

BUILDING A KNOWLEDGE-BASED ECONOMY

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*Weaknesses of the Domestic Industrial Structure*

The Korean economy under the IMF program has been showing signs of recovery towards the end of 1998. However, the complete recovery of the Korean economy is possible only if the weaknesses of Korean industries are overcome fundamentally. The problems or weaknesses can be identified as follows.

First, Korea has developed a very rigid industrial structure, centering around a handful of top-notch export items and a mass production system which puts emphasis on large-scale investment. Industries such as steel and petrochemicals are among the examples. Naturally, it became impossible for these industries to flexibly respond to changes in the demand and supply situations in the international markets. Second, an import-inducing structure has become deeply rooted. With shortages of endowed resources and the underdevelopment of intermediate capital goods industries like general machinery, an increase in exports of final goods often brings about a larger increase in imports of these goods. Third, the prices (or cost) competitiveness of production factors such as capital, land, and labor has weakened drastically since the end of 1980s. The rising wage rates, high interest rates and rent hindered the Korean economy from transforming into a more efficient and higher value-added one. Fourth, there has been a widening disparity between the manufacturing sector and the service sector. Or at least, these two sectors could not develop a harmonious relationship in

which advances in one sector complements and lead the other's development. For example, certain parts of the manufacturing sector were approaching world class levels, while many sub-areas on the service sector possessed only second class competitiveness. Also, the production-led effects on the service industry stemming from the development of the manufacturing industry are very low. Last, light industries, which were conventionally the powerhouse of the Korean economy in 1960s and 1970s have deteriorated considerably. The industrial foundation of light industries has been weakened by the industrial policies focused on heavy/chemical industries and several high tech industries such as semiconductors. The small and medium-sized firms mostly in the light industries did not have the opportunities to grow and foster their core competencies as they did in the past.

*Emergence of a Knowledge-based Economy*

As the background of the current economic crisis, these weaknesses have been playing significant roles undermining the overall competitiveness of the Korean economy. Therefore, the process of overcoming the current crisis, in its true sense, should be based on addressing these shortcomings and on establishing a newer industrial structure in the Korean economy. Moreover, domestic industries need to adjust rapidly to the abrupt changes in the external economic environment as we approach the 21st century. The world economy is being transformed from a resource-based economy to a knowledge-based economy. According to the OECD, a "knowledge-based

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economy” means an economy which has more direct dependancy on the use of knowledge than before. Put in other words, a knowledge-based economy is an economy in which knowledge is the most important factor in the determination of competitiveness.

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The fundamental background of these changes is technological innovation in the fields of information and telecommunications. The revolutionary development of information and telecommunication technologies has made it possible to transform complex knowledge into simple electronic information (digital revolution) and to produce, distribute, and use massive amounts of knowledge easily and quickly. The massiveness and speed of this knowledge production shortens the life cycles of commodities by a great deal. To survive in this increasingly competitive environment, one must acquire new knowledge faster than others and generate higher value-added.

The globalization of economic activities stemming from the end of the Cold-War era and the start of WTO has made such competition fiercer. As technological innovations are being accelerated in the 21st century, a knowledge-based economy in which knowledge is the most important determining factor for competitiveness will become even more important and widespread.

#### *Adopting New Industrial Policies*

New industrial policies should focus on overcoming the weaknesses of the domestic industrial structure and on nurturing the growth of a knowledge-based economy. Primarily in the short run, emphasis should be put on strengthening the weaknesses of the industrial structure. First, self-managed restructuring of industries should be pursued.

For this, an environment where industries can restructure themselves through activities such as M&As should be fostered. Also, we should pursue the higher value-added of the domestic basic industries through the implementation of advanced technologies into traditional industries. Second, the industries of parts and intermediate capital goods need to be further developed. For this, more support in terms of human resources and technologies to small and medium-sized firms should be provided. Third, the connection between manufacturing and service firms should be strengthened. For example, we should enhance the function and the competitiveness of service industries such as finance, advertising, transportation, and communications and strengthen the support from these sectors toward the manufacturing sector.

In the medium and long run, we should pursue industrial policies which will help to establish a mature knowledge-based economy. First, we have to strengthen the basis of knowledge within the economy. For this, the distribution system of flexible technological innovations and knowledge must be improved. An example is the “technology park” which combines industry and academia. The innovation of educational systems, and the construction of information highways are other examples. Second, we have to innovate the related administrative systems of the government. We need to strengthen the image and increase the budgetary support of government agencies for education and enhancement of science and technology. This would help to build a solid infrastructure for the production, accumulation, and use of knowledge. Third, in order to promote the commercialization of new technologies, stronger measures are needed to guarantee the property rights of knowledge. More active support for venture capital firms is another condition toward this end. 

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