

Korean Automotive Industry in Transition

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Abstract

Korean automotive industry drew world's attention as it grew to be the 5th largest producing country in two decades as a later comer. Now it faces a transitory period as domestic market growth drops to less than 5% despite more rapidly increasing over-capacity and it has to cope with greater competition pressure in both domestic and overseas markets. Change in domestic market directs Korean manufacturers in two ways: to develop more of larger cars and various types of vehicles like RVs to meet customers' preferences and to raise their competitiveness in price and quality to survive unprecedented power struggle among new and incumbent players. It also has to pay more heed to social voices. Energy waste, air pollution, and traffic congestion are getting more chronic in Korea. To alleviate these problems Korea imposes the heaviest taxes on automobiles and gasoline among major automobile producing countries..

Entering the '90s, exports of Korean-made cars rose rapidly for several reasons. Among these were redoubled efforts to control quality, expansion of after sales service networks, production of a wider range of export models, and more aggressive marketing efforts. Perhaps most importantly of all, however, the rapid rise was also due to aggressive efforts by Korean manufacturers to explore overseas markets. Korean-made cars are now being exported to a greater number of countries than ever as a result, especially to developing countries. The volume of exports did in fact rise substantially as export markets became diversified, but the growth rates between regions has varied far too greatly. This indicates that Korean manufacturers have not yet secured competitiveness overseas. The rise in exports of Korean-made cars was greatly influenced by external factors such as the appreciation of the Japanese Yen.

The trade imbalance of Korean auto industry drew attention from advanced countries. After successive reductions, the tariff rates on imported cars in Korea now stand at 8%, which is an even lower level than in the EU. In the wake of the trade negotiations between Korea and the US in 1995, foreign auto manufacturers were given wider access to the Korean market.

Korean auto manufacturers have been aggressive in recent years in expanding their overseas operations. Each manufacturer is pursuing different strategies to advance overseas to build local production operations.

1. Changes in Domestic Market

1.1 Sluggish domestic market

The Korean automotive industry faces new challenges as domestic demand growth has slowed down significantly since 1994 while all of Korean auto makers try to expand their production capacity aiming to be one of top 10 global makers in near future. In mid July 1997 vehicle registration reached 10 million units, doubling itself in about 4 years as was 5.2 million in 1992. However, with nation's motorization approaching its final phase, the growth rate of new car sales is expected to continue declining. The number of passenger cars and commercial vehicles registered per 1,000 persons was 211 in 1996, or about one vehicle for every 4.7 persons. South Korea's population was 45 million as of 1996.

<Table 1> Automobile Registration by Type, 1992-1996

(unit: thousand units, %)

	1992	1993	1994	1995	1996	Average Annual Growth
Cars	3,461	4,271	5,149	6,006	6,894	18.8%
Buses	484	528	582	613	663	8.2%
Trucks	1,286	1,475	1,673	1,850	1,996	11.6%
Total	5,231	6,274	7,404	8,469	9,553	16.2%

source: KAMA, Korean Automotive Industry, various issues

<Table 2> Automobile Ownership

(units per 1,000 persons)

Country	Korea					Japan	Mexico	Spain
Year	1990	1993	1994	1995	1996	1994	1994	1994
Vehicles	79.2	142.4	165.5	188.8	211.1	526.3	131.6	434.8
Cars	48.4	97.1	115.8	133.9	152.4	344.8	89.3	357.1

source: *ibid*

In 1996, a total of 1.64 million new automobiles were sold on the domestic market, up 5.7% compared to the previous year. Domestic car sales were 1.24 million in 1996. The domestic market had grown at a blistering pace in the late 1980's. The annual growth rate actually reached a record high of 45.8% in 1989. Entering the 1990's, however, the

growth rate has steadily slowed. Its was -0.1% in 1995, which was the first decline since 1980. The lower growth rate is largely the result of the domestic automobile market maturation as cars have become a necessity of everyday life. Moreover, the terms of new car sale become less favorable to new customers as more of used cars are now available at cheaper price.

1.2 Intensification of Competition

There have been several major developments in the domestic automobile market. The Korean government permitted Samsung's entry into the passenger car business, encouraging a greater deal of competition through both of globalization and deregulation. More new models are introduced in the market by Korean auto makers.

<Table 3> Domestic Market Share by Automaker

	1990	1993	1995	1996	1997. 1-6
(unit) Hyundai	450,197	617,597	746,067	740,341	311,440
Kia	309,701	441,855	441,532	458,400	161,055
Daewoo	134,939	203,239	195,177	179,452	140,791
Asia	24,446	43,870	31,502	29,738	13,105
Ssangyong	21,862	18,183	36,878	55,489	26,957
Daewoo H.	12,579	74,742	61,281	121,039	40,356
Hyundai P.	-	35,971	38,218	55,592	29,130
Samsung H.	-	-	3,184	2,754	1,648
Total	953,724	1,435,457	1,553,839	1,642,805	724,883
(% Share) Hyundai	47.2	43.0	48.0	45.0	43.0
Kia	32.5	30.8	28.4	27.9	22.2
Daewoo	14.1	14.2	12.6	10.9	19.4
Asia	2.6	3.0	2.0	1.8	1.8
Ssangyong	2.3	1.3	2.4	3.4	3.7
Daewoo H.	1.3	5.2	3.9	7.4	5.6
Hyundai P.	-	2.5	2.5	3.4	4.0
Samsung H.	-	-	0.2	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0

Source: Kia Economic Research Institute, *Automotive Industry*, July, 1997

Hyundai and Kia keep updating their full line of cars and vehicles. Daewoo Motor rolled out 3 new models in the market in early 1997, its first own models after Daewoo separated with GM in 1992 and so they are successful in picking up their market share this year. Ssangyong have prepared to introduce their first passenger car into the market late in 1997. Samsung will start to sell their cars from March in 1998. Although the domestic market growth dampened already, the market is destined to witness continuous increase in supply, meaning tough competition among makers.

1.3 Shifts in Demand

The ratio of commercial vehicle sales to total sales had gradually fallen from 34% in 1990 to 25% in 1996. In 1996, consumers continued to show decreasing preference for small cars. Sales of light cars exploded in 1996 as the government policy of preferential tax for light cars took effective from late 1995. As personal income level goes upwards, customers are looking for more of larger cars, medium and large sized cars. In 1996, it was also notable that the ratio of sports utility, jeep, and other multipurpose vehicles went high to 8.5%.

<Table 4> Domestic Sales of Passenger Cars by Size

(Unit)	Light	-	51,865	43,166	44,327	103,918
	Small	380,911	638,708	644,449	565,943	527,352
	Medium	206,510	257,356	344,511	430,787	467,822
	Large	16,817	15,995	19,540	28,874	34,400
	RV	21,888	73,564	88,733	79,478	105,448
	Total	626,126	1,037,488	1,140,399	1,149,409	1,238,940
(% Share)	Light	-	5.0	3.8	3.9	8.4
	Small	60.8	61.6	56.5	49.2	42.5
	Medium	33.0	24.8	30.2	37.5	37.8
	Large	2.7	1.5	1.7	2.5	2.8
	RV	3.5	7.1	7.8	6.9	8.5
	Total	100.0	100.0	100.0	100.0	100.0

Source : KAMA, *Monthly Automobile Statistics*.

note : 1) Lights: ~800cc, Small: under 1,500cc, Medium: under 2,000cc, Large: over 2,000cc

2) RV includes all Jeep-types and mini van(Santamo)

The Korean auto makers sell most of their cars and vehicles through direct marketing channels of their own. The direct marketing channel system is still at the heart of distribution in Korea even though some of the auto makers have established independent auto sales companies or have introduced dealership networks to promote sales. The dealership system is not yet prevalent in Korea. However, more dealerships will be established in the near future.

1.4 Capacity expansion and industry restructuring

Korean automotive industry drew attention as it continued to increase its production capacity. Its capacity utilization rate also rose as domestic demand exploded from late 1980's and exports grew rapidly in mid 1990's. Each maker envisaged its plan to be a global volume maker among optimism and suspicion. Korean auto industry had been successful to increase both its capacity and the utilization rate.

<Table 5> Production capacity and utilization

(unit: 1,000 units , %)

	1985	1990	1992	1993	1994	1995	1996
Capacity	642	2,065	2,795	2,874	3,055	3,366	3,525
Production	378	1,270	1,689	1,985	2,261	2,524	2,811
Utilization	58.9	66.7	60.4	69.1	73.6	75.0	79.7

Source: Kia Economic Research Institute, *1997 Korean Automotive Industry*, 1997

According to the forecasting report by a foreign forecasting unit, annual production capacity of Korean auto industry will rise to 6.4 million units in 2001. It is overestimated. The estimate is based on Korean makers' long term plans outlined 3 or 4 years ago when each maker still believed that it had to increase the capacity not to drop out of the scale race.

However, as its utilization rate fell in the first half of 1997, the industry is now facing the environment that each maker has to readjust its original plan to cut back the future capacity if it is to avoid huge loss. To be worse, the financial structure of Korean makers has not improved over years. Taking into consideration the market demand for Korean cars and vehicles, domestic and abroad, the optimal industry scale is believed to be 5 million units in 2000. So it is more likely that the capacity remains far less than 6 million in 2001.

<Table 6> Ratios of assets, liabilities and equity(1995)

(unit: %)

	Stockholders' equity to total assets	current ratio	fixed ratio	debt ratio
Hyundai	22.2	79.8	252.5	349.7
Kia	20.9	71.4	288.5	378.1
Daewoo	11.8	82.0	419.2	744.5
5 Korean makers	17.8	81.1	304.0	460.6
Japanese makers	48.7	120.1	34.5	105.2

It is also possible that despite skepticism, Korean auto makers do not change their strategy to expand their capacity but instead enter a dogfight with each other, resulting with some inevitable loser. Most Korean car manufacturers, belong to *chabol*(corporate group), so they may run such a race in times of financial difficulty. Kia Motors is not in this group, however.

1.5 Tax increase and government regulations

Korean automobile tax system may be one of the most complicated and heavy in the world. Consumers are required to pay various types of taxes in order to purchase and drive a car: These include the acquisition tax, registration tax, license tax, and the special commodity tax on vehicle and gasoline.

With the number of cars registered increasing rapidly since the late 1980's, the revenue derived from auto-related taxes has increased substantially. Automobile taxes now account for 15% of the nation's total tax receipts, a figure which is much higher than that for Japan where such taxes account for about 8% of the nation's total tax revenue. Considering the fact that there are far fewer cars registered per thousand persons in Korea as compared Japan, the tax burden on car owners is very heavy in Korea.

The Korean government levies such high tax rates because it wants to encourage energy conservation in addition to curbing spending on luxury goods. Accordingly, bigger cars which consumes larger amounts of fuel and which have higher sticker prices are subject to higher tax rates. As heavy as these taxes may be, however, they apply to both Korean and imported foreign cars on equal terms. Outside of import tariffs, it therefore cannot be argued that foreign cars are treated unfairly in the domestic market.

Classification	Time of Collection	Items Subject to Tax	Tax Rates
National Taxes			
Special Commodity Tax (SCT)	Purchase	Passenger cars	10~20% of factory price according to displacement
Education Tax to Special Commodity Tax	Purchase	Passenger cars	30% of Special Commodity Tax
Value-added Tax	Purchase	All automobiles	10% of auto price
Transportation Tax	Operation	Gasoline	414 won/l
		Diesel	48 won/l
Education Tax to Transportation Tax	Operation	Oil	15% of Transportation Tax
Value-added Tax	Operation	Oil	10% of oil price
Local Taxes			
Acquisition Tax	Registration	All Automobiles	2% of auto price
Special Tax for Agriculture & Fishery	Registration	All Automobiles	10% of Acquisition Tax
Registration Tax	Registration	All Automobiles	2~5% of auto price
Education Tax to Registration Tax	Registration	All Automobiles	20% of Registration Tax
Automobile Tax	Ownership	All Automobiles	Fixed amount according to displacement and use of automobile
Education Tax to Automobile Tax	Ownership	All Automobiles	30% of Automobile Tax
Licence Tax	Ownership	All Automobiles	Fixed amount according to displacement and use of automobile
Others			
Public bond	Registration	All Automobiles	1~20% of Sale-price and displacement
Environment Improvement Charge	Ownership	Diesel-powered Automobiles	Basic charges plus surcharge

Note: As of May, 1997.

The raising of transport taxes and collection of traffic congestion tolls are both intended to

restrict the use of cars. Transportation taxes levied without exception on all car owners who insist on driving.

<Table 8> Comparison of Taxes on Passenger Cars in Major Countries

		Korea	Japan	US	Germany	UK
Factory price		100	100	100	100	100
Purchase	Special consumption tax	10	3 ^a	4 ^b	15 ^c	10 ^d
	Education tax on SCT	3	-	-	-	18 ^d
	Value-added tax	11.3	-	-	-	-
Sub-total		24.3	3	4	15	28
Registration	Subway bond	11.2	-	-	-	-
	Registration tax(RT)	6.2	-	-	-	-
	Education tax on RT	1.2	-	-	-	-
	Acquisition tax	2.5	5.2	-	-	-
Sub-total		21.1	5.2	-	-	-
Total including taxes		145.4	108.2	104	115	128

Source : KAMA, *Korean Automotive Industry*, 1995.

Notes : 1) Based on 1.5 liter car 2) a) Consumption tax, b) Sales tax, c) Added tax, d) Special tax

2. International trade and Globalization of Korean automotive industry

2.1 Exports

Entering the '90s, exports of Korean-made cars rose rapidly for several reasons. Among these were redoubled efforts to control quality, expansion of after sales service networks, production of a wider range of export models, and more aggressive marketing efforts. Perhaps most importantly of all, however, the rapid rise was also due to aggressive efforts by Korean manufacturers to explore overseas markets. Korean-made cars are now being exported to a greater number of countries than ever as a result, especially to developing countries.

Car markets in developing countries are growing fast in line with the rapid economic growth, and these countries are widely expected to have enormous market potential in the future. Furthermore, as consumers in developing countries are more sensitive to price than quality compared with consumers in advanced countries, Korean manufacturers can advance into markets in developing countries relatively more easily. Considering that

Korean-made cars have price competitiveness over those made by advanced manufacturers, Korean manufacturers have focused more heavily on markets in developing countries than on advanced countries' markets or in markets where small-car demand is high. This explains the rapid rise in exports in such a short time. In Europe, Korean manufacturers concentrated on Western European markets where demand for low-priced small-sized cars was rising rapidly.

The diversification of export markets for Korean-made cars can be explained by the fluctuations in exports by region. Exports to North America, which used to account for more than 80% of Korea's total exports during the '80s, fell off at an average rate of 1.9% annually during the period from 1990 to 1996. Accordingly, the share of exports to North America out of the industry's total exports dropped from 72% in 1990, to 50% in 1991, 20% in 1993, and finally to 18.5% in 1996.

Exports to Western Europe, on the other hand, rose sharply entering into the '90s. Exports to Western Europe were a mere 20,000 units in 1990, but in 1992, exports to the region exceeded 100,000 units. In 1995, exports to Eastern Europe surpassed exports to North America, and in 1996, exports to Western Europe were recorded at 300,000 units.

<Table 9> Percentage Share of Export by Automaker

(Unit)	Hyundai	196,053	337,070	389,059	472,813	551,274
	Kia	64,317	107,551	168,849	200,477	252,244
	Daewoo	34,049	102,089	99,612	247,414	298,236
	Asia	805	14,753	17,803	27,212	28,061
	Ssangyong	794	3,674	7,747	14,731	24,429
	Daewoo H.	111	9,577	8,966	15,921	55,887
	Total	296,129	574,714	692,036	978,568	1,210,131
(% Share)	Hyundai	66.2	58.6	56.2	48.3	45.5
	Kia	21.7	18.7	24.4	20.5	20.9
	Daewoo	11.5	17.8	14.4	25.3	24.7
	Asia	0.3	2.6	2.6	2.8	2.3
	Ssangyong	0.3	0.6	1.1	1.5	2.0
	Daewoo H.	0	1.7	1.3	1.6	4.6
	Total	100.0	100.0	100.0	100.0	100.0

Source : KAMA, *Monthly Automobile Statistics*.

During the 1992-1995 period, the annual average growth rate of exports to Western Europe was 54.6%, and Western Europe's share of Korea's total exports rose sharply to

25.1% in 1995 from only 6.4% in 1990.

Exports to Eastern Europe, Africa, the Middle East, Latin America, and the Pacific region have registered remarkable growth rates of 40-70% annually. Accordingly, the export shares of these regions were 9-14% of the total in 1996, compared with below 5% in 1990. Exports to the Asian region have grown steadily to 63,000 units in 1996 from 33,000 units in 1990, an average annual growth rate of 11.2%. However, Asia's share of the total exports declined to 5.2% in 1996 from 9.6% in 1990 because exports to other regions have surged at even faster rates.

<Table 10> Exports by Destination

(Unit)	N. America	251,183	129,848	234,904	202,786	223,509
	W. Europe	19,364	131,329	138,270	276,549	303,283
	E. Europe	9,505	26,507	21,528	76,065	146,916
	Africa	5,733	11,986	17,146	42,298	90,444
	Asia	33,544	63,615	28,810	40,722	63,312
	Middle East	6,442	90,168	82,449	100,296	108,155
	Pacific	13,123	30,649	45,562	74,251	107,796
	Latin America	8,206	90,612	123,509	165,601	166,716
	Total	347,100	574,714	692,036	978,568	1,210,131
(% Share)	N. America	72.4	22.5	34.0	20.7	18.5
	W. Europe	5.6	22.9	20.0	28.3	25.1
	E. Europe	2.7	4.6	3.1	7.8	12.1
	Africa	1.6	2.1	2.5	4.3	7.5
	Asia	9.7	11.1	4.2	4.2	5.2
	Middle East	1.8	15.7	11.9	10.2	8.9
	Pacific	3.8	5.3	6.6	7.6	8.9
	Latin America	2.4	15.8	17.7	16.9	13.8
	Total	100.0	100.0	100.0	100.0	100.0

Source : KAMA, *Monthly Automobile Statistics*.

note : Excludes KD kits and Jindo specialty vehicles except 1990.

All considered, the rise in exports of Korean-made cars is largely due to the industry's efforts to develop new markets by taking advantage of the competitive edge which Korean auto makers managed to secure. With the volume of exports rising, the shares of the three biggest export markets dropped to the 57% level in 1996 from the 88% level in 1990.

The fact that Korean manufacturers are becoming less dependent on specific markets implies that diversification of export markets has served as a major factor behind the rapid rise in exports of Korean-made cars.

Export shares by region differ among the three major manufacturers. Hyundai's share of exports to advanced countries including North America and Western Europe out of its total exports is on the decline. Kia's shares of exports to advanced countries and developing countries have changed very little, while Daewoo sharply increased its share of total exports to advanced countries recently.

Since the beginning of the '90s, Hyundai's exports to North America have been sluggish, below the level at the end of the '80s, while its exports to Western Europe have been rising rapidly. Hyundai's exports to Western Europe rose to 156,000 units in 1996, a sharp increase of 24.8% annually during the period from 1991 to 1996. Nonetheless, Hyundai's rise in exports in the '90s has been led by exports to developing countries rather than advanced countries. Hyundai's shipments to the Middle East, the Pacific region, and the Latin America rose sharply to 64,000 units in 1996 from 6,000 units in 1990. The combined share of these regions of Hyundai's total exports rose sharply to 11.6% in 1996 from 2.6% in 1991.

Exports to the Pacific region and Latin America registered a remarkable average annual growth rate of 40-50% during the same period. Thus, Hyundai's exports are classified as either those going to advanced countries or those going to developing countries. The share of exports to advanced countries continued to decline during the period, dropping to 53% of the total exports in 1996, from 71% in 1992, and above 80% at the end of the '80s.

At Kia, exports to advanced countries and developing countries are both on a rapid rise. No changes were seen in each group's share of the total. On the US market, despite the decline in Kia's OEM exports for Ford, exports of the Sephia under the Kia name have been doing well. Kia's marketing functions have been further strengthened in the advanced countries' auto markets. It even established an independent sales network in Western Europe in 1995. Thanks to these marketing efforts, the share of Kia's exports to advanced countries remained at 50% of its total exports during the entire period, except for 1993. Exports to developing countries, mainly in Asia, Eastern Europe, and Latin America, have been rising at almost the same rate as those to advanced countries.

Of developing countries, countries in Asia and Latin America have emerged as major export markets for Korean-made cars. Exports to Asia and Latin America registered a high annual growth rate of 60-70%. It is noted that a high percentage of Kia's total exports are OEM exports, which is a major reason why its exports to advanced countries

have been strong.

Daewoo's OEM exports declined sharply after it severed ties with GM. Its export share to advanced countries out of its total dropped sharply in 1993 as a result. However, in 1995, after restrictions on exports of Daewoo cars to Western Europe were lifted, Daewoo's exports to advanced countries rose sharply. Even so, compared with Hyundai and Kia, Daewoo's export share to developing countries out of its total is relatively very high. Daewoo's exports to North America stopped in 1994 with the discontinuation of its OEM exports for GM. Exports to Western Europe, on the other hand, posted tremendous growth. Daewoo exported 100,000 units to Western Europe in 1995, compared with 12,000 units in 1994. The share of Daewoo's exports to advanced countries rose to 32.6% in 1996 from 7.9% in 1993.

Daewoo's exports to developing countries registered high growth of 77% annually from 1991 to 1996. Thanks to this strong performance, Daewoo overtook Kia as the second largest exporter next to Hyundai. Daewoo has been most successful in the Eastern European market. Its exports to this region grew at the astonishing rate of 552% annually from 1991 to 1996.

<Table 11> Exports by Type

(Unit)	Export Total	346,975	638,492	737,856	1,083,157	1,412,274
	Cars	288,826	509,614	604,315	856,368	1,056,400
	CVs	7,303	65,100	87,721	122,200	153,731
	CKD	50,846	63,778	45,820	104,589	202,143
(% Change)	Export Total	-2.4	40.0	15.6	46.8	30.4
	Cars	-11.7	31.0	18.6	41.7	23.4
	CVs	-11.1	128.2	34.7	39.3	25.8
	CKD	152.2	-	-28.2	128.3	93.3
(% Share)	Export Total	100.0	100.0	100.0	100.0	100.0
	Cars	83.2	79.8	81.9	79.1	74.8
	CVs	2.1	10.2	11.9	11.3	10.9
	CKD	14.7	10.0	6.2	9.6	14.3

Source : KAMA, *Monthly Automobile Statistics*.

note : Excludes Jindo specialty vehicles.

In other regions, Daewoo's presence was very strong, too, registering a rate of growth in exports at 20-230% a year.

Efforts of the industry to expand exports, particularly efforts to diversify export

markets, among others, have led to the rise in exports of Korean-made cars in the '90s. However well the auto makers have been performing, there are a number of problems which must be addressed in order to ensure steady expansion of exports in the future.

The volume of exports did in fact rise substantially as export markets became diversified, but the growth rates between regions has varied far too greatly. This indicates that Korean manufacturers have not yet secured competitiveness overseas. The rise in exports of Korean-made cars was greatly influenced by external factors such as the appreciation of the Japanese Yen. This is a precarious situation to say the least when it is considered that the Korean manufacturers are turning to the export market out of necessity to offset sluggish domestic sales.

It should also be noted that the sharp rise in exports of Korean-made cars to Western Europe can lead to problems if the competitiveness of Korean-made cars has not yet been firmly recognized on the market.

Excessive expansion of exports without first achieving sufficient competitiveness can mean steep declines in exports afterwards. This was something which was learned in painful fashion by Hyundai in North America at the end of the '80s. Furthermore, with Korean-made cars accounting for higher and higher shares of the market in Western Europe, threats to continued exports have become more pronounced. Among other things, more import restrictions on Korean cars have been put in place, and there have been more anti-dumping appeals.

The fact that the number of export models is limited is another problem which needs to be addressed. Of course, only one or two leading models can be selected to compete with foreign models on overseas markets when manufacturers advance into new markets for the first time, but for a country with exports exceeding one million units, the lack in the number of models would seem to bode poorly for expansion of exports in the future.

2.2 Imports

Sales of imported cars on the domestic market registered an increase of 49% to 10,315 units in 1996 from a year earlier. Likewise, the aggregate market share of imports in the domestic market rose to 0.8% in 1996 from 0.6% in 1995. In the wake of the trade conflicts between Korea and the US in 1995, foreign auto manufacturers were given wider access to the Korean market. The market expanded further because foreign manufacturers began to introduce low-priced models.

Sales of imports priced less than 20 million won rose sharply in 1996. Sales by engine displacement showed that the market share of cars with 2 liter or smaller engines dropped slightly, while sales of cars in the range between 2 liters and 3 liters increased sharply by

48.7%. The market share of cars priced lower than 20 million won rose sharply compared with the year before, and the market share of those priced above 50 million won remained about the same. The market share of cars in the price range of 30 to 50 million won dropped, however. All told, the expansion of the imported car market in Korea in 1996 was led by low-priced models.

<Table 12> Sales of Imported Cars by Origin, 1990-1996

Country of Origin	1990	1993	1994	1995	1996
U.S.	1,678(68.9)	1,456(74.6)	1,905(49.3)	2,578(37.2)	3,894(37.8)
Germany	443(18.2)	223(11.4)	916(23.7)	2,411(34.8)	3,685(35.7)
Sweden	123(5.0)	180(9.2)	731(18.9)	1,414(20.4)	1,847(17.9)
France	110(4.5)	49(2.5)	270(7.0)	438(6.3)	289(2.8)
Italy	79(3.2)	24(1.2)	14(0.4)	0(0.0)	187(1.8)
UK	3(0.1)	20(1.0)	31(0.8)	80(1.2)	127(1.2)
Japan	-	-	-	-	286(2.8)
Total	2,436(100.0)	1,952(100.0)	3,867(100.0)	6,921(100.0)	10,315(100.0)

Looking at foreign car sales by country of origin, the market share of US-made cars rose while that of European-made cars dropped. A total of 3,894 US-made cars were sold, posting an increase of 51% in 1996 from a year earlier. This growth came from strong sales of the Chrysler Stratus and Neon, both priced at about 20 million won, and the low-priced Ford Mondeo. This success was attributed by many to the US manufacturers' efforts to enter the Korean market by introducing low-priced cars.

European-made cars registered an increase in sales of 41.9%, a figure below the average growth rate of total imports to Korea. A total of 6,135 European-made cars were sold in 1996. Sales of Mercedes-Benz, Peugeot, Volvo were sluggish, while BMW, Volkswagen, and Audi performed well. BMW and Mercedes-Benz, both German manufacturers of luxury cars, performed very differently. BMW recorded astonishing sales growth of 102.7% while sales of Mercedes-Benz rose by a mere 14.1%. As for Japanese makers, 286 units of Japanese cars imported from the Japanese transplants in US(A ban on imports of built-up cars from Japan remains in place) were sold.

2.3 Trade issues

After Korea-US automobile trade negotiation in 1995, the domestic market got much more widely open to imports. The import tariff rates and acquisition tax rates on imported

luxury cars were lowered significantly and foreign makers were granted greater freedom to advertise their products on television. In addition, the previous limits on the maximum number and size of sales locations (20 locations, 3,000 square meters) that each foreign maker could manage were completely removed.

<Table 13> Tariff Rates on Imported Cars in Korea

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Rate(%)	60	50	30	25	20	20	17	15	10	8

Source: KAMA, *Korean Automotive Industry*, selected years

<Table 14> Automobile import duty and trade restriction in major countries

(unit: %)

	import duty		contents of other import restriction
	cars	CVs	
USA	2.5	25	† None
Canada	8.0	8.0	† None. But duties for cars and vehicles manufactured in USA and Mexico are 1.8% and 23% by NAFTA
EU	10	10.4~22	† None. But UK, Spain, France and Italy impose VER on
Japan	0	0	Japanese imports. † None
Korea	8	8	† Import Origin Diversification on Japanese imports.
China	100~120	25~30	† Imports is allowed only to those with import permit
Thailand	42~68.5	60	† Sales tax of 35.75~41.8% on car imports
Mexico	20	20	† Import permit only to local manufacturers in Mexico
Brazil	70	70	† Preferential duty of 35% for local manufacturers. † Imports from Japan, Korea, and EU are regulated by quota and levied imports duty of 35%

Source: Daily Auto News, *Automotive Industry Handbook*, 1997, Japan

Note: Tariff rates are as of August 1996.

The Korea-US trade talks in 1995 had three major ramifications. First of all, Korea, by agreeing to permit discussion of its tax system during the negotiations, provided the opportunity for the US to press Korea even more intensely in the future. Second, by reducing the special consumption tax and auto taxes on large-sized cars, the retail prices, and registration and operation costs were reduced substantially. The consumer prices at

the time of purchase and registration was down 4.9% and auto taxes during operation was down by \$400-\$500 for 2.5 liter car, by \$1,200 for 3.0 liter car annually.

Third, as costs for the purchase and operation of large-sized cars have been reduced, the shift in domestic demand towards larger cars will no doubt accelerate. As there is no longer any discrimination against imported cars, there will likely be a steep rise in imports. The tariff rates on imported cars in Korea were 60% in 1986, when the government permitted the importation of foreign cars for the first time. After successive reductions, they now stand at 8%, which is an even lower level than in the EU. Other major developing countries producing cars impose much heavier tariffs beginning at 20% in Mexico and going as high as 100-120% in China.

Korea's ratio of exports to total production was 43% in 1996. It is below average of major auto producing countries. USA and Brazil have big local market and so their export ratios are quite low while European countries show high export ratios because of high trade volume inside EU bloc.

<Table 15> New car exports by country

(unit : thousand units, %)

Country	1994			1995		
	Productions	Exports	Export Ratio	Productions	Exports	Export Ratio
Belgium	1,291.8	1,215.7	94.1	1,234	1,193	96.7
Sweden	435.0	346.1	79.6	463	406	87.7
Mexico	1,080.8	559.1	51.7	1,211	975	80.5
Spain	2,142.3	1,588.1	74.1	2,412	1,924	79.8
Canada	2,321.7	1,752.9	75.5	2,142	1,731	80.8
France	3,558.4	2,157.4	60.6	3,591	2,272	63.3
Germany	4,356.1	2,410.3	55.3	4,843	2,842	58.7
Italy	1,534.5	669.6	43.6	1,545	799	51.7
UK	1,694.6	718.2	42.4	1,924	1,021	53.1
Korea	2,311.7	737.9	31.9	2,813	1,210	43.0
Japan	10,554.1	4,460.3	42.3	10,346	3,711	35.9
Brazil	1,582.9	379.3	24.0	1,812	306	16.9
USA	12,262.7	1,086.6	8.9	11,796	1,051	8.9

Source: KAMA, *Korean Automotive Industry*, 1997

Trade in world car market has been dominated by a handful of countries. Top ten auto exporting countries take up more than 90% of world auto exports in 1993. Korea ranked 12th in 1993 and Korea's share in world auto exports was only 1.5%. As Korea's

exports grew so fast recently, however, the trade imbalance in Korean auto industry drew attention from advanced countries. Korea exports autos and auto parts of 12 billion dollars in 1996 with trade surplus of 11 billion dollars.

Trade of advanced countries is better explained by the theory of intra-industry trade rather than the theory of inter-industry trade, stemmed from the difference in input factors available in countries. The theory of intra-industry trade means that the trade occurs because the industry in other countries may differ in scale economy and monopolistic power.

<Table 16> Automotive exports, imports and trade balance of major countries(1993)

unit: million dollars, %

	exports	imports	exports breakdown			trade balance		
			cars	CVs	parts	vehicles	parts	total
Japan	80,157	6,452	58.8	14.0	27.2	53,176	20,529	73,705
Germany	59,993	37,901	58.7	8.7	32.7	14,076	8,016	22,092
USA	44,603	84,085	33.2	11.5	55.3	-38,850	-632	-39,482
Canada	36,122	29,115	52.7	24.2	23.1	14,970	-7,963	7,007
France	24,190	20,639	50.8	7.7	42.0	-1,574	5,125	3,551
Belgium	18,401	14,954	79.7	7.7	12.6	8,952	-5,505	3,447
UK	13,479	21,605	48.4	11.6	39.9	-5,060	-3,066	-8,126
Spain	14,182	13,230	70.1	7.3	22.6	3,718	-2,766	952
Italy	11,678	20,364	42.0	14.3	43.7	-11,365	2,679	-8,686
Sweden	6,540	3,557	45.7	19.3	35.1	2,231	752	2,983
Mexico	8,394	8,579	50.0	8.0	41.9	4,159	-4,344	-185
Netherlands	3,668	7,844	38.4	31.1	30.6	-3,476	-700	-4,176
Austria	3,942	6,544	22.6	17.1	60.2	-3,501	899	-2,602
Korea	4,956	1,189	78.4	11.9	9.7	4,331	-564	3,767
Brazil	3,095	1,120	19.3	28.4	52.3	n.a.	n.a.	n.a.
Total	333,400	277,130	53.5	12.9	33.6			

Source : United Nations, International Trade Statistics Yearbook 1993.

Korea Trade Association, Trade Statistics, 1993.

Note: cars are classified in SITC 781, CVs in SITC 782, 78 and parts in SITC 784, 7132, 7783

The automotive industry is such a good example that we can observe active intra-industry trade as products differentiation has evolved well in final cars and vehicles and as a host of parts are supplied from parts suppliers to auto makers. High R&D costs for

developing a variety of new models and parts constitutes fixed costs to be the most important source of scale economy and monopolistic power. International division of labor also follows between advanced and developing countries in the area of manufacturing and R&D.

The differences in the level of technology and wage brings about such division of labor that advanced firms provide companies in developing countries with technologies for product development and manufacturing as well as with capital equipment and core parts. Then they combine these with low-wage labor to assemble the final cars. Korea is a typical example where a less-developed country has adopted such a strategy of importing foreign technology to combine with its low wage labor. In this way, it could specialize in assembling small passenger cars.

Korean auto industry lacked in technologies, capital equipment, parts industry and etc. However, Korea had an automotive superpower, Japan, in neighborhood. So Korean auto industry could grow depending on Japan in securing technologies, core parts, and a considerable part of capital equipment.

In 1980's, Korea could increase its exports to US market where quota like voluntary exports restraint(VER) was imposed on Japanese passenger cars and US auto makers made strategic alliances with Korean makers, rendering Korea a manufacturing base for US small cars.

<Table 17> Technological Licenses in Automotive industry by Partner country

(unit: # cases, %)

		US	Japan	UK	Germany	Others	Total
1992	Vehicles	21	38	20	4	10	93
	Parts	42	119	9	33	17	220
	Sum	63	157	37	37	27	313
	Share	20.1	50.2	9.3	11.8	8.6	100.0
1995	Vehicles	16	42	14	5	6	83
	Parts	38	93	6	34	17	188
	Sum	54	135	20	39	23	271
	Share	14.9	49.8	7.4	14.4	8.5	100.0

Unlike Belgium, Spain, Canada and Mexico in which multi-national corporations dominate local auto industry, Korean government pursued the localization policy to prop up the parts industry. In 1992 Korea experienced a surplus of 4.3 billion dollars in vehicle trade while in parts industry it had deficit only of 564 thousand dollars. In 1996

Korean auto exports jumped to 12 billion dollar and imports to 0.85 billion, yielding trade surplus of 11.15 billion dollars. This figure does overestimate the potential of Korean auto industry. Looking at Korea's technological licenses from other countries, we can see its auto industry still falls behind Japan, US, and Germany. This tells us that despite of rapid growth in quantity, Korean auto industry has a long way to enhance its technological level inferior to advanced countries.

2.4 Globalization

Korean auto manufacturers have been aggressive in recent years in expanding their overseas operations. Kia entered the Indonesian car market in a joint venture for a national car project, Hyundai advanced into the Indian market, and Daewoo's local production plants in Poland, Uzbekistan, and Romania started full-scale operations. Korean auto makers, with full intentions of becoming among the global top ten by early next century, are now entering a new phase where all efforts are based on global management. Each manufacturer is pursuing different strategies to advance overseas to build local production operations. Hyundai, among others, formulated its own comprehensive globalization strategy, and this plan is quite a departure from its past strategies which focused on KD kit assembly.

Hyundai is planning to establish a comprehensive local production system including parts and components manufacturing in countries with big markets and great potential. Hyundai will pursue this plan independently on its own.

<Table 18> Overseas production capacity by maker

	1993	1994	1995	1996	1997	1998
Hyundai	130	55	79	100	170	290
Kia	73	73	128	138	228	348
Daewoo	0	0	182	580	831	1,033
Total	203	128	389	818	1,229	1,671

(unit: thousand units)

Daewoo, which has been the most aggressive of all Korean manufacturers in pursuing its globalization strategy, is advancing into foreign market either by constructing a local plant with a production capacity of 200,000 units per year or in joint ventures with local firms. Kia, on the other hand, is expected make a big change in its globalization strategy now that it is participating in the Indonesian national car project. Nevertheless, KD kit

assembly at local plants overseas is still an important part of its overseas operations.

Globalization of Korean makers is not limited to manufacturing. A global R&D system is also being built. Kia expanded and reorganized the Kia Japan Research Institute and established the Kia Tokyo R&D Center. Kia has established mutually cooperative relations with the Detroit Research Institute and LA Design Research Institute. Hyundai established a technology research institute in the US in 1986, the first of any of the Korean automakers to do so. By establishing an R&D center in Frankfurt in 1994 to develop technology and products suitable for European market, Hyundai established its own global R&D network linking the US, Japan and Europe.

Daewoo has been strengthening its mutual cooperative ties by linking the Worthing Technology Center, which it has acquired from the IDA Group of UK, and the Munich Research Institute in Germany.

Korean three automakers have been establishing global sourcing network linking the US, Japan and Germany. Kia set up a parts and components R&D network linking research institutes in Detroit, KME in Germany and the Tokyo R&D Center. Kia has a plan to build a sourcing network in Indonesia in cooperation with its suppliers. Daewoo is establishing a production and supply system for parts and components in those developing countries into which it has already advanced. Engines will be supplied from India, small press devices from Romania, large press devices from Uzbekistan and Czech, and six core parts including engines and transmissions will come from China and will be supplied to the East Asian region. Hyundai also plans to build parts plants in those developing countries it has advanced into in order to supply parts to its local plants.