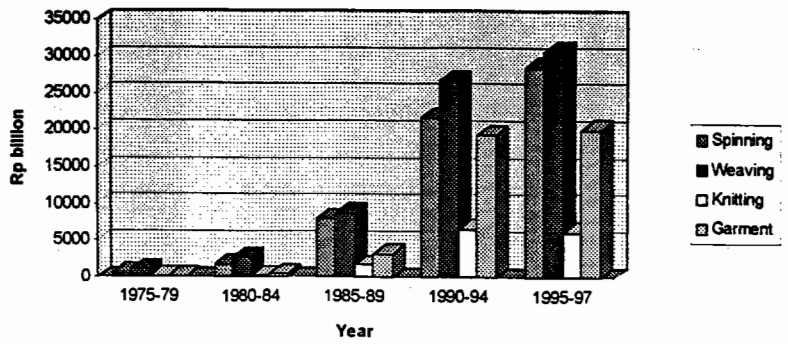
Import composition change in Indonesian textile industry, 1975-1997



Source : CBS, *Indonesian Foreign Trade Statistics*, several editions
Counted by Ratih Pratiwi Anwar, 1999

Figure 23

Value of good produced in main sectors of textile industry in Indonesia



Source : CBS, *Indonesian Foreign Trade Statistics*, several editions
Counted by Ratih Pratiwi Anwar, 1999

Table 4. Value of good produced of Indonesian textile industry (US$ million)

Year	*YARN AND FIBRE*[a]		*FABRICS*[b]		*GARMENT*[c]	
	Current price	Constant 1983 price	Current price	Constant 1983 price	Current price	Constant 1983 price
1975	118.8	264.0	409.6	910.3	3.4	7.7
1976	141.6	301.3	572.8	1,218.7	7.3	15.6
1977	238.2	467.0	569.2	1,116.1	9.1	17.9
1978	310.9	575.7	699.1	1,294.7	17.0	31.6
1979	276.3	394.7	640.8	915.5	18.0	25.8
1980	440.1	530.2	798.5	962.0	44.1	53.2
1981	482.0	554.0	964.2	1,108.2	74.0	85.0
1982	470.9	500.9	1,017.0	1,018.9	113.3	120.6
1983	358.1	358.1	742.2	742.2	114.1	114.1
1984	484.3	452.6	1,035.1	967.4	157.1	146.8
1985	761.9	680.3	1,244.4	1,111.0	292.6	261.3
1986	636.1	543.7	1,084.3	926.8	249.1	212.9
1987	851.5	650.0	1,383.0	1,055.7	364.1	277.9
1988	1,131.7	826.0	1,665.0	1,215.3	505.2	368.8
1989	1,535.6	1,073.8	2,205.2	1,542.1	655.1	45831
1990	1,652.2	1,108.8	2,435.0	1,634.2	1,224.3	821.7
1991	1,918.8	1,230.0	3,142.5	2,014.7	1,334.1	855.2
1992	2,048.7	1,272.5	4,151.5	2,578.6	2,060.5	1,279.8
1993	2,307.6	1,398.5	4,453.4	2,699.0	2,923.6	1,771.9
1994	3,186.3	1,874.3	6,057.2	3,563.0	2,164.4	1,273.1
1995	4,084.9	2,256.8	5,518.5	3,048.9	2,366.3	1,307.3
1996	4,660.8	2,492.4	6,277.4	3,356.9	2,989.2	1,598.5
1997	3,362.7	1,751.4	6,465.3	3,367.3	3,177.6	1,655.0

Notes :

Data refers only to large and medium firms.

[a] Yarn and fibre industry value of good produced consists ISIC 32111, 32112 , and 32113.

[b] Fabrics industry value of good produced consists ISIC 32114, 32115, 32116, 32117, 32122, 32123, 32129, 32130, 32151, 32152 and 32190.

[c] Garment industry value of good produced consists ISIC 32220 and 32290.

Calculated by Ratih Pratiwi Anwar. 1999.

Source : Indonesia's Central Beraue of Statistics, *Industrial Statistics*, several editions.

Table 5. Export value of Indonesian textile industry (US$ million)

Year	*YARN AND FIBRE*[a]		*FABRICS*[b]		*GARMENT*[c]	
	Current price	1983 constant price	Current price	1983 constant price	Current price	1983 constant price
1968	na	na	0.58	3.2	na	na
1969	na	na	0.77	2.8	na	na
1970	na	na	1.3	5.1	na	na
1971	na	na	*1.2	5.3	na	na
1972	na	na	**1.7	6.9	na	na
1973	na	na	**2.0	4.1	na	na
1974	na	na	**1.9	3.9	na	na
1975	0.04	0.1	1.9	4.7	2.4	5.8
1976	0.9	1.8	2.1	4.0	4.6	8.8
1977	0.4	0.6	2.7	4.0	4.8	7.2
1978	1.8	2.3	4.2	5.4	14.9	19.5
1979	4.1	2.7	47.8	31.4	66.1	43.5
1980	3.3	1.8	42.7	23.8	98.3	54.9
1981	2.1	2.6	34.9	43.6	95.3	119.1
1982	1.7	1.9	43.2	50.3	116.4	135.4
1983	14.3	14.3	107.4	107.4	157.2	157.2
1984	17.2	16.1	184.7	172.6	295.7	276.4
1985	12.7	11.9	228.5	213.5	339.1	316.9
1986	21.4	18.0	287.5	241.6	521.9	438.6
1987	86.2	57.9	385.9	256.9	595.8	399.9
1988	126.9	79.8	505.1	317.7	792.4	498.4
1989	132.8	67.4	727.9	369.5	1,169.6	593.7
1990	128.2	59.6	1,132.5	526.8	1,646.5	765.8
1991	234.1	103.6	1,552.3	686.9	2,264.9	1,002.2
1992	380.4	161.9	2,493.6	1,061.1	3,164.2	1,346.5
1993	426.7	171.3	2,247.2	928.6	3,501.9	1,447.1
1994	756.7	307.6	1,819.9	739.8	3,205.6	1,303.1
1995	922.8	356.3	1,900.5	733.8	3,376.4	1,303.6
1996	1,058.9	398.1	1,922.1	722.6	3,591.5	1,350.2
1997	898.9	278.3	1,491.7	461.8	2,903.5	898.9

Notes :

na : not available

Data refers only to large and medium firms, except the period of 1968-1973.

[a] Yarn and fibre industry export consists SITC 26 (except SITC 269) and SITC 651.

[b] Fabrics industry export consists SITC 65 (SITC 651) and SITC 269.

[c] Garment industry consists SITC 84.

Export fabrics in the period of 1968-1973 was embroidery goods.

* January - October 1971.

** Estimation.

Calculated by Ratih Pratiwi Anwar, 1999.

Source : Indonesia's Central Bureau of Statistics, *Indonesian Foreign Trade Statistics*, several editions. Data for fabrics export (1968-1973) is from M. Dawam Rahardjo, *Prisma* No. 4, June 1872, p. 32.

Table 6: Import value of Indonesian textile industry (US$ million)

Year	*YARN AND FIBRE*[a]		*FABRICS*[b]		*GARMENT*[c]	
	Current price	Constant 1983 price	Current price	Constant 1983 price	Current price	Constant 1983 price
1968	17.6	117.3	13.5	90.0	26.2	174.7
1969	32.8	156.2	11.4	54.3	16.0	76.2
1970	30.9	162.6	6.0	31.6	8.8	46.3
1971	19.5	114.7	31.4	184.7	3.5	20.6
1972	23.9	140.6	18.9	111.2	5.0	29.4
1973	30.0	96.8	0.8	2.6	1.8	5.8
1974	20.8	47.3	1.5	3.4	1.3	2.9
1975	212.9	495.2	66.2	153.9	4.8	111.9
1976	259.6	519.3	78.8	157.7	9.6	19.1
1977	273.6	536.5	70.2	137.6	5.9	11.5
1978	259.5	447.3	86.9	149.9	4.9	8.5
1979	325.9	412.6	94.1	119.1	3.2	4.0
1980	381.5	426.9	128.9	144.9	3.0	3.4
1981	389.1	427.6	166.9	183.5	10.8	11.9
1982	369.2	419.6	134.1	152.4	4.4	5.0
1983	307.2	307.2	97.2	97.2	9.4	9.4
1984	349.5	314.8	84.3	75.9	5.3	4.7
1985	323.3	291.2	80.4	72.4	2.8	2.5
1986	340.8	291.2	93.9	80.3	3.9	3.4
1987	448.8	334.9	121.9	91.0	4.7	3.5
1988	513.5	356.6	179.3	124.5	6.0	4.2
1989	696.5	400.3	304.8	175.2	11.1	6.4
1990	938.9	552.3	467.8	275.1	16.0	9.4
1991	1,054.5	613.1	633.3	368.2	23.7	13.8
1992	1,192.2	685.1	808.2	464.5	28.1	16.2
1993	1,061.5	603.1	865.1	491.5	23.3	13.2
1994	1,207.6	678.4	915.1	514.1	20.2	11.4
1995	1,548.5	798.2	1,023.5	527.6	27.5	14.2
1996	1,526.0	748.0	1,023.5	501.7	27.6	13.5
1997	1,294.3	591.0	917.3	418.8	35.4	16.2

Notes :

Data refers only large and medium firms.

[a] Yarn and fibre industry import consists SITC 26 (except SITC 269) and SITC 651.

[b] Fabrics industry import consists SITC 65 (except SITC 651) and SITC 269.

[c] Garment industry import consists SITC 84.

In the period of 1968-1974, import fabrics was cotton dyed and coloured; import garment was shirting; import yarn and fibre was weaving yarn.

Calculated by Ratih Pratiwi Anwar. 1999.

Sources : Indonesia's Central Bureau of Statistics, ***Indonesian Foreign Trade Statistics*** and ***Economic Indicators***, several editions.

Table 7: Estimation of domestic demand of textile industry in Indonesia (US$ 000). In 1983 constant price.

Year	Domestic demand	Year	Domestic demand	Year	Domestic demand
1975	1,839,019	1983	1,353,651	1991	3,307,851
1976	2,225,589	1984	1,500,979	1992	3,733,946
1977	2,280,627	1985	1,885,141	1993	4,452,575
1978	2,485,394	1986	1,367,468	1994	5,571,534
1979	1,797,773	1987	1,704,383	1995	5,567,789
1980	2,045,240	1988	2,008,865	1996	6,240,276
1981	2,208,847	1989	2,638,049	1997	6,171,794
1982	2,097,016	1990	2,055,849		

Notes : Total domestic demand is estimated with total value of textile industry's production plus import minus export. All in 1983 constant price. Data is counted by the author.

Sources : Indonesia's Central Bureau of Statistics, several publications.

Table 8: Value added of textile industry in several countries (percentage)

COUNTRIES	*1980*	*1985*	*1990*
China	13.14	17.24	13.45
German	5.69	5.95	3.95
Hong Kong	38.86	40.13	35.38
India	14.31	20.66	11.97
Indonesia	9.78	9.96	13.44
Italy	11.41	10.22	10.35
South Korea	15.52	18.21	10.21
Taiwan	14.46	14.91	10.5
Turkey	13.74	14.72	14.44
Britain	5.88	5.38	4.6
USA	4.92	5.56	4.57

Source : LP-UI, *Studi Penyusunan Blue Print Industri TPT Indonesia Menghadapi Integrasi MFA ke dalam WTO tahun 2005*, 1998, p. 101.

Table 9: Indices of Labour Productivity by Manufacturing Branch, Indonesia and USA. 1975-1990

Branch	Indonesia 1990	USA 1990	Indonesia/USA 1975 -1990
Food and beverages	171.5	146.7	116.9
Tobacco products	551.2	74.1	743.6
Textile mill products	419.2	182.6	229.6
Wearing apparel	445.5	138.4	321.8
Leather products & footwear	111.1	120.0	92.6
Wood products, furniture, fixtures	308.7	130.9	235.8
Paper products, printing & publishing	325.4	118.9	273.6
Chemical, petroleum & coal products	320.1	197.6	162.0
Rubber & plastic products	162.7	153.5	106.0
Non-metallic mineral products	251.9	125.0	201.6
Basic and fabricated metal products	477.0	135.0	353.2
Machinery and transport equipment	233.9	185.7	126.0
Electrical machinery & equipment	202.5	199.3	101.6
Other manufacturing industries	170.6	145.7	117.1
Total manufacturing	**225.9**	**159.6**	**141.5**

Source : Adam Szirmai, "Real Output and Labour Productivity in Indonesia Manufacturing", *BIES*. Vol. 30, No.2, August 1994, p. 72-73

Table 10: Value of investment in Indonesian textile industry, 1985-1995. (US$ million).

Year	Private National	Foreign	Government
1985	8,077.0	13.5	111.7
1986	6,528.3	9.0	114.6
1987	23,916.0	117.9	570.5
1988	493.7	213.2	22.6
1989	27,790.6	581.1	597.4
1990	713.1	1094.2	8.6
1991	4,825.0	532.3	3.3
1992	522.3	599.6	10.0
1993	2,371.1	419.4	27.2
1994	3,157.7	396.4	13.4
1995	3,436.5	471.1	7.7
Cumulative 1985-1995	81,831.3	1,497.0	4,447.1
Shares(%) 1985-1995	93.2	1.7	5.1
Cumulative 1985-1990	67,518.7	1,425.4	2,028.9
1991-1995	14,312.6	71.6	2,418.2

Notes : Private national investment includes loans which borrowed by private national investors. Private national and government investment are in the term value of realized investment. Foreign investment is direct foreign investment in the term approved investment.

Sources : Data of private national and government investments in textile industry are from Data Base of Inter University Centre of Economics Studies, Gadjah Mada University, based on CBS statistics. Data for direct foreign investment (DFI) in Indonesian textile industry is from *Indonesian Financial Statistics*, Indonesia's Central Bureau of Statistics, several editions.

Table 11: Ownership of Indonesian large and medium textile establishments in main sectors, 1986 and 1991 (Number of establishment)

	1986			1991			1995		
	Government [a]	Private National	Foreign [b]	Government [a]	Private National	Foreign [b]	Government [a]	Private National	For
32111 Spinning	16	51	24	19	99	25	15	125	
32114 Weaving	17	970	17	15	608	16	10	803	
32130 Knitting	1	197	-	5	232	3	5	292	
32210 Garment	8	557	-	11	1582	49	5	1906	

Notes :

[a] Includes government-joint venture firms perusahaan pemerintah - patungan

[b] Includes foreign-private national joint venture firms.

Source : Indonesia's Central Bureau of Statistics, *Industrial Statistics*, several editions.

Table 12: Value of active direct foreign investment in Indonesian textile industry based on country of origin, 1967-1990 (US$ 000)

Country of origin	*(1967-1973)*	*(1973-1979)*	*(1979-1983)*	*(1984-1988)*	*(1989-1990)*
Panama	700.0	-	-	-	11,080.0
Japan	912,459.8	136,310.0	-	-	71,775.0
Singapore	16,200.0	-	-	-	10,715.0
Hongkong	22,942.4	58,924.9	2,110.0	28,800.0	31,350.0
India	24,600.0	-	-	-	25,000.0
United Kingdom	11,178.0	69,574.0	-	-	-
South Korea	-	-	-	26,214.0	303,630.0
Taiwan(ROC)	-	-	-	34,805.0	270,041.4
West Germany	-	-	-	1,000.0	
USA	-	-	-	-	500.0
Malaysia	-	-	-	-	45,300.0
Pakistan	-	-	-	-	1,000.0
France	-	-	-	-	7,437.0
Belgium	-	-	-	-	950.0
Italy	-	-	-	-	1,650.0
Australia	-	-	-	-	3,000.0
Ghana	-	-	-	-	1,025.0
Multi Countries	93,691.0	115,474.5	4,000,0	-	14,019.0
Total	1,081,771.2	380,283.4	6,110.0	90,819.0	798,472.4

Source : Indonesian Business Data Centre, *Multinational Conglomeration Indonesia, A Profile of Multinational Companies Presence in Indonesia*, 199I. The summation carried out by author.

Table 13: Value of gross output of Indonesian textile industry (ISIC 32), in Rp 000. Figures in parentheses are the share out of total.

Year	Large and Medium	Small	Household	Total
1975	314.0 (93.7)	21.1 (6.3)	na	335.1 (100)
1979	743.2 (90.95)	73.9 (9.05)	na	817.1 (100)
1986	3.595.8 (65.2)	386.4 (6.9)	1.547.9 (27.9)	5.530.1 (100)
1991	15.043.8 (87.01)	1.120.6 (6.48)	1,125.0 (6.51)	17.289.4 (100)
1993	32.009.0 (89.78)	2.175.0 (6.1)	1.469.3 (4.12)	35.653.3 (100)
1996	49.547.0 (91.4)	3.431.0 (6.33)	1.231.1 (2.27)	54.209.1 (100)

Notes : Figures in bracket are gross output share in textile industry. Counted by the author. N.a. means data not available. Based on current price.

Sources : Indonesia's Central Bureau of Statistics, *Indonesian Statistics*, several editions.

Table 14: Value added at market price of Indonesian textile industry (ISIC 32), in Rp million

Year	Large and Medium	Small	Household	Total
1975	72,213	6,263	7,133	85,609
1979	207,104	27,684	20,623	255,411
1986	1,340,058	131,857	100,808	1,572,723
1991	4,482,164	532,046	399,629	5,413,839
1993	9,810,567	560,455	369,922	10,740,944
1996	18,155,337	1,240,790	459,644	19,855,771

Sources : Indonesia's Central Bureau of Statistics, *Indonesian Statistics*, several editions.

Table 15: Number of establishment of Indonesian textile industry (ISIC 32)

Year	Large and Medium	Small	Household	Total
1975	2,066	5,792	139,680	147,538
1979	2,147	9,692	177,246	189,085
1986	2,852	15,068	149,124	167,044
1991	3,935	19,788	298,761	322,484
1993	4,258	27,455	335,521	367,234
1996	5,130	38,932	357,026	401,088

Source : Indonesia's Central Bureau of Statistics, *Indonesian Statistics*, several editions.

Table 16: Person engaged in Indonesian textile industry (number of labor).

Year	Large and Medium	Small	Household
1975	244,850	55,375	na
1979	227,787	91,402	na
1986	389,072	132,718	238,956
1994	1,255,536	272,770	429,006
1997	1,399,827	375,294	456,214

Notes : na is not available

Sources : Indonesia's Central Bureau of Statistics, *Indonesian Statistics*, several editio

Table 17: Output value and output composition changes in Indonesian large an medium textile industry (Rp billion and percentage)

Year	ISIC 32111 Spinning	ISIC 32114 Weaving	ISIC 32130 Knitting	ISIC 32210 Garment	Total 32111 + 32114 +32130 + 32210
1975-1979	580.7 (32.57)	971.8 (26.79)	60.5 (3.87)	20.9 (1.34)	1,561.9 (100)
1980-1984	1,726.7 (34.77)	2,666.2 (30.97)	170.4 (3.43)	402.9 (8.11)	4,966.2 (100)
1985-1989	7,954.9 (36.84)	8,762.5 (33.95)	1,666.6 (7.72)	3,207.9 (14.86)	3,207.9 (100)
1990-1994	21,730.9 (29.19)	26,782.2 (30.34)	6,572.9 (8.83)	19,354.9 (26.00)	19,354.9 (100)
1995-1997	28,647.6 (33.39)	30,717.7 (31.26)	6,197.2 (7.23)	20,149.0 (23.57)	20,149.0 (100)

Notes : Data refers only to large and medium firms.

Source : Indonesia's Central Bureau of Statistics. *Industrial Statistics*, several editions.

Table 18: Output composition changes of Indonesian large and medium textile industry (percentage)

	Fibre and yarn	Fabrics	Garment
1975-1977	23.9	75.1	1
1978-1980	31.4	66.3	2.3
1981-1983	30.1	62.9	7
1984-1986	31.6	56.7	11.7
1987-1989	34.8	50.5	14.7
1990-1992	28.2	48.7	23.1
1993-1995	28.8	48.5	22.7
1996-1997	29.8	47.3	22.9

Notes :
Data refers only to large and medium firms. Based on value of good produced in 1983 constant price.
[a] Yarn anf fibre consists ISIC 32111, 32112 , and 32113.
[b] Fabrics consists ISIC 32114, 32115, 32116, 32117, 32122, 32123, 32129, *32130, 32151, 32152 and 32190.*
[c] Garment consists ISIC 32220 and 32290.
Source : Indonesia's Central Bureau of Statistics, *Industrial Statistics*, several editions.

Table 19: Export composition changes of Indonesian large and medium textile industry (percentage)

	Fibre and yarn	Fabrics	Garment
1975-1977	6.8	34.3	58.9
1978-1980	3.7	32.7	63.6
1981-1983	3	31.8	65.2
1984-1986	2.7	36.8	61.5
1987-1989	7.8	35.8	56.4
1990-1992	5.7	39.8	54.5
1993-1995	11.4	32.9	55.7
1996-1997	16.4	28.8	54.8

Notes :
Data refers only to large and medium firms. Based on export value in 1983 constant price.
[a] Yarn anf fibre consists SITC 26 and SITC 651.
[b] Fabrics consists SITC 65 except SITC 651, plus SITC 269.
[c] Garment consists SITC 84.
Counted by the author.
Source : Indonesia's Central Bureau of Statistics, *Indonesian Foreign Trade Statistics*, several editions.

Table 20: Import composition changes of Indonesian large and medium textile industry (percentage)

	Fibre and yarn	Fabrics	Garment
1975-1977	75.9	22	2.1
1978-1980	75	24.1	0.9
1981-1983	71.5	26.8	1.7
1984-1986	79	20.1	0.9
1987-1989	72.9	26.1	1
1990-1992	61.7	37	1.3
1993-1995	57	42	1
1996-1997	58.5	40.2	1.3

Notes :

Data refers only to large and medium firms. Based on import value in 1983 constant price.

[a] Yarn anf fibre consists SITC 26 and SITC 651.

[b] Fabrics consists SITC 65 except SITC 651, plus SITC 269.

[c] Garment consists SITC 84.

Counted by the author.

Source : Indonesia's Central Bureau of Statistics, ***Indonesian Foreign Trade Statistics***, several editions.