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The Korean Consumer Electronics Industry

Reaction to Antidumping Actions

Taeho Bark

Antidumping actions by importing countries do not protect their own consumers. What protects domestic consumers is competition — and the wise choice of opening domestic markets to international competition. It is Korean consumers who are paying for the development of Korean industry, not consumers in the countries that import Korean goods.

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This paper -- a product of the Trade Policy Division, Country Economics Department — is part of a larger effort in PRE to understand the economics of the emergence of "fairness" as a standard for regulating international trade, its implications for the continued openness of the international trading system, and its continued functioning as an important vehicle for development. This was funded by the research project on "Regulations Against Unfair Imports: Effects on Developing Countries" (RPO 675-52). Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Nellie Artis, room N10-013, extension 37947 (21 pages). October 1991.

A key element of Korea's industrial development strategy has been to maintain stringent import restrictions while promoting the development of a few large domestic firms. This strategy implies minimal competition in the domestic market, and allows Korean firms to maintain lucrative prices there. High profits from domestic sales give firms an important source of capital for investment. Across the economy as a whole, this policy strategy shifts the distribution of income from worker-consumers to entrepreneur-investors, helping to keep consumption low and investment high.

Korean companies have reacted to antidumping actions by lowering the prices they charge in Korea rather than by raising their export prices. Korean companies followed this course because they have significant market power in Korea but virtually no power to price other than competitively in any market open to international competition.

Specific concerns expressed by Korea's trading partners (notably the United States) have been complemented by internal pressures for a higher standard of living — for higher wages and lower import restrictions. The result has been to open the Korean market considerably to international competition.

But problems remain. First, the austerity program, introduced to deal with recent domestic macroeconomic problems and social concerns, created skepticism about Korea's commitment to liberalized trade policies. Second, Korean industrial groups, which own the major Korean producers of consumer electronics products, also own or control most of the retail outlets for consumer electronics and appliances. This distribution system dampens the effects of lowered import barriers and prevents Korean consumers from having access to the same variety and prices of goods as consumers in markets that are truly open to international competition.

Bark stresses two major lessons to be learned about antidumping policy. First, antidumping actions by importing countries do not protect their own consumers. What protects domestic consumers is competition — and the wise choice of opening the internal market to international competition. In the consumer electronics industry, the impact of U.S. antidumping actions has been to improve the situation of Korean consumers, with only minimal effect on U.S. consumers or producers.

There is a risk, however, that U.S. producers will push further, for negotiated export constraints. Such restraints would not only raise costs to U.S. consumers but, by removing the incentive for Korean companies to set lower prices at home, would impose a burden on Korean consumers as well.

Second, it is not consumers in the countries that import Korean goods who are paying for the development of Korean industry. Those consumers get what they pay for; there is little "excess" or "rent" in those prices. It is Korean consumers who are paying.

Finally, from the perspective of the exporting country, Bark strongly suggests the need to implement progressive import liberalization policies that will allow foreign competition in the Korean market. Import policy regimes in exporting countries have played a critical role in creating an environment that makes it possible for profit-maximizing firms to follow a price-discriminating marketing strategy. Progressive liberalization will eliminate the incentive for following such a marketing strategy as monopoly profits are slowly eroded.

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The Korean Consumer Electronics Industry: Reaction to Antidumping Actions

Taeho Bark

The growth of the Korean electronics industry

The modern Korean electronics industry began in 1958, with the production of radios on an assembly line. By 1988, production in the industry totaled $23.5 billion, of which almost two-thirds ($15 billion), was exported (table 1). Growth in the industry has been impressive, even by Korean standards: 35 percent annual growth in output since 1970, and even more rapid growth of exports. It is now the largest industry in Korea and generates more than one-quarter of the country's export earnings. The industry employs over half a million people, or 11 percent of Korea's industrial labor force.

In 1980, the Korean industry's share in the world electronics market (by value of production) was only 1.1 percent, which put it in fourteenth place (table 2). By 1988, its share had risen to 4 percent, making it the sixth largest electronics producer in the world. Its share in the consumer electronics market was considerably larger, however, at 14.9 percent, placing it second only to Japan. Korea was the third largest producer of parts and components (7.1 percent), following Japan and the United States. In industrial equipment production, however, which constitutes 66 percent of the world electronics market, Korea lagged considerably behind other producers, with a 1.2 percent share.

Like other industries in Korea, the electronics industry benefited from the government's development strategy of promoting industrialization for export.[1] To boost domestic production capacity and speed technology development, the government supported its domestic industry in various ways. Direct subsidies were provided for research and development. Tax exemptions, accelerated depreciation allowances, and preferential loans were given to manufacturing companies that invested in new facilities.[2]

The international dimensions of the Korean government's industry support program have also been important. The government has actively supported foreign investment to develop the intermediate parts and components industry, while prohibiting foreign investment in companies producing finished goods. And during the formative years of industrial development in Korea, imports of competing products were banned. On the export side, the government's promotion policies were equally extensive. Korean firms with letters of credit for exports automatically received access to preferential loans.[3] Export companies were exempted from various indirect taxes and received tax breaks for depreciation and tariff payments; they also had access to duty-free imports of capital goods. The Korean electronics industry was a major user of a free-trade zone that exempted exports from tariffs or taxes. Perhaps most important, the Korean government maintained a stable real exchange rate, which enabled Korean companies to weigh foreign against domestic costs and revenues on a stable basis that correctly reflected underlying scarcities.[4]

Characteristics of the Korean electronics industry

Oligopolistic market structure

The Korean consumer electronics industry includes more than 150 small firms but is dominated by three: Gold Star Co., Ltd., the flagship company of the Lucky-Gold Star Group; Samsung Electronics Co., Ltd., the fastest growing part of the Samsung Group; and Daewoo Electronics Co., Ltd.,[5] whose position in the Daewoo Group is growing increasingly more important. Each of the parent industrial groups is among *Fortune* magazine's list of the top fifty firms outside the United States (Jun 1988, 38).

Through the 1980s, the big three accounted for virtually 100 percent of Korean production of all major consumer electronics products: washing machines, refrigerators, color television sets, video cassette recorders, and microwave ovens (table 3). Gold Star and Samsung each have about twice the

output of Daewoo. Smaller firms tend to specialize in smaller items, such as audio tapes, audio recorders, calculators, or wrist watches.

Lack of foreign competition in the home market

Imports of consumer electronics goods were prohibited until the 1980s. Beginning in 1982, imports of color TVs were allowed, but each import shipment required the recommendation of the Korean producers association. Later in the 1980s, imports of other consumer electronics products were allowed on the same basis (table 4). The recommendation requirement was lifted in 1986 for color TVs and microwave ovens and somewhat later for other products, so that imports were restricted only by a customs tariff. Tariffs on consumer electronics products were 50 percent ad valorem in 1981 and 40 percent in 1983. As late as 1986, the tariff ranged from 35 percent to 40 percent; by 1990, it was down to 15 percent to 20 percent.

Import restrictions, supported by the ban on foreign producers of consumer electronics in Korea, protected the market position of the Korean big three (table 5) and allowed them to charge monopoly prices in Korea. The domestic market thus served as a "cash cow" for the Korean electronics industry, providing it with a substantial financial base for its ventures into international markets.

Relative importance of protection and industrial policies

A simple calculation gives a notional idea of the importance to the Korean electronics industry of import restrictions and other protective measures relative to the support provided through direct subsidies and tax breaks. In 1985, the tariff on consumer electronics products was 40 percent. Since other, more direct import controls were still in effect, the tariff rate can be taken as a *minimal* measure of the degree of protection. Because of the noncompetitive structure of the Korean market, Korean producers could collect on their domestic sales the entire 40 percent premium over the competitive prices they would have to charge in export markets, where they had no monopoly

power. That premium, collected on the one-third of output sold domestically, amounted to a 20 percent bonus on the two-thirds of production that was exported. In other words, Korean producers collected from *Korean* consumers a 20 percent bonus on each TV set, video cassette recorder, microwave oven, or other electronic product they sold to *foreign* consumers.

Evidence from countervailing duty cases provides a measure (an *inflated* measure, some would argue) of the value of direct bonuses, tax benefits, and other programs that might be construed as subsidies. In the 1980s, firms in the United States and in other developed countries were searching for ways to restrain Korean exports, and countervailing duty cases were one of the methods they used. While there were no countervailing duty cases against Korean consumer electronics firms, cases against other Korean firms that received similar subsidies (steel, for example) resulted in determinations of subsidy margins of between 1 percent and 3 percent.[6] That means, at a very conservative estimate, that the transfer from Korean consumer-taxpayers to Korean producers through restrictions on import competition were worth at least four or more times as much to Korean producers as direct subsidies and tax advantages.[7]

Lack of international market power

The international market for consumer electronics is very competitive. Jun (1988) lists twenty producers that sell color TV sets in the U.S. market under their own brand names. But even this understates the competitiveness of the market because there are also major retailers, such as Sears, K-Mart, and J.C. Penny, that sell consumer electronics under their own brand name.

The intensity of competition in the industry is well illustrated by the change in relative prices. Over the twenty years 1967-86, the U.S. consumer price index more than tripled. Over the same period, the prices of TVs and tape recorders actually fell, in nominal terms, while the prices of radios and sound equipment went up by less than 10 percent. This competition in the industry has been a great boon for consumers.

Not only do Korean companies face intense competition in world markets, but they compete in the most price-sensitive segment of the market. Companies such as Bang & Olufson, Sony, Philips, and Matsushita (Panasonic) maintain their position in the market through brand identity. Korean companies operate at the other end of the spectrum, where brand identity is minimal (or nonexistent, in the case of producers supplying the large retailers) and price is the major dimension of competition. Korean firms have relied heavily on the original equipment manufacturers system for their exports because their technology is still at a relatively low level, most parts and intermediate components have to be imported, and they have relatively little international marketing experience.[8] Only recently have the Korean big three firms begun to establish their own brand names in international markets. In their niche in the price-sensitive segment of the market, Korean companies compete directly with companies such as Tatung and Sampo of Taiwan and Sanyo and Toshiba of Japan.[9] Despite the intense competition, Korean firms have managed to gain relatively high market shares for color TV sets and video cassette recorders (table 6).

Thus an abundance of competitors and minimal brand identity mean that Korean firms must bring themselves into accord with the prices the market sets. They are price-takers, not price-makers in international markets, where they compete with many other companies as well as among themselves (Jun 1988, 31).

Antidumping actions against Korean companies

Cases against Korean consumer electronics firms

During the 1980s, Korea supplied less than 2 percent of world exports but was a respondent in 6 percent of the world's antidumping cases.[10] The nature of Korea's development policies and the success of its exporters explain the high incidence of case against Korea. The development policies allow Korean firms to maintain high internal prices, well above the

competitive level they must match in international markets, while the export success of Korean firms tends to displace local producers -- to cause "injury" as it is defined in GATT and national trade remedies laws. Not only consumer electronics products, but steel, chemicals, automobile tires, batteries, and most other Korean manufactured exports have come under antidumping threat or action.

Fifteen antidumping cases were initiated against Korean electronics exports between 1973 and 1989, and nine cases resulted in the imposition of duties. Of the nine, four were imposed by the European Community (on video tapes, video cassette recorders, compact disk players, and small color TVs), two each by Australia (fluorescent lamps and audio tapes) and the United States (color TVs and color picture tubes), and one by Canada (microwave ovens). I examine the cases of color TV sets, microwave ovens, and video cassette recorders because of their particular importance in the Korean electronics industry and to the Korean economy.

Reasons for the antidumping actions

The major reason for the initiation of antidumping actions against Korean consumer electronics products seems to have been a rapid expansion in exports during the year preceding the action (table 7). In other words, import-competing firms in developed countries demanded antidumping restrictions against Korean exports as they saw their domestic market shares erode with the onslaught of Korean exports.

In most of the antidumping cases initiated against Korean consumer electronics products, international unit values were lower than domestic unit values. I do not intend here to decompose and analyze these price discrepancies to determine whether the charges of dumping were "justified." Rather, I argue that two characteristics of the Korean consumer electronics industry make price discrepancies between domestic and international markets nearly inevitable: an oligopolistic structure in the domestic market and protection from imports. In this situation of segmented markets, Korean

companies would naturally charge a higher markup at home than abroad to maximize profits. In this classic case of international price discrimination, it was the high price in the domestic market, not the low price in the foreign market, that led to the imposition of antidumping restrictions.[11]

Reactions in Korea to the antidumping cases

Awareness of high domestic prices

The United States imposed the first antidumping duties on imports of Korean color TV sets from the big three producers in 1983. At the first annual review of these duties in 1984, the preliminary dumping margins against all three companies were substantially increased -- the margin levied on TVs from Samsung Electronics was raised to 52.5 percent. The U.S. antidumping action against Korean color TVs came as a great shock not only to the Korean electronics industry, but also to the Korean government and the general public. This was the first serious restriction against a major Korean export, and it was imposed by the United States, which Koreans had long regarded as a friend and source of economic assistance.

The U.S. antidumping cases also awakened Korean consumers and politicians to the fact that Korean consumers were being asked to pay considerably higher prices than foreigners for Korean products. This discriminatory pricing became a hot political issue, leading eventually to a special hearing by the Committee on Trade and Industry of the Korean National Assembly in September 1984.[12] At the hearing, the trade minister was soundly criticized for allowing the situation to reach the point where U.S. restrictions were imposed against Korea's major export. Korean conglomerates, particularly Lucky-Gold Star, Samsung, and Daewoo, were also severely criticized for charging higher prices for the same good in the domestic market. During this hearing, for perhaps the first time, the welfare of Korean consumers was put ahead of that of special interest groups and large

corporations. A major recommendation of the committee was to lower the domestic prices of color TV sets.

The response of the Korean electronics firms

What is the rational response of companies in the position of the Korean consumer electronic producers? They have significant control over their prices in Korean markets and so could easily make adjustments there. But in their export markets, they are at the mercy of market forces. To raise their export prices by the amount necessary to avoid antidumping duties would be to price themselves out of these markets. Thus the better business alternative would seem to be to reduce prices in Korea -- which provides, after all, only one-third of their sales.

The evidence supports the contention that the major adjustment Korean producers would make would be to the prices they charged in Korea. Take the case of color TV sets. Before the U.S. antidumping case, export prices (approximated by unit values) had been declining sharply -- by 13 percent from 1980 to 1983. The antidumping order did not change this downward trend: export prices fell another 6 percent from 1983 to 1984 -- and 12 percent more by 1988. As for prices in Korea, their trend before the U.S. antidumping case was level -- the same in 1983 as in 1980. But when the Korean companies began to adjust to reduce the bite of the antidumping order, Korean prices began to fall. By 1985, they were 19 percent below their level in 1983; by 1988, they were 30 percent below.

Similar patterns are apparent in the cases of microwave ovens and video cassette recorders. After Canada imposed antidumping restrictions on Korean microwave ovens, Korean export prices declined slightly -- by 8 percent from 1981 to 1983. And that downward trend continued: export prices fell another 11 percent from 1983 to 19[illegible] and 22 percent more by 1987. However, Korean companies significantly reduced domestic prices after the Canadian antidumping restriction. By 1984, Korean prices were 20 percent below their 1981 level, and by 1987, they were 45 percent lower. In the case of video cassette

recorders, Korean export prices had been increasing slightly before the EC antidumping restriction -- by 5 percent from 1985 to 1987. After the antidumping restriction, export prices did not change; they were the same in 1988 as they had been in 1987. Prices in Korea, however, had been declining sharply even before the EC antidumping actions -- by 35 percent from 1985 to 1987. After the antidumping order, domestic prices fell another 12 percent between 1987 and 1988.

What about the quantity adjustments of Korean consumer electronics companies facing antidumping restrictions? In the case of color TV sets, Korean exports to the United States actually increased for several years after they were first hit with antidumping restrictions in 1983; not until 1987-89 did they register a decline. However, that decline may be attributable more to the appreciation of the Korean won and high domestic wages in Korea than to the antidumping measures.[13] But it is important to note that when Korea's exports of color TV sets to the United States came under antidumping restriction, its color TV exports to other markets increased substantially. Exports to the EC increased so dramatically that the EC brought antidumping charges against Korean color TVs in 1987.

The same thing happened with Korea's exports of microwave ovens. After Canada imposed antidumping restrictions against Korean microwave ovens in 1982, there was no evident decline in the volume of Korea's exports to Canada. Rather, as in the case of color TVs, the result was a substantial diversification of markets. And, again as in the case of color TVs, as exports to the EC expanded rapidly, the EC brought antidumping charges against imports of Korean microwave ovens in 1986. These cases, however, ended with a negotiated voluntary export restraint. Only for Korea's exports of video cassette recorders to the EC was there an immediate decline in export volume in the period following imposition of antidumping measures. Although this decline could have been due in part to the appreciation of the won and rising wages in Korea, which began in 1988, this is a clear case in which Korea's

export performance to the import-restricting country has been seriously damaged.

Recent import liberalization in Korea

By the early 1980s, it had become increasingly apparent that Korea needed to make a fundamental change in its economic development policies.[14] High import barriers had not only become a source of friction with Korea's trading partners, the barriers were also restraining economic growth in Korea by raising the cost of manufacturing inputs and encouraging inefficiency. And the high costs of both domestic and imported products had also placed a heavy burden on consumers. Korea came to realize that its economic development could be sustained only in parallel with a greater opening of its markets.

At the same time, Korea's trading partners were pressuring Korea to implement broad market liberalization measures, especially after Korea began to record a surplus in its balance of payments in 1986. And antidumping restrictions and voluntary export restraint were not the only measures that Korea's trading partners were using in the 1980s to induce Korea to change its policies. The United States, in particular, exerted pressure on the Korean government to open up its markets for agricultural products, wine, tobacco, and beef. The United States also complained about the difficulty of getting an import license, complicated import procedures, and the high tariff levels.

Spurred by such foreign pressure and by the realization that economic growth required greater openness, Korea embarked on an ambitious program of trade liberalization in the 1980s. Especially important were changes in import licensing, import procedures, and tariff rates.

■ *Import licenses*. A license is required to import goods into Korea. Before the reforms of the 1980s, fewer than 60 percent of imported products were eligible for automatic license approval; the rest required prior review and approval. By 1990, however, licenses were granted automatically for 96

percent of the items in Korea's harmonized tariff classification system -- and for virtually all (99.7 percent) manufactured goods.

Most of the few remaining items for which approval is not automatic are agricultural products. And even for these products, licensing requirements are rapidly being removed, despite significant domestic opposition to liberalization of this sensitive sector. Between 1989 and 1991, automatic license approval rose from 72 percent to 85 percent of agricultural products. By 1994, that figure will rise to 92 percent.

In October 1989, Korea became the first developing country to announce its intention to relinquish recourse to article XVIII, clause B of the GATT code, which permits developing countries to apply import protection measures in response to balance of payments problems. Based on that decision, the Korean government will either eliminate its remaining import controls or conform to the GATT provisions by 1997.

■ *Simplified import procedures*. The Korean government has also sought to streamline import procedures and reduce the technical barriers to imports by reducing or removing such obstacles as the import surveillance system and by completely revising technical standards and testing procedures.

The import surveillance system, introduced in 1979 to lessen the impact on domestic industries of an unexpected surge in imports, was abolished at the end of 1988. Since 1987, the Korean government has also eliminated import restrictions on more than 800 items covered by twenty-five "special laws" designed to safeguard public health and welfare. Various laws were also reviewed with an eye toward reducing the pre-import recommendation requirement for pharmaceuticals, fertilizers, and agricultural seeds. Quality certification requirements and testing procedures for industrial goods were simplified, and certain import-related fees were eliminated. Testing procedures and technical standards in other areas have been simplified or relaxed as well, and further action is planned along these lines.

■ *Tariff reduction*. Korea has launched two successive five-year tariff reduction plans, the first beginning in 1984. Korea lowered its average tariff

rate on all goods from 23.7 percent in 1984 to 11.4 percent in 1990, a drop of more than 50 percent. Progressive reductions through 1994 will lower the average tariff rate to 7.9 percent, or one-third the rate in 1983.

Recent trade issues

Despite resistance from politicians and the general public, the Korean government has remained committed to liberalizing its domestic markets.[15] Since the government embarked on its ambitious liberalization program in the late 1980s, Korea's balance of payments began to register deficits -- and those deficits are growing larger. Coming into 1991, Korea's trade balance with the United States also seemed to be turning from surplus to deficit.

However, Korea's major trading partners are skeptical about its commitment to market liberalization, in part because of a misunderstanding about the Korean government's role in the "austerity campaign." The austerity program was intended to address domestic social imbalances resulting from rising wages and consumption. The government's attempt to restrain excessive consumption, which was having a detrimental effect on the national savings rate, was interpreted by Korean businessmen and lower-level government officials as a ban on imports of consumer goods. To counteract these misperceptions, the Korean government has tried to publicize the program's goals and to ensure that the program is implemented as intended.

Another contentious recent trade issue concerns the internal distribution network in Korea. In the consumer electronics and appliance sector, as an example, most retail outlets are controlled by a few large conglomerates. Since they are naturally reluctant to sell imported goods that compete directly with their own products, imports have a difficult time reaching the domestic market. To improve the distribution system, the Korean government has undertaken a three-phase plan to liberalize the system over five years. The first phase, implemented in 1989 and 1990, provides for foreign investment in wholesale distribution enterprises. Under the second

phase, set to begin in July 1991, the Korean government will dismantle barriers to foreign investment in retail distribution, opening that sector to foreign competition. In the third phase, Korea will enact further measures to liberalize foreign access to the retail market.

Summary and conclusion

A key element of the Korean government's industrial development strategy has been to maintain stringent import restrictions while promoting the development of a few large domestic firms. Together, these two characteristics imply minimal competition in the Korean market and allow Korean firms to maintain lucrative prices there. From the perspective of a firm, high profits from domestic sales are an important source of capital for investment. From the perspective of the economy, this policy strategy shifts the distribution of income from worker-consumers to entrepreneur-investors, helping to keep consumption low and investment high.

The major finding of this study is that the reaction of Korean companies to antidumping actions has been to lower the prices they charge in Korea rather than to raise their export prices. Korean companies followed this course because they have significant market power in Korea, but virtually no power to price other than competitively in any market open to international competition.

The specific concerns expressed by Korea's trading partners, most notably the United States, have been complemented by internal pressures for a higher standard of living -- for higher wages and lower import restrictions. The result has been a considerable opening of the Korean market to international competition.

Problems remain, however. The austerity program, introduced to deal with recent domestic macroeconomic problems and social concerns, created skepticism about Korea's commitment to liberalized trade polices. A second problem concerns the distribution network in Korea: Korean industrial groups, which

own the major Korean producers of consumer electronics products, also own or control most of the retail outlets for consumer electronics and appliances. This system dampens the effects of lowered import barriers and prevents Korean consumers from having access to the same variety and prices of goods as consumers in markets that are truly open to international competition.

This study provides two major lessons about antidumping policy. One is that antidumping actions by importing countries do not protect their own consumers. What protects domestic consumers is competition -- and the wise choice of opening the internal market to international competition. In the consumer electronics industry, the impact of U.S. antidumping actions has been to improve the situation of Korean consumers, with only minimal effect on U.S. consumers or producers. There is a risk, however, that U.S. producers will push further, for negotiated export restraints. Such restraints would not only raise costs to U.S. consumers but, by removing the incentive for Korean companies to set lower prices at home, would impose a burden on Korean consumers as well.

A second lesson is that it is not consumers in the countries that import Korean goods who are paying for the development of Korean industry. These consumers get what they pay for -- there is little "excess" or "rent" in those prices. It is Korean consumers that are paying.

Finally, from the perspective of the exporting country, this study strongly suggests the need to implement progressive import liberalization policies that will allow foreign competition in the domestic market. Import policy regimes in exporting countries have played a critical role in creating an environment that makes it possible for profit-maximizing firms to follow a price discriminating marketing strategy. Progressive liberalization will eliminate the incentive for following such a marketing strategy as monopoly profits are slowly eroded.

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Table 1 Export, production, and employment data for the electronics industry in Korea, selected years, 1970-88

Item	1970	1975	1980	1985	1988
Exports (US$ bil)					
Total	0.835	5.081	17.505	30.283	60.696
Electronics industry	0.055	0.582	2.015	4.532	15.162
Share (%)	6.6	11.5	11.5	15.0	25.0
Production (US$ bil)					
GNP	8.1	20.8	60.3	83.7	169.2
Electronics industry	0.1	0.9	2.9	7.5	23.5
Share (%)	1.2	4.3	4.8	9.0	13.9
Employment (1000 people)					
Manufacturing	1,268	2,175	2,955	3,504	4,637
Electronics industry	29	107	165	270	512
Share (%)	2.2	4.9	5.6	7.7	11.0

Note: Values are in current prices.
Source: Electronic Industries Association of Korea (1989).

Table 2 Share of the Korean electronics industry in world production, 1980 and 1988 (billions of U.S. dollars)

	1980				1988			
Country	Total	Consumer equipment	Industrial equipment	Parts and components	Total	Consumer equipment	Industrial equipment	Parts and components
World	261.5	38.3	161.0	62.2	578.3	61.9	378.9	137.5
Korea								
Value	2.9	1.1	0.4	1.4	23.5	9.2	4.6	9.7
Share (%)	1.1	2.9	0.2	2.2	4.0	14.9	1.2	7.1
United States	104.3	10.6	68.3	25.4	196.8	5.2	151.1	40.5
Japan	42.7	14.4	15.1	13.2	166.9	32.0	78.8	56.1
West Germany	24.6	3.6	15.9	5.1	39.7	4.0	27.8	7.9
France	17.5	1.4	13.2	2.9	26.6	1.1	21.0	4.5
United Kingdom	17.1	1.2	12.9	3.0	25.8	1.5	20.2	4.1
Italy	8.4	1.0	6.3	1.1	15.1	0.9	12.2	2.0
Netherlands	5.3	0.4	3.5	1.4	8.2	0.2	6.2	1.8

Source: Electronic Industries Association of Korea (1989).

Table 3 Production shares of major Korean electronic companies, selected products, 1988 (percentages)

Product	Rank 1st Company	1st Share	2nd Company	2nd Share	3rd Company	3rd Share	Total
Color TV sets	Samsung	33.0	Gold Star	31.7	Daewoo	17.5	82.2
Black and white TV sets	Gold Star	32.2	Samsung	23.9	Daewoo	8.7	64.8
Video cassette recorders	Samsung	46.9	Gold Star	38.3	Daewoo	14.8	100.0
Microwave ovens	Samsung	42.7	Gold Star	40.0	Daewoo	17.3	100.0
Refrigerators	Gold Star	47.6	Samsung	36.7	Daewoo	15.7	100.0
Washing machines	Gold Star	48.7	Samsung	35.1	Daewoo	16.2	100.0

Source: Pae, Yoon, and Cho (1990).

Table 4 Import liberalization process for major consumer electronic products in Korea in the 1980s

Item	No imports allowed	Recommendation required for imports	Complete import liberalization
Color TV sets	up to 1981	from 1982 to 1985	since 1986
Microwave ovens	up to 1983	from 1984 to 1985	since 1986
Compact disk players	up to 1988	--	since 1988
Video cassette recorders	up to 1983	from 1984 to 1988	since 1989

Source: Ministry of Trade and Industry.

Table 5 Korean imports of electronic products, 1983-89
(millions of U.S. dollars)

Year	Color TV sets		Video cassette recorders		Microwave ovens		Compact disk players	
	Value	Ratio of imports to domestic production (%)	Value	Ratio of imports to domestic production (%)	Value	Ratio of imports to domestic production (%)	Value	Ratio of imports to domestic production (%)
1983	9.6	1.0	0.5	0.4	na	--	na	--
1984	5.4	0.6	18.0	8.4	na	--	na	--
1985	3.9	0.5	12.7	4.0	na	--	na	--
1986	3.7	0.4	17.5	2.3	na	--	na	--
1987	3.5	0.3	21.2	1.9	0.4	0.06	na	--
1988	5.1	0.3	30.8	2.0	0.2	0.02	0.2	0.2
1989	17.6	1.0	30.6	1.7	1.4	0.2	0.08	0.06

Na means that data are not available.
Sources: Electronic Industries Association of Korea, *Statistics of Electronic an Electrical Industries*, various issues, and *Statistics of Electronic and Electrical Product Imports*, various issues.

Table 6 Korean electronic firms' share in the world market for color TV sets and video cassette recorders, 1987 and 1988
(percentages)

Market	1987		1988	
	Color TV sets	Video cassette recorders	Color TV sets	Video cassette recorders
United States	13.4	14.6	11.7	19.3
European Community	12.0	20.9	11.3	14.1
Japan	2.4	1.6	7.0	4.1
World	13.2	14.6	17.6	19.0

Note: Market shares are based on values.
Source: Electronic Industries Association of Korea (1989).

Table 7 Change in volumes and unit values of Korean consumer electronics exports in year before and during initiation of antidumping action
(percentages)

Item	Country or trade group	Year before initiation of andidumping action		Year of initiation of antidumping action	
		Volume	Unit value	Volume	Unit value
Color TV sets	United States	13.9	2.3	207.0	-11.8
Color TV sets	Canada	91.6	-3.0	-27.0	-17.8
Color TV sets	European Community	213.5	14.6	121.0	1.3
Microwave ovens	Euroepan Community	546.0	-17.3	388.0	-8.6
Video cassette recorders	European Community	363.2	0	287.3	5.2

Source: Electronic Industries Association of Korea, *Statistics of Electronic and Electrical Industries*, various issues.

Notes

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1. This discussion of government industrialization and development policy draws heavily on Lee, Kim, and Park (1985, 236-69) and Electronic Industries Association of Korea, *Handbook of Korean Electronics: 1988-1989* (1989, 371-448).

2. The Korean government designated the electronics industry as a "strategic export industry" and enacted the Electronics Industry Promotion Act in 1969, entitling the industry to various government subsidies. However, interest differentials for preferential loans were eliminated after 1982, and the Electronics Industry Promotion Act was integrated into the Industrial Development Act in 1986, whose policy measure are industry-neutral rather than industry-specific.

3. The conglomerates have been ineligible for foreign trade financing since February 1988.

4. In March 1990, the Korean government introduced the "market average rate" system of exchange rate determination. The won/dollar exchange rate at the beginning of each business day is determined by the weighted average rate of interbank transactions of the preceding business day. During the business day, the exchange rate can fluctuate within a certain band.

5. Taihan Electric Wire Company, which was the third largest firm in the Korean industry in the 1970s, was acquired by Daewoo in 1983 (Jun 1988).

6. Nam (1987) recorded the average rate of countervailing duties against Korean products as 2.4 percent.

7. Similar calculations by Finger and Messerlin (1989) for the OECD countries found that import restrictions provide 90 to 95 percent of government assistance to the manufacturing sector.

8. According to Kim, Pae, and Yoon (1989), more than 50 percent of Korean electronic firms were exporting through the original equipment manufacturers system.

9. Sanyo has production facilities in China, Hong Kong, Indonesia, Malaysia, Philippines, Taiwan, Thailand, and Singapore; Toshiba produces in four of the same countries.

10. Korea's share of world exports was 2 percent in 1989, up from 1.1 percent in 1980 (GATT 1990, vol.2, 3). The figure for antidumping cases is from Finger and Olechowski (1987, 266) and covers 1980-86.

11. Deardorff (1989) points out that the import barriers within the exporting country can facilitate the exporter's monopoly power and thus ultimately induce the exporter to dump in the international market.

12. See *Korea Daily* (*HanKook Ilbo*), September 26-27, 1984, for an account of the hearings.

13. During 1987-89, the nominal value of the Korean won appreciated by more than 25 percent and the nominal wage rate increased by more than 45 percent.

14. This section draws heavily on Ministry of Trade and Industry (1991). The program to liberalize Korea's capital and service markets is not discussed in this paper.

15. Issues related to the opening of financial markets and to agricultural products and intellectual property rights are not addressed in this paper.

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