Economic Effects of the Development of Industrial Complexes in North Korea and Strategies for Successful Development

Deok Ryong Yoon*

Introduction

South Korean firms are making moves to develop industrial complexes in North Korean regions. Hyundai has announced its plan to create an industrial complex for South Korean small and medium-sized firms in Haeju area, by utilizing the land of 20 thousand "pyung" offered by the North Korean authority. Korea Land Corporation also plans to develop several large-scale industrial complexes in various North Korean regions, including Yuhyun industrial complex within Rajin-Sonbong area. These recent moves reflect the fact that South Korean firms are being requested by the North Korean authority to develop industrial complexes in the Northern area.

After establishing a special economic zone in Rajin-Sonbong in 1991, North Korea has been making considerable efforts to improve the country's investment environment. It revised regulations regarding foreigners' investment, introduced capitalistic management techniques and price system into this area, adjusted the currency's exchange rate to reflect its real value more closely, built infrastructure, and held around 10 investment conferences. Investment forum was held twice in September, 1996 and September, 1998, in Rajin-Sonbong area, reflecting the country's strong will to attract foreign investment. Despite such efforts, how-

* Institute for Korean Unification Studies, Yonsei University

ever, the total foreign investment into the area until the end of 1997 amounted only to 62,420 thousand dollars, far below the target of 7 billion dollars. Foreign investment into other regions of the country has been even more slow.

For this reason, North Korea wants to realize their goals of developing industrial complexes and attracting investment by utilizing South Korean firms. South Korean firms are requested to develop industrial complexes and attract other South Korean or foreign firms into them. As a compensation, they will have the right to use the newly developed land for a given period. This project of developing industrial complexes within North Korea is drawing attention domestically and abroad, as its success will have significant effects not only in economic but also in political and social aspects.

This article examines the economic effects of developing industrial complexes, and searches for successful strategies. First, we will review the necessity of this project by analyzing its economic effects both upon the South and upon the North. We also review some institutional conditions that must be satisfied before South Korean firms make investment. Finally, we would like to contribute to the making of rational investment strategies by analyzing the most efficient and desirable production forms, production areas, and firm types in developing industrial complexes,

The Economic Effects of Developing Industrial Complexes in North Korea

In order to determine the desirability of developing industrial complexes as requested by North Korea, it is necessary to analyze the development's economic effects on South Korea as well as on North Korea.

The Economic Effects on South Korea

1) Short-Term Effects

First, the most visible effect of this project in short term is that of improving the economic conditions in general. With the IMF economic crisis, the South Korean economy had to go through a phase of demand reduction in the form of high interest-rates and budget cut-down. Moreover, bankruptcy and restructuring of firms had the effect of further reducing domestic demand. Given this situation, the development of large-scale industrial complexes in North Korea will expand demand for materials and labor. Production of materials necessary for the development will have external effects such as stimulating production in other areas and demand for labor, thus ultimately leading to improving the economic conditions in general.

Second, South Korean firms' idle facilities may be utilized. With the speeding up of restructuring in South Korea, the number of idle facilities has increased fast. The transfer of these facilities to North Korea, therefore, will the effect of lengthening the life of disused capital. In short, this recycling of capital will increase the wealth of the South Korean economy in general.

Third, the project will contribute to reducing production costs of South Korean firms. The problem of high wage, which has been the major factor in weakening the country's international competitiveness, still persists, although it was lessened considerably by the IMF economic crisis. The transfer of some production processes to North Korea will have the effect of saving wage and reducing production costs, thus contributing to improving international competitiveness and increasing profits for South Korean firms.

Increased investment into North Korea for this project, however, may result in a scarcity of capital in the South. With many South Korean firms already suffering from a lack of capital, the outflow of huge capital may be a pressure for increasing interest rates in domestic capital market. The transferring of firms could also slow down the process of restructuring. As it will ease the pressure for restructuring in short term, it may have cause the weakening of international competitiveness in long term. To prevent this pitfall, therefore, the increased profits from the North's low wage must be reinvested for heightening productivity.

2) Long-term Effects

First, the project will have the effect of accumulating knowledge about North Korea's labor market. Regardless of whether the two Koreas are politically unified or not, the North Korean market is likely to be integrated economically into the South Korean market in the long term. Integration in product markets as well as production factor markets will be inevitable. Those South Korean firms investing in North Korea, as they are obliged to employ North Korean labor forces, will have a chance to accumulate knowledge about them.

Second, there will be a long term effect of securing production sites. The expected increase of South Korean firms in North Korea will make it easier to secure production sites and to utilize them later at times of economic integration. In particular, the forming of personal and material networks in North Korean region before integration can become a great asset for South Korean firms when the integration process actually begins.

Third, we may be able to gauge the trend of potential demand in North Korean market. In long term, North Korea is a potential market for South Korean firms. Although the market is very small at present because of the lack of purchase power, it can become can a very important market for South Korea in the future when its purchase power increases and its economic system changes. Therefore, having some pre-knowledge about the market and its demand pattern can be a significant advantage in approaching the market at later times.

The Economic Effects on North Korea

First, there will be an increase of capital. The development of industrial complexes will expand North Korea's infrastructure and capital equipments, thanks to increased investment by South Korean and other foreign firms. North Korea is presently in need of capital equipments with high productivity so as to revive its economy, but the country simply has no money to purchase them. In this sense, South Korean firms' investment can help the North Korean economy reverse the trend of backward growth.

Second, the project will have the effect of transferring technology. With the inflow of capital investment, there will be efforts to increase product quality and improve product design. In this process, technology transfer is inevitable. Moreover, more advanced management techniques of South Korean firms will be naturally transferred to North Korea.

Third, the project will facilitate the supply of raw materials. Most North Korean firms are suffering from the lack of raw materials. The presence of South Korean firms in North Korea will make it much easier to supply raw materials for North Korean firms. South Korean firms will not only bring raw materials to North Korea, but also provide the country with foreign currencies to buy additional raw materials.

Fourth, North Korean may be connected, through South Korean firms, to the international market's sales network. Currently, the country cannot supply goods to the American market, and nor is the country connected to the international network. With the development of industrial complexes, however, North Korean firms may be able to supply goods to the international market, indirectly through South Korean and other foreign firms investing in the complexes. In the process, they can also learn advanced marketing techniques.

Preconditions for Successful Development of Industrial Complexes

It is possible that more South Korean firms, other than Hyundai and Korea Land Corporation, will participate in the development of industrial complexes in North Korea. Their success will depend in large part on the following factors: how much financial capabilities and experiences the firms have, how bright the prospect of attracting other firms into the newly developed complexes is, and how faithful the North Korean authority is in keeping their promises.

Financial Conditions

Those firms participating in the development of industrial complexes should have sufficient financial capabilities, as they will have to invest a huge sum of money without any profits until the development is completed. Although Hyundai and Korea Land Corporation are considered to have such capabilities, one cannot exclude the possibility that the enormous financial burdens from the project can have negative effects on them. Therefore, it is necessary to have a detailed plan on how to spread the burden. The development of industrial complexes must be implemented step-by-step, so that those sites constructed first can start attracting other firms even before the development is completed. In this way, the financial burden can be mitigated greatly.

Conditions for Attracting Other Firms

The success in attracting other firms into newly developed complexes will be largely determined by how well the new complexes meet the goals of prospective occupants. As seen in <Table 1>, firms' investment in North Korea can be made for various reasons,

<Table 1> Incentives for Firms Investing in North Korea

Incentives	Contents	Determining Factors
Production-related Incentives	• securing cheap labor forces • resolving the bottleneck problem • entering into new business • diversifying products	• population, wage and educational level • land price, land quality, usable water, transportation • existing industries and resources • folk products and local specialties
Demand-related Incentives	• access to new markets in North Korea • sales to third countries	• consumer preferences, purchase power, and administrative measures • external opening
Social Incentives	• managing corporate image • returning to the home place	• firm size and social expectation • home places of firms and firm owners
Others	• competition Strategies • speculative incentives	• other firms's investment • governmental incentives

such as production-related incentives, demand-related incentives, social incentives, others. Among these, the production-related incentives seem to be the most important for those firms currently investing in the North, as country's limited purchase power makes the demand-related incentives unattractive. In order to fully utilize the production-related incentives of firms, the following problems must be resolved first.

First, the North Korean authority should designate the newly developed industrial complexes as special economic zones, as exemplified by Rajin-Sonbong Free Economic and Trade Zone (FETZ). North Korea's FETZ is something very similar to China's special economic area, and it was stipulated by law that some privileges be given to foreign investors within this zone. The foreign investors not only have the right to choose freely methods of firm and business management, but also enjoy some tax breaks and

<Table 2> Differences between FETZ and Normal Areas

		FETZ	General Areas
Tax System	Income Tax Rate	14%	25%
	Income Tax Breaks	• Manufacturing: exemption for the first 3 years, and 50% reduction for the following 2 years • Infrastructure building (investment of more than 60 million North Korean won): exemption for the first 4 years, and 50% reduction for the following 3 years	
	Tariffs	No Tariffs	Exemption only for goods to be used for production
Labor	Minimum Wage	160 won (73 dollars)	220 won (100 dollars)
	Employment of Foreigners	• Requirement: Agreement of the local FETZ authority's external economy branch	• Requirement: Agreement of the central government's external economy organ

favorable labor conditions. The differences between FETZ and general areas in terms of investment conditions are summarized in <Table 2>.

Nampo industrial complex, constructed in general areas by Daewoo, is known to have some difficulties in employing quality labor forces. Investors in general areas are obliged to employ North Korean labor forces through mediation of local authorities. If they want to hire foreigners, they must get approval from the central government's external economy organ, which can be time-consuming. Employment is relatively simple within FETZ, however, as all that is required is the agreement of the FETZ's labor mediation branch and external economy branch. Tax systems and minimum wage levels also differ. For these reasons, the designation of newly developed industrial complexes as FETZ will create favorable conditions for attracting South Korean and other foreign firms.

Second, the U.S. economic sanctions against the North must be mitigated or lifted. The lifting, as it will enable North Korean products to be sold in the U.S. and Europe, can be a great incentive for South Korean firms to invest in North Korea. Under the present circumstance of a "limited" sales route, even the choice of production methods can be limited. This limitations will be a serious obstacle for South Korean firms to invest in North Korea.

Legal Conditions on Investment in North Korea

The development of industrial complexes is a huge project requiring a large sum of investment. It is essential, therefore, to have some safeguards on investment. North Korea's laws on foreigners' investment, however, are imperfect in guaranteeing foreign investment. The followings are some of the points that need to be checked with care before making investment.

The first one is the possibility of investment on a given sector. The related laws do not clearly specify the sectors into which foreign investment can be made. This can cause a serious trouble at later times. Therefore, it is important to clarify at the stage of investment negotiation whether investment into the given sector can be approved or not.

A second point is the question of whether materials can be purchased with stability. In North Korea, one must put forward an annual purchase plan in order to secure materials necessary for business activities. As it is stipulated that a purchase contract should be made in consideration of international prices, there is a room for arbitrary interpretation. Moreover, the possibility of low quality and late delivery always exists. Therefore, one cannot simply presume that necessary materials can be easily purchased in North Korea. One must prepare a cautious plan for this matter.

A third checkpoint is the question of how much information one has on markets to sell products. It is desirable to think about markets to sell products before making investment in North Korea. The U.S. prohibits importations of North Korean products, while European countries and Japan do not apply favorable tariffs to them. Therefore, one must think carefully which markets to target before making investment.

A fourth point is regarding employment and wage. In North Korea, firms do not have the right to hire or fire employees on their own. Moreover, they must not only stick to the principle of minimum wage, but also pay 7% of social insurance fees. Therefore, it is necessary to check beforehand whether necessary labor forces can be supplied sufficiently, in time, and at reasonable wage levels.

A fifth point is regarding the use of management of land. After the rent period for land expires, buildings and other facilities must be removed upon the North Korean authority's request. This is a very unfavorable condition for prospective investors in industrial complexes, and must be discussed thoroughly with the North Korean authority before making investment.

A sixth checkpoint is the question of sending profits. In North Korea, sending profits in foreign currencies is not a problem, but it is impossible to convert profits earned in North Korean won into foreign currencies. Since most of the firms investing in North Korea via industrial complexes will not be targeting domestic markets, this may not be a serious problem. Nevertheless, one must take precautions in using currencies in the North.

The final point is regarding settlement of disputes. According to North Korean laws, a dispute is expressed as "difference of opinions in the process of managing firms." General methods of settling disputes such as discussion, arbitration, judgement, and international judgement are suggested, without mentioning specific procedures on how to settle disputes. Therefore, investors must clarify methods of dispute settlement at the stage of drafting contracts.

Strategies for a Successful Development of Industrial Complexes

A successful development of industrial complexes in North Korea depends ultimately on how many firms will invest and do business in the country. In this section, we will go over what production methods, which industrial sectors, and what types of firms will make efficient investment possible.

Production Methods

It is necessary, first of all, to consider what production methods will be applied to firms investing in North Korea. These firms are likely to adopt the method of processing-on-commission, or its more advanced form, "outward processing," for several reasons. First, it is difficult to secure raw materials within the country. Second, those products purely made in North Korea will have limited sales routes, as they are prohibited in the U.S. market and subject to unfavorable tariff rates in European and Japanese markets. Third, South Korean firms' partial involvement in the production process will increase values added. Fourth, North Korea will have limited incentives to confiscate the invested facilities, since only a part of the production process is transferred to the country.

Specifically, there are four different ways of doing outward processing. The first is to process raw materials supplied by South Korean firms. The second is to produce according to the designs or models given by South Korean firms. The third is to assemble knocked-down parts supplied by South Korean firms. Finally, the fourth is to produce parts or knocked-down parts for South Korean firms, by using facilities supplied by them.

This method of outward processing has been successfully and aggressively utilized by Hong Kong firms in investing in China. According to the data in 1994, 50% of their export to China was for the outward processing, while 80% of import from China came from the outward processing. This close production cooperation between Hong Kong and China through outward processing was based on the following three advantages.

One was the comparative advantage coming from different resource allocations of the two countries. According to a survey of Hong Kong business firms, 88% of the respondents pointed out high wage, and 53% of them pointed out high rent, as the factor hurting their international competitiveness. With access to China's low-wage labor forces and wide land, Hong Kong business firms was able to regain their price competitiveness. On the other hand, China had a chance to introduce Hong Kong's capital and technology. A second advantage was relatively low transportation costs thanks to the short distance between the two countries. The third was that the two governments was able to create, through close policy cooperation, many favorable business conditions in terms of tariffs, taxes, and regulations.

This mutually benefitting arrangement between China and Hong Kong can be applied in a similar way to that between the North and the South. The comparative advantage clearly exists in inter-Korean relations. The transportation costs are rather high, however, despite the short distance. Also, the inter-governmental cooperation still has a long way to go. Only if we can solve these problems, South Korean firms' investment in the North for outward processing is likely to increase considerably.

Industrial Sectors

The most promising industrial sectors for investment in North Korea seem to be the textile industry and the electronic industry of simple assembly type. With their labor-intensive nature, these sectors have already become sunset industries. Most firms in these sectors have already moved, or are planning to move, their production facilities to foreign countries. If these idling facilities are moved to North Korea for outward processing, it can benefit both the North and the South.

The types of products imported from the North to the South through processing on commission from 1992 to 1997 are shown in <Table 3>. Textiles occupied 91.4% of the total import, followed in far distance by electric and electronic products (4.0%). Despite some limitations of this data in predicting future investment in North Korea, they do suggest that labor-intensive and land-inten-

<Table 3> Products Imported to the South through Processing on Commission (1992~97)

	unit	agricult-ural	mining	chemical	textiles	iron & metal	machine	electric& electronic	others	total
Import	thousand dollars	22	-	900	108,091	-	-	4,741	4,495	118,249
	%	0.0	-	0.8	91.4	-	-	4.0	3.8	100.0

Source: Ministry of Unification. 1998. *Statistical Data on Inter-Korean Trade.*

<Table 4> The Production Ratio for Hong Kong Firms' Export Products (1993)

SITC number	Industrial Sectors	Production Ratio (%)		Share in Export (%)
		Hong Kong[1)]	Guangdung[2)]	
83	travel necessities & baggages	4.6	95.4	3.1
894	toys	6.0	94.0	9.8
76	communications & sound	22.1	77.9	10.7
69	metals	37.8	62.2	2.2
65	textiles	40.6	59.4	7.1
84	clothing	51.3	48.7	24.9
77	electronic equipment & parts	51.4	48.6	7.8
75	stationeries & auto data processing machines	63.5	36.5	4.8
885	watches	66.8	33.2	3.5
	total	38.6	61.4	73.9
	total industires	39.6	60.4	100

Source: Schmidt, K-D (1997), "Small and Medium Sized Enterprises in Cross-Border Networks: Empirical Evidence from the Pearl Rive Delta. Institute of World Economics," *Kiel Working Paper*, no. 808. p. 12.

sive industries with easy transportation will be the major target for future investment in North Korea. Once favorable business conditions are created, however, various forms of investment utilizing outward processing will be made in virtually every industrial sector.

<Table 4> shows the production ratio between Hong Kong and Guangdung for Hong Kong firms' export products. According to the table, the labor-intensive industries are major targets for outward processing.

A general trend is that Guangdung region's production ratio is higher in industrial sectors requiring not much technology, while Hong Kong's production ratio is higher than that of Guangdung in such high-technology sectors as office automation and computer systems. Rather unexpectedly, Guangdung's production ratios for textiles and clothing are relatively low. The reason for this unexpected finding seems to be Hong Kong firms' consideration of the country's own textile industry.[1]

After North Korea's industrial complexes are completely developed and many South Korean firms are moved to them, both sides may be able to utilize outward processing in much the same way as Hong Kong and Guangdung region did. At the early phase, the investment will be concentrated on the textile industry and the electronic industry of simple assembly type. Gradually, however, the investment will spread into other industries that require high technology and high R&D costs. Of course, the production ratios between the two sides will differ across sectors. Relatively speaking, the South's ratio will be higher than the North's in high-tech sectors, while the North's ratio higher than the South's in those sectors requiring not much technology.

Types of Firms and Cooperation among Firms

There is no objective criteria to judge which types of firms should lead investment into North Korea, as firms may have various investment incentives. In general, though, one can say that those firms in highly labor-intensive industries such as clothing,

[1] Schmidt, K-D. 1997. "Small and Medium Sized Enterprises in Cross-Border Networks: Empirical Evidence from the Pearl Rive Delta. Institute of World Economics." *Kiel Working Paper*, no. 808.

footwear, sewing, weaving, and toy should lead the way, followed by those industries requiring a bit more technology such as electric & electronic parts and stationeries. At the early phase, light industries and consumer goods industries will be the focus of investment, but the investment will be gradually diversified to include service industries.

If investment is to be made continuously into the North with a long-term perspective, R&D teams may be moved to the region in order to facilitate technology transfer and product development. In long term, investment should spread to those sectors where North Korea already has substantial technology, including precision machine processing and construction designs, as well as to the development of natural resources.

In terms of firm size, it would be desirable for small and medium sized firms to lead investment, since they can not only reduce the investment risk, but also penetrate into niche markets. Once, through small and medium sized firms' investment, labor forces within the complexes and nearby areas acquire a considerable level of technology, and all economic transactions with North Korea are stabilized to some degree, the scale of investment may increase gradually.

Given the high risk involved in North Korean investment, it is important to form an organic cooperative system among South Korean firms so that they can make safe and efficient investment. For example, large firms must take responsibilities in building infrastructure, and in negotiating with the North Korean authority on business conditions within the complexes. Small and medium size firms may also benefit by forming a cooperative and making investment together. In this way, they can not only increase their bargaining power against the North Korean authority, but also enjoy the economy of scale in securing necessary raw materials.

Concluding Remarks

North Korea is requesting certain South Korean firms to develop industrial complexes in the country. This development project may bring benefits to both sides. South Korea may derive from the project many short-term benefits as well as some important long-term benefits, although there could be some negative effects. On the other hand, the development will also provide North Korea with such benefits as an increase in capital, technology transfer, a supply of raw materials, and an access to international markets.

The development of industrial complexes will have its true significances only when firms are actually moved in for production. In order to attract firms, the newly developed complexes must be designated as special economic zones. Also required is a partial or complete lifting of the U.S. economic sanctions against North Korea. Moreover, North Korea must remove all the legal obstacles to foreign investment, while making sincere efforts to conclude official agreements with South Korea on such diverse issues as investment safeguard, prevention of dual taxation, direct payment system, direct sea route, and development of railway or roadway.

For more efficient investment, the production method should be outward processing, where a part of the production process is moved to the North. At the initial phase, investment will be concentrated on labor-intensive industries, but it can gradually spread to other industrial sectors, utilizing diverse forms of outward processing. In terms of firm size, small and medium size firms should lead the way so as to minimize the risk. As time passes, large firms' investment in service industry and equipment industry need to be made. In long term, investment may spread into some heavy industries and the development of natural resources. It is also desirable to form a cooperative system among South Korean firms, in order to increase their bargain power and efficiency.