

The Leap-Frog Strategy: A North Korean Developmental Model From the South Korean Experience

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THE VALIDITY OF THE SOUTH KOREAN MODEL

During 2002, Pyongyang set up measures to improve economic management. Resembling those of a market economy, the measures were intended to overhaul its current production and distribution system. Then came a series of laws to set up special economic zones (SEZs) in Shinuiju and Kaesong as well as the special tourism zone at Mt. Kumgang. Mt. Kumgang, linked to the East Coast Railway Line, and Kaesong, which is on the Seoul-Shinuiju Railway Line, will likely be major venues for active economic exchange, once the nuclear crisis subsides.

By these efforts, it is apparent that North Korea is attempting to be more self-reliant. Specifically, by implementing plans for free trade and tourism, the North is breaking away from its previous pattern of dependency on foreign aid. Unfortunately, these positive steps have recently been overshadowed by the North Korea nuclear program and the Hyundai Merchant Marine scandal, in which secret funds were allegedly wired to North Korea.

Much work needs to be done to prepare North Korea for

opening. It not only lacks a comprehensive long-term development strategy, but it has no detailed developmental model. This is due not only to the country's cautious stance on opening and reform in order to maintain its regime, but also to the urgent food shortages that have occupied its time, energy and resources.

Both the Russian model, a sweeping introduction of capitalism, and the Chinese model, designating some areas as development strongholds which then disseminate the wealth to the rest of the mainland, have been discussed as possible models for North Korea's economic development strategy. However, the two strategies have to do with the depth of economic reform and openness and the geographical category of opening, not about what areas to develop and how to develop them.

Focusing on such points, the Federation of Korean Industries (FKI) proposed last year that the long-term economic rebuilding strategy for North Korea could be found in South Korea's experience. Not only do the North and the South share the same history and geographical proximity but surprisingly, North Korea today has many things in common with the South in the 1960s.

First, South Korea, similar to the North today, suffered not only from a scarcity of daily necessities, but from a series of natural disasters that led to famine. The nation was on the brink of destruction. Extreme poverty sapped the people of their will to work, crushing hopes for improvement in productivity. The infrastructure necessary for economic development required large sums of capital, but the government had no reserves to spur economic development on its own.

The two Koreas also have much in common regarding potential for economic development. They value education, they have a high-quality labor force, and they share the possibility of collecting post-colonial claims against Japan or attracting large sums of foreign capital. In sum, conditions are ripe for an economic development policy.

North Korea actually has advantages that South Korea lacked

Table 1. Comparison of Initial Conditions for Economic Development in the North and the South

Similarities	Economic conditions	Lack of the basic needs Lose of the working will because of the urgent lack of national funds
	Potential development	Existence of the high quality manpower Possibility inducement large-scale of foreign capital expectation of the powerful thrust of the economic development policy by the to leader
Differences		Foreign environment: week of the ideological struggle, deepening of the internationalization · globalization, information-oriented society, promotion of the Northeast economic community
		Domestic environment : differences in economic structure, partly establishing productive facilities and infrastructure (North Korea)
Merits of North Korea		Cutting off side effect in the development process, with using the advantage of undeveloped country abundant natural resources and suitable geopolitical location
		Experience in the promotion of the heavy and chemical industries in 1970s

during its initial phase of development. Following the South as its model, North Korea can make provisions to avoid the side effects that South Korea experienced during its development process, such as the destruction of the environment, the disintegration of rural communities, urban overpopulation, and structural problems in the export industry. Moreover, North Korea is blessed not only with an abundance of natural resources, such as minerals, marine products, and natural, scenic tourist attractions, but also has a geopolitical advantage as the gateway to Northeast Asia, with excellent potential for growth.

Comparing industrial potential, South Korea in the 1960s was an agricultural state still recovering from the ravages of war. In

contrast, because of North Korea's policy in the 1970s that put the highest priority on developing the heavy chemical industry, that nation already has basic heavy chemical industrial facilities as well as experience, meaning that North Korea's development period could be substantially shorter than that of the South.

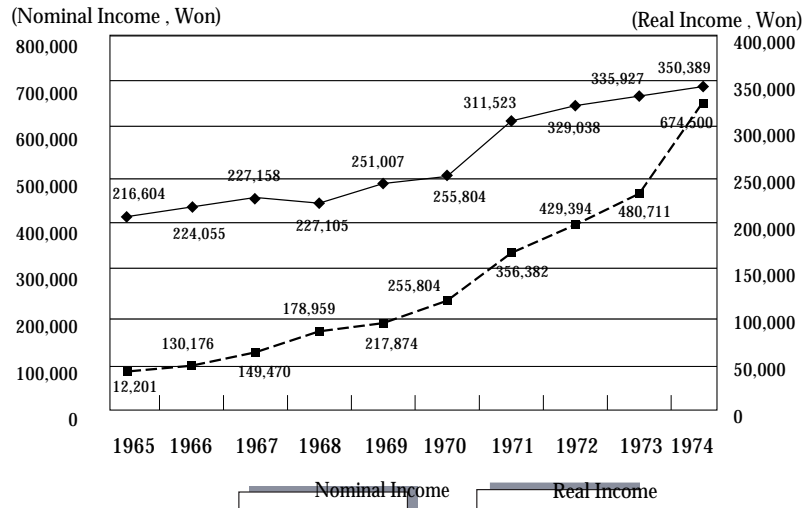
Considering South Korea's experience, what direction should North Korea take in its economic development strategy? The first task is for North Korea to resolve the shortage in daily necessities by focusing on light industry and agriculture. In addition, North Korea should launch a nationwide campaign similar to South Korea's *Saemaul Undong* (an integrated rural development movement) to instill confidence in the people for economic development. Using foreign capital as seed money for economic development, North Korea should focus on building export businesses.

Moreover, to respond swiftly to changes in the international environment and to catch up with advanced countries as quickly as possible, it should not choose the general "catch-up" development strategy that moves from light industry to heavy chemicals and finally to the service industry. Rather, it must opt for the "leap-frog" strategy that moves from light industry straight to fostering a new service industry, and then expand and apply this to the whole industry.

CHARACTERISTICS OF THE SOUTH KOREAN ECONOMIC DEVELOPMENT PROCESS

One of the salient characteristics of South Korean economic development process is the strong leadership of the head of state. Former President Park Chung-hee, who came to power in a 1961 coup, was able to build key infrastructure, such as the Seoul-Busan Expressway, as well as to establish and pursue a state-led long-term economic development strategy. The establishment and promotion of his state-led economic development strategy was, in some sense,

Figure 1. Changes in Farming Household Income Before and After the Saemaul Undong



Source: Ministry of Agriculture and Fisheries

the only option for efficient use of limited resources in the initial stage of development. Moreover, prompt decision-making made it possible to attain rapid economic growth.

On the other hand, the role of the *Saemaul Undong* as the driving force behind national growth, starting from the bottom echelon of society, cannot be underestimated. Initially, the *Saemaul Undong* began as a rural development movement to improve living conditions and increase income in rural areas. By 1974, just four years after its launch, the standard income for farming households had jumped by 37 percent. Propelled by the positive results, the *Saemaul Undong* soon began reviving the national spirit. Emphasizing hard work and frugal living, it motivated the people with the confidence to overcome poverty.

During its initial stage of development in the 1970s, South Korea, focused primarily on light industry, utilizing its low-wage labor

Table 2. Expenditures from the Post-Colonial Compensation Fund

(Unit: 1,000 US\$, %)

Free Funds		Financial Loans*	
Division	Amount(%)	Division	Amount(%)
Capital goods	121,316(40.4)	Capital goods	200,000(100)
Agriculture and forestry	36,548(12.2)	Infrastructure	583,966(42.0)
Marine products	27,176(9.1)	Mining and manufacturing	113,725(56.8)
Mining and manufacturing	31,438(10.4)	Agriculture and forestry	2,309(1.2)
Scientific technology	20,125(6.7)		
Infrastructure	6,029(2.0)		
Raw materials	132,825(44.3)		
Bank commissions and open accounts	45,859(15.3)		
Bank commissions	130(-)		
Open accounts	45,729(15.3)		
Total	300,000(100.0)		200,000(100.0)

* Governmental long-term credit at low interest through the Overseas Economic Cooperation Fund from Japan

Source: Korea Institute for International Economic Policy (KIEP)

force. The government focused on developing labor-intensive industries that could improve basic living conditions, such as foods, textile, clothing, and shoes. After the mid-stage of economic development, South Korea, used the accumulated capital to direct its focus on equipment, the heavy chemical industry, and on businesses strategic for exports, such as automobile, shipbuilding, electricity and electronics, petrochemicals, and steel. In the process, export industry complexes,¹⁾ such as the Kuro industrial complex and

1) Private businesses as well as economic organizations were active participants in building export industry complexes. For example, the Federation of Korean Industries (FKI), based on reports by an investigative committee dispatched to Taiwan and other countries, proposed to the government and led the creation of the Kuro and the Ulsan industrial complexes, Masan Free Export Zone, and Yeochun petrochemical complex.

Masan Free Export Zone, were built to foster efficient export industry. Also, the and the Korea Trade-Investment Promotion Agency (KOTRA) was established to open up new export markets. Meanwhile, the South Korean government enacted various preferential policies, such as tax exemptions and subsidized policy funds, to boost the export business.

The government actively intervened to obtain those development funds. It enacted the Foreign Capital Inducement Law in 1960 to raise funds from international organizations and it introduced the government-guaranteed loan Act in 1962. Beginning with its membership in the International Development Association (IDA) in 1961, South Korea joined various international organizations, such as the International Finance Corporation (IFC), the United Nations Conference on Trade and Development (UNCTAD), the Asian Development Bank (ADB), and the General Agreement on Tariffs and Trade (GATT). A particularly important source of revenue for economic development was the 500 million dollars (300 million dollars in the form of grants and 200 million in loans) that South Korea received in compensation for colonial and wartime activities at the time of normalization of diplomatic relations with Japan in 1965.

South Korea put great effort into building the high-quality human resources necessary for development by creating a national fervor for education and improving the educational system. By focusing on building vocational training schools, technical high school and colleges, and engineering departments in universities, South Korea set the unprecedented record of nine consecutive victories (1977-1986) in the International Vocational Training Competition (IVTC). For advancement of science and technology and technological independence, South Korea adapted a long-term comprehensive development plan for science and technology (1967-1986), legislated the Science and Technology Promotion Act (1972) to support financing and taxation, built the Daedeok Science Town, and founded various research institutes such as the Korea Institute of Science and Technology (KIST), Korea Advanced Institute of Science

and Technology (KAIST), and the National Defense and Science Institute.

THE NORTH KOREAN ECONOMIC DEVELOPMENT MODEL

Because of similar circumstances in its initial stage of development, North Korea could adapt the following long-term economic development strategy based on lessons from South Korea's experience.

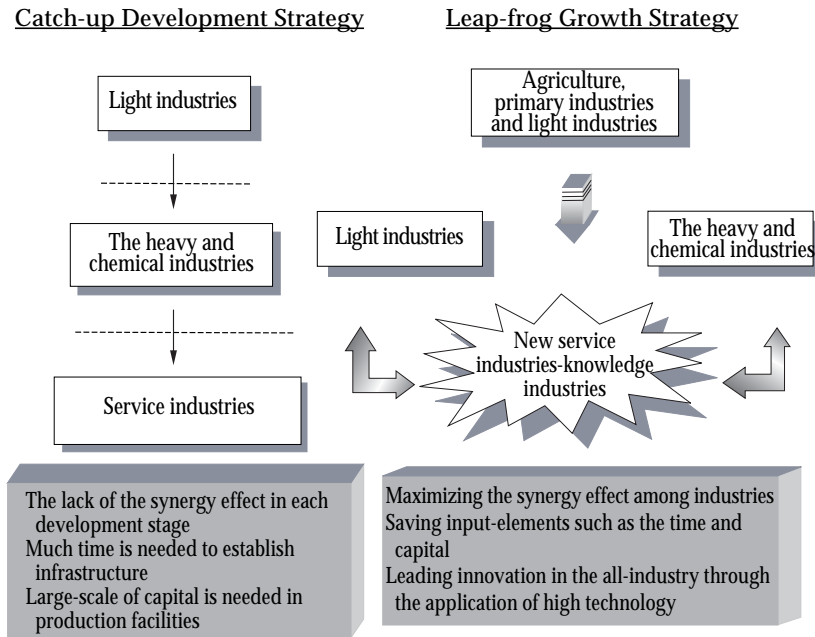
Basic Directions

Contrary to early predictions after Kim Il-sung's death in 1994, his son, Kim Jong-il took firm control over North Korea. Accordingly, if North Korea were to break out of its isolation and promote a policy of economic reform and openness, rapid economic development could follow. To follow that path, North Korea needs to increase its national income by launching a nationwide movement similar to that of the *Saemaul Undong* to improve living conditions, and then to develop it further by reforming its citizens.

Initially, the most urgent task is to improve supplies of basic necessities. To improve the food supply in North Korea requires more seeds, agricultural machinery tools and fertilizer. Moreover, North Korea should first focus on developing light industry such as food and textiles in order to meet people's basic needs.

Instead of focusing on heavy industries or service industries, the next stage in the traditional development process, North Korea should establish a high-tech industry centered on the IT business. Rather than the "catch-up" development strategy that places priority on step-by-step development of traditional industries, North Korea should choose the "leap-frog" growth strategy, focusing on developing new service industries based on information

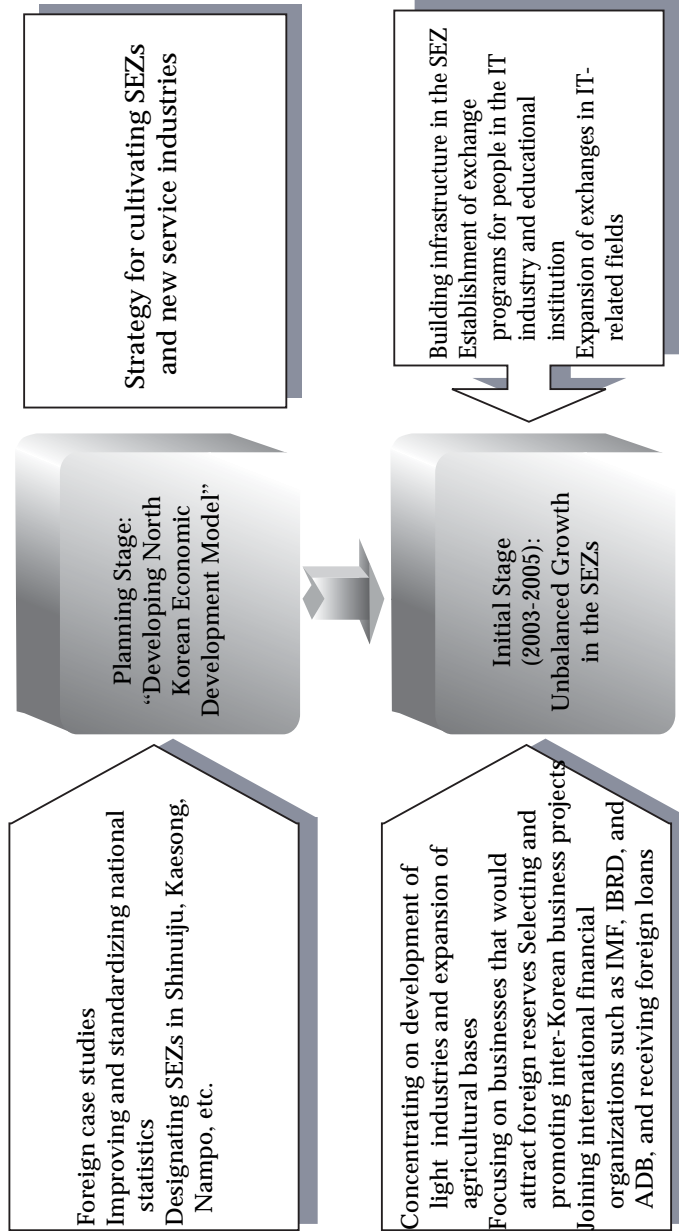
Figure 2. Comparison of Models for Economic Growth



communications and state-of-the-art technology, through which light and heavy industries can also develop as byproducts.

The keywords of the “leap-frog” growth strategy are selection and concentration. By designating areas for potential growth such as special economic zones, and by focusing on certain areas for development, North Korea can utilize its limited financial resources most efficiently and ease the social and cultural shock attending economic reform. North Korea needs to focus on attracting foreign capital as a financial resource in order to promote development. And it must invest first in improving transportation, energy, and other infrastructures. The compensation fund from Japan and grants from international organizations can be utilized for these purposes.

Figure 3. The North Korean Economic Development Model



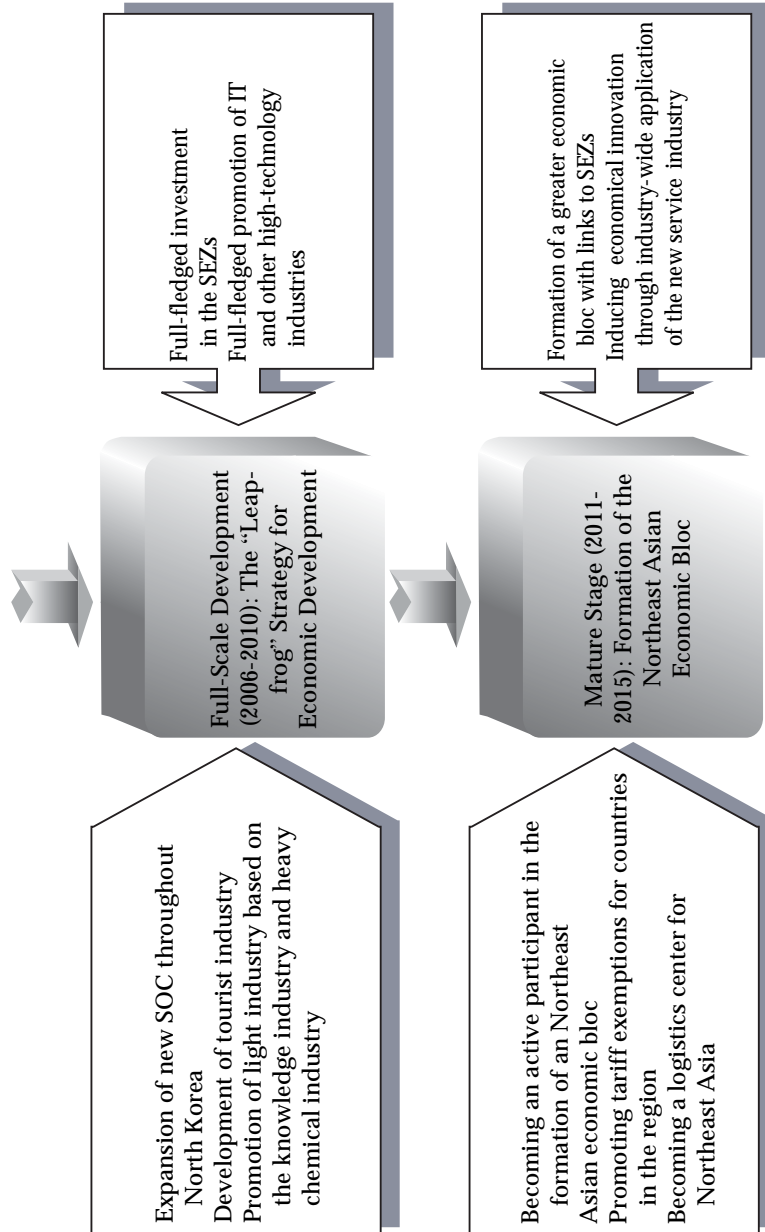


Table 3. Utilization of Post-Colonial Compensation by Nations
(Unit: million US\$)

	Free funds	Financial loans	Commercial loans*	Principle items of the use
Korea	300	200	more than 300	Import capital goods Social overhead capital (So-Yang Dam, the Seoul-Busan Expressway, harbors etc.) Iron manufacturing industries as POSCO)
Myanmar	200	20	more than 300	Restoring the SOC as railroads, roads and harbors Electric power, communication, cement and building steelworks, etc.
The Philippines	550	-	250	Vessels(10.4%) Expansion of the installation as a machine, factories(23.1%) Building plants(12.4%)—a cement plant and road building
Indonesia	223	-	more than 400	Dams, bridges and factories buildings(17.8%) Vessels, vehicles etc.(5.7%) Consumer goods(1.5%) Educating trainees(1.3%)
Vietnam	39	5.5	more than 16.6	Power plants and power transmission equipment(50%) Substations, transformers(13.6%) Production of consumer goods(13.6%) Dam building, plywood plants(6.0%)

* Loans not guaranteed but mediated and recommended to the Japanese Export-Import Bank or other financial institutions by Japanese government.

Source: Korea Institute for International Economic Policy (KIEP)

Strategy for Step-by-Step Promotion

A. Planning Stage: Developing North Korean Economic Development Model

First, North Korea needs to develop an economic development model appropriate for its economic conditions. For continued,

concentrated growth, North Korea needs to utilize the financial resources efficiently, as well as to collect and study successful cases of economic reform in other countries. In addition, statistical figures need to be improved to meet international standards and to overhaul the state of the national economy.

B. Initial Stage (2003-2005): Unbalanced Growth in the SEZs

Improving diplomatic relations is the basic requirement for economic development, since a change for the better can expedite the influx of foreign capital. Injections of foreign capital usually come in the form of loans after joining international financial organizations such as the International Monetary Fund (IMF), the International Bank for Reconstruction and Development (IBRD), and ADB, and it takes approximately three years after becoming a member to receive financial assistance. Therefore, for speedy finance and utilization, North Korea needs to attract financial assistance from the U.S. or Japan in the form of emergency loans or aid.

International financial assistance and post-colonial compensation fund should be used primarily to build infrastructure. Emergency transportation and port facilities should first be expanded in the special economic zones (Nampo, Kaesong, and areas along the West Coast and near the demilitarized zone) and a steady supply of fuel and electric power must be provided. Moreover, for fostering autonomy in the SEZs, independent facilities such as electric generators and communications networks²⁾ should be built early in the development.

In the initial stage, it is necessary to promote light industry and expand agricultural bases to improve living conditions. For a stable food supply, North Korea should build factories for manufacturing

2) In the case of extreme shortage of basic cable communication facilities, it may be more efficient, financially and time-wise, to introduce a wireless mobile communications system first, as in the case of Cambodia.

Table 4. Expected Impact of the Inter-Korean Agricultural Cooperation

South Korea	North Korea
Effect on import substitute of the miscellaneous cereals in the long run	Stable provision with a species of farm products, agricultural chemicals, fertilizers and agricultural equipment etc.
Inter-Korean exchange of farm products, technology and manpower	Many sorts of the breeds improvement, offering the agricultural technology and cooperative development
Promoting related industries such as farm machinery, agricultural equipment	Increasing agricultural output by expanding corn and a potato cultivation

and processing flour, sugar, bread, instant noodles, cooking oil, processed milk, seasonings, and meat and marine products. It must also construct plants for textiles, clothing, shoes, soap, and paper. The expansion of agricultural bases should be go hand in hand with a North Korean-style Saemaul Undong to rebuild the way of life in North Korea. Also necessary are modernization of manufacturing plants for farming equipment and machinery, greenhouse and pesticides and improvement in farming methods and soil quality. Reclamation of riverbanks and waterways, restoration of farmlands damaged by floods and afforestation projects are also needed. In particular, joint operation of model farms, farming on commission, and other inter-Korean cooperation in agricultural areas need to be broadened.

Areas that would increase foreign reserves, should be the main targets for development in the initial stage. These include lumbering, mining and processing natural resources, as well as processing marine products. In addition, Mt. Kumgang and other potential tourist attractions such as Mt. Myohyang, and Kaesong should be developed into international tourism sites.

Successful inter-Korean economic cooperation will not only bring

greater inter-Korean cooperation, but will also attract foreign investors to North Korea. Accordingly, to foster expansion of inter-Korean economic cooperation, the two Koreas should make bilateral decisions on which businesses to target for economic cooperation.

Finally, as a preparation for full-fledged economic development, establishment of educational institutions to foster IT and inter-Korean exchanges between people in the IT industry should be undertaken. The expansion of cooperation should begin in areas with the possibility of immediate cooperation, such as a voice recognition program, foreign language-processing (in particular, Chinese and Russian), animation, and a fingerprint recognition program.

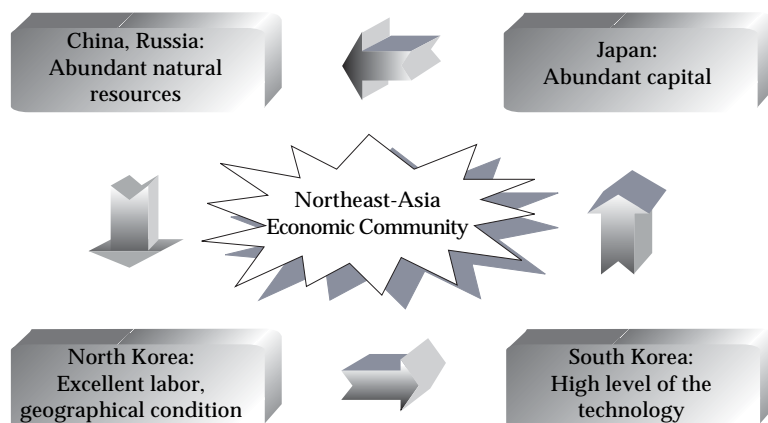
C. Full-Scale Development (2006-2010): the “Leap-frog” Economic Development

Even in the mid-stage, development should continue to be centered on the special economic zones. Following the examples of Hong Kong, Shenzhen, and Macao, which have successfully transformed into cosmopolitan cities through their open economies, North Korea should allow introduction of a market economy, free transfer of funds, free export and import tax exemptions, and freedom to travel in and out of the country. North Korea would substantially raise its revenues by guaranteeing venture capitalists in high technology the freedom to conduct business. Such liberal conditions would also attract manufacturing, financial, tourist, and other high technology firms to the SEZs.

Steel, automobiles, shipbuilding, and semiconductors are the main industries of the South Korean economy today, but profitability in these industries continues in a downward trend with fierce competition among China, Southeast Asia, and Japan. Consequently, North Korea should focus on developing IT,³⁾ information or

3) In the case of India, by developing software for the IT industry, it was able to

Figure 4. Formation of the Northeast Economic Bloc



communications industry, or other new service industries, to avoid investment in the same areas as its neighboring countries.

Taking full advantage of its geopolitical importance as a passageway to Northeast Asian region, North Korea should also develop its tourist business to attract tourists from China, Japan, and South Korea.

D. Mature Stage (2011-2015): Formation of the Northeast Asian Economic Bloc

Once the special economic zones reach the final stage of development, continuation of infrastructure building, such as the

generate in sales some \$2.04 billion in 1994-1995 to \$8.39 billion in 1999-2000, an increase of over four fold. In particular, the software businesses recorded \$5.7 billion in 1999-2000 in sales (68% in export), showing a continued high annual growth of 47 percent since 1994 ("Software Business in India," LG Economic Research Institute).

restoration of roads, construction of double-railroads and a communications network to link the SEZs would lead to a formation of an economic bloc. Full-fledged investment should go into the Rajin-Sonbong Free Trade Zone to expand those facilities for the development of trade ports. For effective fund-raising to cover the developmental expenses, the SEZs need to attract international financial institutions on the premises.

At the mature stage, new service industries will begin to expand. Applying information, communications, and other new service industries to the existing manufacturing industry will raise productivity and efficiency, leading to innovations in the economy.

A Northeast Asian economic community is necessary to keep up with the global trend toward bloc economies, such as the European Union (EU), the North American Free Trade Agreement (NAFTA), and the Association of Southeast Asian Nations (ASEAN). And once economic development reaches maturation, the formation of a Northeast Asian economic bloc that links North Korea to other Northeast Asian countries will become possible. If the rich natural resources of China and Russia are combined with the capital and technical skills of Japan and South Korea, the economic bloc can play a central role in the East Asian economy. And utilizing its geographical advantage, North Korea can become a key logistics base, linking the continental economy with the maritime economy.

POLICY TASKS

As mentioned, North Korea today shares many similarities with the South Korea of the past. And learning from South Korea's development process, North Korea, as a latecomer, may be able to choose a more advantageous path to development. To this end, North Korea needs to adapt a pragmatic economic policy similar to China's "White Cat, Black Cat Theory," which places priority on economic utility. As is generally known, China's gross domestic

product (GDP) recorded an annual growth of 9.5 percent between 1980 to 1990 by introducing a pricing system, promoting responsible management and adapting a policy of economic reform and liberalization.

Improving diplomatic relations is the most important prerequisite for securing seed money for economic development. In order to gain support from international financial institutions such as IBRD, ADB, and IMF, North Korea needs to improve diplomatic relations with countries such as the U.S. and Japan. Moreover, improved relations with the U.S. and Japan would help North Korea to secure a large export market, as well as to attract private capital. Since post-colonial compensation from Japan is likely to play an important role in North Korea's economic development, North Korea should show an active interest in forming diplomatic ties with Japan.

Maintaining stable and continued inter-Korean cooperation is also equally important. China and Taiwan have been able to maintain economic growth for the last twenty years due to their continued cooperation⁴⁾ in economic areas, despite their ideological differences. For economic development of the North and the sustained economic growth of the South, the two Koreas should learn from the example of China and Taiwan. Should the North and the South achieve close cooperative ties, Seoul can become North Korea's window to foreign investments, just as Hong Kong was for China.

Finally, in order to attract more investments itself, North Korea urgently needs to understand successful cases of investment. It should study Shenzhen, Hong Kong, Macao, and other cases to come up with even more attractive laws and systems. Then it can provide preferential treatment for foreign investors, and implement more

4) As of 1999, one-third of Taiwanese products were manufactured in China and 60 percent of high-tech goods in China were products of Taiwanese companies.

aggressive policies for its SEZs. Utilizing these policies, will ensure the successful completion of the Kaesong industrial complex, now underway thanks to close inter-Korean cooperation. Just one successful SEZ would garner the confidence of foreign investors and thus help to sustain North Korea's economic development.