

PROMISING INVESTMENT OPPORTUNITIES

Korea has the potential to become a "global base for modulization." Korea's top-tier

international competitiveness in the assembly industries has put the country at an advantage for the

manufacture and use of modules. Korea can thus gain a competitive edge over China in technology and Japan in price.

Parts and Materials 2008



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Korea's Parts & Materials Industry

1. Industry Overview¹⁾

◆ Industry Statistics

	Item	2003	2004	2005	2006
No. of Companies	Manufacturing (A)	112,662	113,310	117,205	119,181
	- Large	677 [0.6%]	700 [0.6%]	658 [0.6%]	676 [0.6%]
	- Small/Medium	111,985 [99.4%]	112,610 [99.4%]	116,547 [99.4%]	118,505 [99.4%]
	Parts/Materials (B)	34,816	35,638	36,816	38,159
	- Large	412 [1.2%]	420 [1.2%]	401 [1.1%]	414 [1.1%]
	- Small/Medium	34,404 [98.8%]	35,218 [98.8%]	36,415 [98.9%]	37,745 [98.9%]
	Ratio (B/A)	30.9	31.5	31.4	32.0
Employees (10 thousand persons)	Manufacturing (A)	274	280	287	291
	- Large	63 [23%]	68 [24.3%]	68 [23.7%]	70 [24.1%]
	- Small/Medium	211 [77%]	212 [75.7%]	219 [76.3%]	221 [75.9%]
	Parts/Materials (B)	125	130	134	138
	- Large	42 [33.6%]	45 [34.6%]	47 [35.1%]	49 [35.5%]
	- Small/Medium	83 [66.4%]	85 [65.4%]	87 [64.9%]	89 [64.5%]
	Ratio (B/A)	45.5	46.4	46.9	47.4
Production (KRW trillion)	Manufacturing (A)	677	795	852	913
	Parts/Materials (B)	268	338	356	390
	- Large	126 [47%]	167 [49.4%]	162 [45.5%]	179 [45.9%]
	- Small/Medium	142 [53%]	171 [50.6%]	194 [54.5%]	211 [54.1%]
	Ratio (B/A)	39.6	42.6	41.7	42.7
	Manufacturing (A)	256	302	313	327
Value Added (KRW trillion)	- Large	121 [47.3%]	152 [50.3%]	152 [48.6%]	159 [48.6%]
	- Small/Medium	135 [52.7%]	150 [49.7%]	161 [51.4%]	168 [51.4%]
	Parts/Materials (B)	139	179	187	196
	- Large	82 [59%]	112 [62.6%]	114 [61%]	121 [61.7%]
	- Small/Medium	57 [41%]	67 [37.4%]	73 [39%]	75 [38.3%]
	Ratio (B/A)	54.3	59.3	59.7	59.9

Source: Korea National Statistical Office (NSO); Statistical DB on Parts and Materials of Korea Association of Machinery Industry (KOAMI)



¹⁾ The scope of parts and materials industry is based on Article 2 of the Special Act on the Development of the Parts and Materials Companies, Etc. and Article 2 (Scope of Parts and Materials) of the Implementation Decree on the same Act.

◆ Foreign Trade in Parts and Materials

[Unit: US\$100 million]

Description		2004	2005	2006	2007
Exports	Parts/Materials (A)	1,079	1,238	1,487	1,682
	Entire Industry (B)	2,539	2,844	3,255	3,715
	Ratio (A/B)	42.5%	43.5%	45.7%	45.3%
Imports	Parts/Materials (A)	927	1,011	1,140	1,318
	Entire Industry (B)	2,245	2,612	3,094	3,568
	Ratio (A/B)	41.3%	38.7%	36.8%	36.9%
Trade Balance	Parts/Materials (A)	152	227	347	364
	Entire Industry (B)	294	232	161	146
	Ratio (A/B)	52%	98%	216%	249%

Source: Ministry of Knowledge Economy (MKE), 「2007 Statistical Yearbook of the Parts and Materials Industry」

◆ Top 10 Parts and Materials Import Items (2007)

[Unit: US\$ million, %]

Code Name	Top 10 Areas	Parts/ Materials	All Imports	Japanese Imports	Ratio
Hot Rolled, Drawn and Extruded Iron or Metal Products	Basic Metal	Materials	9,349	3,738	40.0
Other Integrated Circuits Semiconductor	Electronics, Radio, Television and Communication Equipment and Apparatus	Parts	21,842	3,243	14.8
Other Individual Material Semiconductor	Electronics, Radio, Television and Communication Equipment and Apparatus	Parts	3,621	2,148	59.3
Plastic Films, Sheets and Plates, Synthetic Leather	Rubber and Plastic Products	Materials	2,258	1,786	79.1
Other Unclassified Chemical Products	Chemicals and Chemical Products	Materials	3,459	1,189	34.4
Optical Fiber and Optical Elements	Precision Equipment Parts	Parts	1,876	1,095	58.3
Other Auto Parts	Transportation Equipment Parts	Parts	3,352	1,058	31.6
Plate Glass	Non-metallic Minerals	Materials	1,222	1,008	82.5
Other Synthetic Resins	Chemicals and Chemical Products	Materials	2,107	653	31.0
Chemical Preparations for Photographic and Sensitized Materials	Chemicals and Chemical Products	Materials	749	511	68.2

Source: MKE, 「2007 Statistical Yearbook of the Parts and Materials Industry」

◆ Foreign Direct Investment (FDI) in Korea's Parts and Materials Industry

(Unit: US\$ million)

Description		2001	2002	2003	2004	2005	2006
Parts/ Materials	Notification		1,233	1,269	4,299	2,113	3,173
	Amount [% change]	1,492	[-17]	[3]	[239]	[-51]	[50]
	No. of Notifications	460	396	422	539	574	856
Manuf- acturing	Notification		2,362	1,683	6,224	3,084	4,229
	Amount [% change]	2,860	[-17]	[-29]	[270]	[-51]	[37]
	No. of Notifications	680	565	571	686	748	709
Total	Notification		9,093	6,471	12,792	11,563	11,233
	Amount [% change]	11,286	[-19]	[-29]	[98]	[-10]	[-3]
	No. of Notifications	460	396	422	539	574	856

Source: Korea Materials and Components Industry Agency (KMAC)

◆ FDI by Sector

(Unit: US\$ million)

Description		2001	2002	2003	2004	2005	2006
Electronic parts, AV, and communications equipment		766	413	252	2,621	936	1,679
Chemical compounds and products		197	112	488	364	109	404
Computer and office equipment		145	44	1	115	6	7
Cars and trailers		124	175	90	293	397	191
Other electrical machinery and conversion devices		75	57	49	169	46	47
Other machinery and equipment		70	198	236	253	125	359
Others		116	233	153	485	494	487
Total		1,492	1,233	1,269	4,299	2,113	3,173

Source: KMAC

◆ FDI by Type of Investment

(Unit: US\$ million)

Description		2001	2002	2003	2004	2005	2006
M&A	Notification Amount		409	696	1,321	584	515
	[% change]	632	[-35]	[70]	[90]	[-56]	[-12]
	No. of Notifications	83	86	79	118	113	116
Greenfield	Notification Amount		824	573	2,978	1,529	2,658
	[% change]	860	[-4]	[-30]	[420]	[-49]	[74]
	No. of Notifications	377	310	343	421	461	443
Total	Notification Amount		1,232	1,269	4,299	2,113	3,173
	[% change]	1,492	[-17]	[3]	[239]	[-51]	[50]
	No. of Notifications	460	396	422	539	574	559

Source: KMAC

2. Industry Characteristics

❖ Position of Korea's Parts and Materials Industry

► Parts and Materials: Key to Industrial Competitiveness

- Just as the competitiveness of commodities is determined by the quality of parts and materials that finished products are composed of, so a nation's industrial competitiveness depends on the quality of the parts and materials it produces.
- Without the development of the parts and materials industry, "stand-alone" economic development is impossible, and continued dependency on external sources would be inevitable.

◆ Comparison of Competitiveness in the Parts and Materials Industry (United States = 100)

		Japan Today	Korea Today	Korea After 5 Years	China Today	China After 5 Years
Technology	Design	98.8	81.6	91.5	62.6	81.7
	New Product Development	99.6	81.5	90.8	62.2	80.1
	Application of New Technology	100.6	83.8	92.7	65.5	82.0
	Production	99.8	86.9	94.3	68.5	85.5
	Materials	98.7	80.0	89.4	64.3	80.8
	Assembly	100.2	88.9	95.0	70.0	86.1
	Inspection	99.9	83.2	91.5	64.5	80.2
	Average	99.7	83.7	92.2	65.4	82.3
Price	Labor	94.9	82.7	90.9	60.7	76.0
	Raw/Sub Materials	95.0	86.0	92.5	72.0	83.0
	Manufacturing	95.1	85.3	92.0	69.0	80.8
	Distribution	94.7	87.3	93.1	72.0	82.9
	Average	94.9	85.3	92.1	68.4	80.7
Quality	Function/Performance					
	/Emotion	101.1	87.5	95.1	64.7	80.6
	Durability	100.6	87.7	95.1	64.7	80.2
	Precision	102.3	87.6	95.1	64.5	80.2
	Average	101.3	87.6	95.1	64.6	80.3
Others	Design	100.6	88.3	95.3	65.1	80.4
	Brand Awareness	99.1	81.5	90.9	58.6	75.2
	Marketing	98.0	82.0	91.2	63.5	79.2
	Ease of Securing of					
	Raw/Sub Materials	94.9	81.9	88.7	75.8	87.5
	Average	98.2	83.4	91.5	65.8	80.6
Total Average		98.5	85.0	92.7	66.1	81.0

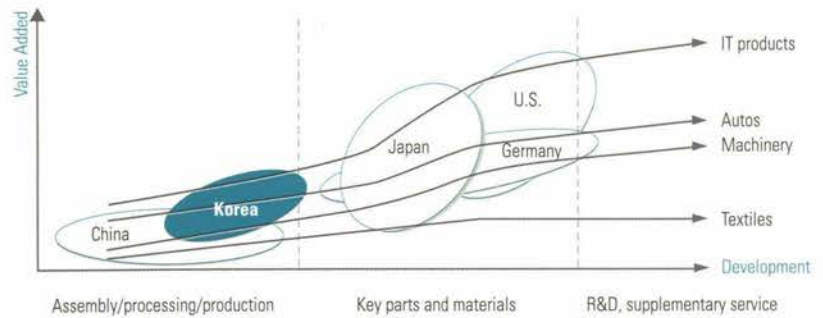
Source: 2006 survey by KMAC

► Advanced Countries Leading the Parts and Materials Industry

- Advanced countries such as the U.S., Japan, and Germany already shifted their focus from a full-set industrial structure toward an industry based on core parts and materials during the 1980s. In Japan, the materials industry accounts for one-third of the output of the entire manufacturing sector.

- The development of the parts and materials industry is a prerequisite to becoming one of the leading countries in technology and industry.

◆ Development Stages in the Parts and Materials Industry in Major Countries



▶ Competitive Paradigm in the 21st Century Has Shifted Focus toward Parts and Materials

Giant multinational parts manufacturers like Intel, Bosch, and Delphi lead the shift in paradigm toward parts and materials, dominating global standards.

- **Intel:** Intel chips are “inside” nearly 80 percent of computers worldwide.
- **Bosch:** influences even the design of finished cars through standardized module parts.

▶ At the Core of the High-Value Added Reorganization of Korean Industry

Being the world’s no. 1 in quantity is meaningless as the parts and materials industry accounts for 60 percent or more of the entire production cost.

▶ Global Sourcing of Parts: A New Corporate Management Strategy

- Under their global sourcing strategies, multinational corporations (MNCs) now source parts from around the world with the only proviso that quality must be guaranteed at low cost.

Global sourcing rate: BMW (50%), Ford (70%), Sony (70%)

- As an extension of global sourcing, mergers and acquisitions have increasingly become popular among top-tier parts suppliers desiring to grow larger to achieve economies of scale and become more specialized.

Examples:

- Delphi merged with Akebono Brake (specialized in braking systems).
- Bosche merged with Zexel (specialized in fuel injection systems).

▶ Core Parts and Materials Manufacturers: Now Mammoth Global Enterprises

The world’s leading parts and materials manufacturers have grown to be gigantic enterprises through the strengthening of their technology barrier, and achieving oligarchies or even monopolies.

Market capitalization of global parts and materials manufacturers: Intel (U.S., KRW245 trillion), Siemens (Germany, KRW71 trillion), Murata (Japan, KRW20 trillion), Denso (Japan, KRW17 trillion), Kyocera (Japan, KRW16 trillion), Fanuc (Japan,

KRW16 trillion)

Market capitalization of Korean parts and materials manufacturers: Posco (KRW 12 trillion), Samsung SDI (KRW6 trillion), Hyundai Mobis (KRW4 trillion), LG Chem (KRW3 trillion), and Samsung Electronics (KRW3 trillion)

► High-Tech Parts and Materials Determining the Development of New Products and the Performance of Finished Goods

◆ Relationship between Parts/Materials and Finished Goods

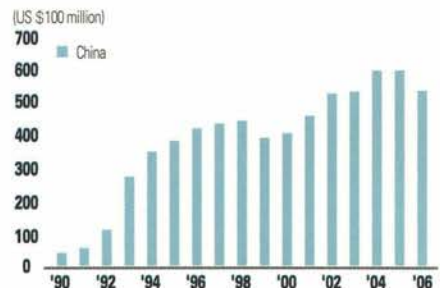
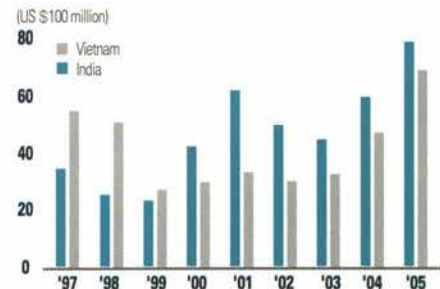


◆ Industrial Trends

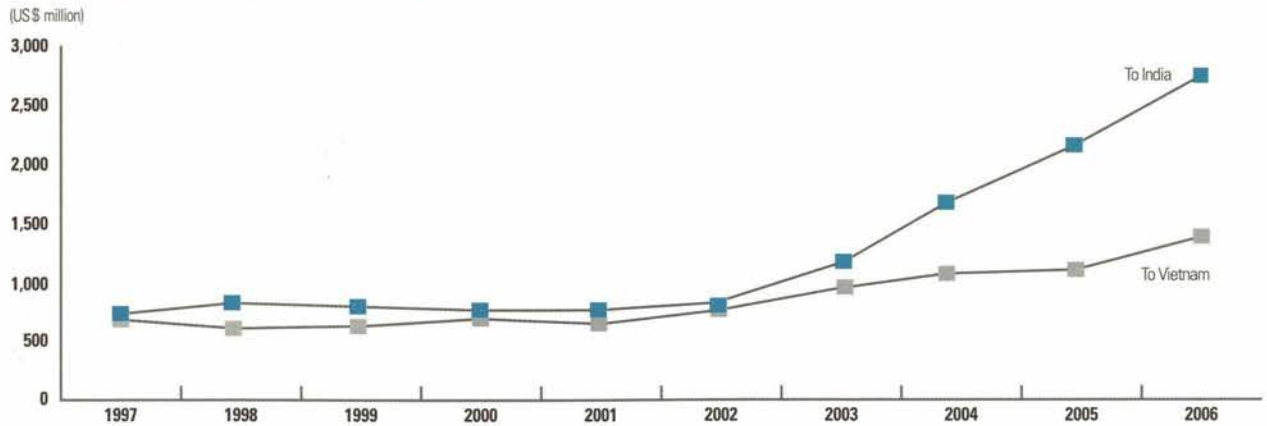
► Emerging Markets in the Parts and Materials Industry

- Countries like India and Vietnam have experienced rapid growth in their respective manufacturing industries. Worsening labor shortages and rising labor costs have made China comparatively less attractive to foreign investment.
- Multinational enterprises are attempting to identify “Post BRICs,” i.e., new and promising investment destinations as an alternative to the current BRIC countries where returns may be greater. One such emerging post-BRIC group is VISTA (Vietnam, Indonesia, South Africa, Turkey, and Argentina).

◆ FDI Trends in India, Vietnam and China



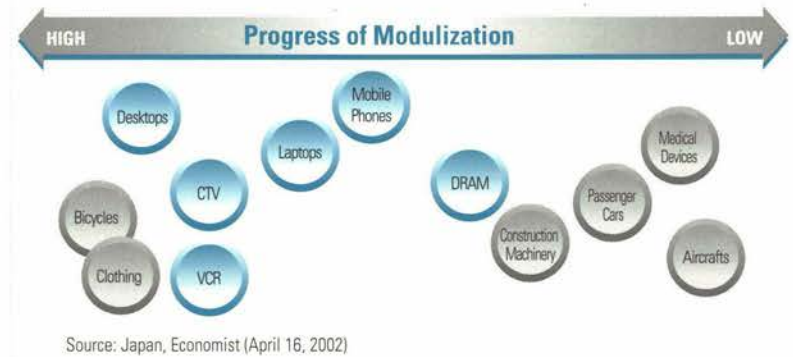
◆ Trends in Exports of Parts and Materials to India and Vietnam



► Greater Likelihood of Global Sourcing Amid Trend toward Modulization and Technology Convergence

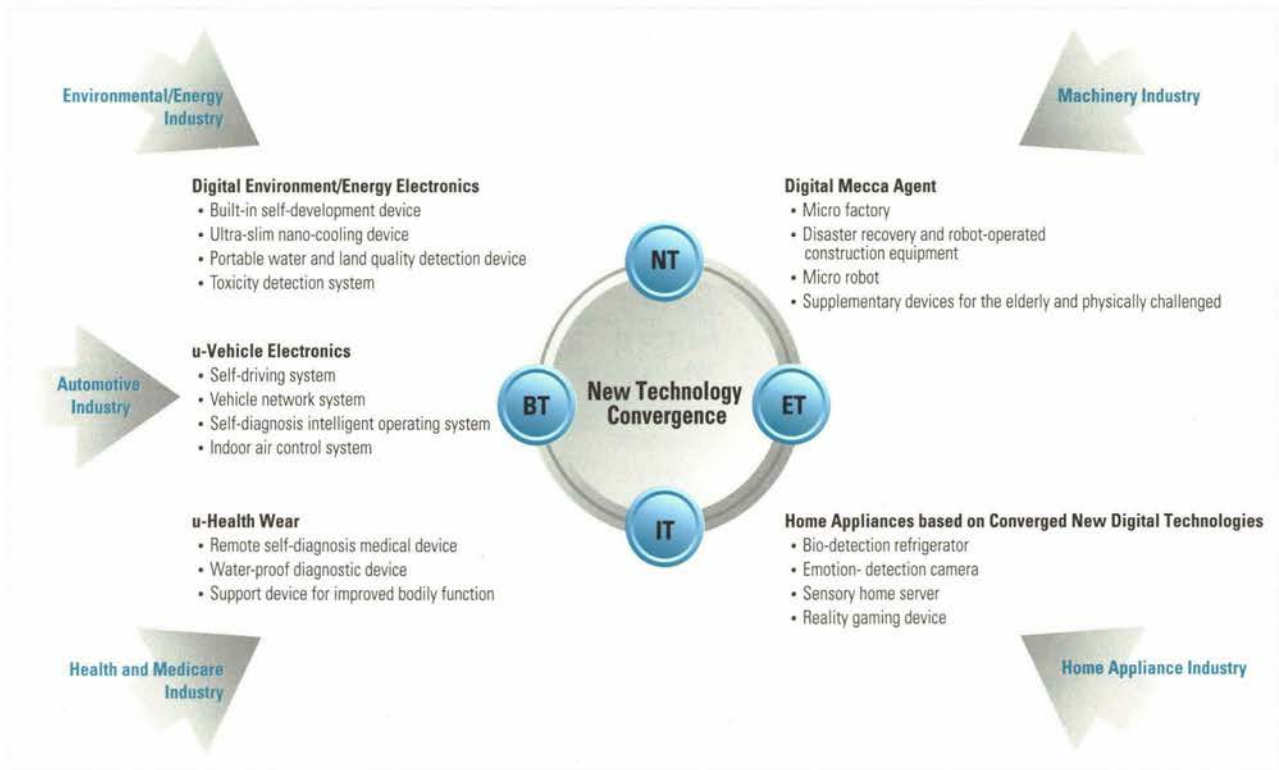
- In tandem with the increased use of modules, into which each component is integrated based upon its function, the importance of core parts has also been on the rise.
- The process of assembling finished products from modules began in the IT industry. It has now expanded into other areas of manufacturing such as autos and shipbuilding.

◆ Modulization by Product



- Korea has the potential to become a “global base for modulization.”
 - Korea’s top-tier international competitiveness in the assembly industries – autos, shipbuilding, and information/communications – has put the country at an advantage for the manufacture and use of modules.
 - Korea can thus gain a competitive edge over China in technology and Japan in price.
- As convergence in technology and mainline industry progresses, new concepts in parts and materials have been developed, together with new markets.
 - The parts and materials industry will likely develop further through selective convergence of traditional industry with new technologies such as biotechnology and nanotechnology.

◆ Technological Convergence Trends



► Continued Market Dominance by a Handful of Global Enterprises with Source Technology

The competitiveness paradigm in the parts industry has shifted from the use of individual parts to modules, while the market for core materials is dominated by only a few suppliers.

Companies which dominate in specific areas: 3M (U.S., prism sheeting, 100%), Fuji (Japan, polarizing plate materials, 100%), Sumitomo (Japan, IC board materials, 95%), Merck (Germany, liquid crystal materials, 100%).

► Growth in Scope of Global Enterprises

Companies operating globally have beaten their rivals through sophisticated management geared toward heightening the economies of scale, application of technology by strengthening their information and funding capability, thus transforming the world's main industries into oligopolies.

► Accelerated Globalization of Parts and Materials Value Chain

As the global economic paradigm has radically changed to favor the creation of globally based sourcing systems, the incorporation of parts and materials companies into such systems coupled with the exploration of global strategies are critical to their ability to compete and survive in the international market.

❖ Status of Production

◆ Production by Item

[Unit: KRW billion, %]

Description		2003	2004	2005	2006
Production	Parts/Materials	268,440 [12.1]	338,386 [26.1]	355,593 [5.1]	389,722 [9.6]
	Parts	152,780 [13.1]	194,672 [27.4]	204,822 [5.2]	229,313 [12.0]
	Assembled Metal Product	9,325 [26.4]	13,347 [43.1]	16,069 [20.4]	18,054 [12.4]
	General-purpose machinery	23,344 [9.8]	29,260 [25.3]	33,649 [15.0]	36,933 [9.8]
	Computer, Office Equipment	5,043 [11.6]	4,758 [-5.6]	4,671 [-1.8]	5,057 [8.3]
	Electrical Machinery	23,892 [8.3]	27,370 [14.6]	29,970 [9.5]	33,819 [12.8]
	Electronic Parts	58,697 [19.1]	78,957 [34.5]	72,865 [-7.7]	79,975 [9.8]
	Precision Machinery Parts	2,254 [-4.2]	3,081 [36.7]	4,497 [45.9]	4,751 [5.6]
	Transportation Machinery Parts	30,225 [6.9]	37,900 [25.4]	43,102 [13.7]	50,723 [17.7]
	Materials	115,660 [10.9]	143,714 [24.3]	150,771 [4.9]	160,409 [6.4]
	Textiles	11,272 [-6.4]	10,426 [-7.5]	9,977 [-4.3]	9,649 [-3.3]
	Chemical Compounds	40,826 [13.7]	50,328 [23.3]	50,852 [1.0]	51,691 [1.6]
	Rubber and Plastic	16,065 [7.1]	19,530 [21.6]	23,078 [18.2]	23,900 [3.6]
	Non-metal Minerals	5,411 [9.2]	6,299 [16.4]	6,885 [9.3]	7,494 [8.8]
	Basic Metal	42,087 [15.6]	57,131 [35.7]	59,978 [5.0]	67,676 [12.8]

Source: MKE, Statistical Yearbook of the Parts and Materials Industry of each relevant year

Notes: Figures in () refer to a year-on-year change.

◆ No. of Manufacturers and Employees (2006)

Description		No. of Manufacturers	No. of Employees (thousand persons)
Production	Parts/Materials	38,159	1,376
	Parts	26,956	1,006
	Assembled Metal Products	5,278	101
	General-purpose Machinery	8,927	254
	Computer, Office equipment	430	16
	Electrical Machinery	4,766	147
	Electronic Parts	2,729	260
	Precision Machinery Parts	1,118	27
	Transportation Machinery Parts	3,708	201
	Materials	11,203	370
	Textiles	2,237	54
	Chemical Compounds and Products	2,230	87
	Rubber and Plastic	3,730	114
	Non-metal Minerals	1,041	28
	Basic Metals	1,965	87

Source: MKE, 「2006 Statistical Yearbook of the Parts and Materials Industry」

◆ Major Parts and Materials Manufacturers

Company	Location	Business Area	Sales (KRW billion)	No. of Employees	2006 Exports (US\$ million)
Heesung Electronics Ltd.	Seoul	Electrical	1,301	435	105
Heesung Engelhard ¹ Corporation	Gyeonggi	Autos	721	261	416
Aekyung Petrochemical Co., Ltd.	Seoul	Chemicals	426	230	327
MB Metal Co., Ltd. ²	Gyeonggi	Metals	420	125	111
Tongsuh Petrochemical Co., Ltd.	Ulsan	Chemicals	411	178	388
Daesung Electronic Co., Ltd.	Gyeonggi	Autos	404	970	217
SewonECS Co., Ltd. ³	N. Chungcheong	Autos	404	950	184
Korea Polyol Co., Ltd.	Seoul	Chemicals	384	227	188
Siemens VDO Automotive AG Corporation ⁴	Gyeonggi	Autos	382	573	199
Das Co., Ltd.	N. Gyeongsang	Autos	357	869	177
DK Corporation	N. Gyeongsang	Metals	338	182	154
Rhodia Polyamide Co., Ltd.	Seoul	Chemicals	332	205	188
Kukdo Chemical Co., Ltd.	Seoul	Chemicals	320	209	218
Motonic Co., Ltd.	Seoul	Autos	303	259	136
MK Elctron Co., Ltd.	Gyeonggi	Electronic	298	173	304
Heesung Metal Ltd.	Incheon	Electronic	293	357	185
Dow Corning Corporation	Seoul	Chemicals	292	205	100
SL Corporation	Daegu	Autos	290	964	158
Hanwook Technoglass Co., Ltd.	N. Gyeongsang	Metals	290	299	300
Samsung BP Chemicals Co., Ltd.	Ulsan	Chemicals	284	180	231

Source: KMAC

Notes: 1) In July 2007, the company's trade name was changed to Heesung Catalysis Corporation.

2) In December 2007, MB Metal Co., Ltd. acquired MB Metal, creating a new combined entity MBShiroyama Co., Ltd.

3) In December, 2007 the company's trade name was changed to Yura Corporation.

4) In December, 2007 Continental Corporation, a German-based company, acquired Siemens VDO Automotive AG, giving it a new trade name "Continental Automotive System Corporation."

- Continued expansion in foreign trade in parts and materials and associated trade surplus
 - In 2002, China overtook the U.S. as Korea's largest export market.
 - As of 2007, the major markets for Korean exports of parts and materials were China, the U.S. and Japan, in declining order of importance.
 - In 2007, Korea imported more parts and materials from Japan than any other country. However, China would have been the largest source of such imports if Hong Kong had been included as part of China.

❖ Trade Status

◆ Exports by Major Purchasing Country

[Unit: US\$100 million]

Country	2004	2005	2006	2007
Asia	722	826	978	1,077
China	291	376	430	504
Japan	96	113	136	135
Hong Kong	104	93	116	113
Europe	126	140	180	212
Germany	37	38	36	35
U.K.	15	14	17	19
Russia	8	12	15	20
Spain	5	5	11	15
N. America	134	150	168	178
U.S.	125	140	158	167
Middle East	39	47	58	80
Central & South America	35	51	70	84
Mexico	14	19	31	42
Brazil	11	18	21	21
Others	23	25	33	51
Total	1,079	1,238	1,487	1,682

Source: MKE, Statistical Yearbook of the Parts and Materials Industry of each relevant year

◆ Imports by Major Supplying Country

[Unit: US\$100 million]

Country	2004	2005	2006	2007
Asia	568	638	733	858
Japan	255	274	292	322
China	130	176	231	314
Taiwan	56	60	71	72
Europe	153	159	173	212
Germany	50	56	62	72
France	14	15	16	22
Russia	11	12	16	12
U.K.	24	13	13	16
N. America	150	157	167	169
U.S.	144	152	160	163
Middle East	10	12	12	15
Central & South America	17	17	23	25
Chile	10	10	15	16
Mexico	2	2	3	3
Others	27	28	32	39
Total	927	1,011	1,140	1,318

Source: MKE, Statistical Yearbook of the Parts and Materials Industry of each relevant year

◆ Exports by Item

(Unit: US\$100 million, %)

Description	2004	2005	2006	2007
Entire Industrial Sector	2,539	2,844	3,255	3,715
Parts and Materials	1,079 (42.5)	1,238 (43.5)	1,487 (45.7)	1,682 (45.3)
Parts	670 (62.1)	791 (64.2)	980 (65.9)	1,114 (66.2)
Assembled Metal Products	17 (2.5)	22 (2.7)	27 (2.8)	30 (2.7)
General-purpose Machinery	69 (10.2)	87 (10.9)	102 (10.4)	131 (11.8)
Computer Office Equipment	84 (12.6)	60 (7.6)	56 (5.7)	57 (5.1)
Electrical Machinery Parts	50 (7.5)	64 (8.0)	80 (8.2)	104 (9.3)
Electronic Parts	373 (55.7)	454 (57.2)	582 (59.4)	633 (56.8)
Precision Machinery Parts	10 (1.5)	15 (1.8)	18 (1.9)	25 (2.2)
Transportation Machinery Parts	67 (10.0)	94 (11.8)	114 (11.7)	135 (12.1)
Materials	409 (37.9)	443 (35.8)	507 (34.1)	568 (33.8)
Textiles	48 (11.8)	47 (10.6)	43 (8.5)	42 (7.4)
Chemical Compounds and Products	180 (43.9)	216 (48.8)	239 (47.1)	276 (48.6)
Rubber and Plastic	40 (9.7)	46 (10.3)	48 (9.5)	54 (9.5)
Non-metal Minerals	9 (2.1)	9 (2.0)	9 (1.8)	10 (1.8)
Basic Metal Products	133 (32.6)	125 (28.2)	168 (33.1)	186 (32.7)

Source: MKE, Statistical Yearbook of the Parts and Materials Industry of each relevant year

Notes: Figures in () refer to year-on-year changes.

◆ Imports by Item

(Unit: US\$100 million, %)

Description	2004	2005	2006	2007
Entire Industrial Sector	2,245	2,612	3,094	3,568
Parts and Materials	927 (41.3)	1,011 (38.7)	1,140 (36.8)	1,318 (36.9)
Parts	565 (61.0)	624 (61.7)	690 (60.5)	780 (59.2)
Assembled Metal Product	8 (1.5)	10 (1.6)	12 (1.7)	14 (1.8)
General-purpose Machinery	85 (15.1)	94 (15.0)	110 (15.9)	137 (17.6)
Computer and Office Equipment	29 (5.1)	34 (5.5)	40 (5.8)	42 (5.4)
Electric Machinery Parts	62 (10.9)	76 (12.2)	86 (12.5)	102 (13.1)
Electronic Parts	309 (54.7)	328 (52.6)	349 (50.6)	380 (48.7)
Precision Machinery Parts	32 (5.6)	37 (5.9)	43 (6.2)	44 (5.6)
Transportation Machinery Parts	40 (7.1)	45 (7.2)	50 (7.3)	61 (7.8)
Materials	362 (39.0)	387 (38.3)	450 (39.5)	538 (40.8)
Textiles	24 (6.5)	24 (6.1)	26 (5.8)	27 (5.0)
Chemical Compound and Product	128 (35.4)	146 (37.6)	159 (35.4)	185 (34.4)
Rubber and Plastic	17 (4.7)	20 (5.2)	24 (5.4)	30 (5.6)
Non-metal Minerals	17 (4.6)	20 (5.1)	24 (5.2)	28 (5.2)
Basic Metal Products	177 (48.8)	178 (46.0)	217 (48.1)	269 (50.0)

Source: MKE, Statistical Yearbook of the Parts and Materials Industry of each relevant year

Notes: Figures in () refer to year-on-year change

3. Competition Status

Korean parts and materials makers began to compete with their overseas counterparts during the mid-1980s under a government policy designed to encourage them to develop and produce products without external help. For example, machine tools such as hydraulic pumps, curvic couplings, hydraulic chucks, automatic pallet changers/tool changers (APC, ATC) and ball screws were locally developed at this time. At the same time, with respect to the achievements of Korean machine

tool builders, demand was met mainly from imports due to the local lack of various sizes, precision, durability, price competitiveness and reliability.

◆ Domestic and Overseas Sourcing of Major Machinery Parts for Machine Tools

Name of Part	Domestic	Overseas	Remarks ²¹	Foreign Competitors
Numerical Control Apparatus	○	○	- 35% of the cost	Fanuc (Japan), Yaskawa (Japan), Siemens (Germany), Turbotech, Doosan Infracore, Curious
Servo Motors	○	○	- Depends on product preference by those on the demand side	Fanuc (Japan), Yaskawa (Japan), Komotek, Metronix, etc.
Spindle Motors	○	○	- 0.9% of the cost	THK (Japan), NSK (Japan),
Ball Screws	○	○	- Improvement is required for precision	Hiwin (Taiwan)
			- Lack of price competitiveness	TIC Ball Screw
LM Guides	○	○	- 2.3% of the cost	THK (Japan), NSK (Japan), Hiwin (Taiwan),
			- Limited sizes of parts locally sourced	Samik THK, SBC Linear
			- Lack of price competitiveness	
Spindles	○		- Mostly produced internally	Sungrim, internally produced
Bearings		○	- Lack of precision in domestic parts	THK (Japan), SKF (Spain)
Curvic Couplings	○	○	- Content with quality	SeoAm, Duk Lim, Daekwangpyeong
			- Content with quality	
Hydraulic Chucks	○		- Lack of design technology regarding special chucks	Samchully, Seo Am, Shin Kang, etc.
Chip Conveyors	○		- 3.4% of the cost	Kaesung CFS, Ace Mech,
			- Content with quality	Sungwoo Machinery & Electric, etc.
ATCs	○		- Content with quality	Samik Tech, Fine, Sungwoo, etc.
APCs	○		- Content with quality	Daeyang Mechatech
Oil Coolers	○	○	- Content with quality	Master Tec, HanKookJeonJae, Chemtek
			- Lack of price competitiveness (Taiwan)	Daikin (Japan), Kaukan (Taiwan)
Hydraulic Units	○		- Content with quality	Ilrim Nanotec, Ace Mech
Tool Holders	○	○	- Content with quality	Nikken, Dine Inc., Shinsaegi int'l.
Gears	○		- Content with quality	SeoAm, Hankook PC Co., Kyungin Machinery Co.
Hydraulic Pumps	○		- Content with quality	A-ryung Machinery End, etc.
Electronic Sub Assemblies	○	○	- Lack of different types of product	Dong Seo Mechatronics, HanKookJeonJae, etc.

Source: Korea Institute for Industrial Economics and Trade (KIET)

◆ Shares of Exports and Imports of Parts and Materials by Country (2006)

[Unit: %]

	Global Export Market Share				Global Import Market Share			
	Korea	Japan	China	U.S.	Korea	Japan	China	U.S.
Textiles	11.0	11.2	62.6	15.2	12.7	10.9	50.1	26.3
Chemical Compounds and Products	15.7	25.8	20.2	38.3	9.9	14.3	40.8	35.1
Rubber and Plastic Products	10.5	26.6	25.5	37.4	7.2	11.5	22.3	59.0
Non-metal Minerals	5.6	31.5	30.8	32.0	18.9	19.0	23.6	38.5
Basic Metal Products	13.8	20.3	32.8	33.2	13.2	13.7	23.8	49.3
Assembled Metal Products	10.1	21.4	37.9	30.6	5.6	8.8	25.8	59.8
General-purpose Machinery Parts	6.8	27.5	19.6	46.1	8.6	14.1	25.3	52.0
Computer and Office Equipment	4.5	15.9	56.6	23.1	3.7	8.2	32.1	56.0
Electrical Machinery Parts	7.4	27.8	34.4	30.4	8.1	14.5	29.8	47.6
Electronic Parts	16.5	22.4	36.6	24.5	9.4	11.8	54.9	23.8
Precision Machinery Parts	3.8	31.4	13.2	51.6	9.7	16.0	30.0	44.3
Transportation Machinery Parts	7.6	26.9	7.6	57.9	4.8	8.7	9.4	77.1

Source: MKE, 「2007 Statistical Yearbook of the Parts and Materials Industry」

²¹ includes the ratio of the cost

FDI System and Policy

1. FDI Incentives

(as of Feb. 2008)

Incentive	Details
Tax Reduction	<ul style="list-style-type: none">▶ Qualifications<ul style="list-style-type: none">1) Foreign companies engaged in industry support services or sectors involving high technology, or those that are based in a foreign investment zone or free economic zone are eligible to receive reduction on corporate, income, and local taxes (acquisition, registration and property taxes); 2) In case that the capital goods used for business purposes are subject to reduction of corporate tax or income tax, customs tariffs are exempted on the capital goods for which the import declaration is completed within three years from the date of investment notification.▶ Application Procedures<ul style="list-style-type: none">• Application for prior checking on tax reduction: to confirm the existence of a high-degree technology• Application for tax reduction<ul style="list-style-type: none">· Relevant organization: Ministry of Strategy and Finance (www.mosf.go.kr)• Decision and notification of tax reduction will occur within 20 days from the application date
Cash Grant	<ul style="list-style-type: none">▶ Qualifications<p>A foreign investment whose foreign-equity stake is over 30% and 1) at least US\$10 million in the industry support services sector; 2) includes high-degree technologies, or is a greenfield investment in parts and materials manufacturing; 3) newly built/expanded R&D facilities in fields related to industry support services or high-degree technology businesses, or research facilities of non-profit corporations invested in by a foreign national; or 4) cases where the investment amount, etc. do not meet the necessary requirements, but the investment is deemed to have a significant impact on the domestic economy and/or is deemed eligible for a cash grant by the Foreign Investment Committee</p><ul style="list-style-type: none">⇒ 5% or more of the investment amount is paid in cash with the upper limit to be determined by a closed formula▶ Application Procedures<ul style="list-style-type: none">• Negotiation and grant application/evaluation<ul style="list-style-type: none">· Relevant organization: Ministry of Knowledge Economy (www.mke.go.kr)• Decision of grant and contract conclusion<ul style="list-style-type: none">· It shall not take more than 60 days from application to contract conclusion.• Payment of cash grant<ul style="list-style-type: none">· In a lump sum or in installments up to 10 times for a maximum duration of 5 years▶ Legal Usage: Limited to funds to support employment and training, land purchase and lease, construction costs, costs to cover installation of facilities necessary for business establishment, capital goods and research equipment purchasing costs

► Foreign Investment Zones (FIZ)

Stand-alone type FIZ

- **Overview:** Designated as the site of an individual foreign-invested company, as determined by the investor's request of region, timing, and other preferences so as to attract large-size investment
- **Designation criteria:** Manufacturing – at least US\$30 million; Tourism – at least US\$20 million; Logistics – at least US\$10 million; R&D – at least US\$2 million
- **Relevant law:** Foreign Investment Promotion Act (FIPA)

Complex-type FIZ

- **Overview:** Operated based on lower rents. This refers to an area divided into predesignated sections for lease or sale, for the purpose of attracting small- and medium-sized foreign-invested companies possessing cutting-edge technologies.
- **Designation criteria:** Manufacturing, logistics, etc. with at least 30% of foreign investment ratio and an investment of at least KRW50 million
- **Relevant law:** Foreign Investment Promotion Act (FIPA)
- **Reference:** <http://www.kicox.or.kr/sub04/sub02.jsp>

► Free Trade Zones (FTZ)

- **Overview:** Free trade zones were introduced for the purpose of promoting FDI and trade and operate as a customs-free zone. FTZs provide the ideal location for foreign-invested companies to operate manufacturing and logistics simultaneously (industrial complex type, airport/seaport type).
- **Designation criteria:** Foreign-invested companies, domestic companies, businesses in logistics and trade, etc.
- **Relevant law:** Law on Designation and Operation of Free Trade Zones
- **Reference:** <http://www.ftz.go.kr>

► Free Economic Zones (FEZ)

- **Overview:** FEZs are distinguished from existing manufacturing-centered industrial complexes in that they are characterized as an industrial complex with international schools, hospitals and broadcasting stations for the purpose of inviting knowledge industries and high value-added service industries, as well as having foreigner-friendly living conditions.
- **Designation criteria:** Foreign-invested companies, manufacturing or logistics companies, medical organizations, educational institutes, financial organizations, etc.
- **Relevant law:** Law on Designation and Operation of Free Economic Zones
- **Reference:** <http://www.fez.go.kr/>

Financial Support

- **Qualifications:** A foreign-invested company where the foreign equity stake is at least 30 percent, or where a foreign individual is the largest shareholder
- **Support Coverage:** Cost of staff education and training, cost of hiring personnel, and projects to build infrastructure within a foreign investment zone or to enhance the living environment

Other

- National and public property lease and rent reduction
 - Rents may be reduced by case, up to 50%-100% through certain procedures.
- Project Manager (PM) designation and operation
- Exemption on restrictions regarding the total investment amount
- Permission to construct a new factory within the capital area
 - Foreign-invested companies in an industrial complex of a growth restriction area, which satisfy certain conditions

Source: Invest KOREA, 「Guide to Investing in Korea」 [Feb. 2008]

Notes: 1) For more details, please refer to the full text of the source, which is available at www.investkorea.org in PDF format.

2) As the new government is in the process of revamping the FDI-related legal system, please visit the Invest KOREA at www.investkorea.org for the most recently updated information.

❖ Tax Reduction Standards for Foreign-Invested Companies and Other Grants (as of Apr. 30, 2008)

❖ Reduction of National and Local Tax *

[Unit: US\$ million]

Category	Type	Investment Amount	Reduction Period and Details	Ref.
High-degree Technology Businesses	Manufacturing	n/a	7 years in total (100% for the first 5 years, 50% for the following 2 years)	Hiring more than 10 employees with master's degree or higher
Companies in a Stand-alone Type FIZ	Manufacturing	At least US\$30 million		
	R&D	At least US\$2 million		
Companies in a Complex-type FIZ			5 years in total (100% for the first 3 years, 50% for the following 2 years)	
Companies in an FEZ	Manufacturing	At least US\$10 million		
Companies in a Business City Development Zone				

* Local taxes to be applied at varied reduced rates between 5 to 15 years according to local government ordinance

❖ Reduction and Exemption of Customs, Individual Consumption Tax, Value-added Tax, etc.

Category	Relevant Tax	Object	Ref.
High-degree Technology Businesses	Customs, individual consumption tax, value-added tax		
Companies in a Stand-alone Type FIZ		• Capital goods imported with invested cash	On condition of importing within 3 years from the date of foreign investment notification
Companies in a Complex-type FIZ Eligible for Tax Reduction	Customs	• Capital goods imported with investment in-kind	
Companies in an FTZ Eligible for Tax Reduction			
Companies in an FEZ Eligible for Tax Reduction FEZ			

❖ Tax Exemption for a High Degree Technology Business *

- Whether or not the business of a foreign-invested company is a high-degree technology business (as stipulated by the Tax Exemptions and Exceptions Act) is determined through deliberation by the Foreign Investment Deliberation Council of the Ministry of Strategy and Finance. The requirements are as follows:
 - ① The technology shall have a profound economic or technological impact on the national economy, and be essential to improving the industrial structure and strengthening industrial competitiveness; ② The technology shall have been introduced to the country less than 3 years prior, or shall be economically and technologically superior to already introduced technologies even though it was introduced more than 3 years ago; ③ Most of the processes using the very technology shall be carried out domestically.
- The tax reduction for a business already recognized as a high-degree technology business is the same as that for companies that invested into FIZs, regardless of investment conditions and locations.
- The products and technology items falling under the high-degree technology business category are limited to the list announced by the Ministry of Strategy and Finance in 2006.

* The translation of Tax Exemptions and Exceptions Act into English by the Ministry of Government Legislation is in progress, and can be referred to in English on the Invest KOREA website, www.investkorea.org from Sep. 2008.

◆ Site Location Support – Reduction of Rent *

Contents of Support

▶ FIZ

Stand-alone type FIZ

- Rent: Over 10/1000 of the site value
- 100% rent reduction

Complex-type FIZ

- Rent: Approx. 10/1000 of the site value
- Rent reduction
 - High-degree technology & investment of at least US\$1 million: 100% reduction
 - General manufacturing & investment of at least US\$5 million: 75% reduction

▶ FTZ

- Rent: Approx. 10/1000 of the site value
- 100% rent reduction
 - A foreign-invested company whose new investment totals at least US\$10 million
 - Foreign-held equity stake totals at least 30% of the foreign investment ratio whose new investment totals at least US\$1 million
 - A new investment of at least US\$500 thousand into a cutting-edge technology, high-degree technology and/or industry-supporting service business

▶ FEZ

- Rent: Approx. 10/1000 of the site value
- Rate of rent reduction (to be determined by the FEZ authority)

* For a foreign-invested company whose investment ratio is at least 30% or which constructs a new factory, support of up to 50% of the total investment amount can be awarded.

◆ Financial Support by the Central Government *

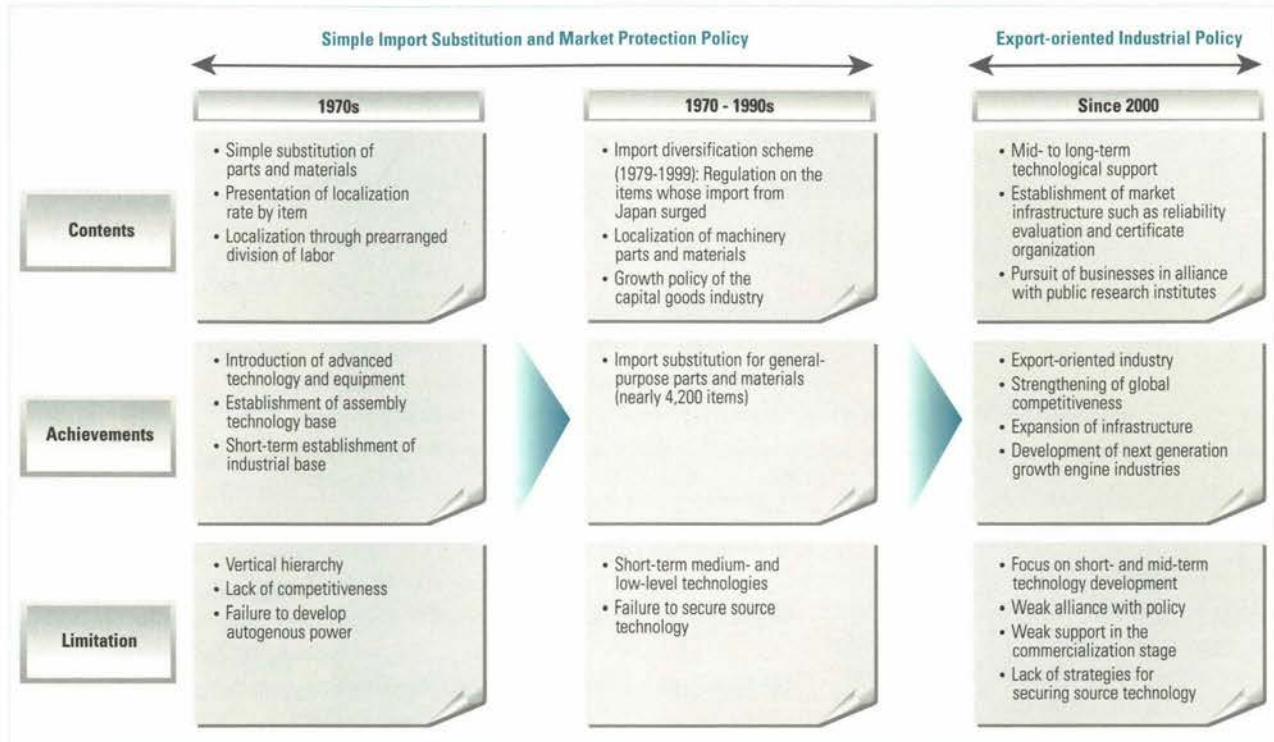
Category	Support
Cost of Staff Education and Training	A foreign-invested company which hires at least 20 new employees is eligible to receive a monthly grant of between KRW100-500 thousand per employee for a maximum of 6 months.
Cost of Hiring Staff	A foreign-invested company which hires at least 20 new employees is eligible to receive a monthly grant of between KRW100-500 thousand per additional employee for a maximum of 6 months.

* Target industry/company and grant conditions are stipulated differently in the ordinances of each local government.

2. Parts and Materials Industry Policy

- Until the 1990s, policy related to the parts and materials industry focused merely on import replacement and market protection. Since 2000, however, it has shifted its focus toward export-oriented industry, or global suppliers, through the enactment of the Special Act on the Development of the Parts and Materials Industry.

◆ Policy Developments in the Parts and Materials Industry



Source: Korea Materials and Components Industry Agency, 「Parts and Materials Support Policy in Review」;
Bank of Korea, 「Competitiveness and Policy Tasks of the Parts and Materials Industry」

- A major issue in the domestic parts and materials industry can be summarized as its trade structure, which features an over-reliance on imports for core parts and exports for general-purpose goods. The main cause can be attributed to an industrial structure dominated by small- and medium-size enterprises lacking innovation capabilities, which in turn results in a dearth of source technologies that underlie the high-tech parts and materials industry.
- Major policy alternatives designed to resolve trade related issues can be summarized as follows: (1) develop technologies linked to government-led R&D projects; (2) build a domestic industrial base through joint international research projects and the introduction of technologies; (3) step up efforts to attract foreign investment especially in regard to technology where entry barriers remain very high due to the inevitability of large-scale facility investment, or in cases where technology transfer or cooperation is difficult; (4) ease the imbalance between supply and demand by encouraging the private sector to

invest; and (5) pursue diversification in source of import through FTAs. In particular, promoting foreign investment is an important way to change the industry's current trade structure.

◆ Import of Top 10 Industry-related Items (2007)

The trade imbalance in the parts and materials industry stems mainly from a high level of dependence on Japan for imports, the main reasons for which include a technology disadvantage as well as a lack of domestic production and economic value.

(Unit: US\$ million)

Rank	Item	Global Import Amount	Import Amount from Japan	Ratio vs. Total Import	Classification	Reason for Import
1	Monolithic IC	19,814	2,642	13.3	Electric and Electronics Parts Steel Materials	Technological disadvantage
2	Hot Rolled Steel	3,625	1,746	48.2	Steel Materials	Insufficient production
3	Ship-building Steel Plate	1,945	1,090	56.0	Ceramic Materials	Insufficient production
4	Wafers	1,558	1,075	69.0	Chemical Materials	Insufficient production
5	Polarizing Plate	1,228	678	52.8	Chemical	Lack of Economic Benefits
6	TAC Film	546	538	98.5	Materials Ceramic	Technological disadvantage
7	LCD Mother Glass	562	537	95.6	Materials Transportation	Insufficient production
8	Vehicle Gearboxes	779	531	68.2	Machinery Parts	Technological disadvantage
9	Printed Circuit Board	1,637	526	32.1	Electric and Electronics Parts	Technological disadvantage
10	Stainless Steel	1,125	460	40.9	Steel Materials	Technological disadvantage

Source: Japan Desk

Case Study of FDI in Korea

Umicore Korea³¹

► Umicore in Korea

Period	Details
1987-1991	Establishment of Umicore marketing services: UMS Korea <ul style="list-style-type: none">• Sales of Umicore products in tooling, chemical and primary battery industries
1998-2000	Establishment of a rechargeable battery materials plant: Umicore Korea (1999) <ul style="list-style-type: none">• Identification of potential in Korean battery industry• Sales & production of lithium cobalt dioxide/ rechargeable battery-related products
2003-2004	Integration of PMG <ul style="list-style-type: none">• Commercial network for PMG products in technical applications for precious metals• Leading automotive catalyst plant in Korea: Ordeg
2006-2007	Participation in leading BGA balls manufacturer: Duksan Hi-Metal
2008	Established Research and Technology Center (RTC) to enter into a new era of collaboration with Korea
2008 and beyond	Daily meetings between Umicore and customer employees on many aspects of the business (logistics, quality control, strategy, R&D, sales/purchase, etc.)

- The establishment of Umicore Korea in 1999 marked the start of Umicore's foreign investment in Korea. The local subsidiary succeeded in domestic production of cathode-active materials which account for 40 percent of total costs, and has supplied such products ever since.
 - Umicore Korea built its first production facilities to mass produce new materials developed by the Umicore R&D Center based in Canada.
- Umicore has continuously expanded its investment in Korea since building its Cheonan plant in 2000, with the major product being lithium cobalt dioxide.
 - Lithium cobalt dioxide is the key material found in lithium ion batteries, a type of rechargeable secondary battery. Demand for lithium ion batteries is expected to surge because of their widespread use in mobile handsets and laptop computers.
- Currently, most of Umicore's products manufactured in Korea are supplied to large domestic companies, with supplies exported as components, providing a significant source of foreign income.

Umicore is a Belgium-based materials technology group founded more than 100 years ago to mine for non-ferrous metals in Belgian colonies on the African continent. The company has since taken a dominant position in the global fine metals market including copper and nickel.

The company has developed and produced key materials for secondary batteries based on its traditional strengths, nickel and lithium. The market has witnessed exponential growth and proved its potential for further growth amid development in the IT industry and market expansion for mobile handsets, computers, and game consoles.

Achievements

- The project (to establish Umicore Korea) was approved in September 1999, with operations starting in July 2000.
- The company's production capacity doubled in 2003, tripled in 2004, and rose five-fold in 2005.

³¹ Source: Ministry of Knowledge Economy, "Investment Promotion – FDI Success Stories," (May 2006)

Relevant Organizations

Public Organizations

Ministry of Knowledge Economy	www.mke.go.kr
Ministry of Foreign Affairs and Trade	www.mofat.go.kr
Korea National Statistical Office	www.nso.go.kr
Korea Customs Service	www.customs.go.kr
The Korean Intellectual Property Office	english.customs.go.kr
Korea National Tax Service	www.nta.go.kr/eng
The Bank of Korea	www.bok.or.kr
Statutes of the Republic of Korea	elaw.klri.re.kr
Korea Trade and Investment Promotion Agency	www.kotra.or.kr
Invest Korea Journal	www.ikjournal.com

Institutes

Korea Institute for Industrial Economics & Trade	www.kiet.re.kr
Korea Institute of Science and Technology Information	www.kisti.re.kr
Korea Development Institute	www.kdi.re.kr
Samsung Economic Research Institute	www.seriworld.org
The Institute for Industrial Policy Studies	www.ips.or.kr
Korea International Trade Association	www.kita.org

Local Governments (in alphabetical order)

Busan Metropolitan City	www.busan.go.kr
N. Chungcheong Province	www.cb21.net
S. Chungcheong Province	chungnam.net
Daegu Metropolitan City	www.daegu.go.kr
Daejeon Metropolitan City	www.metro.daejeon.kr
Gangwon Province	eng.gwd.go.kr
Gwangju Metropolitan City	eng.gjcity.net
Gyeonggi Province	invest.go.kr/eng
N. Gyeongsang Province	www.gyeongbuk.go.kr
S. Gyeongsang Province	english.gsnd.net
Incheon Metropolitan City	english.incheon.go.kr
Jeju Special Governing Province	www.jeju.go.kr
N. Jeolla Province	www.jeonbuk.go.kr
S. Jeolla Province	www.jeonnam.go.kr
Seoul Metropolitan Government	english.seoul.go.kr
Ulsan Metropolitan City	english.ulsan.go.kr

Free Economic Zones

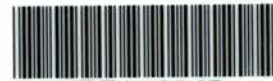
Incheon Free Economic Zone (IFEZ)	eng.ifez.go.kr
Busan-Jinhae Free Economic Zone (BJFEZ)	www.bjfez.go.kr
Gwangyang Bay Area Free Economic Zone (GFEZ)	gfez.go.kr

Parts and Materials-related

Korea Materials and Components Industry Agency	www.kmac.or.kr
Korea Core Industrial Technology Investment Association	www.kitia.or.kr/eng
Materials and Components Company Information System	company.kmac.or.kr
Korea Electronics Technology Institute	www.keti.re.kr/e-kei

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