

## 1. Outline of the Survey

### (1) Characteristics of the Survey

The survey on the activities of foreign affiliates in Korea for the year 2000 can be earmarked as the first full-scale practical survey conducted.

The objective of the survey was to attain an understanding of the characteristics of the inflow of foreign direct investment into Korea and its

## Activities of Foreign Affiliates for the Year 2000

effect on the national economy. And based on the foregoing, it is to contribute to the policy design on foreign direct investment, thereby enhancing economic effects and promoting investment attractiveness.

This survey was initiated as a research project funded by the Ministry of Commerce, Industry and Energy (MOCIE). As a preliminary step of benchmarking surveys implemented in the US and Japan, this survey was carried out by sampling out affiliates with a significant amount of foreign investment. In particular, extra attention was given to the manufacturing sector.

The survey was conducted during the period between July 2001 and August 2002.

### (2) Sampling

The population of the survey is composed of companies that were registered and reported as a foreign affiliate by the end of December 2000. The selected sample came to a total of 7,524 companies with the total investment amount of 41.7 billion dollars, where their existence and status of a foreign affiliate was

confirmed by telephone. Of these companies, manufacturing companies numbered 2,525 with a total investment amount of 22.7 billion dollars.

**Table 1. Composition of Population and Sample**

Unit : Number of Affiliates, 1 Million Dollars, %

	Population		Sample		Sample/Population(%)	
	Number of Affiliates	Amount of Investment	Number of Affiliates	Amount of Investment	Number of Affiliates	Amount of Investment
Total Industry	7,524	41,687	1,423	28,553	18.9	68.5
Manufacturing	2,525	22,745	900	18,858	35.6	82.9
Non-manufacturing	4,999	18,943	523	9,694	10.5	51.2
Manufacturing	2,525	22,745	900	18,858	35.6	82.9
Petroleum Refinery	13	1,196	9	1,191	69.2	99.6
Electrical and Electronic equipment	575	6,022	228	5,531	39.7	91.9
Basic&Fabricated Metal	127	853	35	771	27.6	90.5
Food	138	2,106	38	1,847	27.5	87.7
Pharmaceutical	75	626	41	548	54.7	87.5
Paper and Lumber	42	1,796	15	1,570	35.7	87.4
Ceramics	50	921	20	792	40.0	86.0
Chemicals	361	3,665	178	3,146	49.3	85.9
Machinery	550	2,055	174	1,379	31.6	67.1
Transportation Equipment	136	2,480	79	1,539	58.1	62.0
Textile and Clothing	147	352	32	187	21.8	53.0
Other Manufacturing	311	673	51	357	16.4	53.1
Non-manufacturing	4,999	18,943	523	9,694	10.5	51.2
Construction	64	81	9	32	14.1	39.5
Mining	17	51	3	45	17.6	87.9
Financing	148	4,660	20	847	13.5	18.2
Other Services	1,226	3,665	186	2,399	15.2	65.5
Agriculture	16	262	6	254	37.5	97.1
Wholesale and Retail	428	3,098	56	2,782	13.1	89.8
Trade	2,679	1,687	179	953	6.7	56.5
Insurance	23	1,041	1	6	4.3	0.6
Real Estate	39	299	1	25	2.6	8.5
Fishery	10	2	2	1	20.0	26.4
Accommodation	52	2,635	24	1,631	46.2	61.9
Transportation and Warehousing	129	714	25	121	19.4	17.0
Restaurants	159	108	6	78	3.8	72.4
Electricity and Gas	9	639	5	520	55.6	81.3

Note : The industry classifications are applied with the foreign investment report criteria of MOCIE.

There were 1,423 affiliates, who replied to the survey totalling an investment amount of 28.6 billion dollars, including 900 manufacturing companies with a total investment amount of 18.9 billion dollars.

## 2. Economic Effects of Foreign Affiliates

### (1) Methodology

The economic effects of foreign affiliates were analyzed along with four performance indices: sales, employment, export and import.

In order to estimate the economic effects, the performance indices of the population were estimated by totaling estimates of industries indices based on the results of the survey. (Note: The effects of foreign affiliates can be categorized into direct and indirect effects. This study examines the direct effects based on the activities of foreign affiliates, more specifically, the direct contribution to the national economy.)

To derive the pure contribution of foreign investment from the performance of each foreign affiliate, the equity rate is multiplied (pro rata). Then the derived quantity of each affiliate is added to the quantity of the corresponding industry, which is then divided with the investment-based sample ratio (population investment/sample investment) to estimate the index of the population.

The amount of foreign direct investment to the sample affiliates used for estimation of sales and employment amounts to 83% of total investment and that of export and import, 75%.

**Table 2. Sample Status of Foreign Affiliates for the Manufacturing Sector**

Unit : Company, million dollars, %

	Population		Sample Used		Ratio	
	Number of Affiliates	Amount of Investment	Number of Affiliates	Amount of Investment	Number of Affiliates	Amount of Investment
Sales	2,525	22,745	900	18,858	35.6	82.9
Employment			900	18,858	35.6	82.9
Export			515	17,032	20.4	74.9
Import			549	17,008	21.7	74.8

## (2) Contribution to Production and Employment

Total sales of foreign affiliates in manufacturing in the year 2000 were estimated to be 73.5 trillion won, corresponding to 13.0% of total manufacturing production. Employment was estimated to be at 193,000 persons, which is 7.3% of total employment in the manufacturing sector.

When comparing the manufacturing sectors, the production shares in pharmaceuticals (30%), petroleum refinery (29%), electronics & electric equipment (18%), paper & lumber (15%) and machinery (15%) industries exhibited above average. On the other hand, the affiliates in metallic, textile & clothing, ceramic industries occupied a low share in the 5% range. In terms of employment, industries such as petroleum refineries (31%), pharmaceuticals (22%), electronics and electric equipment (14%) and transportation equipment

**Table 3. Contribution to Production and Employment of Foreign Affiliates in the Manufacturing Sector (2000)**

Unit : Trillion won, 1,000 persons, %

	Manufacturing Total	Foreign Affiliates	Share Foreign Affiliates
Production	564.8	73.5	13.0
Employment	2,653	193	7.3

**Table 4. Production Share of Manufacturing Foreign Affiliates**

Unit : billion won, %

		Foreign Affiliates	Domestic Total	Share of Foreign Affiliates
Manufacturing Sectors Total		73,521	564,833	13.0
Above Average	Pharmaceuticals	1,766	5,786	30.5
	Petroleum Refinery	11,793	40,158	29.4
	Paper · Lumber	2,461	16,582	14.8
Average Level	Transportation Equipment	9,275	72,604	12.8
	Chemicals	8,996	71,716	12.5
Below Average	Ceramics	1,120	16,983	6.6
	Textile and Clothing	1,804	40,999	4.4
	Basic and Fabricated Metal	2,346	64,899	3.6
	Other Manufacturing sectors	1,212	27,901	4.3

**Table 5. Employment Shares of Manufacturing Foreign Affiliates**

Unit : Persons, %

		Foreign Affiliates	Domestic Total	Share of Foreign Affiliates
Manufacturing Sectors Total		192,969	2,652,590	7.3
Above Average	Petroleum Refinery	3,554	11,606	30.6
	Pharmaceutical	6,278	28,539	22.0
	Transportation Equipment	34,587	469,428	11.6
	Machinery	24,069	279,844	8.6
	Food	14,409	177,723	8.1
Average Level	Chemicals	18,478	267,056	6.9
Below Average	Ceramics	3,517	84,627	4.2
	Basic and Fabricated Metal	4,501	287,117	1.6
	Textile and Clothing	6,452	437,573	1.5

(12%) illustrated a higher share than average of the manufacturing sector. On the other hand, the affiliates in textile & clothing and metallic and ceramics industries employed less than 5% of total employment in each industry.

### (3) Trade Effects

The total export and import of foreign affiliates were estimated to be 22.7 billion and 22.2 billion dollars, respectively, with a trade surplus of 500 million dollars. The shares of foreign affiliates in international trade reached 13.2% for export and 13.8% for import. If the petroleum refinery industry, which depends heavily upon import of crude petroleum, is to be excluded export would be at

**Table 6. Export and Import of Foreign Affiliates for the Year 2000**

Unit : Million Dollars, %

	Export	Import	Trade Surplus
Total	172,621	160,492	12,129
Foreign Affiliates Total	22,739	22,206	535
(Excluding Petroleum Refineries)	20,050	17,301	4,758
Share of Foreign Affiliates	13.2	13.8	—

20.1 billion dollars and 15.3 billion dollars for import, resulting in a trade surplus of 4.8 billion dollars.

When comparing export in the manufacturing sectors, affiliates in electronics and electric equipment recorded the highest with 9.9 billion dollars, followed by chemical engineering with 3.2 billion dollars, petroleum refinery with 2.7 billion dollars, transportation equipment with 2.6 billion dollars, and machinery with 1.8 billion dollars. Based on import, electronics and electricity topped the list with 8.1 billion dollars, followed by petroleum refineries with 6.9 billion dollars, chemical engineering with 2.4 billion dollars, and machinery with 1.3 billion dollars. The trade surplus showed transportation equipment with 2.0 billion dollars, electricity and electronics at 1.8 billion dollars, and chemical engineering with 700 million dollars. These sectors are the three leading vehicles for the trade surplus of the Korean economy.

### 3. Characteristics in the Management of Foreign Affiliates

#### (1) Market Entry Mode

Of the Korean market entry mode of foreign direct investors, new

**Table 7.** Trade of Foreign Affiliates in the year 2000

Unit : million dollars

Business		Export	Import	Surplus
Manufacturing Sector		22,739	22,206	535
(Excluding Petroleum Refineries)		20,050	17,301	4,758
Trade Surplus Sectors	Transportation Equipment	2,642	647	1,995
	Chemicals	3,157	2,447	710
	Machinery	1,777	1,301	476
Balance Sectors	Textile and Clothing	462	162	300
	Basic and Fabricated Metal	787	650	137
	Other Manufacturers	235	150	86
	Paper and Lumber	414	582	-168
Trade Deficit Sectors	Food	91	419	-328
	Pharmaceuticals	245	676	-430

establishment accounts for 68.4% of total affiliates replied to the survey, followed by stock acquisition with 23.1%, and asset acquisition at 8.5%.

As for ownership structure, 100% ownership accounted for 39.8% and 17.2%, majority ownership (ownership exceeding 50%) 17.2%, minority ownership (having less than 50%) was 31%, joint venture (having 50% ownership) was at 12.0%. This showed that multinational enterprises prefer sole investment (100% ownership) or minority equity ownership for strategic reasons. In particular, in the non-manufacturing sectors, the preference for sole investment (49.3%) seemed to be more conspicuous.

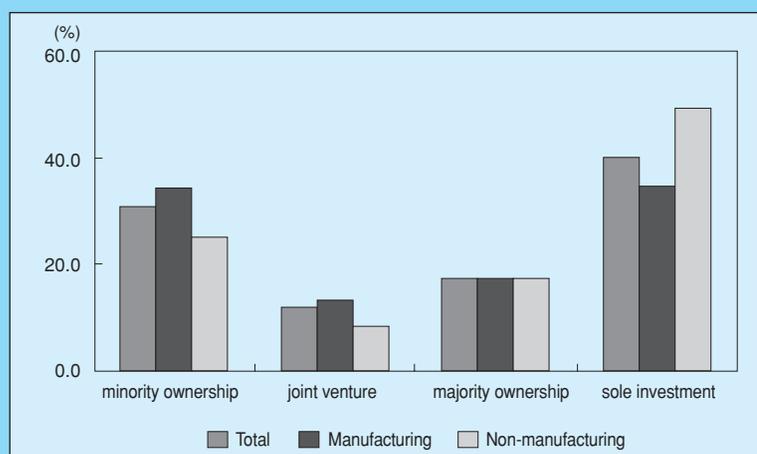
Based on the nationality of parent companies, Japanese affiliates preferred minority equity, while the US and European companies preferred sole investment.

## (2) Performance In The Year 2000

The net profit rate (the ratio of net profit to sales) of the total manufacturing affiliates, who have replied to the survey was 1.12%, which is higher than that of the total manufacturing sectors, -1.97%.

In terms of sectors, it was particularly high in chemicals, and precision equipment & machinery. However, it was low in the electronics-related

Figure 1. Ownership Structure of Foreign Affiliates



sectors.

The debt ratio (debt/equity capital) for manufacturing foreign affiliates was 149.3%, which was significantly lower than that of domestic manufacturing companies with 210.6%. This comparison proves that foreign affiliates depend very heavily on internal funding.

### (3) Research & Development

Out of 969 foreign affiliates, only 25.2% (244 affiliates) responded having research centers in operation, and 15% (145 companies) having research departments in operation. However, 59.9% of the companies replied that they did not operate either a research center or department.

In particular, over 50% of the affiliates even in the sectors such as basic and fabricated metal, electrical & electronics and medical & precision, where R&D plays a very important role in their activities have yet to maintain a research center or a department responsible for R&D.

As a major function of research centers and departments (based on a total of

**Table 8. Comparison of Net Profit Rate for the Year 2000**

Unit : %

	Foreign Affiliates	Domestic Total
Manufacturing Sectors	1.12	-1.97
Medical, Precision and Optical Equipment	7.82	1.07
Chemical Products	6.54	0.43
Machinery	4.88	2.52
Food and Beverages	3.93	0.33
Office Equipment · Computers	3.70	5.26
Electronic Machinery and Communication Equipment	4.61	6.29

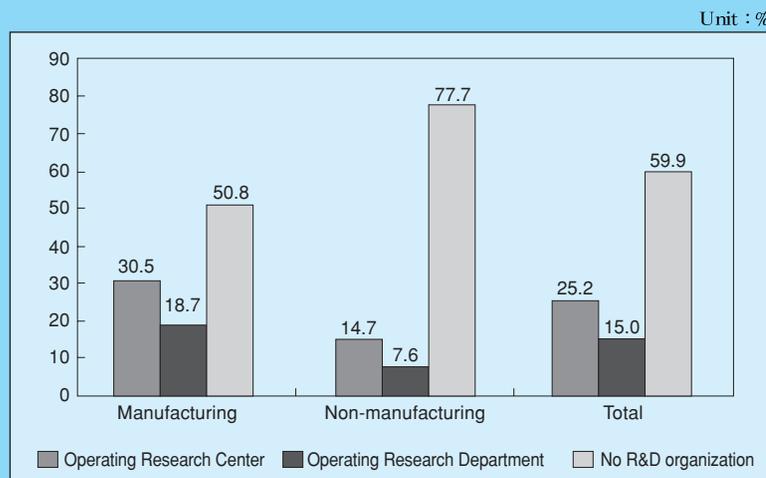
Note : Domestic Total includes foreign affiliates.

**Table 9. Financial Structure Comparison for the Year 2000**

Unit : %

Foreign Affiliates		Domestic Companies	
Debt Ratio	Equity Capital Ratio	Debt Ratio	Equity Capital Ratio
149.3	38.2	210.6	32.2

**Figure 2. Status of R&D of Foreign Affiliates**



384 effective responses), new product development & upgrading (71.1%) was the major focus, followed by original technology & basic research (8.6%), process development (8.6%), search & mining (6.8%), among others.

The reason behind the focus on R & D activities of the affiliates centers on new product development & upgrading seems to be due to the strategies of the multinational enterprises to capture the domestic market. However, original technology & basic research, process development and others are fields that require a substantially advanced level of R&D capability and huge investment. The affiliate's strong dependence on the mother company can be assumed in these areas.

As for the non-manufacturing sector, original technology and basic research accounts for 25.7% of R&D functions. This is substantially higher than that of the manufacturing arena with 4.8%. Based on the survey, it can be concluded that multinational enterprises having invested in information service sectors intend to develop new software and technology in cooperation with domestic venture companies.

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