Chapter 2 Export Promotion Industry

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A Scenario for the Development of the Textile and Garment-Manufacturing Industry in Viet Nam for the Period up to 2020

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1. Assumptions for the scenario

A. Assumption 1: Changes in the international markets

Table 1. Changes in the supply-demand and market environments and factors in competition

Period	Supply-Demand Environment	Market Environment	Factors in Competition
1960s	Supply<Demand	Sellers' market	Production technology
1970s	Supply =Demand	Equilibrium	Price
1980s	Supply>Demand	Buyers' market	Distribution channel
1990s	Supply>>Demand	Intensification of the buyers' market	Marketability
Early 21st century	Supply>>>Demand	Further intensification of the buyers' market	(Garment) Quick response to markets (Textiles) New materials development capability

Source: Japan Chemical Fibres Association, 1999.

(Table 1) After the turn of the century, the international market will become increasingly a buyers' market due to global oversupply. In such an environment, the important factors in competition will be how quickly one can respond to demand with respect to garment manufacturing and the capability to develop new materials in the area of textiles. The question is how well Viet Nam's economic system can respond to changes in international markets.

B. Assumption 2: Changes in the international environment and their impact on Viet Nam

Table 2. Changes in the international environment surrounding Viet Nam's textile and garment-manufacturing industry and their impact on Viet Nam

Years	Item	Contents	Impact
2001 -	Implementation of the Vietnam-U.S. Trade Agreement	* Reduction of U.S. import tariffs * Application of U.S. anti-dumping law * Strengthening of U.S. requirement to prove the place of origin	Positive Not Positive Not Positive
2005 -	ATC of WTO to go into effect	* Intensive competition due to the end of import guarantee from Europe, etc., because of the abolition of the quota system in international trade	Not Positive
2006 -	CEPT rules in AFTA	* Intensive competition vis-a-vis imported textiles and garments in the domestic market resulting from the removal of Vietnam's non-tariff barriers and cut of import tariffs to 5% or less	Not Positive
Around 2010 -	Membership in the WTO	* Full implementation of membership requirements: Termination of export subsidies, removal of tariff and non-tariff barriers, increased transparency in trade measures, removal of export requirement on foreign capital and protection of intellectual property	Positive for foreign capital Not Positive for INATEX

Source: Compiled by Nomura Research Institute, Ltd., November 2000.

(Table 2) In the early part of the 21st century, the international environment surrounding Viet Nam will change in such a way as to promote imports rather than exports.

C. Assumption 3: Textile and garment-manufacturing industry strategy of China, Viet Nam's principal competitor, and its impact on Viet Nam

Table 3. Past and planned composition of textile and garment production in China (%)

	1980	1985	1995	2000 (P)	2005 (P)	2010 (P)
Cotton spinning	59.7	49.2	32.9	30	25	20
Wool spinning	5.5	8.4	8.2	6	5	3
Linen spinning	1.4	2.2	1.2	1	1	1
Silk spinning	7.1	9.7	10.8	10	12	14
Chemical fibers	4.2	6.6	10.1	14	21	27
Embroidery	8.6	9.1	7.4	8	7	8
Garment-making	11.0	11.5	21.4	25	25	25
Others	2.5	3.3	8.0	6	4	2
Total	100.0	100.0	100.0	100	100	100

Source: Planned by the Textile Industry Bureau, State Economic and Trade Commission of China, August 2000.

(Table 3) China plans to increase the percentages of chemical fibers and garments made of chemical fibers through 2020. If Viet Nam adopts a policy to expand production of cotton yarns and garments (including blends of cotton and synthetic fibers), it should help the nation differentiate its products from those of China.

Table 4. Synthetic textile development strategy of China and its impact on Viet Nam

	China's exports	China's imports	Capital investment in China	Impact on Vietnam
2001-2005	Enhancement of exports of medium- and high-grade garments to the U.S. to differentiate from other developing countries	Increased imports of dyed and printed fabrics	Promotion of joint ventures for dyed and printed products (for exports)	Vietnam's exports of basic items to the U.S. could increase (positive)
2006-2010	Increased exports of dyed and printed fabrics	Increased imports of synthetic fibers (blended yarns) for medium- and high-grade textiles	Increased imports of blended yarn spinning mills (for import substitution)	Increased imports of dyed and printed fabrics to Vietnam from China (negative)
2010-2020	Exports of high-grade garments made of blended yarns	Increased domestic production of chemical fibers for medium- and high-grade garments	Further increase in imports of blended yarn spinning mills (for import substitution)	Increased imports of blended yarns to Vietnam from China (negative)

Note: Information on China's imports and exports and capital investment was planned by the Textile Industry Bureau , State Economic and Trade Commission of China, August 2000.

Source: Compiled by Nomura Research Institute, Ltd., November 2000.

(Table 4) China's policy of developing chemical fibers and chemical-fiber products should help Viet Nam increase exports of cotton products to the U.S. market. The other side of the coin is that it could increase imports of chemical and synthetic fiber raw materials and their products to Viet Nam from China.

Table 5. Cost structure of a men's shirt sold in the U.S. by place of origin (USD/piece)

	U.S.	U.S.-Mexico	India	Thailand	China	Viet Nam	Myanmar
Raw materials	1.6	1.6	1.6	1.7	1.6	2.3	2.7
Labor	3.6	0.8	0.3	0.7	0.8	0.6	0.2
Energy	0.3	0.6	0.8	0.5	0.4	0.5	0.7
Depreciation	0.6	0.8	0.6	0.6	0.7	0.5	0.5
Other production costs	1.4	1.0	1.1	1.2	0.9	0.8	0.5
Total production costs	7.5	4.8	4.4	4.7	4.4	4.7	4.6
Profit	1.2	0.8	0.7	0.7	0.7	0.4	0.3
FOB price	8.7	5.6	5.1	5.4	5.1	5.1	4.9
Shipping	0.0	0.5	2.1	2.0	2.1	2.2	2.4
Tariff	0.0	0.0	0.4	0.4	0.4	0.4	0.4
Purchasing price	8.7	6.1	7.6	7.8	7.6	7.7	7.7
Retail price	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Retail profits	6.3	8.9	7.4	7.2	7.4	7.3	7.3

Sources: Compiled from NCC: National Cotton Council, 1998.

(Table 5)The upper table shows a cost comparison of a men's shirt sold in the United States. On an FOB price basis, Myanmarese products appear to be more price competitive than those of its major competitors because of the country's low labor costs. However, at the retail level in the United States, Myanmarese

products are not necessarily more price competitive than others. This can be attributed to the following factors: i) Raw materials costs in Myanmar are high. Because of the country's upstream raw materials sectors are not developed, Myanmar depends on imports for approximately 95 percent of the raw materials it consumes. In addition, import and export costs are high because of inadequate port and harbor facilities and transportation infrastructure. ii) In early 2000, the electricity charge jumped to ten times what it used to be to 8 cents/kwh. iii) With respect to labor costs, although wages in Viet Nam are approximately three times higher than that in Myanmar, it has been pointed out by a number of foreign companies that operate both in Myanmar and Viet Nam that Vietnamese workers work several times harder than Myanmarese workers and that their productivity is much higher. All these factors work to offset Myanmar's advantage brought by its low wages. As a consequence, there is not much difference in the price competitiveness of Myamarese products and those of other developing nations. In the future, however, if the exchange value of the Myanmarese currency is to decline, domestic costs, including labor costs and power charges, which account for approximately half of the cost of production, will help maintain or improve the export competitiveness of Myanmarese products.

Although the amount of garment exports from Myanmar is still small, in recent years the country has been receiving orders for sewing on commission and the range of products is gradually getting broader to USD 7 million. The reasons for the increase are as follows: i) The low wage level in Myanmar. The average monthly wage in Myanmar is approximately 20 USD, which is only about a third of that in Viet Nam, which stands at approximetely 60 USD. ii) The export quota imposed on Myanmar by the advanced, industrialized countries is extremely small compared with that imposed on other countries, such as China, Viet Nam and other competitors. Myanmar has an advantage in the exports of knitwear to the United States because the United States currently does not impose any quota on knitwear made in Myanmar. Specifically exports to the United States account for 40 percent of total garment exports. Twenty percent of exports to the United States are made under the quota (men's and women's slacks, men's shirt, women's skirts and pajamas, all made of woven fabric, women's slacks made of wool woven fabric, etc.) while the remaining 80 percent are non-quota exports. Approximately 40 percent of total garment exports are destined to Europe (France, the U.K., Germany, Greece, etc.) and these are all non-quota exports. This means that just under 10 percent of total garment exports are covered by quotas. It seems that there has been no change in the quota since it was first agreed with the United States in the 1980s. The quota should have been renegotiated with the United States every four years, but it is said that because of the U.S. refusal to negotiate with the government of Myanmar, it has been left untouched. As a result, garments made in Myanmar have been exported through Hong Kong-based firms and others to such mass merchandizers as Walmart and K-mart in the United States as low-priced basic items. Some of the Hong Kong-based firms have entered Myanmar because of the country's advantage in quota allocation from the United States.

2. Scenario for the period up to 2020

Table 6. Outlook for supply and demand

	2000	2005 (F)	2010 (F)	2020 (F)
Value of exports				
Garments (in billions of USD) (Annual rate of increase)	2.0	4.0 (+15%)	6.5 (+10%)	14.0 (+8%)
Value of imports				
Textile raw materials (in billions of USD) (Annual rate of increase)	0.2	0.3 (+10%)	0.6 (+15%)	2.5 (+15%)
Textile plants/year (in billions of USD)	0.5	0.7	1.0	1.0
Value of domestic sales (in billions of USD) (Annual rate of increase)	1.0	1.3 (+5%)	1.6 (+5%)	3.1 (+7%)
Planned textile production (1,000 tons)	150	243	360	800
(Breakdown) (%)				
Cotton yarn	51%	50%	48%	48%
Blended yarn of cotton and synthetic fibers	24%	24%	25%	25%
Synthetic yarns	25%	26%	27%	27%
Breakdown (%)				
Knitted fabric	18%	19%	19%	22%
Woven fabric	60%	63%	66%	68%
Others	22%	18%	15%	10%

Note: Figures for textile production plans were obtained from the Vietnamese authorities. Others are estimates by Nomura Research Institute, Ltd.

Source: Compiled by Nomura Research Institute, Ltd., November 2000.

(Table 6) Garment exports should increase smoothly through 2004 thanks to the increase in export quotas to Europe and the implementation of U.S.-Viet Nam Trade Agreement. Subsequently, however, growth of garment exports should slow somewhat due to the following factors: i) As the WTO Textile Agreement comes into effect in 2005, competition will intensify in export markets because Bangladesh, Cambodia, Myanmar and inland areas of China will begin to export the basic items in the same price range as those of Viet Nam; and ii) after in or around 2010, when Viet Nam joins the WTO, it will have to scrap preferential treatment given to state-owned enterprises.

Textile imports will tend to increase from 2005 onward due to the following factors: i) with progress being made in develop-and-export schemes, import of raw materials which cannot be produced domestically should increase; ii) AFTA will reduce import tariff rates from 2006 onward; and iii) after Viet Nam gains membership in the WTO in or around 2010, it will be required to remove tariff and non-tariff barriers.

Imports of textile plants are expected to increase. i) Between now and 2005, imports of spinning mills for high-count cotton yarns will increase in order to enhance garment product lineup, in addition to the replacement and updating of existing equipment; ii) through 2010, there will be imports of equipment for import substitution of dyed and printed fabrics; and iii) through 2020, spinning mills will be imported for import substitution of blended yarns.

Table 7. Forecast of the scale of domestic market

	2000	2005 (F)	2010 (F)	2020 (F)
(Assumption) Per capita real GDP (USD)	350	500	700	1300
Forecast formula	Per capita textile consumption = 3.679Ln (per capita real GDP) - 0.3517			
(Primary results) Per capita domestic textile consumption (including imports) (kg per25m length-fabrics)	4.8	5.8	6.3	10.1
(Assumption) Population (Annual increase of 1.2%) (in one million persons)	81	89	99	120
(Secondary results) Textile consumption (1,000 tons)	389	516	623	1,212
(Assumption) Average unit price to remain the same (USD/ton) (Reason) Competition with imports	2,570	2,570	2,570	2,570
(Tertiary results) Scale of domestic market (in billions of USD)	1.0	1.3	1.6	3.1

Source: Nomura Research Institute, Ltd., November 2000.

(Table 7) In the developing countries, per capita domestic textile consumption increases sharply after per capita real GDP exceeds USD1,000. In Viet Nam, per capita real GDP will exceed USD1,000 in or around 2016. For every USD100-increase in per capita real GDP, per capita textile consumption will increase by approximately 0.5kg.

Table 8. Viet Nam's priorities for the development of textiles

	Priorities	1996-2000	2001-2005	2006-2010	2011-2019
Export	Enhancement of export competitiveness	Cotton fabric	High-count cotton yarn	Advances in dyeing technology	Cotton-blend yarn
Domestic sales	Promotion of import substitution	Chemical fiber fabric		Chemical fiber yarn	
Raw materials development	Shift to develop- and-export schemes	Improvement of raw cotton strain	Expansion of cotton growing	Expansion of cotton growing	Expansion of cotton growing
Capital investment	Equipment modernization	Replacement and updating of existing equipment	Replacement and updating of equipment, cotton spinning mills and medium-scale chemical fiber plant	Dyeing plant and medium-scale chemical fiber plant	Blended yarn spinning mills

Source: Nomura Research Institute, Ltd., November 2000.

(Table 8) In terms of competitiveness in export markets, it will be an advantage for Viet Nam to concentrate on product development primarily in cotton products, as the nation has strong price competitiveness in domestic raw cotton. Therefore, it will be necessary to improve cotton strains and increase cotton planting acreage. Cotton is considered an important industrial plant, its development not only helps textile industry to ensure domestic material but also speeds up the conversion of plant structure, raise Viet Nam agriculture production (in general, production value of one cotton hectare is two times more than rice growing). Otherwise, the

production cost in the same quality cotton is almost near to the price of imported cotton, which shows the international competitiveness of domestic cotton. On the other hand, as chemical fibers require economies of scale, development of chemical fiber textile products will not bring advantage to Viet Nam vis-à-vis China in view of the relatively small size of Viet Nam's domestic market.. Based on the assumption that synthetic fiber demand in Viet Nam in 2020 will be USD7 billion (garment market size estimated at USD17 billion, of which approximately 40 percent will be synthetic fiber garments) and based on the production capacity of synthetic fiber businesses in Viet Nam being operated by South Korean or Taiwanese firms, even in 2020 Japanese investment in a major synthetic yarn plant of approximately USD1.5 billion (production cost: USD1,000/ton x annual optimum production capacity of 100,000 tons x 15 years for recovery of investment) probably will not be able to break even, not to mention being profitable. By characteristics of production and consumption of product in short period, so the term of recovering investment capital from textile, garment sector is much lower than that of other industries. Commonly, the term of recovering capital from textile sector is from 12 - 15 years, garment sector is from 5 - 7 years, in the meantime the other industries is over 15 years, even tens years like steel industry. Additionally, one is being reminded of the facts that when major Japanese synthetic textile makers invested in China between 1997 and 1998, China's demand for such products was USD23 billion and that there was no other big investment in synthetic textile plants from other countries before the Japanese investment.

3. Priorities and policies on promotion for import substitution and export

A. Recommendations for long-term policy priorities

(Up to 2005)

1. Export industries must achieve import substitution by 2005 to save foreign exchanges and also to capture the domestic market. Capturing the domestic market is very important for the development of capital-intensive synthetic textile sector, which requires economies of scale. The reason that "import substitution effect of export industries" is necessary is that, for example, although the domestic garment market in Viet Nam in 2000 is estimated at USD1 billion, low-priced imports, primarily from China, account for approximately 60 percent of this market. Sales prices of these imports are only one-third to one-quarter of the unit price of garments sewed on commission for exports (which is USD10 or more). The domestic market has been captured by China because Viet Nam is not able to produce and supply a wide variety of materials compared with China and because the fight against smuggling by the governments of Viet Nam and China has not been effective. Crackdown on and penalties for illegal imports should be made more severe.

2. One of the reasons for the inflow of low-priced Chinese garments is the absence of large distributors who handle high-quality garments. At present, the garment manufacturers who wish to ship to the domestic market must either open specialty shops by themselves, or sell through agents who do not have the obligation to purchase merchandise or sell on a consignment basis. The garment manufacturers in Viet Nam, whose principal business is sewing on commission for exports, the expansion into the domestic market is difficult not only because of the prevalence of illegal imports and copies of brand-name products but also because of such financial burdens as financing inventories and the creation of distribution channels. In order to realize "the import substitution effect of export industries," the government must take the following measures by 2005: i) deregulation of large-scale mass merchandisers who handle high-quality products in large cities, where consumer demand is becoming increasingly sophisticated; ii) easing of regulations on merchandise purchase agreements; iii) support for the entry of garment manufacturers to domestic distribution (by providing low-interest loans for opening outlets); iv) support for the improvement of the efficiency of physical distribution (build facilities for joint physical distribution, provide low-interest loans for the creation of physical distribution system); v) support for the development of demand (subsidies for participation in exhibitions and fairs); and vi) support for market research, and advertising and promotion (make spending on these items deductible expenses). These supporting measures are urgently needed.

(In or around 2010)

3. Although VINATEX's monopoly is expected to continue for some more time, Viet Nam will have to modernize its production and management setup in preparation for its membership in the WTO in or around 2010. In order to achieve this, it will be essential to create a fair competitive environment, that will include a level playing field for VINATEX and foreign companies. From 2005 onward, Viet Nam will have to introduce preferential measures to the South Korean and Taiwanese firms that are already engaged in the production of cotton or synthetic textile fabrics in Viet Nam to allow them to expand to the production of cotton and chemical fiber yarns. Measures specifically required are, after the elimination of differentials in the treatment of Vietnamese enterprises and foreign enterprises, tax cuts on investment, special depreciation of machinery and equipment, tax deduction of testing and research expenses, and a reduction in corporate taxes.

B. Priority tasks for Vietnamese garments makers to succeed in the Japanese market and measures to promote export to Japan

Table 9. Unit price per ton of garments imported to Japan

		1995	2000 (F)	2005 (F)	2010 (F)	2015 (F)	2020 (F)
Vietnam	million yen /ton	2.2	2.5	2.7	3.0	3.4	3.8
China	million yen /ton	2.3	2.7	3.0	3.5	3.7	4.5
Italy	million yen /ton	15.0	17.8	16.0	15.0	15.0	16.0
World Total	million yen /ton	2.5	3.2	3.6	3.8	4.3	5.0

Source: Studied by Japan Textiles Importers Association, 1999

Table 10. Trends in the ratio of knitted garments in Japan's woven garment

		1995	2000 (F)	2005 (F)	2010 (F)	2015 (F)	2020 (F)
Vietnam	Knitted (amount) /Woven(amount)	0.58	0.49	0.50	0.56	0.60	0.64
China	Knitted (amount) /Woven(amount)	0.62	0.64	0.72	0.85	0.90	1.00
Italy	Knitted (amount) /Woven(amount)	1.66	1.74	1.86	1.90	2.0	2.15
World Total	Knitted (amount) /Woven(amount)	0.78	0.85	0.97	1.05	1.16	1.21

Source: Studied by Japan Textiles Importers Association, 1999

Table 11. Ratio of women's garments in Japan's garments imports

		1995	2000 (F)	2005 (F)	2010 (F)	2015 (F)	2020 (F)
Vietnam	Ratio of women's	19%	21%	21%	23%	26%	30%
China	Ratio of women's	34%	37%	41%	45%	50%	53%
Italy	Ratio of women's	61%	62%	63%	62%	61%	62%

Source: Studied by Japan Textiles Importers Association, 1999

(Up to 2005)

1. The value of garment imports to Japan has surged since the yen's appreciation in 1987. By 2000, imports accounted for 60 percent of the domestic consumption of apparel. Viet Nam is the fifth largest exporter of garments to Japan, which is its largest market. The unit price of garment (per ton) from Viet Nam in Japan is low in 2000, but it is expected to increase as Viet Nam's exports shift from inner garments to outer garments and with increasing "fashion elements" of outer garments between now and 2020. However, compared with those of Chinese garments, Vietnamese garments are still wanting in terms of color, fabric design and apparel design. Therefore, between now and 2005 Viet Nam should send its fashion designers abroad to study or invite foreign fashion designers to give guidance to Vietnamese designers.

(Up to 2010)

2. The ratio of women's wear (in terms of value) to total garment exports from Viet Nam in 2000 is low. Even between now and 2020, this ratio is not likely to rise sharply. Viet Nam should adopt a strategy of entering into women's wear market, which offers higher value added. Another medium- to long-term priority is to increase the ratio of knitted products to woven fabric products. The presently low ratio of knitted products stems from the fact that at present many Vietnamese garment manufacturers are sewing on commission using the fabric brought in by foreign companies. This is due to the absence of well-developed knitted-wear technology, which would enable Vietnamese companies to manufacture knitted wear using the yarns brought in by foreign companies. From 2005 onward, Viet Nam should introduce equipment for the manufacture of high-count yarns, that are used for women's knitted wear.

(Up to 2020)

3. In the Japanese market, in addition to the timeliness of fashion designs, consumer demand for the clothes to appeal to their sensitivities or have special functions is getting stronger and stronger. Specifically, since the latter half of the 1990s, the consumer has begun to show strong preference for blends of natural fibers and chemical fibers, and staple fibers and long (filament) fibers. To meet this demand trend in Japan, China plans to enhance the importation of blended yarn spinning mills from Japan and Germany in or after 2006, with a view to start full-scale production of these yarns in or after 2010 for sale to the Japanese and U.S. markets. Therefore, Viet Nam should make investment to replace equipment or enhance capacity, and investment in cotton spinning mills and chemical fiber plants between now and 2005. It should also make investment in dyeing plants and chemical fiber plants before 2010, and investment in blended yarn spinning mills in the 2010s. It is advised that such investments be financed by retained profits of enterprises, or money raised in the financial markets or the equity markets rather than funds from the government treasury. This will make it all the more necessary for enterprises to build corporate structure, modernize management, and increase profits, so that they can gain the trust of the markets.

C. Present status of and future changes in the domestic market structure

1. Present status

Table 12. The Supply market of textiles and garments in Viet Nam at the present

Characteristics	Spinning (Yarns)	Knitting and weaving (Fabrics)	Garment-manufacturing
Factors	Large-scale capital-intensive	Medium-scale capital-intensive	Labor-intensive
Economies of scale	Large	Medium	Small
Supplier	SOEs	SOEs (primary), foreign firms (secondary)	Private enterprises (primary), SOEs (secondary), foreign firms (secondary)
Market (supplier)	95% domestic (SOEs)	Domestic (SOEs), indirect exports (foreign firms)	Exports (sewing on commission by private enterprises, SOEs and foreign firms)

Source: Nomura Research Institute, Ltd., November 2000

The structure of the supply market of textiles and garments in Viet Nam is as follows. i) SOEs, centering on VINATEX, are engaged in spinning yarns for domestic consumption; ii) SOEs, centering on VINATEX, are engaged in weaving and knitting fabrics mainly for domestic consumption, while South Korean and Taiwanese firms are engaged in making fabrics which are exported indirectly after processing into garments; and iii) primarily SOEs but also private enterprises and foreign capital-affiliated firms are making garments, usually on a sewing-on-commission basis and which are destined for exports. Low-priced imports, mainly from China, account for approximately 60 percent of the domestic market. The detailed analysis on the structure of this supply and demand markets in Viet Nam textile and garment sectors has already done by the same author in the report titled " The JICA Study on the Promotion of Small and Medium Scale Industry (March 1999)"

In the synthetic fiber sector, which requires large capital, foreign firms have not made full-scale entry to Viet Nam because demand is not large enough. In the weaving and knitting sector, which requires medium capital, South Korean firms are making cotton fabrics while Taiwanese firms are making synthetic fabrics. These fabrics are used by foreign capital-affiliated firms for sewing garments on commission. As of 1998, SOEs accounted for approximately 60 percent, non-state-owned enterprises approximately 20 percent, and foreign capital-affiliated firms approximately 20 percent of textile output amount. In the same year, SOEs accounted for approximately 30 percent, non-state-owned enterprises approximately 50 percent and foreign capital-affiliated firms approximately 20 percent of garment output amount, with non-state-owned enterprises accounting for a larger percentage than SOEs. Small and medium-sized enterprises (SMEs) with less than 200 employees accounted for approximately 50 percent of total output amount.

Because Vietnamese firms, both SOEs and private enterprises, are not strong enough in terms of materials-development, marketing and financing capabilities, 95 percent of total garment manufacturing is sewing-on-commission. At present, competitiveness of garment-makers which are engaged in sewing-on-commission in the export market depends on the allocation of export quotas, which are directly or indirectly allocated by the Ministry of Commerce, and their ability to reproduce the samples provided by foreign buyers. In order to strengthen export competitiveness in sewing-on-commission, at least the following two conditions must be met urgently: i) export quota allocation must be made on a level playing field; and ii) firms must be allowed to freely hire skilled workers.

2. Future development

a. A hypothetical scenario for SOEs

So far, VINATEX and other SOEs engaged in textile and garment manufacturing have enjoyed various preferential treatments, including the injection of public funds and subsidies, and preferential treatments in getting loans from state-owned banks, allocation of export quotas, access to industrial land and information on overseas markets. The gap between SOEs and private enterprises, foreign firms will have to be closed in preparation for Viet Nam's membership in the WTO, which is expected in or around 2010, and a level playing field for all must be realized. VINATEX must carry out management reform in order to survive such a drastic change in the business environment. The following is a hypothetical scenario for VINATEX and other SOEs engaged in textile and garment manufacturing.

(Up to 2005)

a) Privatization of garment makers under the wing of VINATEX will proceed between now and 2005. Firstly, the following issues should be pointed out. i) Their decision making is very slow. For example, when they make equipment investment of more than 500 million dong, the government rules call for them to select the vendor through a bidding. They are also required to obtain approval of the government or headquarters of VINATEX, before they take any decision on important matters. ii) Director General, Deputy Director General and Chief Accounting Officer of SOEs are appointed regularly by the government and they are not said to be full of entrepreneurial spirit. iii) Even when the number of employees is too large relative to the scale of production and sales, SOEs cannot layoff employees because of their socialistic management characteristic. They must also shoulder excessive burdens for fringe benefits. iv) When a level playing field between SOEs and private enterprises is realized, stripping SOEs of their protected status, their earnings will deteriorate,

making it necessary to carry out corporate restructuring. Under these circumstances, it is noteworthy that at some affiliated directors in garment manufacturers which are now under the wing of VINATEX with overseas business experience have gained self-confidence and entrepreneurial spirit, and are aiming to become independent from VINATEX in order to conduct business under develop-and-export schemes. These directors develop overseas distribution channels leveraging their own overseas networks and design capability and expand their production by obtaining bank loans or distributing equity among a number of partners. Pioneers of such enterprises are Ho Guon Garment Company in Hanoi and Binh Minh Garment Import Export Co. in Ho Chi Minh City, etc., which were equitized in 1999.

(Up to 2010)

b) As the playing field becomes more level in the future, the distinction between SOEs and private enterprises will disappear de facto by 2010. Private enterprises which have enhanced their international competitiveness through technological and/or marketing tie-up with foreign capital-affiliated firms could shift away from sewing-on-commission to engage in develop-and-export schemes. On the other hand, SOEs which lag in terms of technological and marketing capability without relationships of foreign capital-affiliated firms may not be able to outgrow sewing-on-commission. At that point, it will become very important for the government to adopt policy options that will strengthen the linkage between SOEs and SMEs in order to shift from sewing-on-commission to engage in develop-and-export schemes. Specifically, there are such options as i) open up VINATEX's market research arm to the private sector and create a public export promotion body which private enterprises are also free to use; ii) open up VINATEX's development center to the private sector and create a public raw materials and technology development center; and iii) open up VINATEX's export and import division to the private sector and restructure it into a specialized trading firm.

b. A hypothetical scenario for private enterprises

(Up to 2005)

a) Between now and 2005, SMEs will form regional manufacturers' associations at the place of production or associations at the place of consumption in order to achieve both horizontal and vertical integration. Such efforts could take the following forms:

- In order to outgrow sewing-on-commission and move into develop-and-export schemes, SMEs will form associations with both garment and textile-makers at the core. The core firms will station

designers in foreign countries or establish overseas antenna shops and focus on product development and information gathering.

- Small and medium-sized garment-makers who use yarn-dyed, fabric-dyed or printed fabrics will establish joint product development centers at the place of consumption. These centers will collect and accurately analyze domestic fashion information in order to identify consumer needs and preferences in terms of color, design, etc., so that makers in the area can jointly promote research and development of new fabric designs and materials.
- Dyers and garment-manufacturers which use primarily local textiles will establish joint facilities, such as distribution centers, joint cutting studios, and joint treatment facilities for pollutants. By enhancing dyeing and garment-manufacturing functions, these firms can realize integrated production ranging from textile-making to apparel-making within the region.

Therefore, supporting measures to these associations for horizontal and vertical integration should be introduced by 2005. Additionally, small and medium-sized garment-makers call for supporting measures for skill training, holding domestic product fairs in order to help procure domestically-produced good quality raw materials and materials, gathering information on overseas markets and improvement of fashion designs and financial assistance to increase exports.

(In and around 2010)

b) From 2010 onward, as SOEs and private enterprises may become separated into two groups: one engaged in develop-and-export schemes and the other in sewing-on-commission, private enterprises which lag behind will become subcontractors to those that are engaged in develop-and-export schemes. In order to bring stability to the business activity of such laggard enterprises, the government will have to support them through the following policy option: Establish a federation of subcontract garment-makers in Hanoi and subcontract garment-maker development associations in major cities. These organizations will offer management consulting and guidance to subcontractors as well as handle complaints and disputes concerning subcontract agreements and transactions. They can also create information centers that will help primary manufacturers meet subcontractors and also gather and offer information on subcontracting jobs offered by primary manufacturers on a continual basis. They may do this over the Internet in the future.

c. A hypothetical scenario for foreign capital-affiliated firms

(Present)

a) Today, the production of textiles and garments are being carried out in the following three regional spheres: i) the NAFTA sphere in which textiles made in the United States are made into garments in the Caribbean nations and brought back into United States; ii) the OPT(Outward Processing Tariff) sphere in which textiles made in France, Germany or Italy are made into garments in North Africa or (former) East European nations and brought back into European Unity; iii) Textiles made in Japan (including textiles made at the overseas transplants of Japanese firms in Thailand, Indonesia, etc.), South Korea or Taiwan are made into garments in China, Indochina or South Asia. Because the first two spheres are institutionalized by tariff agreements, intra-regional investment and trade in textiles and garments are on the increase. On the other hand, in Asia, Japan, South Korea and Taiwan are focusing on investment in and trade with China. As mentioned earlier, businesses in these countries are viewing China, with its huge domestic market and abundant young and inexpensive labor, as the production base for synthetic textiles, manufacturing of which requires the economies of scale. South Korean firms are investing in Viet Nam as a production base for materials to be used in sewing-on-commission for export purposes, while Taiwan's investment in Viet Nam is primarily to spread the risk instead of putting everything in China. Japanese firms are concentrating on large-scale investments in China in order to achieve the economies of scale and aim to supply materials to Viet Nam from their production plants in China, Indonesia or Thailand.

(Up to 2005, 2010, 2020)

b) In order to draw a picture of the structure of Viet Nam's textile industry in or around 2020, we have stated in the Phase 2 of this Study that the prerequisite for the development of capital-intensive upstream (yarn- and fabric-making) sector is the expansion of the downstream sector. Along this line, Viet Nam has been steadily making investment in the upstream sector. Our previous statement still stands, but in order to encourage the introduction of foreign capital in the textile industry, we believe it is essential to create a level playing field between the SOEs, centering on VINATEX, and private enterprises, foreign firms in relation to R & D, production, foreign trade domestic distribution, the dual pricing system and improve the investment environment by improving the industrial system. Specifically, this should include i) removal of discriminatory practices in export quota allocation, bank lending and expensive land price evaluation contributed by Vietnamese partner in joint ventures, etc. by 2005; ii) opening up of VINATEX's market research organization, materials development, export-and-import organizations to the private sector and abolition of the dual pricing system by 2010; and c) changing administrative functions of the government from administrative guidance on

textile and garment manufacturers to policy planning and leave the oversight of the industrial issues to self-regulation by a federal association of textile and garment to avoid direct intervention by the government by 2020.

Provided that the scenario would come true by 2020, the structure of supply market of textiles and garments in Viet Nam could change as the following table indicates.

Table 13. The Supply market of textiles and garments in Viet Nam toward the future

Characteristics	Spinning (Yarns)	Knitting and weaving (Fabrics)	Garment-manufacturing
Year 2000	95% domestic (SOEs)	Domestic (SOEs), indirect exports (foreign firms)	Exports (CMT by private enterprises, SOEs and foreign firms)
Year 2020	Domestic (former SOEs), indirect exports (foreign firms)	Domestic (former SOEs), indirect exports (foreign firms)	FOB (head contract firms),CMT (subcontract firms)

Source: Nomura Research Institute, Ltd., November 2000

2 − 2

Development Scenario and Policy Issues Related to Export Promotion in the Electric/Electronics Industry of Viet Nam in the 21st Century

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1.Summary

Direct investment from Japan and other countries in Viet Nam in the electrical/electronics industry dropped significantly after the Asian currency and economic crisis. However, some aspects of the investment environment that had been discouraging siting in Viet Nam have shown signs of improvement. Indeed, various changes are now in motion and point to a major upturn. More specifically, with the recovery of the ASEAN economies, Japanese and other multinational corporations are leaning even more heavily toward division of labor and higher value added levels in their production in the region, largely for reasons in the employment aspect, while keeping their eyes open for investment opportunities in China. The emergence of AFTA should expand investment opportunities in Viet Nam. Furthermore, the conclusion of a trade agreement with the United States should stimulate major investment not only by the established U.S. giants but also by up-and-coming EMS(Electronics Manufacturing Service) enterprises, for example. This holds the possibility of businesses in the fields of information-communications equipment and software choosing to site in Viet Nam.

Considering the characteristics of the electrical/electronics industry (product technology, types of production, scale of investment, etc.) and Viet Nam's internal and external investment environment (positive and negative factors), the three major fields to which Viet Nam should actively strive to attract foreign investment to promote exports in the immediate future are: simple assembly components, materials-type components, and information-communications sets and components. The scenario presented in the following figure was prepared on the assumption that Viet Nam attracted foreign firms in these fields to site there. The scenario envisions the build-up in the electrical/electronics industry with the number of internationally competitive (foreign-affiliated) enterprises projected to increase from about 25 at present to 50 as of 2005, to 100 as of 2010, and to 150 as of 2020. Naturally, the same period would see the emergence of domestic (indigenous Vietnamese) firms doing business in software and SI, and the corps of major firms in this field would therefore consist of about 200. As a result, the scenario foresees an increase of about 10-fold in the number of companies and about 20-fold in the amount of production along with the expansion of exports. The implication is that the scale of production in this field in Viet Nam could grow from the current level of about USD2 billion to

USD40 - 50 billion by 2020 (about one-fourth the level in the most developed ASEAN countries today). In the process, this production would come to account for the majority of Viet Nam's exports.

Japanese firms in the electric/electronics industry have thus far made direct investments of over 10 billion dollars in the ASEAN region. Furthermore, reinvestments by Japanese firms and investments by firms from other countries have given the whole ASEAN electric/electronics industry a scale of over 100 billion dollars. Because Viet Nam has almost no stock of indigenous industrial capital that could develop export in this sector, it must rely on siting by international industrial capital in order to promote export. At present, the cumulative investment in Viet Nam by Japanese electric/ electronics firms is no more than just a little over 200 million dollars. If Viet Nam can attract siting by many Japanese and other international industrial concerns for the purpose of export, it could develop a fairly large export industry at a relatively low expenditure of its own funds, assuming that it makes the necessary investment for industrial estates, improvement of the logistics network, and elements of the infrastructure, as the more developed ASEAN countries have done. The government of Viet Nam therefore should take measures for prompt conditioning of the internal environment for investment and attraction of siting by international industrial capital in a both timely and active manner. In so doing, it must monitor the trend of and structural changes in the global supply and demand in the electric/electronics industry, the developments in other ASEAN countries and China, and the actions of international industrial capital.

The approach to fostering the growth of industry and export in the electric/electronics industry in developing countries lies in the sequence of preparing a master plan to serve as a guideline, conditioning policy and legislation in accordance with this plan, erecting setups for executing measures, and improving various infrastructures, including power supply, ports and harbors, and industrial estates. At the same time, it is indispensable to conduct effective campaigns to attract siting by foreign firms capable of driving export activities. In siting for replacement of import, it is perhaps unavoidable for the activities of the foreign firms within Viet Nam to be placed under various restrictions at least temporarily. Although the factors constraining the activities of export-oriented firms are thought to be in the process of improvement, the attraction of sitting by foreign firms is nevertheless not making much headway. Besides circumstances operating on the side of the foreign firms and the lack of full arrangements (policy measures, infrastructure, etc.) for acceptance of such siting on the Vietnamese side, the chief cause is presumably the lack of effective promotional campaigns focused on specific targets.

In particular, besides examining prospective siting incentives that would appear more attractive in the eyes of foreign firms than those of other countries (incentives for siting by SMEs would also be essential) and conditioning the "soft" and "hard" infrastructures to expand siting by EPZ firms, the government of Viet Nam must effectively target firms for attraction, regularly stage seminars in developed countries, and make diplomatic overtures based on visits by officials on the ministerial level to firms in developed countries. Similarly, while improving the infrastructure of industrial estates, physical distribution, electrical power, and

Figure 1-1 Scenario for the phased development of export-oriented industry in Viet Nam in the electric/electronics field

	Stage Ⅰ(-2005)	Stage Ⅱ(2006-2010)	Stage Ⅲ(2011-2020)
Basic orientation	· Building of the foundation of the electric/electronics industry with the help of foreign capital	· Expansion of export by foreign affiliated manufacturers of various types of electric/electronic sets and components under the AFTA system	· Growth of international competitiveness in the electric/electronics industry based on a build up of component/SI firms (indigenous domestic as well as foreign affiliated) · Full scale advancement of the electric/electronics industry (aim for evolution into a center of electric/electronics production in the ASEAN region)
Policy on foreign investment	· Nurturing of the growth of export oriented industry through attraction of siting by foreign firms looking to restructure their ASEAN production systems or build setups for supply to the global market · Reinforcement of incentives for siting by foreign firms and active promotional campaigns	· Nurturing of the growth of export oriented industry through attraction of siting by foreign firms building setups for supply to the global market · Active promotional campaigns including talks with top ranking foreign officials	· Development of high VA export oriented industry through more selective targeting in campaigns to attract siting
Fields to be emphasized in attraction of foreign investment	· Simple assembly components · Information communications sets and components (computer peripherals capable of assembly with almost 100% imported components and materials) · (Materials type components)	· Information communications sets and components (printers, HDD, fax, and other mechatronics items requiring a store of SI capabilities) · Simple assembly components · Package type assembly components · Materials type components · AV sets (switch from replacement of import to growth of export) · (Software)	· Information communications sets and components · Package type assembly components · Materials type components · Electronic devices · White goods (conventional home appliances) · Software
(Software/ SI field)	· Bolstering of programs for human resource development to lay the foundation for information communications industry in fields such as software and network development	· Strengthening of the foundation for growth of SI (metal processing, plastic molding, etc.; through human resource development programs, SI center operation, attraction of foreign investment, and support for venture businesses)	· Extensive development of indigenous domestic SI firms based on technology transfer from foreign firms (in areas such as high precision plastic processing, high precision metal processing, and metal molding) · Nurturing of engineering capabilities for development design and facility maintenance
Related policy measures	· Publication of a long term master plan and assurance of the transparency and consistency of all measures · Infrastructural conditioning (EPZ, logistics, etc.) · Higher education for human resource development · Tariffs in conformance with CEPT (and AFTA)	· Augmentation of measures for promotion of small and medium enterprises (SI; legislative framework, financing, credit guarantees, and industrial estates) · Conditioning of legislation for protection of intellectual property and trademark rights (conformance with WTO rules) · Human resource development (management executives, administrative experts, etc.)	· Drafting of comprehensive policy for advancement of the electric/electronics industry (promotion of science and technology, growth of domestic industrial capital, etc.)

Source: Nomura Research Institute

telecommunications, it will become even more vital to bolster the development of quality human resources, including executives and engineers capable of coping with the demands of manufacturing and the IT revolution in the new international environment.

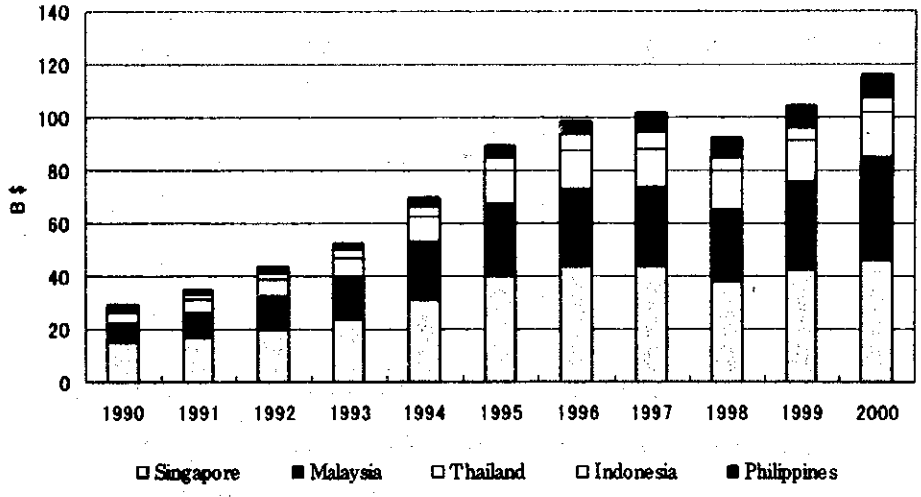
2. Trends in the electric/electronics industry in the main ASEAN countries

1) General situation

The ASEAN electric/electronics industry achieved growth averaging 15 percent annually over the last ten years and reached a scale of 116 billion dollars (U.S.) in 2000. Whereas annual growth averaged 25 percent in the first half of the 1990s, it was held to about 5 percent in the second half due to the effects of the currency and economic crisis. In terms of scale, production is now more than half as large as in Japan and larger than in Korea, Taiwan, and China; the region supplies close to 15 percent of the global market. The crisis induced an internal demand slump, increase in component import costs, and shrinkage of direct investment from other countries. In 1998, production in the industry actually declined from the previous year. However, there were positive factors in the form of a firm expansion of the demand in Western markets and rise in competitiveness of export due to the currency depreciation. Furthermore, the demand in home markets has clearly begun to recover as a result of financial rebuilding. Production activities are rapidly regaining their former levels, and the industry appears poised for a new round of growth.

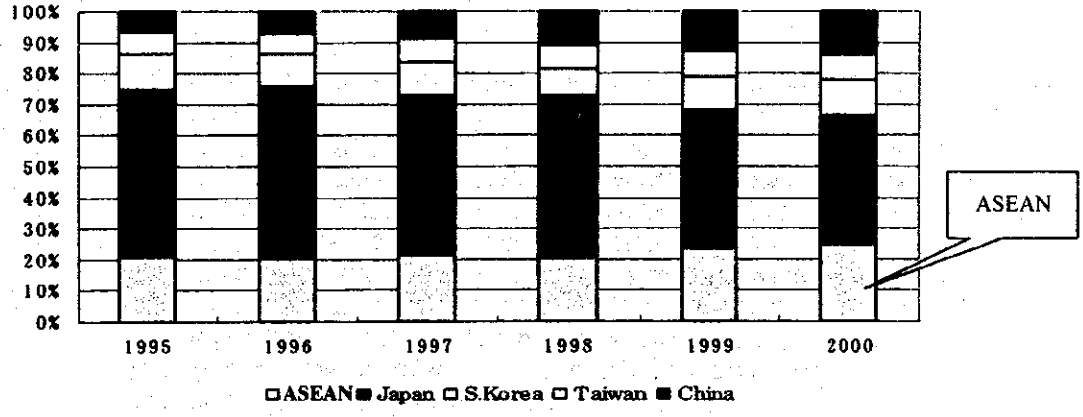
The ASEAN electric/electronics industry initially developed around assembly of sets and components in the field of TV, audio, and other AV equipment, as well as post-processing and assembly of semiconductors. Thereafter, the number of various types of component manufacturers grew along with the demand for components associated with this production, and this facilitated component sourcing from the ASEAN market. There followed a shift from AV items (sets and components) to the more high-VA personal computers and peripheral items (sets and components) in the information-communications field as the focus of production activities in the region.

Figure 2-1 Trend of production in the ASEAN electric/electronics industry



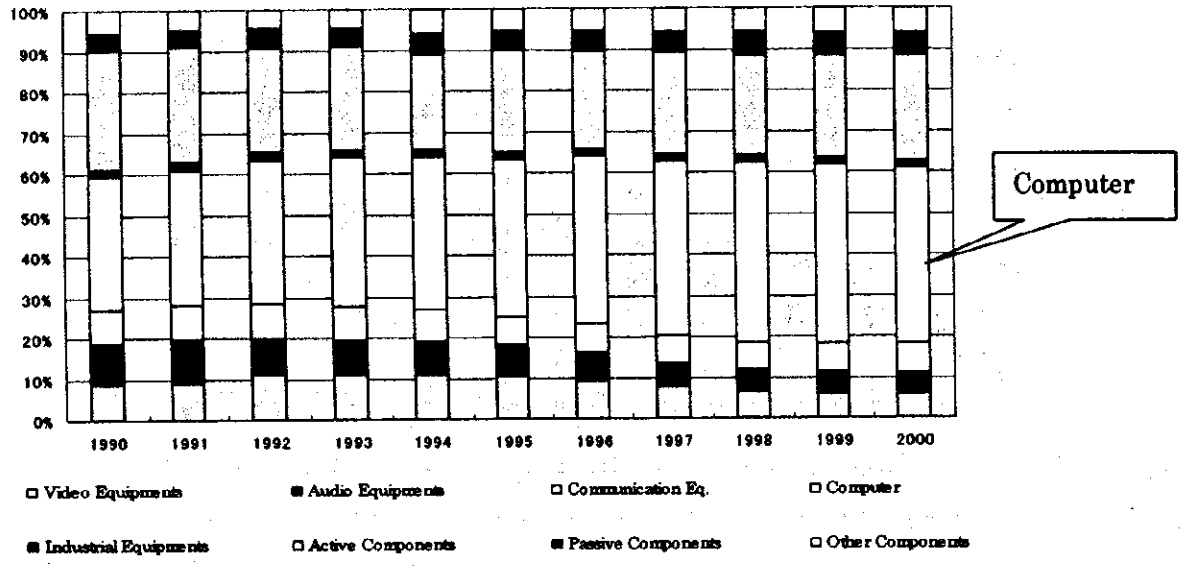
Source: Yearbook of World Electronics Data 2000(Reed Electronics Research)

Figure 2-2 Positioning of the ASEAN electric/electronics industry in the Asian context



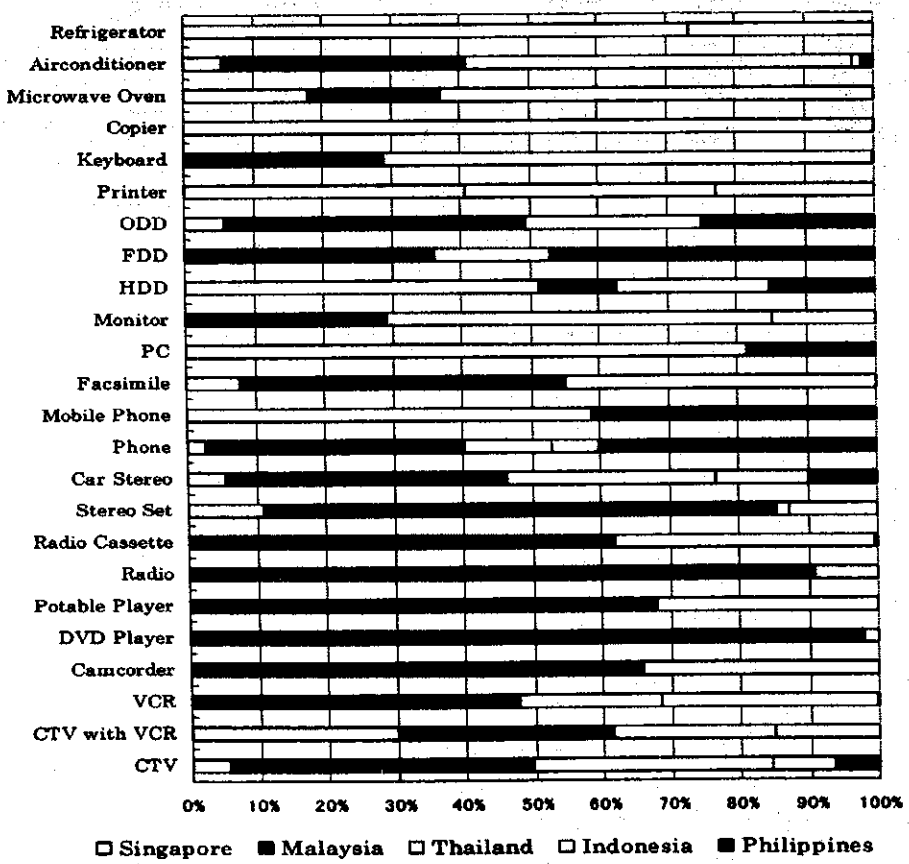
Source: Yearbook of World Electronics Data 2000(Reed Electronics Research)

Figure 2-3 Trend of production in the ASEAN electric/electronics industry (by field)



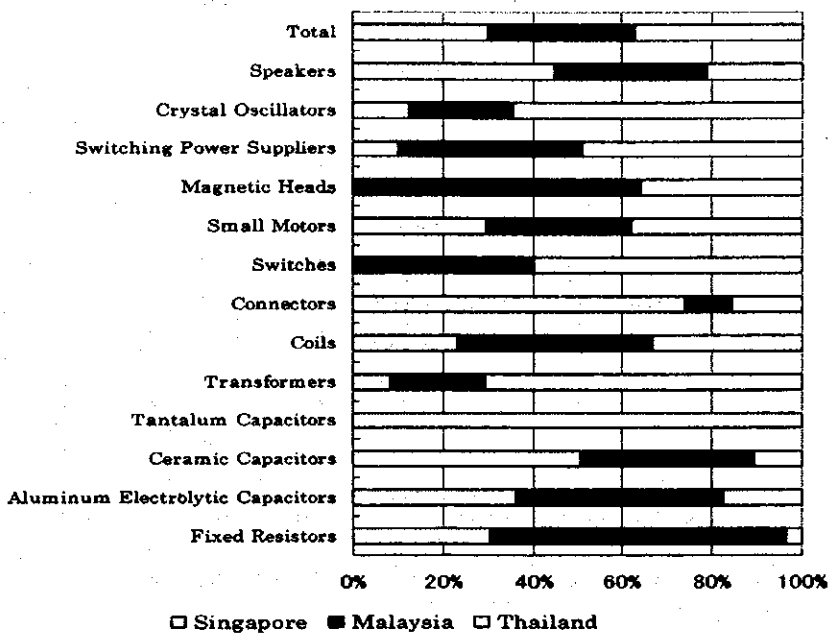
Source:Yearbook of World Electronics Data 2000(Reed Electronics Research)

Figure 2-4 Five main country shares of production of major electric/electronic items (1999)



Source: Electronics Industries Association of Japan (EIAJ)

Figure 2-5 Three main country shares of production of major electric/electronic items (1999)

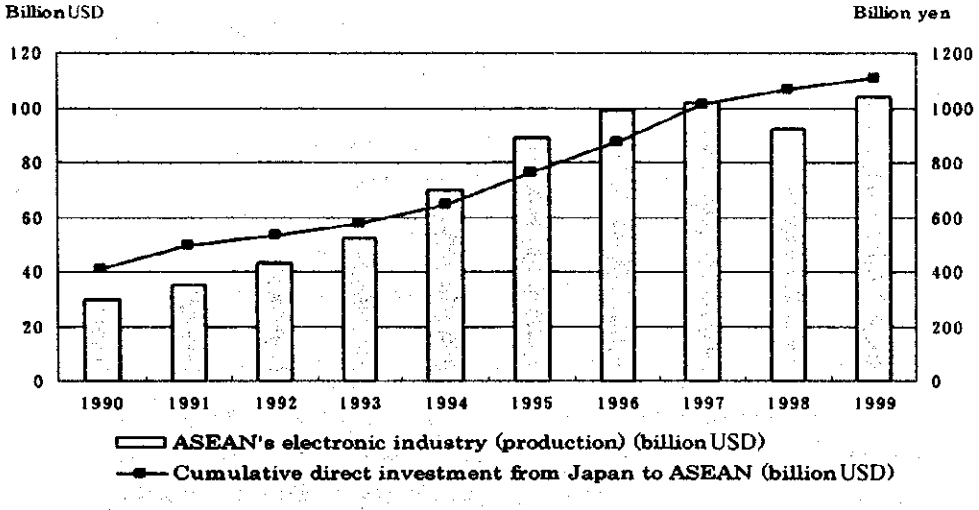


Source: Electronics Industries Association of Japan (EIAJ)

2) Orientation of change in the production activities of Japanese firms

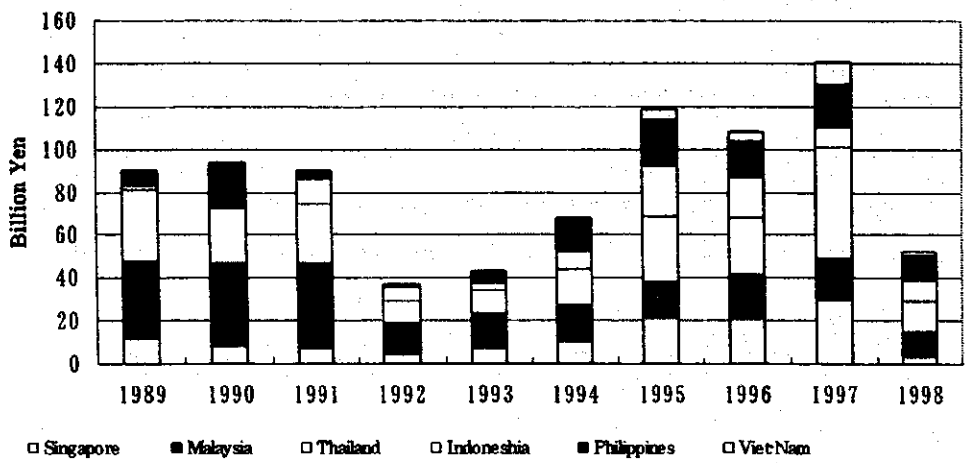
The development of the ASEAN electric/electronics industry is being supported in the aspect of capital and technology by Japanese and other international industrial capital concerns. These players built large export bases in Singapore, Malaysia, and Thailand beginning in the mid 1980s, when the countries switched to policies geared for aggressive attraction of foreign investment. Big investments were made in a wide range of fields by Japanese firms. As shown in Figure 2-6, direct investment by Japanese firms has made a vital contribution to the growth of the ASEAN electric/electronics industry.

Figure 2-6 Trend of production and cumulative direct investment from Japan in the ASEAN electric/electronics industry



Source: Yearbook of World Electronics Data 2000 (Reed Electronics Research)
/Ministry of Finance Statistics Monthly (Ministry of Finance)

Figure 2-7 Trend of direct investment by Japanese electric/electronics firms in ASEAN countries



Source: Ministry of Finance Statistics Monthly (Ministry of Finance)

In response to the currency and economic crisis which struck in 1997, the Japanese and other representatives of international industrial capital in the region set about programs including an increase in the VA level of production items, restructuring of production functions, strengthening of design and development capabilities, establishment of new production locations, and review of management and organization. The substance of these programs is described below.

(1) Increase in the VA level of production items

The ASEAN electric/electronics industry is already shifting toward information-communications items with a relatively high VA level, such as desk-top PCs, notebook PCs, monitors, hard disk drives (HDDs), floppy disk drives (FDDs), optical disk drives (ODDs; e.g., CD-ROMs), and keyboards. It is also attempting to make deep inroads into fields involving even more high-VA technology, such as portable CD/MD players, flat TVs, and S-VHS VCRs.

As a whole, production of components is shifting toward surface package items for PCs and cellular telephones. Production of many assembly-type components (and also semiconductor post-processes) generally continues to rely on Japan for key parts, but VA levels are rising due to the unit formats. Similarly, firms are inclined toward a total production for many material-type components. Amid the strong growth in the information-communications field, production of components by Japanese firms in ASEAN markets is expected to shift further toward surface package types. In the process, Taiwanese firms are greatly building up their competitive strength in production of more conventional components.

(2) Restructuring of production functions

As the shift to high-VA items gathers momentum, firms are promoting a division of production responsibilities by transferring the manufacture of low-VA items to their own plants in China or Indonesia, or consigning it to Korean or Taiwanese counterparts. This is exemplified by the shift of production of items such as radio-cassette players, 14-inch TV sets, variable resistors, and switches to China, and that of speakers, transformers, coils, remote control units, power sources, and fixed resistors to Batam island in Indonesia.

This trend in intraregional division of production is represented by the development centered around Singapore and encompassing Penang and Johor (in Malaysia) and Batam island; the expansion of siting in Malaysia to the province of Sarawak (in East Malaysia), and advance from the Bangkok area (Zone 1) in Thailand to the second and third zones. The division revolving around Singapore is thought to be the most well-developed.

This trend is anticipated to deepen along with the shift to in-house processing of components and materials for higher VA levels and stronger cost competitiveness. The subjects in this connection are mechanically processed components and process steps that would be difficult to outsource to local firms not affiliated with Japanese capital. There is also a movement afoot for in-house performance of plastic molding, metal stamping, metal molding, and even plating, which is difficult to consign to local firms in almost all cases.

(3) Strengthening of design and development capabilities

Many Japanese firms are vigorously strengthening the local capabilities of design, not only for AV items but also items (sets and unit components) that are fairly well established technically. This is being done by transferring sophisticated systems for design support, such as 3D CAD systems. The main factors behind this current are the difficulty of recruiting engineers in these fields in Japan and the rise in the skills of ASEAN engineers to quite high levels. Premised on accurate response to needs in the local market and local sourcing of components, the shift is expected to shorten the time required for delivery and increase profits through prompt development of appropriate products.

In the case of component manufacturers, design and development activities tend to be concentrated in Japan, and regular mass production is only transferred to the ASEAN sites after the related technology has been more or less mastered in Japan. There has been no change in this stance as far as design and development are concerned, but some manufacturers have recently begun to show a preference for getting new items into mass production in offshore plants at an early stage, and all are taking steps to increase the level of local production technology.

(4) Establishment of new production plants

The Philippines is coming to the fore as a site for the construction of new production locations. In the 1990s, the government made a policy switch toward active attraction of foreign investment against the background of a lowering of its country risks and desires to develop the former sites of U.S. military bases. The locations for post-processing of semiconductors already in the country have been joined by mass-production plants for PCs, HDDs, and other such information-communications items, thanks to siting by Japanese and U.S. firms since the mid 1990s.

The swift strides in siting by set and component manufacturers in these fields are being supported by the favorable investment conditions, such as capabilities for communication in English and ease of recruiting newly graduating engineers. In addition, the market is growing very rapidly and requires delivery within a short time. This has created a need for siting by many vendors in peripheral fields in addition to the assembly-base manufacturers, in order to build setups for a quick start-up of mass production and sourcing of the requisite components and materials. The government of the Philippines has taken an extremely liberal stance in policy on investment by small and medium enterprises (SMEs) in these fields as well.

(5) Review of management and organization

Many Japanese firms have posted personnel from Japan to lead the operation of their ASEAN locations. In so doing, they have emphasized decision-making and management by these personnel in close coordination with the Japanese head office. It can also be noted that the operations have been rooted in the transfer of production know-how from Japan, and the firms imported the same kind of management style practiced in Japan. This made it difficult to recruit first-rate personnel in competition with the locations of Western firms, and management remained largely in Japanese hands as a result.

In contrast, Western firms instituted personnel systems that were premised on delegation of authority and keyed by incentives in the form of promotions and raises. As a consequence, they were better able to attract the best personnel of management caliber and so to put more of the management responsibilities in local hands. For Japanese firms as well, this localization of management is essential for expansion of business in local markets and division of production responsibilities in a both prompt and appropriate manner.

3) Changes in the investment environment in the main ASEAN countries

(1) Policy on induction of foreign capital

Figure 2-8 summarizes the policy on foreign investment and stage of the stock of foreign capital and technology in the main ASEAN countries. Singapore, Malaysia, and Thailand, which are further along in such development, have placed policy priority on the growth of high-VA industry through selective attraction of foreign investment. Indonesia and the Philippines, where siting is less developed, are energetically promoting the growth of export-oriented industry through a less selective attraction of foreign investment. In recent years, the political troubles in Indonesia have invited a stagnation of inbound foreign investment. The Philippines, on the other hand, has thus far been successfully attracting investment from Japanese and U.S. firms, especially in the information-communications field, due to a decline in its perceived degree of country risk.

In keeping with its policy for attraction of siting of IPOs, OHQs, MHQs, RHQs, R&D facilities, and financing functions, Singapore offers formidable incentives for such investment and is bolstering its capabilities as a hub. More recently, it has been aggressively promoting the development of software industry toward its goal of evolution as an IT-based country. More specifically, the government unveiled its Industry 21 vision in 1999 and hammered out a line of economic reconversion accenting knowledge-intensive sectors. In accordance with this line, it is eagerly seeking foreign investment in nine fields, including electronics, engineering, information-communications and media, logistics, and

regional or global business integration. It is also revising legislation related to patenting, copyright, trademark rights, and IC design with a view to attracting foreign investment and developing industry in high-tech and software fields.

Following Singapore's lead, Malaysia is deliberately shifting the focus of foreign investment incentives from assembly-based industries to knowledge-intensive ones under the banner of high-VA industry. Its ambitious Multimedia Super Corridor (MSC) plan envisions attraction of high-tech firms at an investment of 50 billion ringitt (RM) by 2020 and the emergence of a huge cyber city to the south of Kuala Lumpur. However, the effort has gotten off to a slow start, partly due to the influence of the crisis. Malaysia moved to a fixed exchange rate system in September 1998, and this laid the foundation for stable production by export-oriented firms. Meanwhile, the government has taken measures to stimulate the inflow of investment. For example, the ceiling on foreign interest in ownership, which had been tied to the export rate, was lifted to 100 percent until December 2000.

In Thailand, the stock of sites in the electric/electronics industry is not as developed as in Singapore and Malaysia. While posting the goal of selective attraction of foreign capital, the country in effect recognizes the siting of wholly-foreign-owned locations as part of its line of deregulation and is also offering incentives for investment in the provinces and siting by SI firms. In June 2000, the BOI greatly revised policy to encourage investment and abolished restrictions regarding export rates and the foreign interest share. At the same time, it revised the zones for investment encouragement and placed upper limits on the amount of exemption for corporate income tax.

Indonesia and the Philippines have not yet reached the stage of selective attraction of foreign investment in specific fields of the electric/electronics industry, and are offering incentives to all kinds of export-oriented firms. In response to its comparative success in luring investment in the information-communications field, the Philippines is beginning to implement more focused measures to attract IT-related investment, such as the creation of an IT park and provision of corporate income tax deductions and exemptions.

The main countries therefore vary in respect of the hallmarks of their policies for industrial advancement. Singapore has put together a body of policy that satisfies the requirements of economic rationality, and has been studying and implementing measures of preferential treatment for foreign capital in rapid succession. In Malaysia, a highly transparent policy system has been being prepared by technocrats, but there is a tendency toward forcible imposition of rules arising from issues in the home market. Moreover, policy is apt to be strongly colored by the wishes of Prime Minister Mahathir (the prospects for privileges for the manufacturing industry appear to be worsening in light of the priority on preferential treatment for ethnic Malays and the realization of the MSC vision). In Thailand, policymaking appears to be influenced more by the party interests and stop-gap measures than a careful examination of the industrial characteristics and direction of evolution.

Figure 2-8 Policy on foreign investment and stage of stock of capital and technology in the electric/electronics industry in the main ASEAN countries

	Policy on attraction of foreign investment	Characteristics of the stock of foreign capital	Engineering capabilities	Technical level of local capital
Singapore	Promotion of high-VA industry through selective attraction of foreign investment (emphasis on IT siting)	* Stock of knowledge- and facility-intensive industries * Large number of Japanese and Western sites for control (IPO,OHQ, MHQ, RHQ), design and development, and financing (Number of Japanese sites: 330)	Design of AV equipment, development of hardware and software in IT domains, and process control for ICs	Design and development of sets and circuit blocks with distinctive engineering capabilities
Malaysia	Promotion of high-VA industry through selective attraction of foreign investment (emphasis on IT/SI siting)	* Large number of set and component firms in the fields of AV and information-communications; synergistic effects * Transfer of design and development capabilities from Japan in recent years for improved response to market needs, local sourcing of components, and shortening of delivery terms (Number of Japanese sites: 366)	Mass production assembly of AV/PC peripheral equipment and related components, and transfer of design capabilities for AV sets	Component processing subcontracted by foreign capital, with their technical and financial support (few local firms with independent capabilities on this level); performance of assembly consignments by some firms owned by ethnic Chinese capital
Thailand	Promotion of high-VA industry through selective attraction of foreign investment (emphasis on SI siting)	* Growing stock of set and component firms as in Malaysia, but not such a strong interrelationship * Relatively large number of sites for printers, fax machines, and other such largely mechanical items in the electric/electronics sector (Number of Japanese sites: 328)	Mass production assembly of AV/PC peripheral equipment and related components, and transfer of design capabilities for AV sets	Component processing subcontracted by foreign capital, with their technical and financial support (few local firms with independent capabilities on this level)
Indonesia	Promotion of export-oriented industry through attraction of foreign investment	* Stock of assembly-based firms in the fields of AV sets and components * Shift toward assembly processes for low-VA items (small, low-cost products) in the context of ASEAN divisions of production (Number of Japanese sites: 131)	Currently accumulating skills in mass-production assembly for AV sets and related components	Component processing subcontracted by foreign capital, with their technical and financial support (very few local firms with independent capabilities on this level)
Philippines	Promotion of export-oriented industry through attraction of foreign investment	* Stock of set and component manufacturers in the field of information-communications (mainly HDDs and PCs) * Japanese investment mainly in the special export processing zone (PEZA); siting attracted by English proficiency and large supply of graduates of technical schools (about 300,000 per year) (Number of Japanese sites: 137)	Accumulation of mass-production assembly skills for a limited circle of information-communications sets and components, such as HDDs and ICs	Component processing subcontracted by foreign capital, with their technical and financial support (very few local firms with independent capabilities on this level)

Source: Nomura Research Institute

Note: Figures for the number of Japanese firms are cumulative totals for cases of direct investment as of the end of 1998

(2) Labor force

Singapore

Singapore has a total population of about 3.8 million and a labor force of about 1.9 million. To achieve continued economic advancement with such a small population and labor pool requires a conversion to high-VA industries. The government has shifted emphasis from manufacturing to reinforced capabilities of design and software development. In the ASEAN electric/electronics industry, Singapore is leading in terms of VA levels and also building up its ability to function as a hub of financing, communications, transport, and distribution.

Malaysia

Malaysia's total population is estimated at about 23 million, with a working force of some 8.9 million. The economic advancement spurred by entry of foreign capital beginning in the late 1980s eventually ushered in a serious labor shortage, which led to an extensive influx of foreign workers. At present, these workers are thought to number as many as 2 million (about half being in the country legally, and the remaining half, illegally). Many are from the island of Sumatra in Indonesia, but others have entered more recently from various other places, including the Indonesian island of Java, the Philippines, Bangladesh, Myanmar, and Cambodia.

Malaysia's population is growing by from 200,000 to 250,000 per year, but recruitment of employees for the manufacturing industry continues to be difficult. Along with economic advancement, the service industry is soaking up much labor, and factory work is not preferred by many ethnic Malays. Partly for political considerations, the government has imposed a quota of about 2 million on acceptance of foreign workers into the country, and there are not good prospects for an improvement of the hiring environment. Malaysia's economic activities are consequently limited to the progress that can be attained with this finite labor force. Because a quantitative expansion therefore cannot be expected, an increase in levels of productivity and a graduation to high-VA fields are becoming the most pressing tasks.

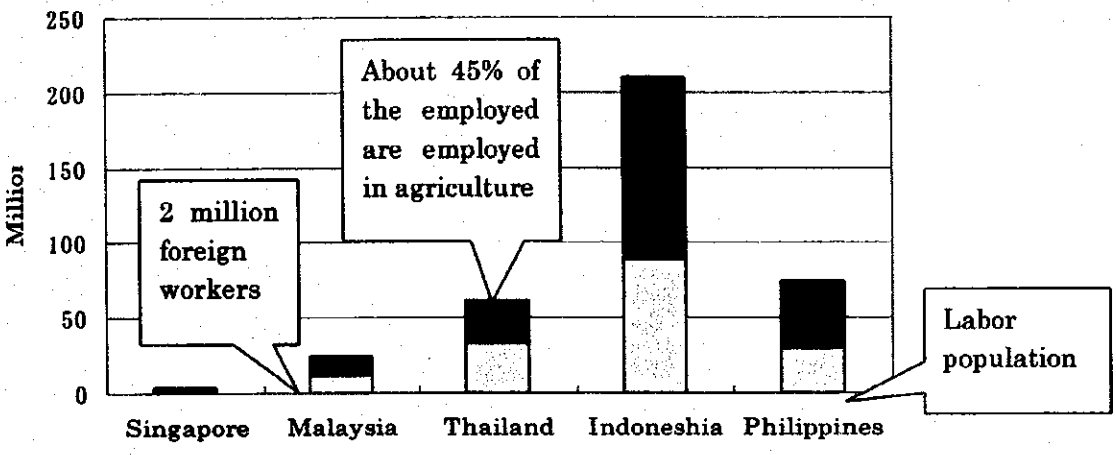
The supply of engineers and middle managers needed by the manufacturing industry is limited. In their production activities thus far, Japanese firms have worked to groom such personnel through in-house programs whose participants are mainly Chinese-Malaysians. However, interest in manufacturing work tends to be low among ethnic Malays, and the firms are finding it difficult to assure themselves of a supply of labor to fill all of their needs. The hiring of engineers in the requisite numbers is made even harder by the obligation to comply with the dictates of the "bumiputra" (stipulating that a certain percentage of personnel in all positions must be ethnic Malays).

Thailand

Thailand has an estimated total population of about 62 million and labor force of about 33 million. Due to the economic growth accompanying industrialization, the active openings ratio passed the 3.0 mark in 1995. There was a particularly serious shortage of labor for manufacturing locations in the vicinity of Bangkok. However, this situation has been eased as a result of the currency and economic crisis. Of the country's roughly 31 million employed, about 45 percent are employed in primary industry (agriculture, forestry, and fishery). Labor shortages in the Bangkok area have traditionally been filled mainly by workers arriving from the northeastern part of the country. The future holds the prospect of a further shift away from primary industry and relocationing of plants to the northeastern region. This could make it possible to acquire a sufficient supply of low-cost labor, which is in short supply in the areas already industrialized.

As described above, there appear to be some prospects for an adequate supply of labor on the worker level within Thailand, but the situation is one of serious shortage for personnel in more specialized areas, such as middle managers, engineers, and accountants. The Thai government has posted human resource development as one of its top priorities and is making efforts to bolster educational institutions in these areas. Nevertheless, there is a deep-seated preference for humanities and service industries among students, and enrollment is running low in colleges of science and engineering as well as technical schools turning out personnel for the manufacturing industry. As such, a resolution of the shortage is not on the horizon.

Figure 2-9 Population and labor supply in the main ASEAN countries



Source: Official statistics from each country

Note: Totals indicate total population (including foreign workers in the case of Malaysia)

(3) Wage comparison

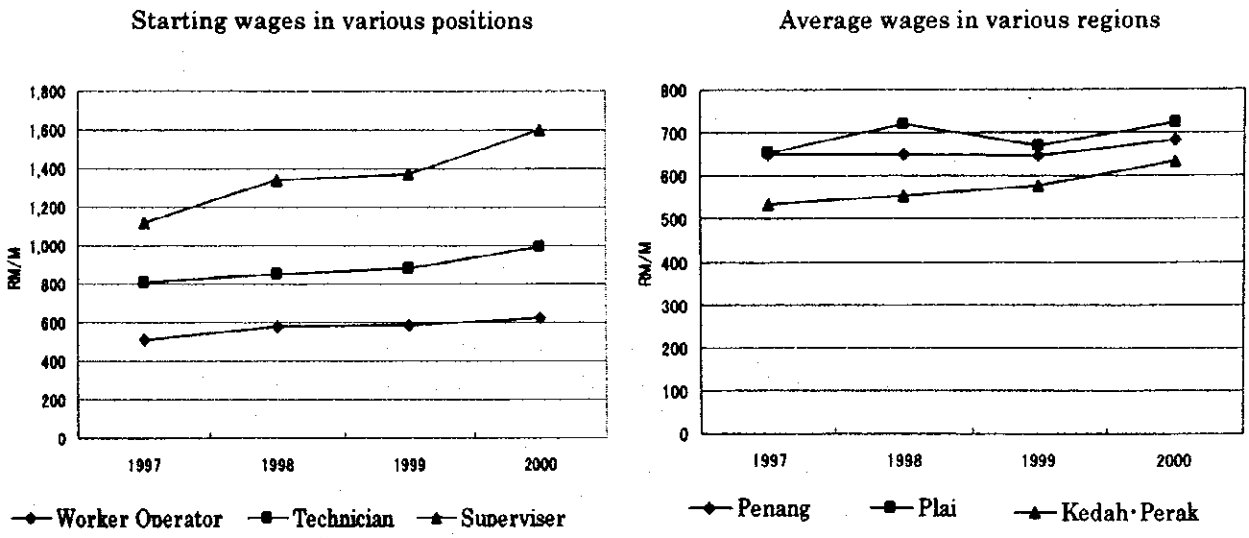
Figure 2-10 shows wage levels in the main ASEAN countries as of the end of 1999. Although there is some variation, it can be seen that wages in Malaysia are about half as high as those in Singapore, and those in Thailand, about half as high as those in Malaysia. Wages in the Philippines are somewhat lower than in Thailand, and those in Indonesia, from one-half to one-third as high as those in those in Thailand.

Figure 2-10 Comparison of wage levels in major Asian cities (dollars per month)

	Workers	Engineers	Middle managers	Nominal wage increase rate 96 →97→ 98	Corporation tax/income tax
Singapore	398-528	1,130-1,495	1,907-2,419	6.7→5.5→△0.4	26%/28%
Malaysia (K/L)	329	668	1,407	7.2→7.2→7.1	28%/30%
Thailand (BKK)	176	378	727	9.8→9.7→△0.8	30%/37%
Indonesia (Djakarta)	44-83	139-242	236-1,208	9.5→△43.3→△33.3	30%/30%
Inndonesia (Batam)	82	190	576	9.5→△43.3→△33.3	30%/30%
Philippines (Manila)	137-319	255-433	417-824	3.5→4.8→NA	33%/33%
China (Dalian)	48-152	85-230	58-386	10.7→7.1→4.7	15-30%/45%
China (Chongqing)	79-123	85-207	166-286	11.1→9.8→3.8	15%/45%
Myanmar (Yangon)	26-43	83-111	145-313	NA	30%/15%
Vietnam (HCMC)	76-132	165-275	401-540	NA	25%/50%
Vietnam (Hanoi)	79-108	187-314	476-546	NA	25%/50%

Source: "Tsusho Koho" (Trade Publicity), JETRO, December 1999

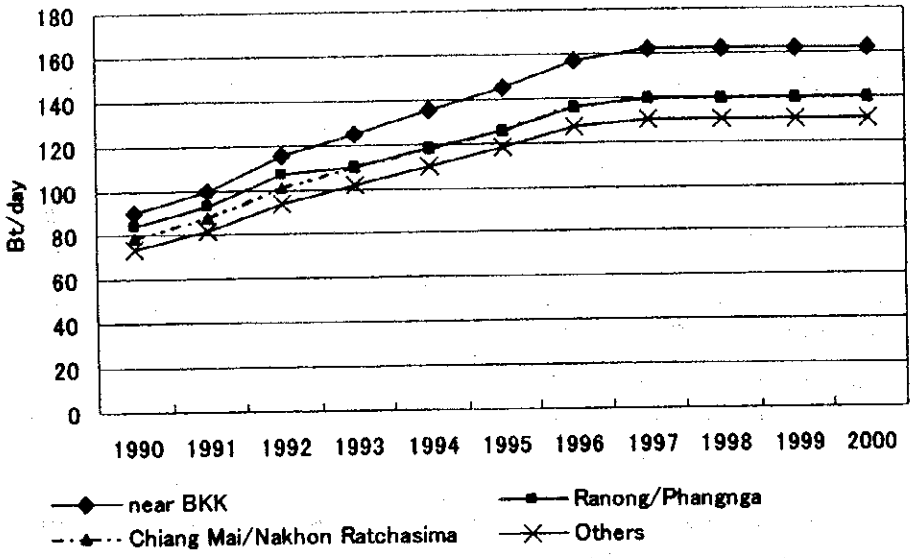
Figure 2-11 Starting/average wages (including allowances) at Japanese-affiliated firms in Malaysia



Source: Questionnaire survey conducted annually by the Sansuikai (a group organized in Malaysia by resident Japanese firms for the purpose of information exchange and fraternization)

Wages in the key ASEAN countries rose by rates in the range of 5 - 10 percent annually during the high-level economic growth that continued until the mid 1990s. For the sites of foreign firms, the rise drove up the cost of production. In the wake of the currency and economic crisis, they remained flat or declined substantially in Singapore, Thailand, and Indonesia. In Malaysia, on the other hand, they continued to rise even during the crisis, according to the results of a questionnaire survey with Japanese firms (presumably because export continued to increase due to instatement of the fixed exchange rate system). Along with economic recovery, the rate of wage increase is likely to rise in Singapore, Thailand, and the Philippines as well.

Figure 2-12 Trend of minimum wages in various regions of Thailand



Source: Ministry of labor and social welfare

Note: near BKK → Bangkok, Nontaburi, Pathumthanai, Samutprakan, Samutsakhon, Nakhonpathom
Central and southern part → Ranong, Phangnga
Northern and north - eastern part → Chiang Mai, Nakhon Ratchasima, Others

4) Restructuring of the electric/electronics industry in the main ASEAN countries and orientation of extended divisions of production in the region

Attracted by its wealth of low-cost labor, Japanese and other international industrial capital in the electric/electronics industry initially moved many assembly processes into the ASEAN region. The subsequent rise in the stock of set and component plants was accompanied by a jump in personnel costs and steady rise in engineering capabilities. To maintain the competitiveness of their export, companies are making the conversion from simple assembly by manual operation to facilities equipped with automated assemblers and sophisticated inspection and measurement systems, or graduating from mere material processing to end-to-end component production. In this way, forms of production are diversifying.

Supported by the burgeoning growth of markets inside and outside the region, the ASEAN electric/ electronics industry became overheated, but was suddenly cooled off by the currency and economic crisis. As mentioned above, Japanese and other firms are now pressed for a restructuring of their network of ASEAN locations. Due to the combination of the structural reform implemented by the firms and the industrial policy pursued by the governments, the industry is expected to move in the direction of differentiated structures and physically extended divisions of production, as shown in Figure 2-13.

In Singapore, which is the furthest along in terms of industrial level, the government is taking the initiative and actively conditioning the IT-related infrastructure while promoting a campaign to attract siting by foreign firms of this stripe, in keeping with its so-called "Singapore, Inc." stance. In response,

foreign firms are beginning to relocate labor-intensive processes to the Indonesian island of Badam, where sites were developed by the government of Singapore to join the existing ones at Penang and Johor, as part of wider divisions of production to ensure international competitiveness.

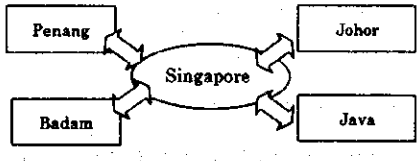
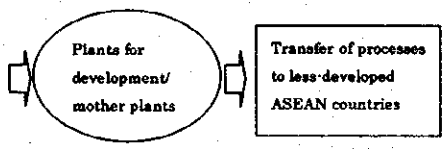
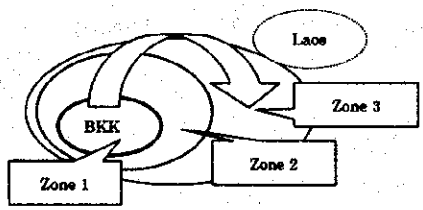
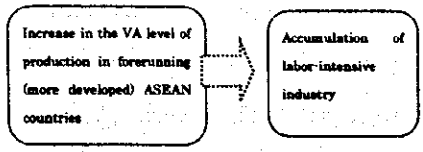
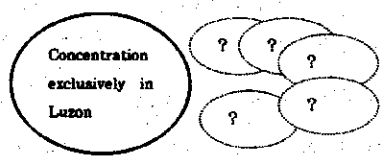
In Malaysia, where a mass of foreign firms have sited in the electric/electronics industry, all types of set and component manufacturers together form a rational supply and demand structure. This is at the source of its diverse product shipment and export competitiveness in the aspect of cost. At the same time, there is a growing dependence on foreign workers, and the situation regarding the supply of labor need by the manufacturing industry in the future appears bleak. As if to rival Singapore, the government is beginning to accord precedence to the IT industry in its policy aimed at attracting siting by foreign firms. In this atmosphere, it is thought that foreign locations in the electric/electronics industry in Malaysia, while attempting to make the transition to high-VA products and improve design and development capabilities, will have to build divisions of production with other ASEAN countries for labor-intensive processes and make new investments to cope with future demand expansion. One of the factors at work here is the relative lack of incentive for employment in manufacturing among ethnic Malays in general.

In Thailand, workers are in short supply in the Bangkok area, but the northeastern region still has an abundance of low-cost labor. The provincial transportation network is in comparatively good order, and labor-intensive processes could very well be relocated to the provinces if the incentives offered by the government for siting in accordance with its zone scheme take effect. The concentration of ASEAN auto industry in Thailand and rise in the stock of mechanical processing know-how are anticipated to have a positive effect for the siting of materials processing there in the electric/electronics industry, too. The firms with locations in Thailand are consequently thought to have the potential of promoting a further division of production, in terms of both regions and processes, within Thailand.

Indonesia instated policy for vigorous attraction of foreign investment in the 1990s, and appeared to have succeeded in building up a stock of labor-intensive assembly operations. However, the level of foreign commitment to the country sagged considerably following the collapse of the Suharto administration and the ensuing turmoil on the political and social scene. Although the country's investment environment is still given good marks for its abundant supply of labor and size of the latent market, positive ratings have receded in the aspects of labor quality and the timetable for actualization of the market. It will probably take substantial time to resolve the current disruption, and the industry cannot look forward to making big strides in the foreseeable future.

In the Philippines, the conquest of the former country risks and energetic attraction of export-oriented firms induced siting by Japanese and U.S. firms within a short time in the 1990s, particularly for assembly of PC peripheral equipment. The key factors behind this success were the ability to offer foreign firms full privileges because the domestic industry had nothing to lose, and the state of the infrastructure, proficiency in English, and existence of many engineers. By the same token, long-term advancement

Figure 2-13 Structural change and orientation of extended divisions of production in the electric/electronics industry in the main ASEAN countries

	Factors behind structural changes (factors encouraging and impeding advancement)	Structural change and the orientation of extended divisions of production
Singapore	○ Governmental policy for active attraction of foreign investment ○ Full conditioning of the service sector infrastructure (financing, distribution, etc.) ○ First-rate engineering capabilities × Small land area × Small labor force	● Growth of IT industry ● Establishment of international competitiveness based on division of production within the ASEA Nregion 
Malaysia	○ Highly transparent economic and industrial policy ○ Effect of the build-up of set and component industries ○ Transfer of design and development capabilities × Post-Mahathir order × Labor shortage and dependence on foreign workers × Policy favoring ethnic Malays × Lack of a manufacturing aptitude among ethnic Malays	● Transition to high-VA assembly products ● Loss of growth potential due to a shortage of labor 
Thailand	○ Expansion of new foreign investment projects (post-crisis reevaluation) ○ Build-up of mechanical processing firms due to the growth of the auto industry ○ Well-established distribution network (as front line infrastructure for the U.S. forces during the Vietnam War) × Lack of stability in the political order × Lack of governmental initiative in industrial policy × Chronic shortage of technicians, engineers, and other specialized personnel	● Spiral-type development of the electric/electronics industry and machine industry ● Potential for growth based on labor supply and use of provincial energies 
Indonesia	○ Reform of the political order ○ Wealth of natural resources ○ Abundance of low-cost labor × Country risks × Withdrawal of ethnic Chinese capital, which has supported the industrial structure × Issues regarding the educational level, diligence, and skill of workers	● Development of labor-intensive electric/electronics industry ● Delayed actualization of labor and market potential 
Philippines	○ Industrial policy with preferential treatment for foreign capital ○ Well-developed infrastructure on the island of Luzon ○ Potential of the labor force (level of skill and English proficiency) × Instability of the political order × Country risk × Inefficiency in economic activities due to dispersion (as regards labor force, market, and the transportation/distribution network)	● Siting of assembly operations for PC peripherals ● Delayed actualization of the labor potential 

Source: Nomura Research Institute

may possibly be impeded, to judge from a variety of other factors. These include apprehensions about the transparency and stability of the political order, inefficiency in employment and logistics deriving from the country's composition of numerous islands, and concerns about preservation of law and order in islands other than Luzon.

3. Trends in investment in Viet Nam in the electric/electronics field

1) Cases of siting in Viet Nam by Japanese firms

(1) Expansion of production by EPZ/EPE firms

Figure 3-1 presents an outline of most of the Japanese EPZ (and some EPE) firms that moved into Viet Nam in the mid 1990s, along with a description of their business and the future outlook. Although Fujitsu's location is engaged in PCB packaging and substrate processing, the locations of the other firms are basically confined to assembly of simple components mainly by coiling, such as transformers, coils, and motors. As this suggests, the siting was motivated by use of the low-cost labor in Viet Nam.

These components fall in the category of simple assembly and require a large number of workers, but the work is not simple; on the contrary, it demands skills in the operation and maintenance of large amounts of automated machines, and Viet Nam is given high ratings in this aspect. While investing extensively in China, some firms want to disperse the investment risks and prefer siting in Viet Nam for assembly of components requiring considerable engineering capabilities and for early start-up of mass production of newly developed components. This is a big factor behind the development in parallel with siting in China.

EPZ (and EPE) firms may point out the irrationality and inefficiency typically found in procedures for customs and various applications in developing countries, but do not regard them as major problems. Indeed, they have a high opinion of the benefits in the form of the one-stop services offered by the EPZ authorities. These make for a big difference from the investment environment of the firms participating in the domestic market. The field of demand for many assembly components is information-communications equipment, which has good growth prospects, and the EPZ firms are generally planning to double the scale of their production in Viet Nam and switch to in-house processing (stamping, molding, etc.) in order to boost their cost competitiveness.

Figure 3-1 Profile of Japanese component firms in Viet Nam and plans for the future

Firms	Corporate profile	Business outline	Plans for the future
Tokin Electronics	Year of start-up: 1997 Capital composition: Tokin Electronics (100%) Number of employees: 650persons	* Assembly of TV noise filters and transformers * Tokin already has plants for the same components in Malaysia and China, but the one in Malaysia would be difficult to expand, and the one in China is to specialize in more labor-intensive components. The VN plant is built mainly for surface package components assembled by automatic units.	- As a second stage, the company is planning to commence assembly of speakers for cellular telephones and expand the overall scale of assembly. - The target third stage is in-house production of stamped and molded plastic components.
Mabuchi Motor	Year of start-up: 1997 Capital composition: Mabuchi Motor (100%) Number of employees: 5,000 persons	* Assembly of small motors for CD players and automobiles * In-house production of ferrite cores and stamped/molded plastic components * Siting in VN to disperse risks associated with extensive siting in China (Dalian, Jiangsu, Guangdong; VN was judged to be the best site outside China)	- Plans for a doubling of the number of employees and production volume relative to the present by 2002, for cost competitiveness to rival that of China (the Guangdong plant employs 50,000)
T.T.T.I.	Year of start-up: 1996 Capital composition: Todai Electric (72%)/ Towa Denki (28%) Number of employees:500 persons	* Assembly of TV noise filters, demagnetizing coils, etc. * In-house production of some molded plastic components * Siting in VN in association with the mother plant in Malaysia (avoidance of siting in China due to risks)	- The company has not made any concrete plans for expansion, but noted that its VN location would be the subject of any such expansion, which would be impossible at the Malaysian plant. - It regards the plant as capable of prompt mass production of all components soon after their development in Japan, thanks to the high level of workers and engineers.
Nidec Tosoku	Year of start-up:1995 Capital composition: Nidec (40%)/ Tosoku (60%) Number of employees:1,600 persons (1,000 of whom work in the fan motor plant)	* Assembly of fan motors for PCs and peripherals (however, of the three plants, the remaining two assemble automotive components and process the related materials, respectively) * Nidec acquired the Nissan-affiliated firm Tosoku in Japan, and built a fan motor plant on the grounds of the existing Tosoku plant in VN. * Nidec also has a large fan motor plant in China (Dalian), but regards the one in VN as offering lower costs and better quality.	- The company is targeting an increase in monthly production from 2 million units at present to 5 million units in the near future. This will require construction of a new plant (there is still room for expansion on the grounds).
Nidec Copal	Year of start-up: 1999 Capital composition: Nidec (51%)/ Nidec Copal (49%) Number of employees: 1,600 persons	* Assembly of oscillation motors for cellular telephones * Import of all materials from Japan and other countries * The company has plans for production of the same components in China and Thailand, but attaches importance to the one in VN because of the risk of leakage of know-how in the production in China (which is on a consigned basis) and the increase in personnel expenses in Thailand.	- Plans for a doubling of production volume by 2001 - Intention to shift to in-house production for certain stamped components by the spring of 2001.
Viet Shaing Electronics	Year of start-up: 1996 Capital composition: Huacheng Toko (100%) Number of employees: 800persons	* Assembly of coils and duplexers * Import of materials from Taiwan, etc. * Siting in VN to disperse risks associated with siting in China	- Possibility of an expansion of production through transfer from the Malaysian plant
Fujitsu	Year of start-up: 1995 Capital composition: Fujitsu (100%) Number of employees: 2,500 persons	* HDD-use PWB package assembly and substrate processing * Shipment mainly to Fujitsu HDD assembly plants in Thailand and the Philippines	- The company has already started up one plant for packaging and another for processing. The third plant (for packaging) was under construction as of June 1999, and a fourth plant (for processing) is planned for the future.

Source:Nomura Research Institute

(2) Response to new tariffs among home appliance manufacturers

Sony, Matsushita Electric Industrial, JVC, and other major Japanese manufacturers of home appliances (i.e., "white goods" and other electrical products for the home) entered Viet Nam from the early to the mid 1990s with a view to participation in its market, and embarked on the assembly and sale of color TVs and other such products in partnership with state enterprises. Even thus far, they have been struggling with problems arising from local contents regulations, high tariffs on component import, and export obligations. They are apprehensive about a further strain on their operation under the new system that links the local contents rate of production and tariff rate for component import and is to go into effect in 2001.

The relationship between the local contents rate and the tariff rate varies depending on the product. Figure 3-2 shows the change in the tariff rate in the case of color TV sets. While the purpose is thought to be an increase in local contents and expansion of tariff revenue, Japanese firms intend to seek an improvement of the new tariff system. At the same time, they are groping for a product setup for adaptation to the new environment by pursuing production in Viet Nam for major components and taking advantage of the AICO scheme as described in Section (3) below.

In the current import tariff system, the highest tariffs are placed on semi-knocked down (SKD) kits (import of which is, in effect, prohibited), followed in order by completely knocked down (CKD) kits and IKD kits (which are distinctive to Viet Nam). More specifically, the tariff applied to IKD import of TV components is 5 percent (except that a 30-percent rate is applied for tuners and remote control units, which are treated as finished components; also, a separate 20-percent rate is applied for import of CRTs). The corresponding rate for CKD import of audio equipment is 15 percent because almost no components can be locally sourced.

In addition, the government expects the local contents of production at foreign-affiliated plants to be above 20 percent within two years after the start of operations and to rise steadily thereafter as well. In the field of TV sets, the Vietnamese plants of some foreign firms have achieved a local contents of about 50 percent thanks to sourcing of CRTs from the local plants of the Korean firm Orion. In other product fields, however, almost no components can be locally sourced and production depends on CKD import.

Figure 3-2 Local contents and tariff schemes in the field of color TV

Former tariff scheme

· Finished products	30%
· IKD component kits	5%
· Tuners and remote control units	30%
· CRTs	20%

* Local contents: over 20 percent initially (and request for increase thereafter)

New tariff scheme (effective 2001)

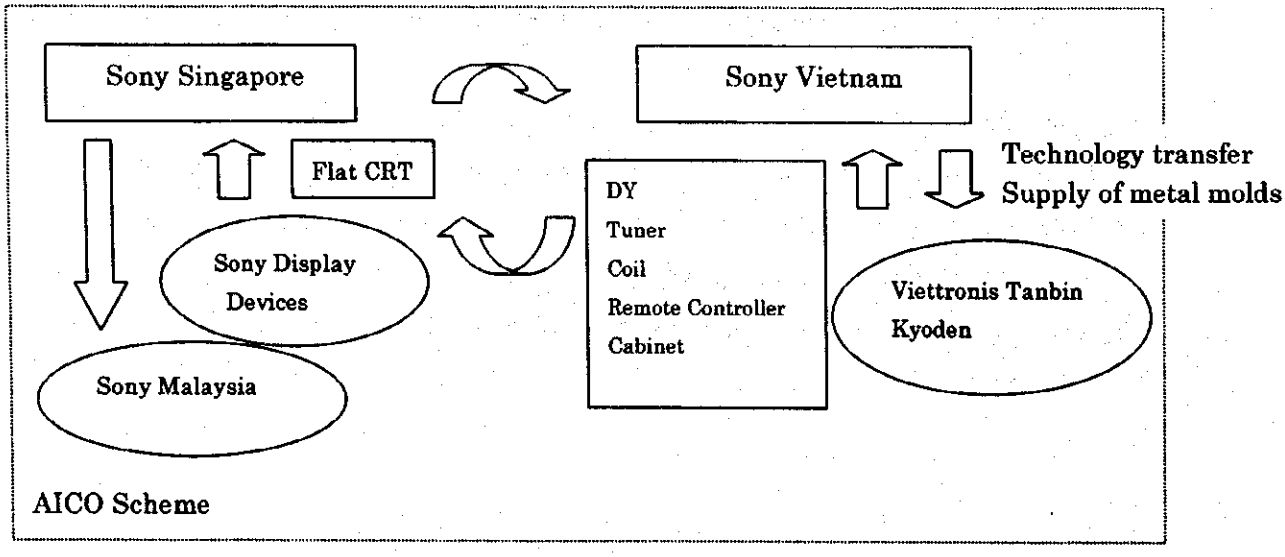
Local contents rate	Import rate
Less than 20%	40%
20-35%	30%
35-50%	15%
50-60%	10%
More than 60%	3%

Source: Nomura Research Institute

(3) Component export under AICO schemes

Export of components from Viet Nam to Singapore under ASEAN Industrial Cooperation (AICO) schemes has been approved within the AFTA framework and is anticipated to begin in 2001. Sony has formed a joint venture with a state enterprise for the purpose of participating in the domestic market, but is having trouble in its TV business. This is because it uses an original CRT, which makes it difficult to attain local contents requirements and, by extension, results in higher export obligations. Use of the AICO arrangement would deliver the twin benefit of a reduction (from 20 to 5 percent) of the tariff on import of flat CRTs and increase the local contents rate through sourcing of components within Viet Nam.

Figure 3-3 Sony's import of TV components under the AICO scheme



Source: Nomura Research Institute

The components to be exported from Viet Nam in this arrangement include those from the TV assembly production consigned by Sony to Viettronics Tanbin (DYs, tuners, remote control units, and demagnetizing coils) and the 14-inch TV cabinets produced (with molds provided by Sony) on consignment from Sony by Kyoden (which acquired Show pla). These components are to be shipped via Sony Viet Nam to Sony Singapore for use in the TV production plants there and in Malaysia. In return, Sony will import flat CRTs from its CRT plants in Singapore.

The TV production in Viet Nam is saddled with major issues in the form of the delayed actualization of the domestic market and pressure from smuggled sets. In addition, there are no prospects on the horizon for a substantial increase in the scale of component export. Although it would not greatly improve the investment environment for home appliance manufacturers, other Japanese firms (such as Matsushita Electric Industrial) and Korean firms could follow Sony's lead and turn to AICO schemes for import of flat CRTs, which cannot be sourced within Viet Nam, while lowering the cost of component import in the climate of high tariffs. Although operations in Viet Nam would be limited to in-house or consigned production of TV components for the time being, AICO schemes could be expected to induce a beneficent cycle by quickening production of assembly and package components and thereby stimulating export.

(4) New investment projects

Japanese and other international industrial capital concerns have basically finished making adjustments for the Asian currency crisis and completed the last round of investment in China, which rapidly expanded. The global market in the information-communications field continues to exhibit strong growth, and they are looking for new production sites. Under these circumstances, plans for production of Condensers and printers (or related components) premised on siting in Viet Nam are under consideration, especially among Japanese firms.

Condensers constitute a component field in which Japanese manufacturers are overwhelmingly dominant. Production is expanding by large margins inside and outside Japan along with the increase in demand in recent years for surface package components for cellular telephones, etc. At present, siting in Viet Nam is being planned in this field by the Japanese firm T Co. Although it is a latercomer as far as offshore production is concerned, T Co. is deploying an aggressive strategy that led to its successive start-up of four plants over the last year, in China (Dalian), Korea, the Philippines, and Malaysia (Sarawak). To expand its share of the rapidly growing global demand, it is making plans for a new site of production in a fifth country. Among the offshore plants of Japanese firms, that operated in Singapore by M Co., the leader in this field, is the only one equipped for total (end-to-end) condensor production; the others basically do not rise above the level of taping and inspection processes. The

siting of a total production would have a big impact as an investment project in that it could entail an expenditure of 20 billion yen and high engineering capabilities.

As for printers, C Co., a leading Japanese firm in this field, is reportedly considering siting in Viet Nam, although it is not clear whether the subject is finished products or components. It recently held an exhibit in Ho Chi Minh City for local vendors of related components (about 60 Japanese-affiliated and other firms participated) and is probing the possibilities of local component sourcing. In the ASEAN region, C Co. has an assembly-based production of close to 9 million printers per year in Thailand, and is taking steps to decrease costs and increase productivity there in light of the emerging competition with output from China. The Thai plant would not be involved in the siting in Viet Nam; the company is considering the move in connection mainly with production in Japan or Hong Kong. C. Co. has actively transplanted production offshore, and produces copiers in Korea and printers, copiers, and fax machines in Thailand. In each case, it has accorded precedence to nurturing the development of local vendors of stamped and molded components from a long-term perspective. If it decides to site in Viet Nam, the investment project could therefore have a substantial impact as far as fostering the growth of local vendors is concerned.

Although they are smaller in scale than the big projects described above and do not afford clear prospects for investment in Viet Nam, it should be added that small and medium enterprises (SMEs) headquartered in regional areas of Japan have increasingly sent missions to China and ASEAN countries in recent years. While the large Japanese companies moved production offshore, these firms were forced to refrain from establishing offshore sites because of financial and staffing difficulties deriving from their small size, and so relied on export for continued supply of the offshore operations of their clients. In the wake of the currency crisis, though, Japanese firms decided to concentrate their sourcing of components in the best local vendors (which, however, are mainly Japanese-affiliated). This is to say that they can no longer fill supply needs by export from Japan. These circumstances form the background for the increased dispatch of missions on the prefectural level to China and ASEAN countries by SMEs in Japan. In the eyes of SMEs, offshore siting poses immense risks. For this reason, they want to make careful studies of the scale of the domestic market, various siting conditions, the possibilities of collective entry (as a group), and other matters, in order to see that the environment would enable SMEs to invest with confidence. There can be little doubt that Viet Nam is one of the candidate countries for their siting.

2) Factors encouraging direct investment in Viet Nam

Direct investment from Japan and other countries in Viet Nam in the electric/electronics industry dropped significantly after the ASEAN currency and economic crisis. The following four factors can be

cited as the main reasons for this drop.

* The crisis necessitated a commitment of resources to restructuring of the existing network of sites in the more developed ASEAN countries, and so eliminated margin for considering additional investment in Viet Nam. There was also a strong tendency to attach top priority to investment in China along with its transition to a market economy, in light of its huge labor force and latent market.
* There is confrontation between foreign firms, which sited for the purpose of replacing import, and the government of Viet Nam over various measures, including limits on capital subscription, local contents rates, high tariffs on imported components, and export obligations. This is instilling the impression that economic activities cannot be freely conducted in Viet Nam owing to the lagging transition to a market economy.
* Recent years have seen an expanded flow of foreign investment into the Philippines in the information-communications field. This investment requires the presence of not only large assemblers but also a mass of vendors supplying the necessary components. Viet Nam does not yet have such a stock of vendors and also has not fully conditioned its environment to spur investment by foreign vendors of medium or small status.
* There remain political and social circumstances that discourage investment. These are exemplified by the two-tiered price system aimed at collecting tax revenues from foreign nationals and the deep-seated distrust of foreign firms in the process of privatizing state enterprises (which is reflected in views of them as threats to state enterprises and a bias toward exploitative arrangements without technology transfer).

Nevertheless, there have appeared some signs of improvement in these factors, which have thus far made the investment environment a negative one for Viet Nam. In addition, the major changes noted below are under way. As such, the climate for investment could be regarded as undergoing marked improvement.

* Economic recovery in more developed ASEAN countries
* Restructuring of production setups in the ASEAN region
* Expansion of investment in China and desire to disperse risks associated with it
* Conclusion of a trade agreement with the United States
* The pros and cons of the CEPT system
* Active use of AICO schemes
* Rise of the software industry along with the IT revolution
* Global spread of EMS firms

(1) Economic recovery in ASEAN countries

As shown in Figure 3-4, in 1999, ASEAN economies began to emerge from the damage inflicted by the currency and economic crisis and entered an upswing. Singapore, Malaysia, and Thailand are now posting strong growth rates in the range of 6 - 8 percent. Although a deceleration is expected in 2001, expanded export backed by favorable currency exchange rates could drive continued growth. This, in turn, could cause a recurrence of the precrisis predicament of spiraling wages and labor shortage. In particular, Malaysia, which is retaining its fixed exchange rate system, will probably have to embark on structural adjustment sooner or later, given the movement of foreign exchange quotations and the limits of its labor supply.

Figure 3-4 Economic growth rates, consumer prices, and exchange rates in the main ASEAN countries

	Real economic growth rate (%)				Rate of increase in consumer prices (%)				Exchange rate (to the dollar)				
	1998	1999	2000	2001	1998	1999	2000	2001	2000/ Q3	2000/ Q4	2001/ Q1	2001/ Q2	
Singapore	0.4	5.4	7.3	5.7	-0.3	0.5	1.5	2.1	1.72	1.69	1.67	1.67	S$
Malaysia	-7.5	5.6	8.3	5.2	5.3	2.8	2.6	3.5	3.8	3.8	3.8	3.8	RM
Thailand	-10.2	4.2	5.9	3.9	8.1	0.3	1.8	2.4	41	42	42	42	BT
Indonesia	-13.0	0.3	4.0	3.8	58.4	20.5	3.6	5.4	8.6	8.1	8.0	8.2	Rupiah
Philippines	-0.5	3.2	3.5	3.2	9.7	6.7	4.6	5.1	44.0	43.5	43.5	43.0	Peso

Source: Nomura Research Institute

(2) Restructuring of production setups in the ASEAN region

Up until the mid 1990s, the ASEAN electric/electronics industry exhibited strong growth in step with the expansion of the global market. Indeed, it was even becoming somewhat overheated, and foreign firms were pressed to make structural adjustments to cope with a shortage of labor and rising wages. With the outbreak of the currency and economic crisis, production activities in the ASEAN region underwent a round of readjustment including an increase in the VA level of the items of production, rearrangement of production functions, reinforcement of design and development capabilities, and revision of management and organization. The effects of this restructuring combined with the currency depreciation (fixed rate in Malaysia's case) to push the competitiveness of ASEAN products in markets outside the region to even higher levels. In this atmosphere, the production activities at the ASEAN locations of foreign firms are being revitalized.

If this tone of resurgence continues, the firms will presumably face the need for another round of restructuring as noted above, and this raises the possibility of adjustment (divisions of production) over wider areas in the region. As described above, the orientation of such divisions can be surmised

to a certain extent in the case of locations in Singapore and Thailand, but it is not very clear in the case of those in other countries, and especially Malaysia. A further expansion of production in Malaysia is approaching its limits, mainly due to the employment constraints. At the same time, Malaysia is the site of the largest concentration of set and component manufacturers in the entire ASEAN region. Division of their production systems over wide areas would therefore have a significant impact on all other countries in the region, and particularly Viet Nam.

(3) Expansion of investment in China and dispersion of related risks

On the other hand, in China where a rapidly growing economy is being maintained under strong market orientated policies, including the introduction of special economic zones, much progress has been seen in foreign capital introduction and technology transfer with rapid empowerment in international competitiveness, all helped by market expansion inside and outside the country for AV/ household appliances and further, in the information and telecommunications sectors. In particular, joining the WTO system will hasten dissolution of inefficient divisions of state-owned firms, etc., and further activate utilization of international capital including those of overseas Chinese. Not only that, but domestic capital will also benefit from incentives provided by the WTO, bringing the long-term activation of domestic capital into the market. With huge potential in the domestic market, it is possible for China itself to further strengthen industrial competitiveness, and in doing so its effects on surrounding countries like Viet Nam will be powerful.

In July, the government of China announced the establishment of export processing zones in various parts of the country in order to promote export following its WTO admission. The initial plans call for the establishment of such zones in a total of 15 locations, including Dalian, Tianjin, and Beijing. The zones could offer new incentives that would be particularly advantageous for foreign firms with high rates of export. The possibilities include exemption from the VA tax, a preferable 15-percent rate in business income tax, exemption from duties on import of production facilities, arrangement for customs clearance around the clock, and lifting of requirements for the preparation of a management ledger and payment of security money when importing materials handled as bonded goods. While there would also be certain drawbacks associated with the relocation from existing plant locations, stricter control of export zone access, and the added procedural complexity involved in shipment to the domestic market, the policy will probably be given high marks on the whole by foreign firms as one that will make a substantial contribution to export.

Investment in China by foreign firms is rapidly growing (the cumulative amount of investment from Japan comes to about one-third as much as that in all ASEAN countries combined). China's electric/electronics industry is now almost half as large as its ASEAN counterpart. This industry has

enormous potential for advancement, given the huge size of the latent market and abundance of labor, but the country also still poses many investment risks that cannot be overlooked by foreign firms. These include sudden changes in policy on foreign exchange and industry, underdeveloped logistic systems, and leakage of technical know-how in the case of consigned production. Viet Nam must be take full note that there are also many foreign firms which have refrained from investing in China right from the start or desire to disperse risks associated with investment there by investing in Viet Nam and other countries.

(4) Conclusion of a trade agreement with the United States

Thus far, Viet Nam has been at a great disadvantage in the trade aspect because it has not concluded a trade agreement with the United States. This has, in effect, prevented firms which emphasize export to the United States from siting in Viet Nam. For example, textiles exported from Viet Nam to the United States would be twice as expensive as those exported from China because they would not benefit from preferential duties. The situation is similar in the case of small motors, which have already been removed from the preferential treatment framework; whereas import from countries in general is subject to a tariff of 5 percent, the rate for Viet Nam rises to 35 percent.

As a consequence, the official effectuation of the trade agreement with the United States in the spring of 2001 may be expected to deliver a synergistic benefit by triggering an inflow of capital from U.S. and other international industrial concerns which, in turn, would persuade yet other firms to invest. As a result of the treaty, the U.S. side is likely to make strong demands for a correction of various restrictions on corporate activities, and this should have a positive effect on the business environment for Japanese firms as well. The agreement will have great advantages, at least as far as foreign firms in the electric/electronics industry are concerned.

(5) Pros and cons of the CEPT system

The timing of the instatement of common tariffs based on the Common Effective Preferential Tariff (CEPT) system is being moved up from 2003 to 2002. In accordance with CEPT, Viet Nam has already submitted four phases of lists for tariff rate reduction, including an exclusion list (EL) and a temporary exclusion list (TEL). Tariffs on all EL items had been lowered to the range of 0 - 5 percent as of 1999, and those on TEL items are to be reduced to at least 20 percent by 2001 and 0 - 5 percent by 2006. Most types of electric/electronic products are on the TEL, and tariffs on items imported from other ASEAN countries, whether finished products or components, are scheduled to be in the range of 0 - 5 percent by 2006.

According to the Vietnamese authorities, a new policy for promotion of domestic production through linkage between the local contents rate and import tariffs is to be set in motion in 2001. Nevertheless, CEPT dictates that import tariffs must be lowered to at least 20 percent by 2003 and 0 - 5 percent by 2006. Although it will take some time, this will pave the way for import, at low tariff rates, of components needed for export. Meanwhile, Japanese firms will presumably work to raise the local contents of their production. In some cases, they could possibly pursue (local) in-house and consigned production in connection with AICO schemes, and this could lead to export of components from Viet Nam.

(6) Active use of AICO schemes

As noted above, Sony Viet Nam has obtained approval for an AICO scheme which will allow it to meet local contents requirements and assure profits in its TV business. Under this scheme, it will import flat CRT sets from its operation in Singapore and export custom TV components such as tuners produced on consignment by Viettronics Tanbin and other firms back to the same operation. Such schemes will not necessarily be confined to Sony; they are also being considered by other home appliance manufacturers. They could become a factor of increase in export of custom assembly-type components, albeit on a limited scale. In addition, the increase in production consignment to other manufacturers, like that from Sony to Viettronics Tanbin, would have important ripple-effects for technology transfer to Vietnamese firms and for nurturing the growth of local vendors.

(7) Rise of software industry along with the IT revolution

It is possible that the IT revolution will result in the giving birth to a huge information and telecommunications market, and spreading of new business models through industrial society, making obsolete the existing supply-demand structure.

One direct impact of the IT revolution is market expansion of information and telecommunications equipment systems (including software). To meet hardware demands, companies are always on the look out for new and more suitable production locations within Asia, not necessarily tied to existing sites, where there is a backdrop of rapidly growing demand. Regarding the software sector, where a huge market continues to develop, India and China are growing rapidly, evolving through strong human networks with Western countries. In India in particular, four billion dollars of exports was achieved, making software the second largest export industry in the country. With a dramatic expansion of the information and telecommunications market, there are big business opportunities for Viet Nam as well. When we see that most of the players in the software industry are small and medium sized

firms, there is an urgent need to build training systems for experts of information processing-related technologies such as the Internet, from the perspective of setting the infrastructure in place for the information and telecommunications industries.

Regarding the evolution of the above business model there are two important characteristics, as follows.

A. E-commerce on the Internet will free the transactions of small and medium sized firms from limitation to the domestic market and make them global.

B: Mechanization of such know-how as used to be acquired through long-term training, such as for dies in machine processing, has resulted in the possibility of the catch up period required for developing countries to dramatically shorten.

Nurturing SI firms is indispensable for the long-term growth of the electric and electronic industries in Viet Nam. Such an IT revolution as outlined above will result in ease of high-tech catch-up and make securing global markets possible in a relatively short period for small and medium sized firms, assuming there is an appropriate business approach on the side of the firms.

(8) Global spread of EMS firms

As the IT revolution continues, there is a growing trend toward specialization in product development and consignment of the actual assembly-based manufacturing to others in the interest of efficiency, especially among Western firms. These circumstances are giving rise to a new kind of assembler known as electronics manufacturing service (EMS) suppliers, as exemplified by Solectron. These firms are garnering increasing attention for their rapid growth. They contract for and supply manufacturing services in all phases other than product development, including package design, assembly-based production, component sourcing, and logistics. They are looking for large-scale mass-production sites in Asian countries offering an abundant supply of low-cost labor. Several have already begun to site, through acquisition of existing factories in some cases, assembly plants in ASEAN areas with local sources for various types of components (such as Penang in Malaysia). Embodying a new business model, EMS firms could very well continue to make big strides along with the growth of the market for information-communications equipment. There is thought to be plenty of opportunity for Viet Nam, too, to attract siting by them.

4. Policy for support of export promotion in the electric/electronics industry in Viet Nam

1) Target fields for attraction of foreign capital

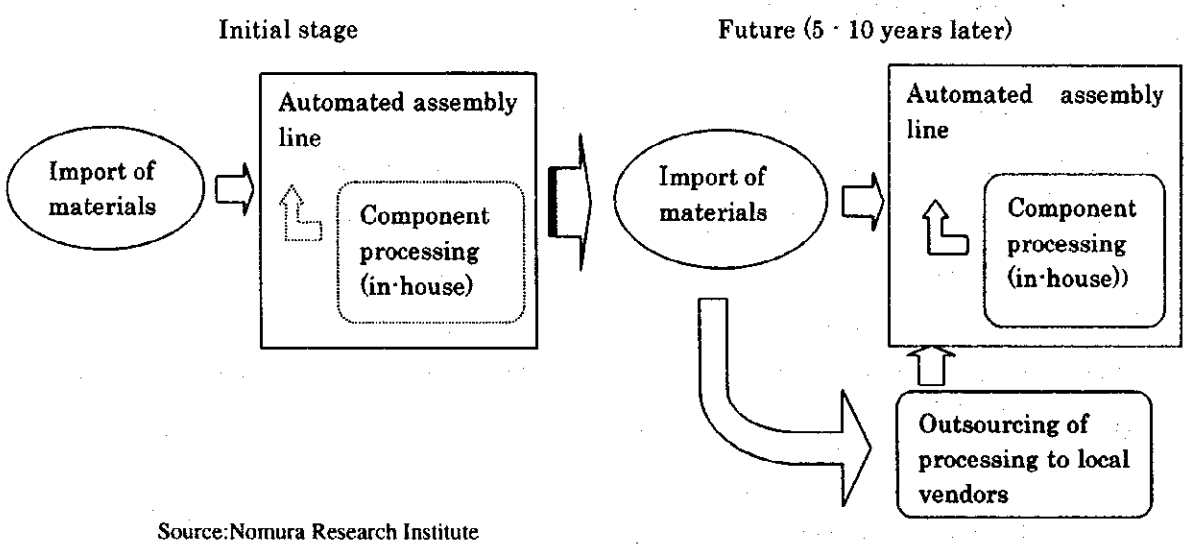
Considering the characteristics of industry in the electric/ electronics field (product technology, types of production, scale of investment, etc.) and the internal and external environment surrounding investment in Viet Nam (positive and negative factors), the following can be cited as the three major fields where the Vietnamese side should actively strive to attract foreign investment in the interest of export promotion for the immediate future: (1)simple assembly components, (2) materials-type components, and (3)information-communications sets and components. This section presents a profile of the situation in each of these three fields.

(1) Simple assembly components

There are many items in the category of simple assembly components, which includes transformers, coils, small motors, magnetic heads, and optical heads. Generally, the production is labor-intensive and requires a relatively low plant and equipment investment in the range of a few hundreds to a few thousands of millions of yen. Such components are extensively used in information-communications equipment, and the demand for them is consequently rising rapidly. At the same time, however, there are also tough demands for reduction of their cost. This is why the leading firms are constantly searching for a cost advantage and focusing on developing countries in selecting sites for their production. Companies that have already sited in Viet Nam, including Tokin, Mabuchi, and Nidec, may be expected to expand their capital investment in this field in the future. In addition, there are thought to be many other firms in the ASEAN region that could follow them into Viet Nam.

Partly because of the labor-intensive nature of the assembly processes and dependence on import for almost all materials, plants for components of this type are often criticized as having few technical ripple-effects. In recent years, though, assembly processes have begun to incorporate high-precision automated assembly equipment for components used in high-density packages, and require a high level of engineering expertise for programming as well as many unskilled workers. In addition, the increasing scales of production hold the possibility of investment for in-house processing in pursuit of lower costs and eventual outsourcing to local vendors (further in the future). In light of these factors, it is considered crucial for Viet Nam to target attraction of firms manufacturing simple assembly components as an industrial field for promotion of export in the initial phase, with a view to creating jobs and earning foreign exchange.

Figure 4-1 Scenario of development of simple assembly component production through attraction of foreign investment



Source:Nomura Research Institute

Many of the simple assembly firms already in Viet Nam have praise for the level of the country's workers and the skills of its engineers. As compared to the assembly of low-VA components in China, which is more oriented toward human-wave tactics keyed by the huge supply of low-cost labor, production in Viet Nam is regarded as more suited to high-VA components that are needed for high-density packages and require more extensive use of automatic assembly units. Viet Nam also is given high marks as a site for launching mass production of components shortly after their development in Japan. As such, although the subjects are simple assembly components, it would be possible to differentiate production from that in China, and this suggests prospects for an expanded investment in Viet Nam in this field over the coming years

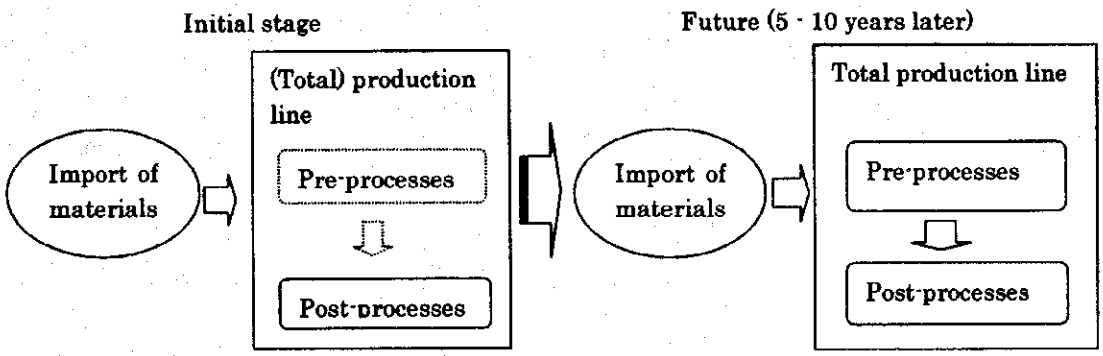
(2) Materials components

Construction of a full-fledged plant for materials components (such as resistors, condensers, and connectors) takes a sizable capital investment on the order of a few tens of billions of yen due to the need for a total (end-to-end) production encompassing pre- (front-end) and post- (back-end) processes. Foreign firms that already have plants in other ASEAN countries (such as Singapore, Malaysia, and Thailand) and China, would find it harder to diversify their investment sites for these types of components than for simple assembly components. To meet demand in rapidly growing areas of information-communications products (such as cellular telephones), they have essentially relied on import from Japan, especially for the supply of chip (surface package) components, while transferring this production to ASEAN plants in certain cases. However, the demand is surging, and will probably

trigger not only an expansion of the capacity of existing offshore locations but also a round of investment in new ones.

Although the requisite amount of investment is huge and the number of new plant projects would be limited, it can also be observed that candidate host countries are required to have a high level of engineering skill to cope with pre-processes. Judging from the relatively high ratings of the skills and aptitude of its workers, Viet Nam is thought to possess a good foundation for acceptance of any such new investment. Because most of the materials would be imported from Japan (or other sites of production) for the time being, there would be no need for much sourcing from local vendors. While it lacks a store of almost all related technology, Viet Nam therefore would definitely not be at a disadvantage in this respect. The engineering capabilities acquired for smooth execution of pre-processes would be a precious object of technology transfer to Viet Nam and have far-reaching effects. In light of these points, the Viet Nam could attach priority to attraction of foreign investment in this field, and particularly in the area of Condensers, where some firms are already considering the prospect of investment in Viet Nam. It can also be noted that, for many materials components, post-processes are on the order of a simple assembly process like that for assembly components. Viet Nam could possibly also target phased siting beginning with such post-processes in detachment from pre-processes.

Figure 4-2 Scenario for development of materials component production through attraction of foreign investment



Source: Nomura Research Institute

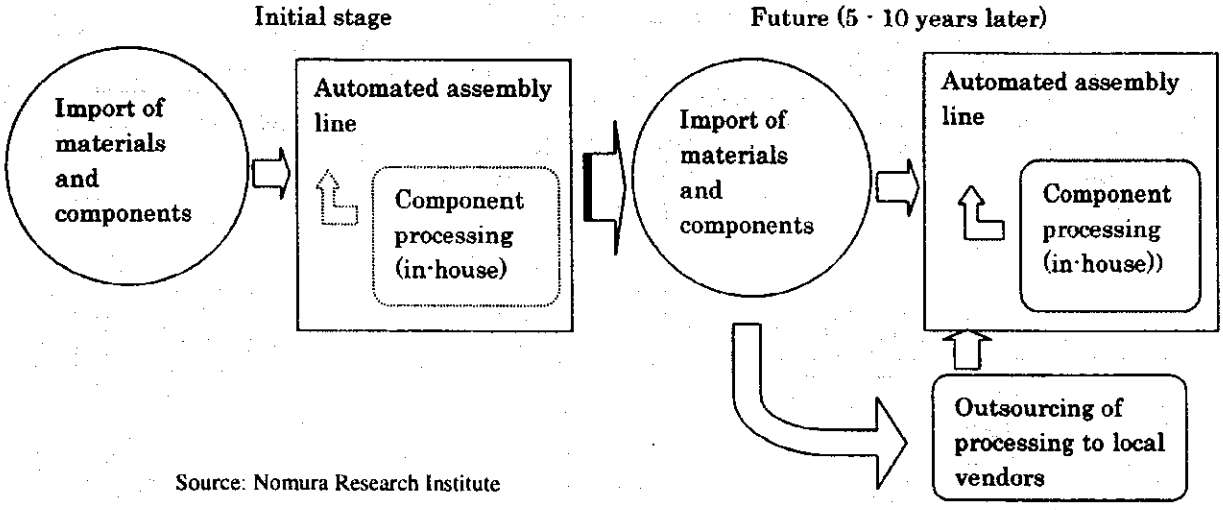
(3) Information-communications equipment and components

The category of information-communications equipment encompasses a wide variety of products, including everything from personal computers, monitors, printers, FDDs, HDDs, and ODDs (e.g., CD-ROMs) to cordless telephones and cellular telephones. Since their development, these products have gone on to enjoy strong growth in the global market. The concerned companies (including manufacturers of their components) are constantly searching for new production sites that would be

the optimal ones in the current conditions. Most of the core components such as semiconductors used in these items come from development and production in Japan and other developed countries, but much of the assembly is performed in developing countries. Because price competition is fierce and the product life cycle is short, there is a general preference for low-cost, large-scale assembly plants. The requisite amount of capital investment on plants and equipment typically ranges from a few hundreds of millions of yen to a few tens of billions of yen, due to differences in respect of assembly capacity, automation, and the degree of in-house processing facilities such as metal stamping machines.

As noted above, this field is an arena of fast-paced product evolution and tough price competition. Like that of assembly components, it has great labor-absorbing effects over the short term, but does not offer a rapid technology-transfer benefit. Over the longer term, however, it should have enormous ripple-effects due to the outsourcing of component processing (which would help to foster the growth of local vendors) and expansion of the demand for all kinds of engineering services. At any rate, the big firms will have no choice but to up their supply capacity in step with the growth of the global market, and chances are good for selection of developing countries for new plants. Viet Nam therefore should embark on campaigns that are timely and target attraction of investment by these firms.

Figure 4-3 Scenario of development of information-communications equipment/ component production through attraction of foreign investment



Source: Nomura Research Institute

In addition, there are several export-oriented fields where the development of industry should be promoted from a long-term standpoint although they afford few prospects for immediate attraction of foreign investment for a variety of reasons. Examples are home appliances (and especially video equipment and "white goods"), package assembly components, electronic devices, software, and supporting industry .

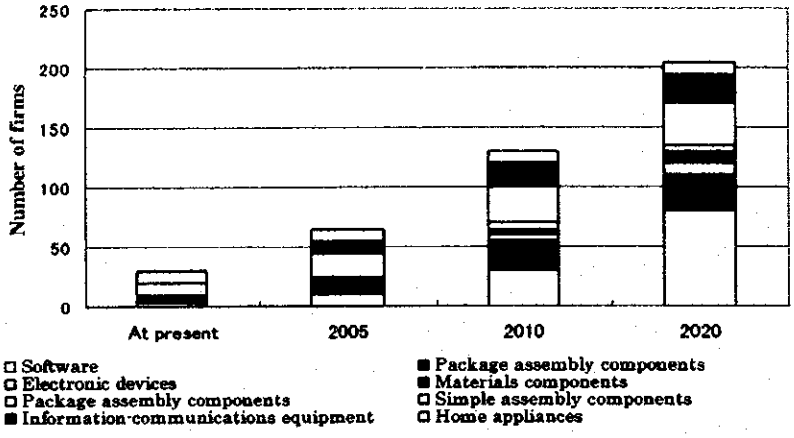
In the case of home appliances, the inauguration of AFTA would basically entail the lifting of

restrictions on import of components and materials as well as a substantial lowering of tariffs. These conditions would also apply to white goods (e.g., refrigerators and washing machines), which would also require an increase in the scale of production through actualization of the domestic demand. As for package assembly components, activities will begin with export (albeit on a small scale) under AICO schemes for the time being. A major inflow of foreign capital in this field will demand a substantial group of export-oriented home appliance firms and manufacturers of information-communications equipment and components. In the field of software, the immediate focuses are human resource development and acquisition of the fundamental technology; growth into a genuine export industry cannot be achieved without global marketing activities and construction of networks by domestic capital. In the SI field, while IT could shorten the period required for technology transfer, it would nevertheless take considerable time to produce more expert engineers, and the task of developing SI personnel consequently must be undertaken from a long-term perspective.

2) Scenario of phased development

Figure 4-5 shows the prospects for (intensive) siting in Viet Nam by foreign firms considering the characteristics of industry in the electric/electronics field and the changes in the investment environment inside and outside the country. Figure 4-6 and Figure 4-7 present the scenario for the future evolution of the electric/electronics industry in Viet Nam premised on a buildup of foreign firms. Figure 4-8 defines the targeted product level in each of the stages outlined in Figure 4-7, with consideration of the requisite scale of facility investment, production technology, and stock of supporting industry. Besides the reconstruction of production setups in the ASEAN region by Japanese and other foreign firms in anticipation of AFTA, the studies for its preparation also emphasized the ongoing search for new production locations by international industrial capital (U.S., etc., as well as Japanese) in the rapidly growing field of information-communications sets and components.

Figure 4-4 Image of the buildup of companies in the electric/ electronics industry in Viet Nam



Source: Nomura Research Institute

Note: The figure assumes that most of the software houses and about 50 percent of the SI firms would be Vietnamese (i.e., owned by indigenous capital), and most of the other firms, of Japanese or other foreign affiliation.

Figure 4-5 Attributes of fields in the electric/electronics industry and possibilities of accumulation of a stock of foreign firms in Viet Nam

	Field	Types of products	Labor-intensive	Tech-nology-intensive	Facility-intensive	Directed to local demand	Scale of capital investment for plants and equipment	Global market growth prospects	Possibilities of accumulation of a stock of foreign firms				Factors encouraging investment in Viet Nam
									Stock at present	Good possibilities for accumulation within the next five years	Good possibilities for accumulation within the next ten years	Good possibilities for accumulation within the next 20 years	
Equipments	Video Equipment	CTV/ VCR/ Camcorder /DVD Player		◎		○	Few 100 million - few billion yen	△	△	○	◎		* Restructuring of production setups in the ASEAN * Lowering of tariffs on component import under CEPT * Good ratings of worker aptitude and labor costs
Equipments	Audio Equipment	Potable Player/ Radio/ Radio Cassette/ Stereo Set/ Car Stereo	◎	○			Few 100 million - few billion yen	△		△	○		
Equipments	Communication Equipment	Phone/ Cordless Phone/ Mobile Phone/ Facsimile/ PBX	○	◎			Few 100 million - few billion yen	○		○	◎		* Rapid growth of the global market * Conclusion of a trade agreement with the U.S. * Good ratings of worker aptitude and labor costs
Equipments	Information Equipment	PC/ Monitor/ FDD/ HDD/ ODD (CD-ROM etc.)/ Printer/ Copier		◎	○		Few 100 million - few 10 billion yen	○		○	◎		* Rapid growth of the global market * Conclusion of a trade agreement with the United States * Good ratings of worker aptitude and labor costs
Equipments	Home Appliance	Washing Machine/ Refrigerator/ Microwave Oven/ Air-conditioner			◎	○	Few 10 - few 100 billion yen	△		△	○		
Parts	Simple assembly components	Transformer/ Coil/ DY/ Small Motor/ Switch/ Magnetic Head/ Optical Head/ Keyboard	◎	○			Few 100 million - few billion yen	○	△	◎			* Rapid growth of the global market * Good ratings of worker aptitude and labor costs * Dispersion of risks associated with investment in China
Parts	Package assembly components	Power Supply/ Tuner/ Remote Controller		◎		○	Few billion yen	△		△	○	◎	* Good ratings of worker aptitude and labor costs * Actualization of the domestic market (expansion of equipment production)
Parts	Materials components	Resistor/ Capacitor/ Connector/ PCB	○		◎		Few 10 billion yen	○		○	◎		* Rapid growth of the global market * Good ratings of worker aptitude and labor costs * Dispersion of risks associated with investment in China
Parts	Electronics Devices	IC/ CRT/ LCD		○	◎		Few 10 - few 100 billion yen	○			○	○	
	Software		○	◎			Few 100 million - few billion yen	○		△	○	◎	* Rapid growth of the global market * Conclusion of a trade agreement with the United States * Good ratings of worker aptitude and labor costs

Source: Nomura Research Institute

Note: The meaning of symbols for ratings of the possibilities of accumulation of a stock of foreign firms is as follows.
△: extremely low ○: some accumulation ◎: considerable
However, the firms in the software field would presumably consist mainly of Vietnamese capital.

Figure 4-6 Phased development of the electric/electronics industry in Viet Nam (current status and orientation for the future)

Field		Current status (siting by foreign firms)	Orientation for the future (targets and objectives)
Equipments	Video Equipment	Entry by Japanese firms (e.g., Sony and Matsushita Electric Industrial) and Korean firms through partnership with state enterprises, mainly for participation in the domestic TV market	Up until the mid 2000s, the aim would be an increase in the local contents through replacement of import. Subsequently, Viet Nam could acquire export competitiveness by lowering tariffs on imported components under AFTA, and "catch up" along with the switch to digital technology in the 2010s.
	Audio Equipment		The object for the time being would lie in CKD kit assembly to replace import. Beginning around 2005, lower tariffs on imported components under AFTA could induce siting of assembly plants for optical equipment, where there is a considerable buildup in the ASEAN region, for expansion of export. It would be more difficult to attract siting for production of low-end items, which would meet tough competition from China.
	Communication Equipment		China has overwhelming competitive strength in the area of low-end telephone equipment. As such, Viet Nam should focus on cell phones and network-related items in campaigns aimed at attracting siting by export-oriented plants of Japanese, North American, and European firms along with the transition to next-generation technology projected to begin in the second half of the 2000s.
	Information Equipment		Initially, Viet Nam should concentrate on attraction of mass-production plants for unit products even if they entail a high dependence on imported materials and components. Around 2005, it could fully prepare conditions for investment by small and medium vendors and start to attract full-scale mass-production plants accompanied by component vendors.
	Home Appliance	Siting by Sanyo Electric for production of washing machines (mainly for export) and refrigerators (mainly for sale in Viet Nam)	Essentially, production in this area tends to be directed to the local market; the export orientation declines as product size rises. The point is to expand the scale of production in step with the growth of the domestic market (by way of replacing import) and to probe the possibilities for transformation into an export industry over the longer run (beginning in the second decade of the century).
Parts	Simple assembly components	Siting by about ten firms (mainly Japanese, including Mabuchi and Nidec) in EPZs (Export Processing Zones)for export of the entire volume of production	The firms already sited in Viet Nam intend to expand their export within the next few years. Success by these operations could spur increased investment by other foreign firms (confined to EPZs) for simple assembly by automated units while avoiding butting with sites in China. This could form the foundation for the growth of export industry in this field.
	Package assembly components	Siting by Fujitsu for HDD-use substrate packages (for export to Thailand and the Philippines)	This field requires comparatively large investment, preferably close to the user market. As such, siting would probably be limited to supply aimed at replacing import of items such as TV sets for the time being. Although there are some prospects for an increase in export through AICO schemes, the key factor is whether or not the TV set production can acquire an export capability in the 2010s.
	Materials components		It would be difficult for Viet Nam to attract siting by many foreign firms, which already have made sizable investments for total production plants in other ASEAN countries and China. However, the market in this field is growing at a rapid rate, and Viet Nam could conceivably attract siting of such plants by foreign firms emphasizing higher levels of skill and dispersion of risks in production in China.
	Electronics Devices	Siting by Orion (affiliated with Daewoo) for production of CRTs (mainly for export, with some sales in the domestic market)	This field is a facility- and technology-intensive one in which requisite investment can rise to the order of a few hundreds of billions of yen. There is consequently little possibility of siting of pre-processes in Viet Nam by foreign firms. Viet Nam could accent its engineering capabilities and aim for transfer of post-processes from Malaysia (Penang) beginning around 2005.
Software			Thanks to the spread of IT, this field enjoys strong market growth. It also has relatively low requirements as far as capital investment is concerned, and Viet Nam therefore could possibly "catch up" with other ASEAN countries within a short time. The major tasks to this end are transfer of technology from countries such as India, construction of channels for supply to developed-country markets, and conditioning of legislation related to protection of intellectual property.
SI			Increasing siting by foreign firms should be linked to rising inclinations for local sourcing of stamped and molded components for the purpose of cost reduction and contraction of delivery terms. Viet Nam may be able to acquire a buildup of SI firms over the longer term (10 - 20 years) in this field, considering the long time needed for development of skills in it and the tendency of foreign SI firms to site only when there is a sufficient number of potential corporate clients.

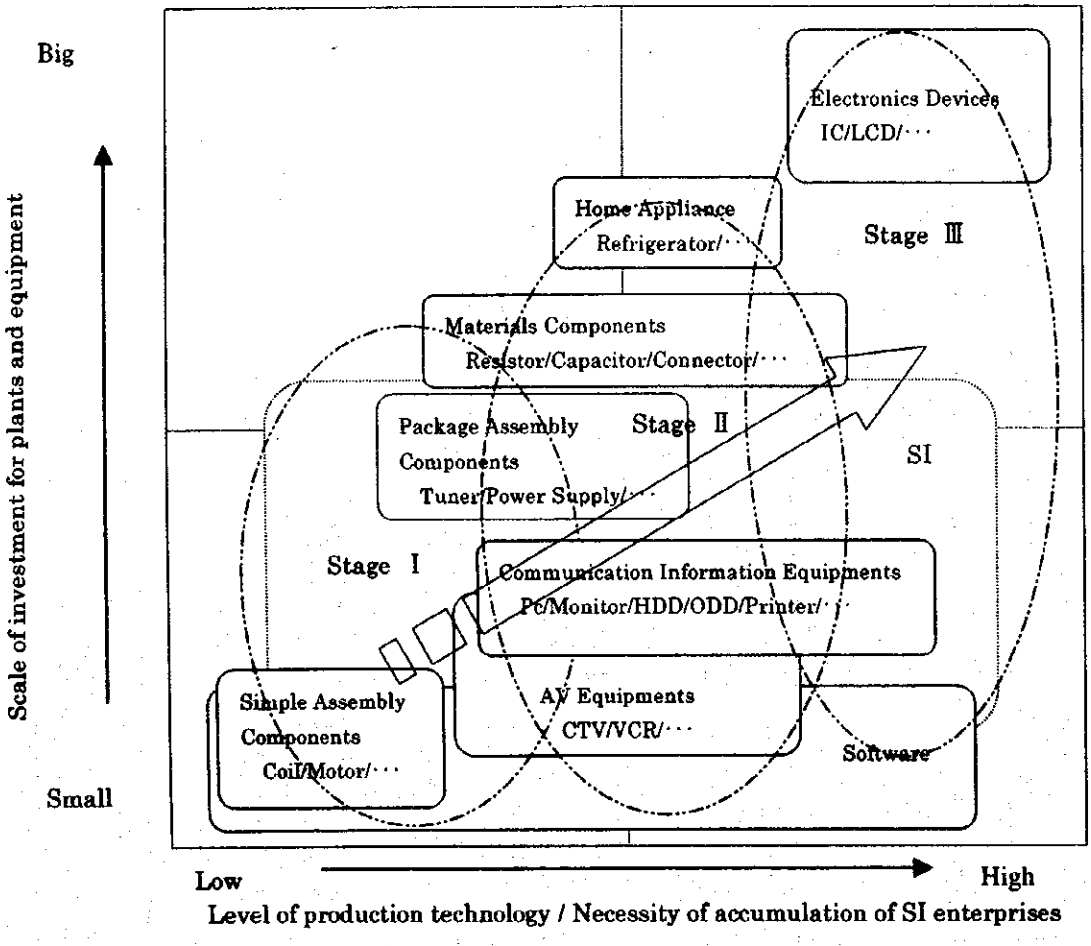
Source : Nomura Research Institute

Figure 4-7 Scenario for the phased development of export-oriented industry in Viet Nam in the electric/electronics field

	Stage Ⅰ(-2005)	Stage Ⅱ(2006-2010)	Stage Ⅲ(2011-2020)
Basic orientation	· Building of the foundation of the electric/electronics industry with the help of foreign capital	· Expansion of export by foreign-affiliated manufacturers of various types of electric/electronic sets and components under the AFTA system	· Growth of international competitiveness in the electric/electronics industry based on a build-up of component/SI firms (indigenous domestic as well as foreign-affiliated) · Full-scale advancement of the electric/electronics industry (aim for evolution into a center of electric/electronics production in the ASEAN region)
Policy on foreign investment	· Nurturing of the growth of export-oriented industry through attraction of siting by foreign firms looking to restructure their ASEAN production systems or build setups for supply to the global market · Reinforcement of incentives for siting by foreign firms and active promotional campaigns	· Nurturing of the growth of export-oriented industry through attraction of siting by foreign firms building setups for supply to the global market · Active promotional campaigns including talks with top-ranking foreign officials	· Development of high-VA export-oriented industry through more selective targeting in campaigns to attract siting
Fields to be emphasized in attraction of foreign investment	· Simple assembly components · Information-communications sets and components (computer peripherals capable of assembly with almost 100% imported components and materials) ·(Materials-type components)	· Information-communications sets and components (printers, HDD, fax, and other mechatronics items requiring a store of SI capabilities) · Simple assembly components · Package-type assembly components · Materials-type components · AV sets (switch from replacement of import to growth of export) · (Software)	· Information-communications sets and components · Package-type assembly components · Materials-type components · Electronic devices · White goods (conventional home appliances) · Software
(Software/ SI field)	· Bolstering of programs for human resource development to lay the foundation for information-communications industry in fields such as software and network development	· Strengthening of the foundation for growth of SI (metal processing, plastic molding, etc.; through human resource development programs, SI center operation, attraction of foreign investment, and support for venture businesses)	· Extensive development of indigenous domestic SI firms based on technology transfer from foreign firms (in areas such as high-precision plastic processing, high-precision metal processing, and metal molding) · Nurturing of engineering capabilities for development design and facility maintenance
Related policy measures	· Publication of a long-term master plan and assurance of the transparency and consistency of all measures · Infrastructural conditioning (EPZ, logistics, etc.) · Higher education for human resource development · Tariffs in conformance with CEPT (and AFTA)	· Augmentation of measures for promotion of small and medium enterprises (SI; legislative framework, financing, credit guarantees, and industrial estates) · Conditioning of legislation for protection of intellectual property and trademark rights (conformance with WTO rules) · Human resource development (management executives, administrative experts, etc.)	· Drafting of comprehensive policy for advancement of the electric/electronics industry (promotion of science and technology, growth of domestic industrial capital, etc.)

Source: Nomura Research Institute

Figure 4-8 Scenario for evolution by stage of electric and electronics industries



Source: Nomura Research Institute

As for the industrial build-up in the electric/electronics field envisioned by the scenario, the number of internationally competitive (foreign-affiliated) enterprises is projected to increase from about 25 at present to 50 as of 2005, 100 as of 2010, and 150 as of 2020. Naturally, the same period would see the emergence of domestic (indigenous Vietnamese) firms doing business in software and SI, and the corps of major firms in this field would therefore consist of about 200. As a result, the scenario foresees an increase of about 10-fold in the number of companies and about 20-fold in the amount of production along with the expansion of exports. The implication is that the scale of production in this field in Viet Nam could grow from the current level of about 2 billion dollars to the range of 40 - 50 billion dollars by 2020 (or about one-fourth as high as in the most developed ASEAN countries today). In the process, this production would come to account for the majority of Viet Nam's exports.

While led by activities in the field of information-communications sets and components, where growth is anticipated to remain strong, production and export should expand around the simple assembly and

materials components used in these products, with an extremely high dependence on foreign capital. Over the long term, it is essential to provide for the autonomous advancement of SI firms that support the activities of these foreign concerns and are owned mainly by Vietnamese capital. Over the next 20 years, however, the SI degree of contribution to production and export will inevitably be held to a very low level.

3) Measures for attraction of foreign investment needed for growth of export industry

Based on the outlook for change in the internal and external investment environment surrounding Viet Nam presented in the preceding sections, this section discusses measures that should be taken by the government of Viet Nam to attract the foreign investment needed for promotion of export in the electric/electronics industry. Two of the salient characteristics of this industry are the wide range of product fields and the diversity of forms of production. Official policy for promotion of export and attraction of foreign investment should be prepared with attention to the possibilities for phased buildup of foreign capital and scenario of development set forth in this paper. As prior concerns, the following section outlines the approaches and issues in efforts to nurture industry and export capabilities in the electric/electronics industry.

(1) Approaches and issues in nurturing industry and export capability in the electric/electronics industry

To endow industry in the electric/electronics field with an export capability in developing countries requires systematic approaches. More specifically, these approaches consist of the preparation of a master plan to serve as a guideline, the instatement of policy provisions and legislative arrangements in accordance with the plan, erection of a setup for implementing policy, and conditioning of the infrastructure of electrical power, ports and harbors, and industrial estates. Moreover, this must be paralleled by active promotional campaigns to attract siting by foreign capital and thereby develop export. Figure 4-9 outlines the current status of and issues in these areas in Viet Nam.

In the case of attraction of foreign capital for the purpose of replacing import, it would be unavoidable (to a certain extent) for the activities of foreign firms within Viet Nam to be placed under various restrictions, at least in the transitional phase, but there would appear to be few factors restricting export activities. Nevertheless, the attraction of siting is not making much headway. Apart from circumstances at the foreign companies themselves, the biggest reasons are thought to be the underdeveloped arrangements for acceptance of foreign investment on the Viet Nam side (in respect of policy, infrastructure, etc.) and the lack of effective campaigns with closely circumscribed targets.

Figure 4-9 Approaches and issues in nurturing industry and export capability in the electric/electronics industry

Approaches	Current status and issues
Preparation of a master plan	Although master plans have been drafted on several occasions in the past, all have omitted targets for export capability targets and detailed approaches, and have otherwise been inadequate in respect of content. In addition, the political and administrative authorities have been seriously lacking in capabilities for objective evaluation of plans and preparation of supporting policy.
Policy provisions and legislation	Although provisions have been made in areas such as induction of foreign capital, local contents, and tariffs, Viet Nam still lacks a policy and legislative system that are fully coherent as viewed from the standpoint of export promotion. It may also be noted that state enterprises are accorded favorable treatment, and that legislative arrangements for the promotion of SMEs are greatly lagging.
Setup for implementing policy	Industrial policy is implemented mainly by means of regulations on capital and taxation, and therefore is under the influence of the MOF. The role of the MOI, which should have jurisdiction over this field, is confined to the level of management and administration, partly due to a lack of the requisite human resources.
Infrastructural conditioning	The existing infrastructure is being conditioned, and capabilities for its management and administration are improving. Besides such improvement of the physical conditions pertaining to transportation and the supply of power, water, and communications, however, there is an increasing need for a new round of advancement in "soft" aspects (such as the establishment of extended export processing zones).
Campaign to attract foreign capital	Viet Nam has not engaged in adequate campaigns to attract siting by foreign concerns. The major reasons include the lack of consensus in the government and party on the necessity of active (positive) dependence on foreign capital for the growth of the domestic industry, and the gross shortage of information on trends in siting and investment by foreign capital in the context of global networks of supply and demand.

Source: Nomura Research Institute

(2) Measures for attraction of foreign investment

Japanese firms in the electric/electronics industry have thus far made direct investments of over 10 billion dollars in the ASEAN region. Furthermore, reinvestments by Japanese firms and investments by firms from other countries have given the whole ASEAN electric/electronics industry a scale of over 100 billion dollars. Because Viet Nam has almost no stock of indigenous industrial capital that could develop export in this sector, it must rely on siting by international industrial capital in order to promote export. At present, the cumulative investment in Viet Nam by Japanese electric/ electronics firms is no more than just a little over 200 million dollars.

If Viet Nam can attract siting by many Japanese and other international industrial concerns for the purpose of export, it could develop a fairly large export industry at a relatively low expenditure of its own funds, assuming that it makes the necessary investment for industrial estates, improvement of the logistics network, and elements of the infrastructure, as the more developed ASEAN countries have done. In light of the factors noted below, there is not anticipated to be a substantial change in the strategic emphasis on production activities in Asia among multinational firms in the electric/electronics industry. Investment in plants and equipment may be expected to continue to increase in order to acquire sufficient capacity for mass-production sets and components. The government of Viet Nam therefore should take measures for prompt conditioning of the internal environment for investment and attraction of siting by international industrial capital in a both timely and active manner. In so doing, it must monitor the trend of and structural changes in the global supply and demand in the electric/electronics industry, the developments in other ASEAN countries and China, and the actions of international industrial capital.

* The Asian region has an abundant supply of quality yet low-cost labor for performance of production activities. Furthermore, most of the components and materials needed for assembly-base production can be obtained at low cost.
* Through the production activities of multinational firms going back over 20 years, the region contains well-developed industrial infrastructures up to international standards in various fields. This makes it possible to construct more efficient production systems.
* Production costs can be held down by taking advantage of the many investment incentives offered under official policy to attract foreign investment in developing countries in the region.
* Although the main subject of this investment for the time being will be production whose output is directed to developed countries, there are good prospects for actualization of the enormous latent market in the region itself over the long term.

Besides encouragement of export, it is essential for studies of industrial policy to consider promotion of science and technology, improvement of the telecommunications infrastructure, and automation of factory operations. However, the subject of this report is export promotion, and domestic tasks in these other areas were therefore excluded from consideration. It goes without saying that these areas must be studied in parallel with export promotion, but it may also be observed that priority should be accorded to promotion of export at relatively low internal cost in order to earn the foreign currency to fund advancement in them. The succeeding sections comment on the orientation of efforts in three key aspects: measures to attract foreign investment, infrastructural conditioning, and human resource development.

(3) Measures to attract foreign investment

* Incentives for foreign investment

Viet Nam currently provides certain incentives for foreign investment in correspondence with the items of production and export rates. Firms exporting at least 80 percent of their production are, as a general rule, exempt from the corporation tax for the first four years and given a 50-percent tax deduction for the next four years. Firms siting in EPZs(Export Processing Zones)are given corporation tax refunds for three years if they reinvest their profits in Viet Nam. These incentives represent improvement to a par with those of other countries in the region. Nevertheless, Viet Nam is in competition with other countries for foreign investment, and must constantly devise approaches to more attractive incentives for the strongest possible support of their production activities of foreign concerns.

To quicken the inflow of foreign investment into Viet Nam, the government has taken numerous steps, including the abolition of regulations on capital composition and other matters related to joint ventures (in the case of new investment projects in product categories where Viet Nam already has a production, an export obligation is imposed, but there are no other particular restrictions even for most of the components), trimming of application procedures, reduction of the cost of application procedures when the VN dong is used, and simplification of procedures for issuance of work permits to foreign nationals. It must continue to make such improvements; there is a particular need for early correction of the two-tiered price system, which is aimed at foreign nationals.

* Reinforcement of efforts to attract siting in EPZs(Export Processing Zones)

Although the government of Viet Nam initially prepared industrial parks with an EPZ status on the provincial level, it subsequently transformed most of these into IZs (Industrial zones) for the purpose of attracting investment by a wider variety of firms. At present, of the roughly 40 industrial

parks nationwide, only four have an EPZ status, namely, Tan Thuan and Rin Chun in the Ho Chi Minh City area, Da Nang in the central part of the country, and the industrial park in the Hanoi area in the north. Thus far, only the two in the HCMC area have been operating smoothly.

Today, EPE firms in IZs are offered the same incentives as EPZ firms and face no major obstacles in their activities of production and export. Nevertheless, the government should expand and augment IZ capabilities as EPZs in light of additional privileges available at the EPZs, including comparatively simple customs procedures and one-stop services, which are indispensable for various administrative procedures. EPZ firms do not merely make use of labor; they bring automation equipment into the country and do much to transfer technology. In addition, most of the firms sited in EPZs have a high opinion of the investment environment in Viet Nam as compared to other countries. As such, the government should make provisions to offer further privileges for siting in EPZs.

* Revision of the linkage between local contents rates and import tariff rates

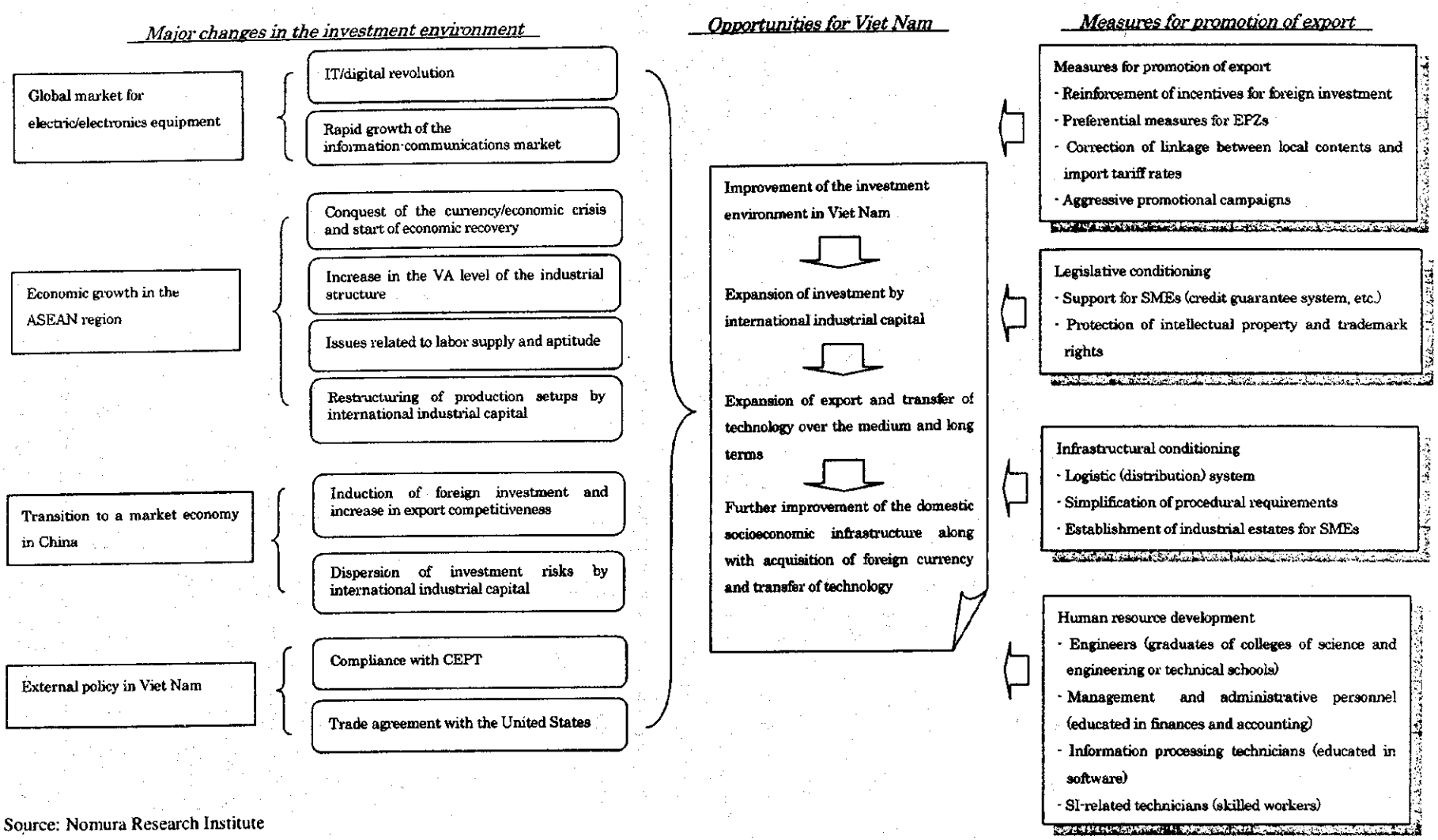
Linking the local contents rate and the import tariff rate, the new system scheduled to go into effect in 2001 makes a certain degree of sense as an approach to encourage domestic production of components while inducing transfer of technology from developed-country firms, as evidenced by the evolution of the Sony Viet Nam venture into an AICO scheme. However, the policy also has an undeniably distorted dimension as viewed from the standpoint of the development of the electric/ electronics industry as a whole. For one, Viet Nam is nearing the time for reduction of import tariff rates in preparation for the inauguration of AFTA. For another, the restrictions are in effect aimed mainly at Japanese manufacturers of TV sets, which sited in Viet Nam in order to participate in its (domestic) market. Moreover, the provisions for local contents rest on CRTs that are based on slightly outdated technology and essentially manufactured only by a Korean firm.

While they are products of importance for the electric/ electronics industry, TV sets make up only one part of the entire demand. An overemphasis on them and instatement of local contents and tariff regulations that are not reasonable could have the negative effect of discouraging siting by foreign firms, which is indispensable for Viet Nam if it is to promote the growth of this industry with a focus on the information-communications field and from a long-term perspective. Although the system is to go into effect shortly, the government should work to improve it in actual application. It must be applied in a both fair and flexible manner and with a long-term perspective.

* Aggressive campaigns to attract foreign investment

In the tough competition with other ASEAN countries and China, it will not be enough for Viet Nam merely to condition systemic arrangements and infrastructures in order to attract foreign

Figure 4-10 Changes in the investment environment surrounding the electric/electronics industry in Viet Nam and measures for promotion of export



Source: Nomura Research Institute

investment. It also must deploy an effective and aggressive promotional campaign combining carefully worked out marketing efforts with diplomatic approaches at the top. To win big projects, it would be valuable to stage regular investment seminars in developed countries, have officials on the ministerial level pay visits to major firms, and request Japanese trading firms, which have solid business channels to major manufacturers around the world, to assist the campaigns to attract siting. Naturally, presentation of cases of successful business by resident foreign firms would also be effective in campaigns to promote Viet Nam as an industrial site. For this reason, too, it is extremely vital for Viet Nam to succeed in attracting firms with a symbolic value in accordance with the aforementioned scenario for phased development.

(4) Infrastructural conditioning

The infrastructure is thought to be in fairly good order as regards the "hard" elements, such as industrial estates, electrical power, telecommunications, and logistics. There are, of course, many areas requiring improvement, including power outages and communication costs, but such difficulties are expected to be resolved with time. The following can be cited as points requiring particular attention in both the "hard" and "soft" aspects.

* Conditioning of the logistic network

There is a need for an overall review and improvement of the logistical (physical distribution) system. In the electric/electronics industry (and especially the information-communications field), it is becoming the general practice to require quick delivery of supplies; air transport is now utilized for shipping most small components. Attraction of many foreign firms therefore demands further improvement of arrangements for air transport efficiently and swiftly linking points inside and outside Viet Nam.

* Further procedural simplification and systematization

The firms sited in EPZs, at least, welcome the recent improvements in the procedural aspect, and difficulties on this front are being eased. Nevertheless, there is a need for further improvement in areas such as the requirement for application documents to be written in Vietnamese. More specifically, the government must recognize submission of documents prepared in English if it wants to attract foreign investment and internationalize its industry. Similarly, its customs system is divorced from global standards and saddled with various anomalies, such as decisions dependent on the level and temperament of the assigned officials. The government should urgently take steps for appropriate personnel education and implement reform with a view to fairness and rationality.

* Preparation of industrial estates for SMEs

For small and medium enterprises (SMEs), siting in the industrial parks developed for large firms is liable to cost too much and be inconvenient. Instead, they are apt to prefer siting collectively (in a group) in factory facilities where there are blanket services for performance of a variety of administrative procedures. SI firms face serious difficulties in coping with waste treatment and would like sites to be equipped with environmental treatment facilities for shared use at reasonable cost.

(5) Programs for human resource development

One of the biggest issues in Malaysia, Thailand, and other countries where the electric/electronics industry is growing through attraction of foreign firms is the shortage of human resources to act as principals in the development of this and other manufacturing industries. The production of manufacturing-oriented technicians and engineers is lagging. All of these countries are aware of the situation and taking policy measures to remedy it, but a complete resolution is not on the horizon. If it genuinely wants to develop the manufacturing sector and foster the growth of technical/IT capabilities as the foundation for national advancement over the long term, Viet Nam must take prompt action to reinforce the system of education at colleges of science and engineering and technical schools. It should also consider the option of offering incentives for development of such personnel, if that is necessary.

To put more management duties at foreign-affiliated operations in Vietnamese hands of Vietnamese and to stimulate business owned by indigenous capital, the government must promote programs for the production of executives and middle managers as well as education in expertise related to accounting, personnel affairs, and marketing. The development of SI firms requires ongoing programs for turning out skilled workers. It also goes without saying that proficiency in English is becoming a universal requirement for genuine internationalization of activities in the transition to a market economy.

Appendix

1) Inclinations to site in Viet Nam among Japanese firms

Research Institute for Development and Finance in Japan regularly conducts a questionnaire survey with Japanese firms in the manufacturing industry on their overseas investment activities. According to this survey, Viet Nam ranks sixth among firms in all industries as a promising site of investment over the medium term, but third, behind China and the United States, among firms in the electric/electronics field. This trend has not changed over the last few years, and suggests that Viet Nam has a high potential as a destination for investment by Japanese firms. However, what Japanese firms are seeking from investment in Viet Nam is not necessarily a location for export; attention must also be paid to the country's large latent market.

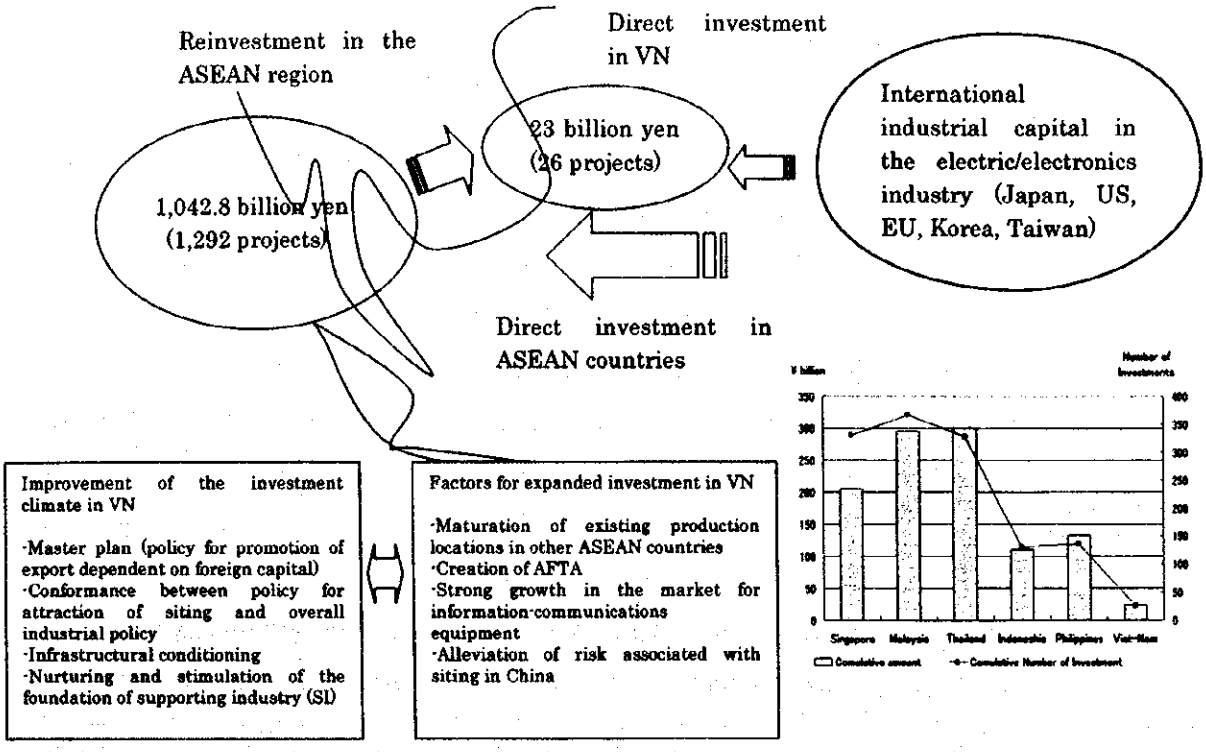
Figure 1 Promising i Investment to recipient countries from medium-term (3 years) perspective for Japanese companies (All industries/electric and electronics lidustries)

Ranking	Recipient countries	All industries (number of companies)	Share (%)	Recipient countries	Electric and electronic industries (number of companies)	Share (%)
1	China	153	55	China	28	57
2	U.S.A.	108	39	USA	14	29
3	Thailand	76	27	Viet Nam	9	18
4	India	42	15	Singapore	8	16
5	Indonesia	41	15	India	8	16
6	Viet Nam	30	11	Thailand	8	16
7	Malaysia	25	9	Philippine	7	14
8	Philippines	25	9	Indonesia	7	14
9	U.K.	25	9	Malaysia	6	12
	Overall	278	100	Overall	49	100

Source: Results of questionnaire regarding future overseas investment of Japanese manufacturing (Research Institute for Development and Finance)

Assuming that the global economy achieves a sustained expansion, the existing production locations in ASEAN countries are anticipated to encounter serious problems again in the aspects of recruitment of workers and demands for wage hikes along with the swift recovery from the currency and economic crisis. Moreover, the aforementioned factors of change in the structure of production by Japanese and other foreign (and foreign-affiliated) manufacturers point to the start of earnest efforts to rebuild production setups in the ASEAN region, inclusive of Viet Nam and Myanmar, in anticipation of AFTA. Figure 2 presents a picture of the expansion of direct investment in Viet Nam by Japanese firms in the electric/ electronics field.

Figure 2 Scenario for expansion of direct investment in Viet Nam by electric/electronics firms



Source: Ministry of Finance Statistics Monthly(Ministry of Finance)

Note: The monetary figures and figures in parentheses are based on direct investment from Japan in the electric/electronics field.

2) Nurturing the growth of SMEs as the foundation for long-term advancement

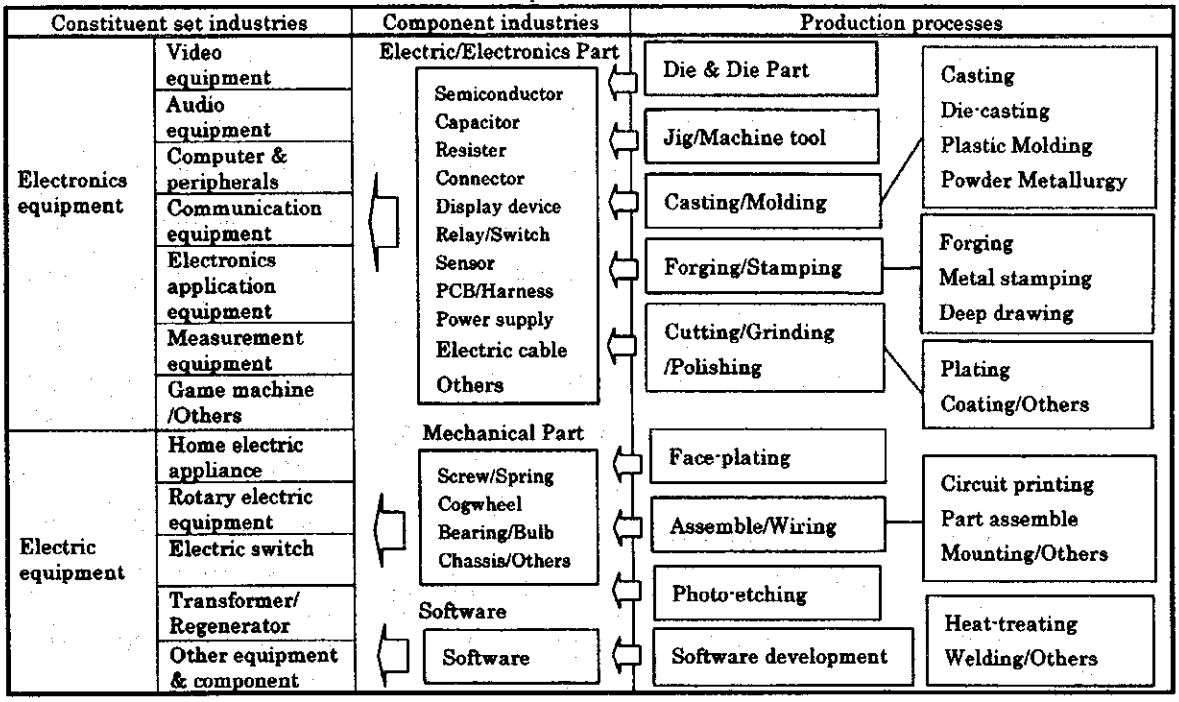
As shown in Figure 3, the electric/electronics industry consists of set industries in various fields and the industries producing the components required for this set production. Besides the electric/electronic types such as resistors and capacitors, components include mechanical types such as screws, springs, and chassis as well as software types. Generally speaking, the components are produced with the use of molds, jigs, and other tools in a variety of processes including plastic molding, metal stamping, circuit printing, and software development.

Calculation based on the 1995 table of industrial linkage reveals that, in monetary terms, the demand for components generated by Japanese production of electric/electronic sets came to 26 percent of the set production. Electric/electronic types accounted for about 17 points of this percentage, and the mechanical and software types, about 4 points each.

As shown in Figure 4, large shares are occupied by assembled and processed components such as semiconductors and general-purpose components (resistors, etc.). The respective percentage-point shares for the component categories of printed circuits, molded plastic, stamped metal, and software are estimated at 4, 3, 1 and 4 points. While the individual shares are by no means high, the components in question

account for a fairly large part of the diverse and complex interrelationship of processes in the industry. Whereas the production of assembled and processed components such as semiconductors and general-purpose components is undertaken mainly by large firms, the related circuit printing, plastic molding, metal stamping, and software development is undertaken mainly by SMEs.

Figure 3 Structure of the electric/electronics industry
(constituent set/component industries and production processes)



Source: Nomura Research Institute

For the time being, it is thought that almost no use would be made of small and medium enterprises (SMEs) in Viet Nam for promotion of export industry, to judge mainly from their technological level. Over the longer term, however, it would become necessary to build up a group of domestic SMEs that are internationally competitive, especially as regards their technological capabilities, in order to support the competitive strength of export-oriented firms in aspects such as cost and delivery time. As is clear from the results of the analysis of industrial relationships, although the task could draw on the energies of foreign firms, these SMEs should be nurtured as essentially domestic concerns engaged in business activities and creation of additional value in this field.

Figure 4 Set production value and demand-creating effect for components in the Japanese electric/electronics industry (1995) (Unit:billion yen)

Set production value		Demand-creating effect for components		Demand-creating effect by major component type	
Electronics equipment	19,610	Electric/Electronics components	6,180 (17)	Printed circuit fabrication	1,558 (4)
				Plastic molding	1,098 (3)
		Mechanical components	1,560 (4)		
Electric equipment	16,333			Metal stamping	280 (1)
		Software	1,640 (4)	Software (development)	1,640 (4)

Source: Estimates based on the 1995 table of industrial linkage in Japan

3) Case study: Fujitsu's HDD production in the ASEAN region and positioning of Viet Nam

As shown in the following figure, Fujitsu's first offshore plant for HDD production was in Thailand, and the company opened additional ones in the Philippines and Viet Nam in the mid 1990s. While the plant in the Philippines is for final product assembly, that in Viet Nam is for printed circuit board (PCB) processing and assembly. This difference derives from another in respect of the policy in the two countries on foreign capital. The Philippines has adopted very liberal policies for attraction of foreign investment, and it was consequently easy for foreign manufacturers of components needed for HDDs to move into the country at the same time. In Viet Nam, on the other hand, there is a problem in that policy does not provide incentives for siting by manufacturers of components for domestic transactions. For this reason, Fujitsu decided against building a plant for assembly of finished HDD products in Viet Nam, and instead built only plants for assembly and processing of PCBs, for which all components and materials can be imported. As this suggests, attraction of siting for full-fledged product assembly plants will require the instatement of policy that will encourage siting and a build-up of SME component manufacturers which ideally should be located in the vicinity of the product manufacturers.

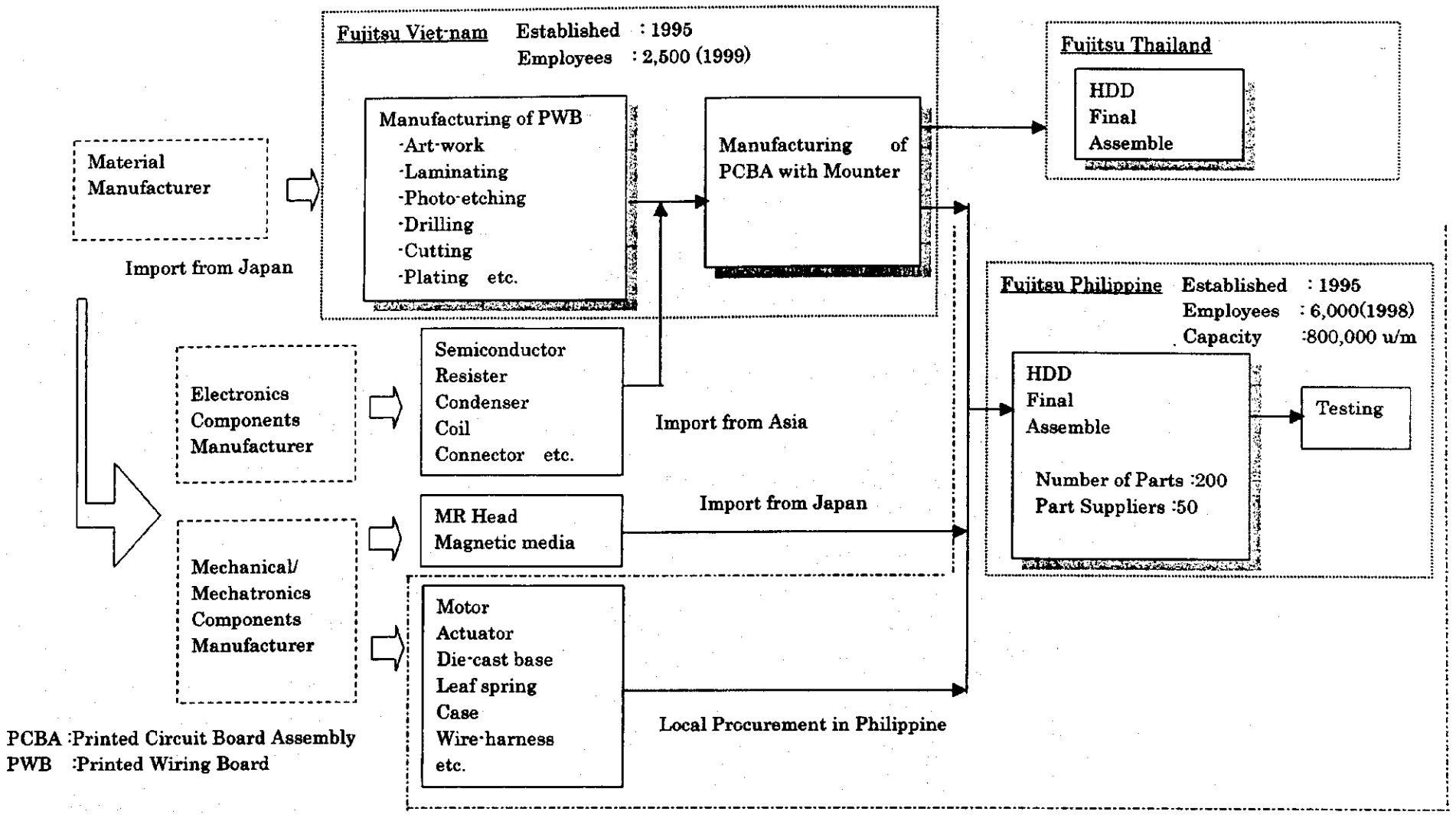
Fujitsu HDD assembly plant in the Philippines

* Fujitsu built a full-fledged plant for assembly-base production of 3.5-inch HDDs in the mid 1990s (beginning around 1995, Japanese firms developed extensive HDD assembly operations in the Philippines). Fujitsu invested about 30 billion yen in the initial phase (1995 - 1997) and was planning to invest an additional roughly 25 billion yen over the years 1998 - 2000. As of 1997, the plant had a monthly production capacity on the order of 500,000 units and employed about 6,000 (the capacity was to be boosted to 800,000 units in 1999).
* The plant depends on import from Japan for the key components (heads and media), but many of the other components are sourced from a variety of ASEAN locations. Heads undergo preprocessing in Japan and post processing and assembly in the Philippines. There is an in-house production of

some of the media at the Philippines plant.

* While there were apprehensions about the sourcing of components from within the Philippines, they were removed when Japanese and ethnic Chinese component manufacturers relocated plants from Singapore, which had been a major center of HDD production. The plant sources from roughly 500 firms in all and about 50 in connection with HDD assembly. Of these latter, Japanese (or Japanese-affiliated) firms account for about 85 percent, and ethic Chinese firms, about 15 percent; indigenous firms are represented by only one, a packaging material supplier.
* HDDs contain about 200 components (i.e., parts). The services of Japanese processing firms (including some joint ventures) that moved into the Philippines are utilized for die cast bases, covers, and other items not requiring high levels of precision and quality.
* Fujitsu also assembles HDDs (both 2.5- and 3.5-inch) in Thailand. Its PCB plant in Viet Nam supplies mainly these HDD plants in Thailand and the Philippines. The Thai plant went into operation first and had a higher yield initially, but the Philippines has a higher potential in terms of engineering skills, and the yields of the two are now basically on a par.

Figure 5 Fujitsu HDD production site development



Source: Nomura Research Institute