



FDI IN THE KOREAN AUTO INDUSTRY

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Abstract

Two years after the Asian financial crisis, the Korean automotive industry had recovered the pre-crisis levels of production and export. Since then, it has further developed. This paper examines the factors behind this development and focuses on the impact of FDI on the Korean car industry, including both carmakers and suppliers.

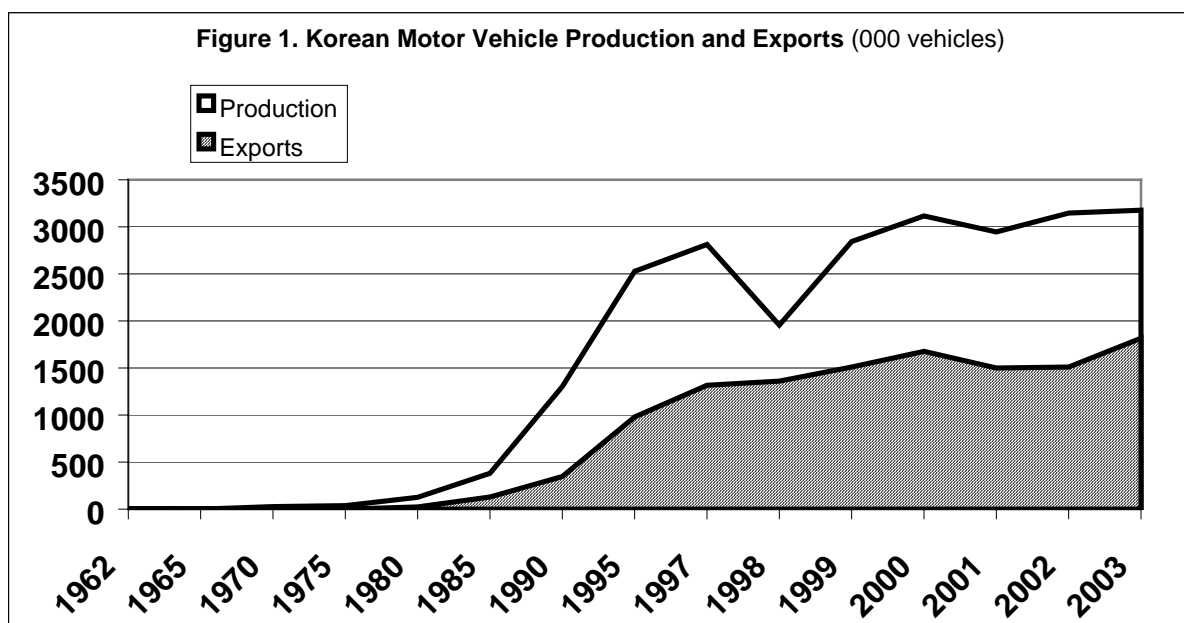
The Korean auto assemblers and component supplier benefit from the increase of inward FDI. Multinationals transfer various assets to their Korean subsidiaries, including capital and technology. This re-organization creates new opportunities for Korean suppliers to increase exports within global networks.

But the FDI in Korea has slowed down, due in particular to labor market rigidities and keen competition with China. Moreover, structural weaknesses of the Korean component suppliers lead multinationals to turn to other manufacturing locations. China in particular offers both low wages and a large potential market.

The Context

Few industries have undergone as dramatic a transformation in as short a period as the Korean auto industry has done since 1997. Rapid expansion of capacity during the 1990s, financed by ever-increasing levels of debt, had rendered Korea's auto assemblers vulnerable to a market downturn even before the upheavals generated by the financial crisis. At the end of 1996 the debt to equity ratio of Ssangyong Motors, a company that specializes mainly in four-wheel drive vehicles, stood at 10,496%. The average debt ratio for auto producers increased from 416% in 1995 to 530% in the following year, substantially above the (very high) average level of 300% for all manufacturing companies (*Korea Herald*, May 10, 1997). Samsung Motors was widely believed to have paid substantially above a "fair" market price for the \$2.5 billions plant that it created in the mid-1990s with technology licensed from Nissan. Ssangyong and Kia were alleged to have made no profits in their auto operations throughout the 1990s. Some analysts suggested that Daewoo Motors had never made a profit if this were to be assessed by any normal accounting standards (the company had survived through taking on further loans and through cross-subsidization within the Daewoo chaebol). Such allegations were impossible to substantiate because of the lack of transparency of accounting within Korea's largest corporations.

The Korean auto industry had become the fifth largest in the world by the mid-1990s, the first country since Japan to make a significant breakthrough in world markets in this important manufacturing sector – and the only less developed country to establish a significant presence in the global industry through the promotion of domestically-owned companies (see Figure 1). Auto production grew on average 22.9% between 1975 and 1996. It was in the period from 1985 onwards, however, that production expanded particularly rapidly.



Source: Data from Korea Automobile Manufacturers Association (KAMA).

FDI in this sector, as in most other parts of the Korean economy before the financial crisis, was limited (Mardon 1990, Sachwald 2003a). Korean auto assemblers had depended heavily on foreign technology in their push to develop a full range of vehicles quickly (Lautier 2001). For the most part, however, access to this technology was obtained through licensing agreements rather than through the acceptance of equity investments by foreign partners. This statement applied particularly to Hyundai, whose management resisted any equity partnership that would impinge on its autonomy (Kim 1997). Foreign participation in Hyundai was limited to less than 5% of total shareholding, held exclusively by Mitsubishi. Kia had depended more heavily on foreign alliance partners but their combined shareholding amounted to only 17% of the firm's stock (9.4% held by Ford; 6.7% by Mazda). Daewoo Motor had begun, unusually, as a 50/50 joint venture with General Motors (GM), but the partnership was dissolved in 1993 after Daewoo grew increasingly unhappy at GM's unwillingness to agree to its ambitious plans for foreign expansion.¹

Foreign investment in the auto parts industry was also limited in scope. The assemblers preferred to manufacture parts in-house or to rely on imports for those technologically sophisticated components that they lacked the capacity to produce themselves. Where foreign components producers had invested in Korea, the government had required them to enter into joint ventures with domestic companies.² Two consequences flowed from these arrangements. First, foreign partners were often unwilling to deploy their most advanced technologies in Korea for fear that these would leak to local companies and potential

¹ For further discussion of the history of the industry see Ravenhill (2003) and Lautier (2001).

² Clifford (1998: 121-2) provides an illustration of the manner in which the Korean government assigned local partners to foreign companies. After a US diplomat voiced GM's concerns at the poor performance of its original joint venture partner, Shinjin, the government, without consulting GM, told the American company that Daewoo would be its new partner.

competitors. Second, foreign companies were unable to organize production in the way that they wished, often lacking control over employment practices and the management of day-to-day operations – and sometimes having to cope with local partners that lacked expertise in this industrial sector.

Weaknesses in the auto industry were evident before the financial crisis. The success of Korean companies in international markets had come primarily through competition on price rather than on quality. After an initial success in North America in the second half of the 1980s when the Hyundai Excel became the best selling imported model, the poor reputation that Korean cars acquired for their lack of reliability and for paucity of advanced features led to a falling off of sales in the markets of industrialized countries. Korean assemblers became increasingly dependent on sales in less developed markets (sales to Western Europe and the United States accounted for only 43% of total exports in 1996).³ They specialized in the export of small, inexpensive cars (often in kit form for local assembly) where profit margins were razor thin or negative.

A study by the management consultants McKinsey and Company (McKinsey Seoul Office 1998) suggested that three critical factors had prevented Korean auto assemblers from reaching world-class levels of performance:

- an inability to implement lean production;
- an inappropriately high rate of product proliferation; and
- difficult manufacturing processes due to insufficient consideration of manufacturing and assembly principles in the design process.

The study estimated that the productivity of labor and capital in auto assembly in Korea was less than half of that in US assemblers; considering labor productivity alone, the Korean figure was only slightly more than one third of that of Japanese car companies.

Many of the quality control problems in turn had their roots in weaknesses in the auto parts industry. Small and medium enterprises dominated components production. They often lacked the technologies needed to ensure consistent quality of product. The feudal organization of the parts industry, in which most producers were tied to a single assembler, combined with a lack of standardization of components across models (Korean assemblers had failed to keep up with international best practice by building a range of models on the same platform) to preclude the realization of economies of scale. The small scale of most Korean parts producers together with their lack of research and design capacity led to lower participation by suppliers in Korea than their counterparts in Japan in the design process. In

³ Data from Korea Auto Industries Cooperative Association.

turn, this absence of supplier participation caused lead times for the development of new parts to be longer than in Japan. Unlike their Japanese counterparts, few Korean companies had the capacity to design parts independently: production usually was to specifications provided by the assemblers.

In short, despite the tremendous achievements of the Korean chaebol in building an auto assembly industry, the lack of foreign participation in the industry posed significant costs, particularly in inhibiting the realization of international benchmarks in quality control and in productivity. The heavy indebtedness of assemblers left them vulnerable to the downturn in demand that occurred in the run-up to the financial crisis: two of the assemblers, Kia and Ssangyong, declared bankruptcy even before the onset of the crisis in November 1997. Samsung Motors followed shortly thereafter while the crisis also exposed the fragility of the financial pyramid that underlay the Daewoo chaebol. It was the last of the four domestic assemblers to succumb, leaving Hyundai as the only solvent company in the industry. In turn, the bankruptcies of the assemblers and their failure to pay their bills caused severe financial problems for many of the small and medium enterprises in the parts sector. Meanwhile, many of the larger auto parts producers that were affiliated with various chaebol suffered when their parent companies experienced difficulties in the crisis.

The Financial Crisis and FDI in the Auto Industry

The financial crisis accelerated the opening to foreign investment in Korea.⁴ The domestic automobile market, the second largest in Asia after that of Japan, held obvious attractions for foreign auto companies that had previously largely been excluded from participation either through investment or – especially in the case of assemblers – through imports. Despite the reduction in auto tariffs in the 1990s, following sustained pressure from Korea's trading partners, foreign penetration of the domestic car market was minuscule—only 15,000 cars were imported in 1996, equivalent to 1% of the local market.⁵ And Korea, with its geographical proximity to China, had the potential to serve as a regional base for companies seeking to penetrate the rapidly growing Chinese market. The motor industry was one of the largest manufacturing sectors in Korea; the assemblers alone employed more than 100,000 workers. Automobiles were the second most valuable of Korean exports.

Against these obvious attractions, however, potential investors had to weigh several offsetting factors: the high levels of debt carried by Korean companies, compounded by the

⁴For further discussion see Sachwald (2003a) and Beck (2000).

lack of accounting transparency that frequently made it difficult for foreigners to ascertain the true state of company finances; the relative technological backwardness of the industry; and the low levels of labor productivity and long history of poor labor-management relations.

The Assemblers

Bankruptcy and foreign takeover

The government's response to the bankruptcy of Kia provided little reassurance to potential foreign investors. Contending views within the bureaucracy produced paralysis as to how to respond to Kia's bankruptcy. After several months of indecision, the Kim Young Sam government announced in October 1997 that it would place Kia Motors and Asia Motors under court receivership, and that the state-run Korea Development Bank's loans to Kia would be converted to equity, making the Bank, with 30% of its total equity, Kia's largest shareholder (*Korea Herald*, October 23, 1997). The Minister of Finance and Economy asserted that the government had no intention of allowing Kia to be taken over by a third party, but would run the company as a successful state enterprise (*Korea Herald*, October 27, 1997).

The deepening of the economic crisis (with the collapse of the won in the following month), and the election of the opposition leader, Kim Dae Jung, as President, led to a reversal of policy. The government eventually agreed to auction off Kia's assets. The manner in which the government conducted the auction, however, raised doubts about the new government's willingness to permit the take-over of Korean assets by foreign companies. The initial auction attracted bids from the other three Korean auto producers, Hyundai, Daewoo, and Samsung, and from Kia's US partner, Ford. But two auction rounds were aborted because all bidders refused to take on the volume of Kia's debts that creditors (essentially the Korean state) required. Ford, which failed to participate in the second auction, alleged that the process was less than transparent. Accusations flew that the government conspired with Kia to inflate the value of its assets and to understate the size of its debts. Foreign commentators saw delays in resolving the issue as a sign of the government's continuing reluctance to make the necessary painful decisions in economic restructuring.⁶ Kia was eventually sold to the highest bidder, Hyundai, amidst allegations that economic nationalism had prevailed over a more rational solution of selling the troubled automaker to its foreign partner, Ford.

⁵ Data from Korea Automobile Manufacturers Association (n.d.).

⁶ For instance, 'South Korean cars: Eureka', *The Economist*, October 24, 1998.

Not only did the Kia merger with Hyundai cast doubt on the government's proclaimed desire to increase FDI but it posed a new problem in the auto sector: the creation of a monopoly in the domestic market. The combined share of Kia and Hyundai of the domestic market was in excess of 70%. Initially, the government sought, as part of its Big Deal policy of chaebol restructuring and rationalization, to balance Hyundai's influence by having Daewoo acquire the assets of Samsung Motors. This deal fell through, however, when Daewoo itself succumbed to bankruptcy. Hyundai then indicated an interest in acquiring Daewoo Motors: given that Samsung had only produced a few thousand cars before it went into bankruptcy, to allow Hyundai also to take over Daewoo would have given it almost total control over the domestic market, a development that would hardly have been regarded favorably by the International Monetary Fund (IMF), with which the Korean government was negotiating at the time. If the government's promulgation of its commitment to increase the level of FDI in Korea were to have any credibility, foreign partners would have to be sought for Korea's other bankrupt assemblers.

The first significant foreign entry into the assembly industry came through the eventual sale of Samsung Motors to Renault. This foreign purchase was relatively uncontroversial despite the low price (see below) paid by the French company for Samsung's almost pristine assembly plant. Renault, which in March 1999 had acquired 36.8% of Nissan, from which Samsung had acquired the technology for its plant, was a natural partner for the bankrupt Korean company. In a context in which concerns existed that consolidation in the industry would lead to the disappearance of Samsung Motors (whose plant was located in Busan, a distance from most of the Korean parts industry,⁷ its (non-unionized) workforce supported the Renault take-over.

GM's acquisition of its former partner, Daewoo Motors, proved more controversial. GM's previous partnership with Daewoo had left a legacy of poor relations – with the Korean company unhappy at the (relatively dated) technology that GM had been willing to supply to it and at its unwillingness to permit Daewoo to expand in foreign markets, while the unionized labor force had bitter memories of a long history of poor worker-management relations. Again, the sale was far from straightforward with Ford being nominated as the preferred bidder for Daewoo's assets and subsequently withdrawing its bid in September 2000 when it gained a fuller understanding of the extent of Daewoo's debts. The government then turned to GM but faced substantial opposition to the sale from Daewoo's unions and the general public. Nonetheless, agreement on the sale was reached in September 2001.⁸

⁷ When Samsung Motors originally went into receivership, the government proposed that Daewoo should take it over in return for Daewoo surrendering its electronics manufacturing to Samsung (part of what was known as the "Big Deal" proposal).

⁸ GM holds 44.6% of Daewoo's shares; Suzuki holds 14.9%; Shanghai Automotive Industries 10%; and former Daewoo creditors the balance of 30.5%.

Effects of FDI on the assemblers

Capital injection

One thing was obvious from the details of the sale of the assemblers to foreign companies: the initial sales in themselves would not provide a significant capital inflow into the Korean economy. Renault acquired 70% of Samsung Motors, on which the Samsung chaebol had lavished more than \$5 billions since 1994 to create production and research facilities and dealerships, for a cash payment of only \$100 millions. In addition Renault assumed \$250 millions of Samsung's debt, and agreed to pay a further \$270 millions out of the future profits of the plant.⁹ General Motors and its alliance partners acquired 67% of most of the domestic and overseas assets of Daewoo Motors for an outlay of only \$400 millions.¹⁰ Moreover, in 2003 the government revealed that at the time of the negotiations with GM it agreed that the company would be exempted from all corporate taxes for seven years after it returned to profitability (something it has yet to achieve) and thereafter would pay only 50% of taxes due for the following three years.

A focus solely on the initial cash flows from the purchase of the assemblers is misleading, however. Both Renault and GM have subsequently pledged substantial capital injections into their new subsidiaries. Renault has committed to invest 120 billion won (approximately \$100 millions) each year between 2002 and 2005 to boost research and development at Renault Samsung. At the Frankfurt motor show in September 2003, GM Daewoo's CEO unveiled a \$1 billion investment plan for the following two three years to design new vehicles, upgrade plants, create a new design centre, and improve dealer networks. It included a \$200 millions plan to build a new plant for assembling diesel engines ("GM Daewoo to set up diesel engine plant", *Korea Herald*, September 14, 2003).

Technology transfer

One benefit from the new presence in the auto assembly industry in Korea of foreign investors is the access they provide their subsidiaries to technology developed elsewhere in their global networks. Renault, for instance, will make available its latest platforms, power trains, and engines to Renault Samsung. GM similarly will import from its other branches its

⁹ "Renault/Samsung Motors deal closed: Renault Samsung Motors, the new subsidiary of the Renault group", *Automotive Intelligence News* (September 5, 2000), <www.autointell-news.com/news-2000-2/September-05-00-p3.htm>.

¹⁰ GM acquired Daewoo's plants in Changwon (annual production capacity 240,000 units) and Gunsan (320,000 units), its research and development centre and maintenance division, and overseas assembly plants in Vietnam and Egypt, but excluded its oldest domestic plant at Bupyeong, renown for its worker activism. "GM, Daewoo Motor Company And Creditors Reach Preliminary Agreement", *Automotive Intelligence News* (September 26, 2001), <www.autointell-news.com/News-2001/September-2001/September-2001-4/September-26-01-p6.htm>. GM had reportedly offered close to \$6 billions for Daewoo in 1999. See "GM Korea Chief Warns of Risks in Daewoo Delay", *International Herald Tribune* (December 12, 1999).

latest engines (larger engines from GM Holden in Australia, small diesel engines from probably from Europe).¹¹ Easy access to the latest technology available internationally may facilitate the Korean subsidiaries' export efforts.

The assemblers have every incentive to work closely with their suppliers to upgrade their technology to assure quality control. GM Daewoo and Renault Samsung management in interviews professed a strong commitment to this objective but how successful they will be in carrying this through remains to be seen. Unlike Hyundai, which has established a new institute, the Foundation of Korea Automotive Parts Industry¹² to assist its suppliers to upgrade their capabilities, neither Renault Samsung nor GM Daewoo has similarly institutionalized their upgrading efforts with their suppliers.

Research and Development

The impact of foreign acquisition on research and development (R&D) conducted locally remains a controversial issue in the literature on FDI. On the one hand, the newly acquired subsidiary may be given an injection of capital and/or personnel that better equips it to pursue R&D activities. On the other, the tendency for transnational corporations to continue to concentrate their R&D activities to their home country base, despite some recent diversification, is well-established. With the passage of ownership to foreign companies, the Korean companies will be dependent on decisions made at regional or global headquarter (HQ) on where R&D activities should be carried out. A potentially negative consequence of the easier access to technology that foreign acquisition provides is the possibility that the subsidiary will depend on imported components rather than developing them locally.

The relatively recent dates of foreign acquisition of Korean auto assemblers preclude any definitive judgment on this issue. As noted above, both Renault and GM have indicated their intentions to provide additional investments for further R&D in their Korean subsidiaries. To date, the R&D conducted by Renault Samsung has been relatively modest, being primarily focused on the adaptation of Nissan models for the Korean market. Officials at Renault Samsung itself share the view of commentators on the Korean industry that the subsidiary will have a very limited role in the Renault-Nissan global network unless it is allowed to develop its own models both for the local market and for export.¹³ GM Daewoo, given its potentially much larger output, its range of domestically produced models and developed engineering skills, is more likely to undertake significant R&D locally in the near future.

¹¹ Information from interviews conducted in Seoul in September 2003.

¹² <www.kapif.org/english/default.asp>.

¹³ Interviews, Seoul, September 2003.

Integration into global networks

Any company seeking to create a presence in foreign markets faces formidable challenges – establishing a brand name, setting up dealer and service networks, etc. Manufacturing products on an OEM (Original Equipment Manufacturer) basis to be re-badged by a foreign partner can avoid many of these problems, albeit at the cost of losing a substantial share of the profit. Korean auto assemblers used this strategy extensively: Daewoo, while in its 50/50 joint venture with GM, exported cars to the US that were sold through the GM network under the Pontiac badge; Kia exported cars to the US re-badged in the name of its minority shareholder, Ford. With the termination of Daewoo's partnership with GM, Daewoo had to create its own network of dealers and service centers in the US and Europe.

The negative brand image that Korean cars acquired in the first half of the 1990s was reinforced in Daewoo's case by the difficulties that customers faced in servicing their cars after the Daewoo Corporation went bankrupt. US customers, for instance, have had problems in having warranty work done or even obtaining insurance for their vehicles, given the difficulties of obtaining spare parts for Daewoo vehicles.

The acquisitions of Samsung Motor by Renault, and of Daewoo by GM, have re-opened possibilities for Korean-manufactured vehicles to be re-badged and sold through the global networks of these two companies. The Korean auto industry was heavily dependent on exports by the time of the financial crisis. And exports are the only feasible source of major growth for the auto assemblers given that the domestic market is nearly saturated.

Both Renault Samsung and GM Daewoo have plans to significantly increase their exports. Currently Renault Samsung exports only a handful of cars but plans to export half of its output, primarily to China and to Latin America, by 2010 (some commentators are skeptical, however, about Renault Samsung's export prospects unless it ends its reliance on modified Nissan models).¹⁴ GM Daewoo currently exports an extraordinarily high percentage of its production, in part because of the downturn in the Korean domestic market and because it lacks a full range of models for that market. In 2003, GM Daewoo planned to export 270,000 cars of a total output of approximately 400,000 vehicles ("Korea Grants Tax Break to GM Daewoo", *Automotive News*, November 20, 2003). Its actual performance – exports of 256,147 out of a total production of 400,578 – came close to meeting this ambitious target.¹⁵

¹⁴ Information from interviews in Seoul, September 2003 and from World Markets Research Centre, "Company Report-Renault", <www.worldmarketsanalysis.com/wma_sample_pages/site_pages/WMASampLightVeh.htm>. Renault Samsung exported 1,127 vehicles in 2003, up from 293 in 2002. Korea Auto Industries Cooperative Association, "Statistical Data of Automobile by Makers", <www.kaica.or.kr/eng/industry/overview.html>.

¹⁵ Korea Auto Industries Cooperative Association, "Statistical Data of Automobile by Makers", <www.kaica.or.kr/eng/industry/overview.html>.

GM is marketing Daewoo vehicles under the Chevrolet brand name in the US, India, and Thailand, and, in a first for Korean vehicles, under the Suzuki brand in Japan. In Europe and Oceania, somewhat surprisingly given the negative brand image that Daewoo acquired, the GM Daewoo badge is being retained. That GM is marketing GM Daewoo vehicles through its dealerships worldwide is a significant gain for the Korean subsidiary.

Integration into global networks also offers export opportunities for local components suppliers – both for the aftermarket, and for assembly into other models being produced within the parent's network. Renault and Nissan created a joint purchasing alliance, Renault-Nissan Purchasing Organization, in 2000 which it is now planned will account for 70% of the global purchasing of components by the two companies (a total volume of \$33 billions; "Three Years After its Establishment, Renault-Nissan Purchasing Organization [RNPO] to reach 70% of the Alliance Purchasing Turnover", Renault Nissan Press Release, October 3, 2003). Renault Samsung has been promoting the use of Korean-manufactured components within this global alliance (but has met resistance from Nissan given the Japanese company's commitments to its traditional suppliers).¹⁶

In July 2002, GM sent a dozen members of its purchasing team to South Korea to investigate ways to export parts from GM Daewoo to other GM operations around the world, with emphasis given to countries where small cars, the GM Daewoo specialty, are popular. The expectation was that tyres, starter motors and seat frames could be exported to Europe, Brazil, Mexico, and Canada.¹⁷

Reorganization of production

The McKinsey report cited above placed a great deal of emphasis on low levels of labor productivity in explaining the difficulties faced by the Korean auto assemblers. Labor costs are a much larger share of total costs of production in the auto assembly industry in Korea than they are in other OECD (Organization for Economic Co-operation and Development) countries (McKinsey Seoul Office 1998). Ultimately, the new foreign partners can be expected to attempt to take decisive action on this issue. At the present time, however, both Renault Samsung and GM Daewoo have their hands tied by commitments made at the time of their acquisitions to maintain existing levels of employment for a specific period. Working within this constraint, they have already attempted to increase productivity, e.g., Renault Samsung has moved to a two-shift system to meet the increased demand for its models.

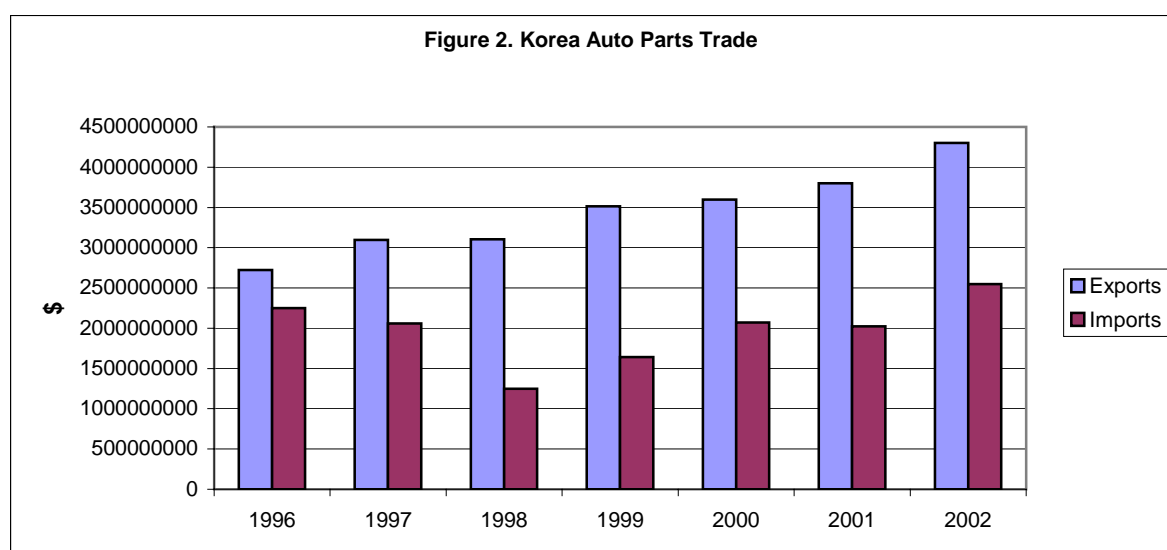
¹⁶ Interview, Seoul, September 2003.

¹⁷ "Daewoo suppliers may ship to GM Worldwide", *Ward's Auto World* (July 1st, 2002).

Auto components manufacturers

Overview

While parts production in Korea initially lagged significantly behind assembly, in recent years parts producers have performed strongly, the Korean industry growing to be the second largest in the region behind that of Japan. The financial crisis provided a spur to domestic parts production by lowering the value of the won and encouraging the entry of foreign parts firms. Whereas imports of auto parts fell dramatically during the financial crisis, exports of parts – save for 1998 – have risen steadily so that by 2002 Korea was earning a healthy surplus in its auto parts trade.



Source: UN Comtrade data. See Appendix 2 for the definition of auto parts included in these data.

In the pre-financial crisis years, domestic component producers in Korea were squeezed by the twin strategies of the assemblers of importing core technologies to meet quality standards required for the export market, and their attempts to develop in-house design and production facilities. The share of in-house components in total production in Korea was around 50% in the early 1990s, a high figure by international standards (Chung 1994). Much of the technological learning in the industry's development was captured by the assemblers:

Lautier (2001 footnote 11) reports that the assemblers' share of automobile industry value-added rose from 18 to 60% between 1970 and 1985.

With the exception of a few companies closely tied to a chaebol (for instance, the Mando Group, part of the Halla chaebol, whose founder Chung In Yung was the younger brother of Chung Ju Yung, the founder of the Hyundai Group), components producers were overwhelmingly small and medium sized enterprises (contrary to some popular impressions and the stereotypical comparisons with Taiwan, small and medium-sized enterprises (SMEs) do play a significant role in the Korean economy). For the most part, these enterprises, despite repeated government programs aimed at boosting SMEs, lacked financial resources and technology. The insistence of the assemblers that their suppliers should not also manufacture for their competitors limited economies of scale and product standardization (when the government eventually allowed Samsung to enter car production in the mid-1990s, it was instructed to establish its own supply chain independent of existing producers – a very substantial task even given the range of capabilities within the various members of the Samsung chaebol).

As noted above, FDI in the Korean auto components industry was relatively small in the pre-financial crisis era. Although a number of first tier suppliers, e.g., Delco Remy, had established a presence in Korea, they were compelled during the era of military governments to enter into joint ventures with domestic partners. The financial crisis spurred a dramatic increase in the foreign presence in the industry, facilitated by the availability of Korean assets at fire sale prices. Close to 100 foreign companies either increased their presence in or entered the Korean components industry since the onset of the crisis. More than 60 companies either established wholly owned subsidiaries or majority owned joint ventures (Korea Automobile Manufacturers Association, n.d.). Some of the prominent developments in foreign investment in the sector include:

- The Halla chaebol's Mando subsidiary, one of Korea's best-known and largest parts makers, was broken up when the parent company went bankrupt. Its electrical parts plant was sold in 1999 to the French-headquartered components manufacturer Valeo (which already owned 50% of Pyeong Hwa Valeo Corporation, a manufacturer of manual power train systems); five of its plants were sold to Chase Asia Equity Partners and UBS Capital (the expectation being that they would eventually be sold on to companies with expertise in the industry).

- FAG, the leading German-based producer of bearings, in August 1998 acquired 70% of the equity of a new joint venture with Hanwha Machinery Corporation, to which the latter sold

all of its rolling bearing activities for a total of DM380 million.

– Visteon, a spinoff of Ford Motor Company, in 1999 purchased its technology licensee, Halla Climate Control, Korea's single largest auto parts exporter outside of the assembly companies. In the same year, Visteon also acquired Duck Yang Ltd., Korea's largest instrument panel maker.

– The UK firm Britax purchased a 70% holding in Poong Jeong Corporation for \$23.7 millions in 1999; the new company enjoys an 80% share of the market for rear vision systems in South Korea.

– Delphi, the GM spinoff, acquired an equity holding in Sungwoo Corporation, a major supplier of airbags and seatbelts to Hyundai Motor.

– Kumho Industrial, Korea's largest tyre maker and the 10th ranked tyre maker in the world, sold its China factory to Bridgestone in 1999 (*AutoAsia Online*, October 29, 2001).

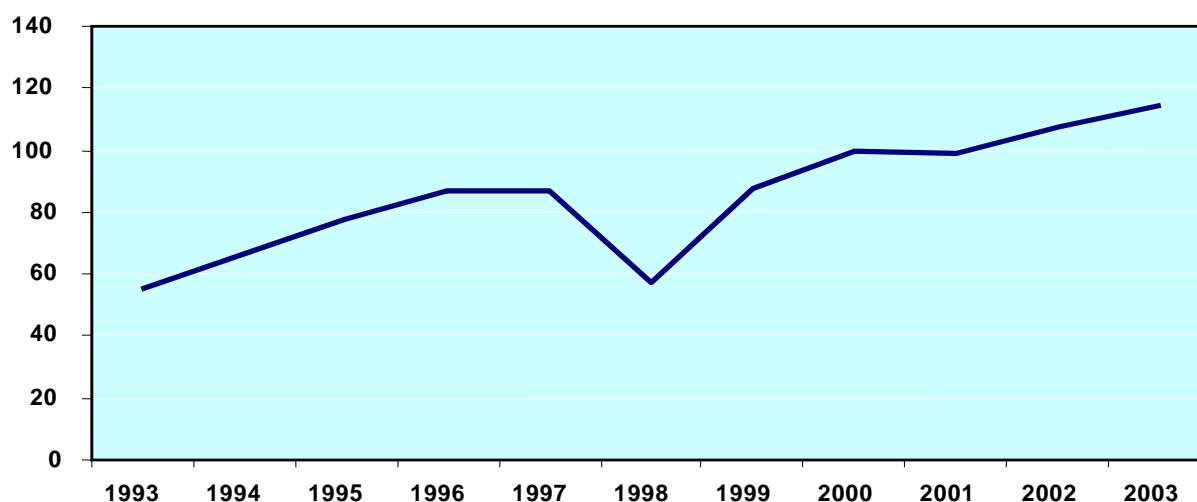
By the turn of the century, all of the global Tier One suppliers in the auto industry had established or consolidated a presence in Korea, attracted both by the size of the domestic car market and by the local industry's prospects for exports.

The enhanced presence in Korea of the leading auto component manufacturers affords Korean-based assemblers an opportunity to access the latest technologies and to overcome some of the problems that they have encountered on quality control issues. With component manufacturers being asked by assemblers world-wide to take increasing responsibility for the construction of complete modules rather than individual parts, the Tier One suppliers are assuming an ever more important role in assuring the quality of the final product. The latest models produced in Korea are incorporating newly-designed modules from the Tier One suppliers. For the recently-introduced Daewoo Lacetti, for example, Bosch is supplying the ABS system, Siemens Automotive was the development partner for the airbags and the emission control systems, and ZF and Aisin Warner are manufacturing the automatic transmissions. To the extent that these modules are being manufactured domestically, they will generate benefits for the Korean balance of payments. It is too early yet, however, for the effects of the new investments to be reflected in standard trade data (the latest UN data are for 2002).

The relatively recent date of the new FDI in the auto parts industry in Korea makes it premature to attempt to reach definitive judgments on its effects. And, despite the post-crisis acquisitions, foreign-invested companies remain a relatively small segment of the Korean industry. According to data published by Korea's Ministry of Commerce, Industry and Energy (2002), foreign-invested companies in 2000 accounted for 12.8% of total output, and 11.6% of employment in the transport equipment sector.¹⁸ Moreover, the consolidation of the parts industry is still under way. Although the situation is changing, it is still the case that the foreign-invested companies are experiencing reluctance on the part of suppliers to Hyundai-Kia to deal with them¹⁹.

Since 1999, the Korean production in the automotive industry has been recovering from the impact of the financial crisis with a clear upward trend. Figure 3 shows that production is now well above the pre-crisis level and has been increasing substantially over the last couple of years.

Figure 3. Production index in the Korean automotive industry, 1993-2003 (base year: 2000 = 100)



Source: Data from Bank of Korea Economic Statistics System

Domestic assemblers all have plans to substantially increase their production in the next few years, which will significantly affect the opportunities available to components producers. To this rapidly changing situation must be added a further problem for drawing conclusions about the impact of FDI on the auto components industry: a comprehensive survey of the foreign-invested firms in this sector has yet to be undertaken. Some evidence of developments in the sector is presented below, based on interviews that the author conducted with a sample of foreign-invested firms in Korea in September 2003.

¹⁸ Unfortunately these data are derived from a one-off survey by Ministry of Commerce, Industry and Energy (MOCIE), undertaken as part of the OECD's globalization project.

¹⁹ Which they attribute to pressure from Hyundai-Kia management.

Reorganization of production

Several respondents reported that they had achieved significant improvements in productivity in the plants since they had become their subsidiaries. One company (that had ceased local R&D after its acquisition by a foreign investor), for instance, had doubled its output using the same labor force because of a reorganization of production that enabled the subsidiary to concentrate on its core competencies.

Technology transfer

Technology transfer is one area where the move from minority joint ventures to majority- or wholly-owned ventures after the financial crisis has made a significant difference to the behavior of the foreign partners. One company, for instance, reported that it had previously withheld its most advanced technology from the joint venture in which it was involved in Korea because it feared that its technology would “leak” through its partners in the venture. With the post-crisis removal of a potential competitor from the venture, it had subsequently introduced its latest technology to its Korean subsidiary. Other companies that had established wholly-owned subsidiaries indicated that they would have no reservations in transferring their latest technologies to them.

As with the assemblers, first tier suppliers have a powerful incentive to work with their suppliers to upgrade their technologies. Again, it is too early to judge how effective their efforts in Korea will be.

Research and development

Little evidence emerged from the interviews of any intention by the components manufacturers to increase the research and development conducted in their Korean subsidiaries. Indeed, there was one instance of a Korean company that had previously conducted its own research and development but this had ceased after it was acquired by a first tier supplier. Most components firms suggested that product adaptation for the local market will be undertaken but core research and development activities will be conducted elsewhere. There were some instances where companies were attempting to integrate local research and development more closely with the parent firm's global network – for instance, FAG has incorporated the R&D centre of its FAG Hanwha subsidiary in Changwon into the grouping's "Worldwide 24 hour R&D System".

Exporting from Korean subsidiaries

Many of the companies interviewed were cautious on the prospects for exports from their Korean subsidiaries. Concerns were voiced about barriers to trade, formal and informal, in other countries in East Asia, and the potential lack of competitiveness of Korean-manufactured products given the relatively high costs of Korean labor. Two other issues surfaced in discussion of exporting possibilities. One was the relatively high weight/value ratio of many auto parts, a natural barrier to trade (in contrast to components in the electronics industry, for instance). The other was the likelihood that major players in the auto components industry would have subsidiaries in many countries, and would be likely to service markets from a proximate geographical location. This consideration was particularly relevant to the plans of Hyundai and Kia to expand their overseas assembly operations (both already have plants in China; Hyundai is constructing a plant in Alabama and is currently short-listing possible sites for a European assembly plant). Respondents noted, for instance, that it would be logical for component manufacturers to supply the Hyundai plant in Alabama either from their subsidiaries in the US or in Mexico, rather than from Korea.

There were, however, some notable examples of companies that were exporting substantial volumes from their Korean subsidiaries. Company A, a manufacturer of raw materials for auto components, used its Korean plant to supply customers in Japan. Company B, a global first tier manufacturer, which previously had a joint venture with a Korean company and (atypically for the sample) withdrew from the venture at the time of the financial crisis and exited altogether from manufacturing in Korea (although it is now contemplating re-entry), now used its Korean office as a trading company for sourcing components from local manufacturers (it used about eight suppliers) for assembly in its overseas plants, and for selling imported components to Korean assemblers. Company C, another major first tier supplier, which had several joint venture projects in Korea, reported no problems with its joint venture partners (which, in most instances, it allowed to run the local operations with minimal interference) and exported in substantial volumes.

Data from Korea's Ministry of Commerce, Industry and Energy (2002) suggest that foreign-invested companies in the transport equipment sector generated a healthy \$2 billions surplus of exports over their imports in 2000.²⁰

²⁰ See footnote [18] above on the lack of comparable data for subsequent years.

Challenges Faced by Foreign-Invested Firms in the Korean Auto Parts Industry

Respondents typically focused on two issues when asked to identify the principal problems their operations in Korea faced. One was the challenge from China; the other was concerns about the poor state of labor-management relations in Korea. The two issues of course are not entirely independent: some companies made reference to labor relations problems as a principal factor in their considerations as to whether to re-locate production to China.

Most respondents believed that Korea still held a competitive edge over China in the production of auto parts. In particular, they pointed to the higher quality of Korean products, the higher levels of education of the Korean workforce and the ready availability of engineering skills, the current lack of economies of scale in production in China, and Korea's far superior logistics (one company noting, for instance, that it was possible to transport components from its manufacturing plant to anywhere within Korea within one day). Some also expressed concern about the current lack of protection of intellectual property rights in China.

The consensus among respondents was that Korea would continue to enjoy an advantage over China in auto parts production for another five to seven years. Several noted, however, that the contemporary trend among transnational companies was to look first in China rather than coming first to Korea.

Besides the obvious attractions of the size of the domestic market in China, the other significant factor was the Korean labor market. Three issues were of particular concern to foreign-invested companies:

- The relatively high cost of labor in Korea especially in relation to its productivity. Although the productivity/wage ratio might still favor Korea over China, the belief was that the gap was rapidly closing. There was widespread dismay in the industry at the wage settlement that Hyundai reached with its workers in August 2003, when Hyundai's unions won an 8.6% pay increase, substantially above the 3.1% inflation rate; moreover, this was accompanied by agreement on a shorter working week and on labor representation in some management decisions. Hyundai's workers were estimated to be receiving, after the implementation of the pay deal, the equivalent of more than \$20 per hour.

- Labor militancy. Some – but not all – respondents complained of unreasonable behavior by labor unions, which they perceived as arising from a legacy of decades of labor repression in Korea. They echoed the views of the President of the American Chamber of

Commerce in Korea, William Oberlin, that “the world now perceives South Korea as a militant trade union republic” (quoted in “Korean Economy at a Crossroads”, *Chosun Ilbo*, August 29, 2003). Foreign firms were perceived to be particularly vulnerable to militant action, a trend also noted in the press (“Foreign Firms Hit by 10% of Labor Strife”, *Korea Herald*, October 8, 2003). In particular, labor unions were accused of believing that all foreign companies had unlimited funds, and that the wages that they could pay in their local subsidiaries had no relationship to the productivity of the local labor force. Partly for this reason, the management of several subsidiaries indicated that they were keen to maintain the “Korean” name and identity of their firms, even when the parent company had taken total control of the subsidiary after the financial crisis.

Some companies had also experienced demands for worker participation in management, which they completely rejected.

One company, currently non-unionized, had told its labor force that it would withdraw from production in Korea if they formed a trade union.

- Lack of flexibility in the labor market. Companies complained that legislation coupled with expectations on the part of the labor force made it very difficult to reduce the size of their labor force during recessions. Expectations that the firm would provide lifetime employment made firms reluctant to take on additional workers.

Perceptions of labor market problems have undoubtedly contributed, together with the slowdown in the Korean economy in 2002-3, to the decline in FDI inflows into Korea (with cumulative FDI inflows in the nine months to 2003 fully 36% below the figure for the equivalent period in 2002 – and flows in 2002 in turn were substantially below those of the peak year). Labor market problems have inhibited new investment by foreign-invested companies in the auto parts sector. One company, for instance, had postponed a major investment decision following labor unrest, and was contemplating transferring production (which currently serviced other East Asian countries) to China. There seems some risk that some companies in the auto parts sector will follow the examples of the Swiss-owned pharmaceutical firm Novartis Korea, and the Japanese-owned watchmaker, Citizen Korea, in terminating their operations in Korea.

Conclusion

Like most other manufacturing sectors in Korea, the automobile industry had relatively little foreign investment before the financial crisis of 1997-98. While the sector was not completely closed to foreign participation, potential investors during the period of military government found themselves forced into joint ventures with partners that were not of their own choosing. Foreign companies in these enforced partnerships were reluctant to introduce their latest technology to Korea, a tendency reinforced by perceptions that intellectual property rights would not be respected.

The automobile sector figured prominently in the financial crises. The bankruptcy of the Kia chaebol in June 1997 was a major contributory factor in the loss of confidence in the Korean economy that preceded the onset of the crisis. Government indecision over what to do with Kia – first refusing to intervene, then nationalizing it in October 1997, and then conducting two unsuccessful auctions to dispose of its assets – raised questions about the country's economic management at a critical moment when the contagion effect of the Southeast Asian financial crisis first hit Korea. Two years later, the bankruptcy of Daewoo cast an enormous shadow over efforts to restructure Korea's financial system.

The financial crisis opened the way for significant foreign investment in the automobile industry as European firms in particular snapped up Korean assets at fire sale prices. The low prices paid to purchase Korean companies or to buy out joint venture partners ensured that the new inflows of foreign investment did not make in aggregate a major addition to capital stock. Nonetheless, they were critical in rescuing companies that otherwise probably would have not emerged from bankruptcy. This was most obvious in the assembly industry where, without foreign investment, it is unlikely that either Daewoo or Samsung would have survived as separate entities. In both instances, the new foreign owners have provided means for integrating Korean operations into global networks – bringing new opportunities for export of vehicles that will be re-badged for sale within the parent's sales networks worldwide. To date this opportunity has been particularly important for Daewoo, with GM Daewoo exporting an extraordinarily high percentage of its production (64% in 2003). For GM, such sales have been a necessity if Daewoo's fortunes are to be revived given the general downturn in the domestic market in 2002 and 2003 and the company's lack of a comprehensive range of vehicles. Renault's rescue of Samsung Motor has been equally dramatic – built in this instance not on exports but on a substantial increase in local market share that has seen annual production rise from c. 20,000 units in 1999 to 118,000 in 2003.²¹

²¹ Data from Korea Auto Industries Cooperative Association.

Both GM Daewoo and Renault Samsung have pledged to assist their suppliers to export through their global networks. It is too early yet to judge whether local suppliers will be able to take advantage of these opportunities. Although the aggregate export performance of the Korean components industry has been very strong since the financial crisis, the data are not sufficiently disaggregated to distinguish the share (probably very substantial) in these total exports of Hyundai and its spin-off, the components producer Hyundai Mobis.

Indeed, the short period that has elapsed since foreign producers entered the Korean industry and/or bought out joint venture partners (most of the significant acquisitions were made in 1999) inevitably renders any judgments on the effects of the new foreign penetration of the industry very tentative. New foreign investors have spent these initial years first in assessing local assets, then in re-organizing them both to boost productivity and to achieve integration into global networks.

The interviews conducted in September 2003 indicated that while most companies were happy with the skills of the workforce and the levels of infrastructure in Korea, there was considerable disillusionment among some long-established as well as new investors about the current economic environment in Korea. Most complaints focused on the inflexibilities of the labor market, and the militancy of trade unions. The labor situation, coupled with a rate of economic growth that has been markedly slower than that of the pre-crisis years, provides much of the explanation for the downturn in foreign direct investment in Korea since 2001. Among some of the firms included in this survey, new investments had been postponed pending further review of the labor market.

Whereas at the time of the financial crisis, some foreign investors saw Korea as a potential regional hub and as a possible base for penetrating the Chinese market, by 2003 the focus was on China as an alternative location not just for supplying its burgeoning domestic market but also other parts of the region including Korea itself. Several interviewees noted that foreign investors seeking a production base in the region were now looking first to China; although Korea still retained a lead in engineering skills and in infrastructure, some perceived that these advantages would be eroded within a few years. The government faces a difficult task in rekindling the excitement that opportunities for entering the Korean industry generated immediately after the financial crisis. The challenge to the domestic economy in the motor industry will be further compounded by the increased production by Korean companies in their major foreign markets – the United States, Europe, and China.

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Appendix One.

List of companies and organizations where interviews were conducted in Seoul in September 2003

American Chamber of Commerce Korea
Bosch Korea
British Embassy
Dana
Delco Remy
Delphi Korea
FAG Hanwha
Foundation of Korea Automotive Parts Industry
GM Daewoo
HAC Corporation
Hyundai-Kia
Hyundai Mobis
Korea Auto Industries Cooperative Association
Korea Automobile Manufacturers Association
Korea Automobile Research Institute
Korea Development Institute
Owens Corning
Renault Samsung

Appendix Two.

Definition of Auto Parts for COMTRADE data

4011: New pneumatic tyres, of rubber

840733: Engines, spark-ignition reciprocating, 250-1000 cc

840734: Spark ignition recip. piston engines of a kind used for the propulsion of vehicles of Ch.87, of a cyl. cap. >1000cc

840991: Parts suit. for use solely/princ. with spark-ignition int. comb. piston engines

840999: Parts suit. for use solely/princ. with the engines of 84.07/84.08 (excl. of 8409.10 & 8409.91)

850710: Electric accumulators, incl. separators thereof, whether or not rect. (incl. square), lead-acid, of a kind used for starting piston engines

850730: Electric accumulators, incl. separators thereof, whether or not rect. (incl. square), nickel-cadmium

851190: Parts of electrical ignition or starting equipment

851220: Lighting/visual signaling equip. of a kind used for cycles (excl. bicycles)/motor vehicles (excl. of 85.39)

851290: Electrical lighting or signaling equipment parts

853921: Electric filament lamps (excl. sealed beam/ultra-violet/infra-red lamps), tungsten halogen

854430: Ignition wiring sets & other wiring sets of a kind used in vehicles/aircraft/ships

8708: Parts and Accessories for Motor Vehicles

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