

## **Shortage in the North Korean Economy: Characteristics, Sources, and Prospects**

**Seung-Yul Oh**

A variety of symptoms indicate that North Korea is suffering from serious economic difficulties in the 1990s, including a food shortage so extreme that it called in the help of neighboring countries including South Korea and Japan. Decreases in the working rate of industrial facilities and deteriorating quality of exports due to energy and raw material shortages has forced the volume of North Korea's exports to shrink abruptly. In addition, it is widely observed that the people are suffering from unprecedented cuts in daily necessities.

The North Korean leadership attributes the economic difficulties to the unfavorable changes in external circumstances caused by the system transformation in Russia and the Eastern European countries as well as the market-oriented reform in China, and describes such difficulties as inevitable but transitory. As cures for the ailing economy North Korea has pursued changes in economic policies recently, but they were within the confines of its Soviet-type economic system. In addition to promoting an "independent accounting system" and "corporate enterprise" nationwide since the mid-1980s, North Korea has tried to induce foreign capital into the Najin-Sunbong Free Economic and Trade Zone and promulgated a series of foreign investment-related laws in the 1990s. Recognizing the failure of its Third Seven Year

Plan, it also announced a new economic policy line that put priority on agriculture, light industry, and foreign trade.

Nevertheless, because of the lack of reliable data a quantitative assessment of North Korea's economic performance is an almost impossible task for outside observers. Since the mid-1960s North Korea has never released consistent statistical data, only fragment descriptions of its economic accomplishment for propaganda purposes. Only the yearly reports of the North Korea's minister of finance to the Supreme People's Assembly about government budgetary affairs and trade statistics collected from those of North Korea's trade partners by the Korea Trade Promotion Corporation (KOTRA) and Japan External Trade Organization (JETRA) contain any hard data, despite its coarseness. A few observational reports and anecdotes provided by western visitors and overseas Koreans can be referred to but only for variety's sake. The ROK Unification Board and the Bank of Korea as well as some foreign institutions provide estimates for North Korea's GNP and some sectorial data every year, but the methodology for estimation is unknown and it is difficult to decide the scale of estimation bias. Absurdly enough, in spite of the serious shortage of reliable statistics, the economy-related reports and analyses on North Korea tend to focus on quantitative assessment and prospects. Moreover, since North Korea's economic difficulties are system-specific and policy-specific, the results of quantitative analysis based on the possibly biased estimates are subject to serious limitation in their usefulness and reliability. As a complementary effort, this study opts for a descriptive analysis of the characteristics and sources of shortage in the North Korean economy. Based on analysis results, it will try to answer following questions in relation to shortages and policy changes in North Korea.

First, are the shortage symptoms in North Korea only transitory as they are interpreted by the North Korean leadership? If not, what kind of interactions between system-specific features

and policy variables can be identified as the fundamental sources of shortages in the economy?

Second, will it be possible for North Korea to revive its shortage-plagued economy by means of its limited economic policy changes?

Third, is it possible for the Kim Jong-il regime to reconcile the two seemingly conflicting objectives of keeping the ideological heritage of Kim Il Sung and of recovering its ailing economy? If it is not possible, what will be Kim's risk-minimizing option?

### **Shortages in the North Korean Economy**

As was mentioned in the previous section, the most serious problem afflicting the North Korean economy is the prevailing shortages, which can be categorized and sketched as follows.

*Consumer goods:* One of the most serious problems North Korea faces is extreme shortage of consumer goods including food and daily necessities. In the 1990s North Korea has been suffering from poor harvests of cereals year after year due to bad weather conditions, shortages of agricultural products such as pesticides and chemical fertilizer, and lack of incentives.<sup>1</sup>

In view of the leadership's repeated emphasis on "priority on agriculture" and "meat soup with steamed rice for the people" as the major objectives of agricultural policy, the seriousness of food shortage in North Korea is indisputable. In addition, the food shortage in North Korea was aggravated in 1994 when bad weather affected the region, due to smaller grain imports from the Chinese Northeastern provinces, which has been its major

---

1 The fact that the three North Eastern provinces in China (Jilin, Heilungjiang, Lianing), where the weather conditions are relatively similar to those of North Korea due to their geography, recorded increasing crops during the period of 1990-93 suggests that the explanatory power of the weather conditions for the poor harvests in North Korea in the same period is rather weak. State Statistical Bureau, *Statistical Yearbook of China* (Beijing: China Statistical Publishing House, 1992, 1993, 1994).

source of grain import. The grain crop in the region decreased by some twenty percent from the previous year.<sup>2</sup> North Korea's acceptance of the food aid by its longtime arch-enemies South Korea and Japan, with 150,000 and 300,000 tons of rice in June and July 1995 respectively, also indicates that North Korea is indeed faced with the worst food shortage.

In addition to the food problem, the supply of industrial consumer goods in the economy also runs far short of daily demands. According to the officially announced results of the Third Seven Year Plan (TSYP), the production of local industry oriented to consumer goods increased by 1.7 times compared to the planned target of a 2.5 times increase, while the whole industrial production increased by only 1.5 times instead of the planned target of a 1.9 times increase. North Korea also reports that its production of synthetic resins, an important intermediate good for light industry, fell far short of the planned target 500,000 tons to record low of 92,000 tons.<sup>3</sup> As these show, even though improvement of the living standard through the expansion of light industry was a major policy objective for the TSYP, the relative position of light industry in the North Korean economy deteriorated during the period.

The seriousness of consumer goods shortage in North Korea is well understood in the Chinese Northeastern provinces. People in the region regard subsidiary foods and goods such as

---

2 According to the China's custom's statistics, North Korea's cereal imports (HS code 10) from China in 1994 (1-11) recorded \$23,740,000, which decreased sharply compared to the \$97,680,000 in 1993 (1-12). Since China is to control the cereal exports strictly for the sake of the self-sufficient food supply system (report of the Chinese Central TV, 12 July 1995), it seems to be difficult for North Korea to increase cereal imports from China in 1995 and following years.

3 Although data announced by the North Korean authority of course is subject to enormous bias due to the "imaginative reporting" by economic agencies in the Soviet-type economies due to their "incentive to doctor plan fulfillment report," they are cited for the understanding of relative position of the consumer goods sector in North Korea. For a discussion of "imaginative reporting" and "incentive to doctor plan fulfillment report," see Jan Winiecki, *The Distorted World of Soviet-Type Economies* (Pittsburgh: Univ. of Pittsburgh Press, 1988), ch. 1, 2.

sweets, socks, clothes, shoes, soap, and toothpaste as requisites for any visit to North Korea. It is often observed that North Korean people who travel to China bring back as many consumer goods as possible.

Another symptom of consumer goods shortage in North Korea is the prevalence of the black market throughout the country. Since supply through the official commercial network runs far short of actual needs, it is natural for the people to depend on the black market for daily necessities.<sup>4</sup> Allegedly, inflation in the black market is serious, which can be explained by faster money circulation and swelling monetary overhang from increasing black market transactions. Faced with the serious hidden inflation, North Korean authorities increased base payment of living expenses by thirty percent in April 1992 and substituted new currency for the old at a one-to-one exchange rate in July 1992.<sup>5</sup> Nevertheless, the efficacy of such policies seemed to be very limited, and signs have not yet appeared to indicate that the expanding black market transactions have abated.

*Energy and Producer Goods:* It is understood that North Korea is also faced with an equally serious shortage of producer goods. Even North Korea's official estimation of the result of the TSYP indicates that it could meet only 89.3%, 87.5%, 54.5%, 77.7% of plan targets for the production of coal, steel, cement, and chemical fertilizer, respectively, during the period. If we assume

---

4 According to an informative source, the amount of consumer goods rationed to North Korean people through the state supply network is as much as 10–20% of regulation supply. The fact that black market prices of consumer goods are 3 to 50 times higher than state prices of the same goods indicates the seriousness of consumer goods shortage in North Korea. For instance, the state prices of rice, sport shoes, tape recorder are 8 Chon per kg, 14 Won per pair, and 600–840 Won per unit, but their black market prices are 23 to 35 Won per kg, 40–70 Won per pair, and 5,000–15,000 Won per unit respectively. (The figures were obtained from interviews with recent defectors from North Korea.)

5 *Naewoe Press* (Seoul: Naewaetongsinsa, weekly edition No. 787, 804; 19 March 1992, 16 July 1992).

**Table 1. Major North Korean Trade with China**

(Unit: percentage of total export and import)

	1992	1993	1994 (Jan. 11)
Export			
Steel	43.3	69.9	65.9
Coal*	11.9	2.8	0.8
Cement	3.4	6.5	8.2
Import			
Crude oil, products and			
Coking coal	41.1	39.5	44.1
Cereals	12.7	16.2	6.2

\* The reduction of the share of coal in North Korea's export to China during 1993-1994 was partly caused by the austerity program of the Chinese government but it was mainly due to coal shortage in North Korea. On the other hand, abrupt decrease in China's cereals export to North Korea in 1994 was due to the reduction in cereal crops in the North Eastern Provinces, where bad weather condition cut cereals harvest down by 20% compared to the previous year. Seung-yul Oh, *Analysis of Economic Relationship Between North Korea and China* (in Korean) (Seoul: RINU, 1994).

Source: Customs General Administration of the PRC, *PRC Customs Statistical Yearbook 1993* (Beijing, 1994); *China Monthly Exports and Imports*, Beijing, December 1994). Calculations are my own.

the possibility of data doctoring, the actual result of the TSYP are deemed to be worse than the reported figures.

Recently North Korea suffers from a significant shortage of electricity due to inefficient usage,<sup>6</sup> obsolete power generating facilities and distribution system, shortage of coal caused by the obsolescence of mining facilities and exhaustion of resources in the existing mines. Power generation facilities comprise approximately 66% for hydroelectric power and 34% for thermal power

---

6 According to an estimation, intensity of energy used to generate one unit of GDP in the Soviet-type economies is 2.5 to 3 times higher than market economies. J. Winiecki, *ibid.*, p. 7.

in terms of capacity. Since almost all thermal power plants consume coal, decreases in coal production forced by electric power shortages in turn further reduce power generation. This vicious circle has caused manufacturing to plunge—and the situation is aggravated by the reductions in oil from Russia since 1991 that cause transportation bottlenecks and even further manufacturing and mining decreases.

Shortages of industrial intermediate goods has been exacerbated by the interaction of low manufacturing rates, reductions in excavation, and less raw material from Russia. There is abundant anecdotal evidence of intermediate goods shortages in North Korea. For example, operation of the first generator of the December Thermal Power Plant was possible only after seven years of construction, since 1987. North Korean propaganda, that the completion of monumental industrial facilities would never have been possible without the mobilization of resources according to the “on-the-spot guidance” of the great leader Kim Jong-il, is credible insofar as it implies an extreme shortage of producer goods.<sup>7</sup>

There is a report that in China, with its relatively strong regional self-sufficiency conditions and tendencies, shortages of fuel, electric power, and transport facilities caused twenty to thirty percent of industrial capacity to go unutilized during 1975–1977.<sup>8</sup> By comparison, North Korea has a high degree of import dependency for raw materials including crude oil and coking coal and a relatively low regional self-sufficiency in its industrial system. It would not be an exaggeration to estimate that its industrial operation rate is less than fifty percent.

---

7 According to North Korean propaganda, construction of West Sea floodgate, Sangwon cement corporate enterprise, and Ryongsung machinery corporate enterprise etc. could have been completed as planned only by the on-spot-guidance of Kim Jong-il. Pyongyang Chulpansa, *Kim Jong-il Jidoja* (Pyongyang: Pyongyang Chulpansa, vol. 3, 1994)

8 E. J. Perry and C. Wong (eds.), *The Political Economy of Reform in Post-Mao China: Causes, Content, and Consequences* (Cambridge: Harvard Univ. Press, 1985), p. 3.

In addition, North Korea's limited manufacturing export capacity due to that sector's sluggishness has forced it to export intermediate goods with a low degree of processing such as iron and steel, coal, and cement, for which itself felt sharp shortage, in order to import indispensables for survival such as crude oil and grain. Shortages in intermediate goods were thus amplified.

*Investment funds:* In order to ameliorate bottlenecks and inefficiency caused by industrial imbalances and obsolete infrastructure as well as to construct the Najin-Sunbong Free Economic and Trade Zone on schedule, North Korea urgently needs a great amount of investment money. Nevertheless it would seem very difficult, if not impossible, to raise such funds by any increase in government budget, domestic savings, export promotion, or inducement of foreign capital.

The ratio of state budget to GNP is approaching its limit in North Korea,<sup>9</sup> so any increase in state investment through expansion of government budgetary revenue seems almost impossible. Neither is an investment increase feasible to cover the urgent need to change the structure of government expenditure—not only because maintaining and repairing its comprehensive and obsolete industrial facilities absorb much funding, but (for their vested interests) the military and industrial complexes do not want such a change. In addition, extension of the gestation periods of funds due to the producer goods shortage, and due as well to the tendency of its planners to concentrate financial resources on politically-decided priorities,

---

9 According to the estimations of Unification Board and the Bank of Korea, the ratio of government expenditure to its GNP for North Korea was over 90% in 1993. The Bank of Korea, *Estimation of North Korea's GNP in 1993* (Seoul: The Bank of Korea, June 1994). Budgetary data announced by North Korea also show that its economy is approaching the limit of budgetary expansion as North Korea's government expenditure in 1993 increased by mere 2.4% despite urgent need for increase in the expenditure (Report to the Supreme People's Assembly by the Minister of Finance, May 1994).



has made shortage of funds even worse than it would have been otherwise.

As an alternative, investment expansion through an increase in domestic savings is probably also difficult under North Korea's current economic circumstances. Preference of the consumers to hold cash for unexpected transactions in the black market and the low interest rate in the financial institutions (three to four percent of nominal rate per annum) compared to the extent of hidden inflation inhibit people from saving their income.<sup>10</sup> On the other hand, because of the taut planned targets for producers and the low operation rate in the industrial sector, it is difficult for the enterprises to secure financial resources for reinvestment.

Obsolete technology and low supply elasticity for exports as well as an inefficient foreign trade pattern are obstacles for North Korea to obtain investment funds by means of export promotion. Major exports comprise extractive industrial products with a low degree of process and its trade direction is concentrated to a small number of countries. Furthermore, a large part of its trade is conducted on the basis of bilateral barter agreements. Domestically, the immobility of factors of production, the monopolistic position of the military-industrial complex, and a recently appearing tendency of regionalism and sectionalism hinder the structural adjustment of the economy for export promotion. All these contribute to the low supply elasticity of North Korean exports.

In 1993 primary products (mining products, nonferrous metals, and marine products) and rudimentary textiles consumed 47.1% and 21.4% total export respectively. In that year, North Korea conducted trade with fifty-four countries, but the volume

---

10 In the Soviet-type shortage constrained economies, forced saving is a possible result of people's frustrated consumption. Nevertheless, since North Korean people have to secure basic necessities such as rice and clothes from the black market, it is natural for them to prefer cash holding.

of trade with the upper ten countries took 88% of that total, and trade with China, Japan, and the CIS amounted to 69%.<sup>11</sup> Backwardness of trade pattern made the terms of trade disadvantageous to North Korea so that it might be difficult to accumulate investment funds by promoting export. Moreover, shrinking export caused by shortages forced it to reduce imports of producer goods as well as consumer goods. This made the shortages even sharper.<sup>12</sup>

*Technology and human capital:* A large part of the major industrial facilities in North Korea comprises those built with aid from the Soviet Union, China, and East European countries during 1950–1960 and those imported with loans from those countries and OECD member countries in 1950–1975.<sup>13</sup> Thus, the embodied technology and facilities themselves are obsolete. In the early 1970s Pyongyang tried to upgrade its industrial facilities by importing advanced equipment from the West, but the effort was unsuccessful due to its stagnant export and deteriorating trade terms.

As an alternative North Korea has tried to attract foreign capital and advanced technology with the promulgation of the Joint Venture Law in 1984. This was a marked departure from its autarkic policy adhering to self-sufficiency, inspired by the *juche* ideology. The attempt induced only a trivial amount of foreign capital, however, mainly from the pro-Pyongyang Korean resi-

---

11 KOTRA, *Trend of North Korea's Foreign Trade 1993* (in Korean) (Seoul: KOTRA, 1994).

12 The ROK National Unification Board and the Bank of Korea estimate trade volume of North Korea during 1991–1993 as \$27.7 billion, \$26.6 billion, and \$26.4 billion respectively. Unification Board, *Major Economic Indicators of South Korea and North Korea* (Seoul, various issues), The Bank of Korea, *ibid.*, various issues.

13 North Korea provided \$1.28 billion worth of aid by the former Soviet Union, China, and East European countries in 1950–1960, and loans from these countries and OECD member countries during 1950–1975 amounted to \$2.86 billion. Most of the aid and loans were provided with industrial facilities. National Unification Board, *Statistics of North Korean Economy* (Seoul, 1986).

dents in Japan.<sup>14</sup> Since 1985 North Korea had pursued industrial modernization through economic cooperation with Gorbachev's formal Soviet Union, but that ceased with the dismantling of the USSR.

North Korea has failed to absorb and develop modern technology through R & D expenditure as its efforts were focused on the quantitative expansion and construction of a self-sufficient comprehensive industrial sector. Producers were not much interested in competitiveness of their products since their performance was measured by the extent of accomplishment of quantitative targets set by the planning authority. Such tendency was exacerbated by the prevalence of shortages.

In addition to the obsolescence of industrial facilities and technology, North Korea also suffers from serious shortage of human resources for improvement of managerial efficiency, export promotion, and absorption and development of advanced technology. Its adherence to the Soviet-type command economy and closed-door policy as well as its ideology-oriented education system should be blamed for the lack of human capital. Nevertheless, North Korea is still negative towards personnel exchange of technicians and scholars with foreign countries, and persistently tries to substitute ideological passion for academism.

### **The Characteristics of Shortages in North Korea**

North Korean authorities attribute the acute shortages characterizing the economy to the unfavorable international circumstances formed by the changes in the socialist countries and eruption of the nuclear issue. In other words, it regards its

---

14 In the period of 1984–1993 North Korea induced total \$150 million of foreign capital for 140 projects. Among them more than 90% were investment from Korean residents in Japan and only 70 projects were operating by the end of 1993. Unification Board, *Joint Venture in North Korea* (in Korean) (Seoul, 1994), p. 8.

shortage phenomenon as exogenous and transitory to its economic system. Outside observers' viewpoints have been ambiguous about this, and relatively little systemic and theoretical analysis has yet appeared. Most recent discussions about the impact of economic sanctions against North Korea on the economy have proceeded on the basis of quantitative estimation of the economy, and analysts have failed to derive conclusions based upon analyses its structural features. In order to analyze the shortage phenomenon in the context of system-specific and policy-specific features of North Korea, first of all we have to show that shortages in the economy are chronic and not a transitory phenomenon.

Generally, for an understanding of the supply-demand situation in centrally planned economies, a widely accepted approach is to make a distinction between buyer's market and seller's market. Contrary to the case of market economy, the concepts of buyer's market and seller's market do not rely on the existence of market-clearing prices.

J. Kornai defined market conditions more comprehensively, where the market is one of the system's complex decision processes and its operation constitutes a process overtime. Therefore, the market is not only the price signal by which the sellers make their decision for production, but it is also a complex information structure—the offers and orders of his clients. Following this argument, market conditions in most actual economic systems can be characterized by general “pressure economy” and general “suction economy,” where buyer's market and seller's market prevail in turn.

It should be noticed that the distinction refers to the situations when *for the products accounting for the major part of social production there prevails general pressure (or suction) over a longer-than-average period.*<sup>15</sup> To provide empirical contents for this approach, Kornai proposed to use the level of inventories held by users

---

15 J. Kornai, *Anti-equilibrium* (Amsterdam: North-Holland 1971), p. 226.

relative to those by producers as a key indicator of chronic shortage or a seller's market.<sup>16</sup> He suggested that the long-term average ratio between the stock of input and the stock of output be the basic parameter determining the general market conditions of a country.<sup>17</sup> Although such a simple measurement of chronic shortage has been widely used for the analysis of market conditions in socialist countries, the blackout of statistical information prevents us from applying this methodology to the North Korean case. Therefore, in this study I show that *for the industries accounting for the major part of the North Korean economy, shortage has prevailed over a relatively long time* relying on descriptive analysis as follows.

North Korea embarked the First Seven Year Plan (FSYP) in 1961 in the judgement that it had completed the Five Year Plan (FYP) planned for 1957–1961 in advance. To the extent that the Five Year Plan period did produce rapid industrialization at the initial stage of socialist economic development, it too contained the seeds of shortages in the economy. Accomplishment of the major target of FYP in advance was possible only with aid from friendly socialist countries while North Korea maintained its wartime mobilization system. Moreover, the success of the FYP was judged by the completion of quantitative targets for a small number of products and construction projects. Aid from the other socialist countries had already begun to decrease sharply in the FYP period, not to mention that they provided heavy industrial facilities without paying attention to North Korea's capability to supply its own raw material. As a result, North

---

16 J. Kornai, *Economics of Shortage* (Amsterdam: North-Holland Publishing Co., Vol. 1, 2, 1980), ch. 14.

17 The rationale for the use of the ratio as an indicator of market condition is that in the buyer's market, where buyers have a wide range of choices and sellers compete with each other for sales, the enterprise will find it easy to buy but hard to sell, and so the enterprise usually has a big stock of output as against a small stock of inputs, and the ratio is low. In the seller's market, by analogy to the case of buyer's market there is a lower stock of output than of inputs, and the ratio would be high.

Korea's industrial production became heavily dependent on raw materials from the Soviet Union and China, and the reduction of economic aid from them induced serious imbalances in the economy.

On the other hand, agricultural production increased by more than ten percent a year on the average in 1956–1958 relying on the improvement in the supply of industrial goods for agriculture and good weather conditions as well as a mass mobilization strategy. But the fact that the Chollima Movement, a campaign for labor mobilization, was already begun shortly after the completion of agricultural collectivization in 1958 means that there had already appeared incentive problems in the agricultural sector as early as the 1950s.

In view of the intensive campaign for the Chungsanri Method and the Dae'an system initiated in 1960 and 1961 respectively, North Korea's economy must have already faced significant shortages in the early 1960s. Ostensibly the campaign was to invoke revolutionary voluntariness and participation of cadre and labor in the managerial affairs of collective farms and industrial enterprises. In fact, however, the core of the campaigns was that the cadres in charge of management of the relevant farms or enterprises should see and understand the reality of the scene of labor to guarantee supply of materials for production at the right place and the right time.

Shortages due to the industrial imbalances in North Korea grew worse through the economic policy adopted in the mid-1960s which put extreme emphasis on the construction of self-sufficient heavy industry and on military expansion. Strikingly, even its official data shows that North Korea spent more than thirty percent of government expenditure every year to build military force in the period of 1967–1971. In spite of the prevalence of industrial imbalances and resulting shortages, it did not make visible efforts to normalize its deformed industrial structure. Instead North Korea has given priority of resource allocation to the construction of large-scale industrial facilities and

monuments to brag about the superiority of its political system. Shortages have been exacerbating incessantly. As a result of the policy, it had to extend the period of the FSYP for three years to accomplish the planned target, and had to have adjustment periods of one year, two years, and three years after the Six Year Plan (1971–1976), the Second Seven Year Plan (1978–1984), and the Third Seven Year Plan (1987–93) respectively. Such practice indicates that the industrial imbalances and shortages in the economy had been aggravated during the plan period and it had to wait for the problems to be ameliorated to embark upon the next plan period. Since 1977, the first adjustment period, North Korea has put special emphasis on the elimination of transportation bottlenecks, development of the extractive industry, and improvement of living standard, all of which pointed to the significance of industrial imbalances and resulting shortages.

**Table 2. North Korea's State Investment  
in the Industrial Sector**

(Unit: percent)

	1961	1962	1963	1964	1965	1969	1970
Industry total*	58.1	55.8	56.0	65.0	66.7	56.6	-
Heavy industry**	69.7	63.7	68.2	73.8	87.3	-	80.7
Electricity	11.1	12.9	14.6	11.5	-	-	-
Coal	9.9	9.9	12.6	14.7	-	-	-
Mining	16.3	15.7	17.5	19.4	-	-	-
Metallurgy	6.2	5.0	5.8	6.1	-	-	-
Machine	9.1	7.4	10.1	11.1	-	-	-
Light Industry**	30.3	36.3	32.8	26.2	12.7	-	19.3

\* as percentage of total state investment

\*\* as percentage of state investment in industry

Source: *Chosun Jungang Yongam* (1963, 1964, and 1965); *Rodong Sinmun* (November 10, 1970), recited partly from Bon-Hak Koo, *Political Economy of Self-reliance* (Seoul: Research Center for Peace and Unification of Korea, 1992), p. 116.

Sacrificed to heavy-industry-oriented economic policy, the consumer goods sector had been suffering from chronic shortage. North Korea's decision makers did not show, by allocating more resources to it, any real intention to boost light industry. The August Third Consumer Goods Program, for example, was designed only to utilize waste and unused materials, i.e., "inner reserves," for the production of simple consumer goods such as clothes, shoes, utensils, and school supplies. The program was not supposed to redirect heavy industry-oriented investment policy or bring about institutional changes into the economy.

On the whole, the North Korean economy has all along been showing a syndrome of chronic shortages prevalent in the Soviet-type economies, and the extent of the difficulties has been aggravated since the mid-1960s. Moreover, because of the excessive concentration of economic power on the part of the central government and ideological rigidity that forced the country to adhere to its closed-door policy, the extent of shortage in North Korea has been more serious in the other socialist countries.

In sum, shortages that came into the limelight in the 1990s are not a transitory phenomenon due to some abrupt change in international circumstances, but a chronic disease that has long been agonizing North Korea's "suction economy." The longevity and comprehensiveness of the shortage phenomenon leads us to conclude that generation and reinforcement of shortage are endogenous to its economic system. The changes in external circumstance only acted as a catalyst to accelerate the interaction among system-specific and policy-specific variables, which brought about these unprecedented economic difficulties in North Korea.

### **Sources of Shortages in the North Korean Economy**

In this section, following a logical sequence, it is attempted to clarify sources of the chronic shortage that make the phenomenon endogenous to the economic system of North Korea. The



sources are divided into four categories: system-specific economic development strategy, operational inefficiency, self-reinforcing mechanism of shortage, and inefficiency in external economic relationship as follows.

*Strategy for self-sufficient economy under the juche ideology:* In the 1960s the Sino-Soviet border dispute and decreasing aid from other socialist countries, as well as then appearing economic problems, forced Kim Il Sung to build a self-sufficient economic and military system. Almost all usable resources have been poured into heavy industry and military industry: in 1965 the industrial sector took 66.7 percent of whole state investment. Heavy industry, in turn, held 87.3 percent of the state investment to the industrial sector (see Table 2). Since then there has been little change in such a biased investment structure.

Biased investment to build self-sufficient and comprehensive heavy industry induced serious inefficiency into a country with high degree of foreign trade dependency for raw material and with a relatively small-scale economy. Simultaneous investment to the comprehensive scope of heavy industry not only brought about inefficiency of under-specialization in the national dimension but also induced resource waste because enterprises could not take advantage of economies of scale. In addition, industrial enterprises have shown a tendency to produce parts and components for their own use as a protective reaction against prevailing shortage.<sup>18</sup> This all has wasted resources and aggravated the shortages. Moreover, the fact that in the absence of scarcity prices, intra-heavy industry investment structure could only reflect the preference of decision makers bore another source of resource waste.

The heavy industry-oriented investment structure and resulting inefficiency and waste of resources siphoned off funds and

---

18 For inefficiency caused by the two-fold underspecialization at the level of a national economy and at that of enterprise, see J. Winiecki, *ibid.*, pp. 73–8.

material that would otherwise have been used for investment in light industry, agriculture, and infrastructure for balanced growth. In addition, the extension of gestation periods of funds due to the competition among sub-sectors of heavy industry for funds and material formed a vicious circle of producer goods shortage. To sum up, North Korea's pursuance of self-sufficient industrial system under the *juche* ideology induced shortages due to inefficiency and resource waste not only at the level of a national economy but also at that of the enterprise. Against the leaders' expectations, their efforts towards a self-sufficient heavy industrial system over more than forty years was able to create the seeds of shortage but not the engine of growth.

*Operational inefficiency:* In addition to the heavy industry-oriented development strategy under the *juche* ideology, operational inefficiency in the Soviet-type economies constitutes a major source of chronic shortage. There are numerous studies about operational inefficiency in centrally planned socialist economies and some argument can be well applied to the case of North Korea to explain the chronic shortage in the economy as follows.

First, under the extensive growth strategy of the Soviet-type economies, since the performance of producers is judged largely by the extent of the quantitative accomplishment of state plan target, industrial enterprises became insensitive to cost increases. They show a tendency to hoard an abnormally high input inventory as protective means against prevailing shortages. As a result, a socialist firm uses more energy and inputs relative to its output than does its counterpart in a market economy. Moreover, "soft budget constraint" for producers intensifies such a tendency<sup>19</sup> so shortage prevails in the inputs but the intermediate goods sectors are subjected to seller's market. As

---

19 For the relationship between "soft budget constraint" and overstock of inputs, see Kornai, *ibid.* (1980), ch. 5.

producer goods sector and consumer goods sector compete for the same inputs, shortage in the former spill over to the latter and it comes to prevail all over the economy.

Second, because of taut planning based on overly optimistic assessment of the economic situation and the quantitative performance criteria for producers and for local government as well as for workers, economic agents in the Soviet-type economies tend strongly towards "imaginative reporting" and often provide "doctored performance figures."<sup>20</sup> Execution of the plan based on such doctored figures is inevitably subjected to uncertainty and error, which in turn aggravates overall shortages.

Third, the prevalence of a seller's market and producers' pursuance of the quantitative targets of a taut plan inevitably induce quality and specification problems.

Fourth, as the complexity of an economic system grows, the planning procedure relying on the material balances is inevitably subjected to increasing uncertainty. Moreover, manipulation of performance figures, quality and specification problems, and producers' tendency to hoarding inputs intensify the uncertainty in the process of plan execution. Usually, such uncertainty induces ad hoc changes of the plan, which in turn make it difficult for the economy to accomplish original plan targets and aggravate the overall shortages.

Fifth, producers subject to the soft budget constraint of the Soviet-type economies need not pay attention to the economic validity of an investment project, but if the planning authority grants permission for an investment project, they receive enormous benefit including priority for material supply. Thus, producers presenting their investment demand to the higher levels of hierarchy will try to present their proposals in the best possible light to get the desired funds. So they often underestimate the costs of proposed investment projects and overestimate the results. The authority, however, usually permits proposed pro-

---

20 See footnote 3 of this study.

jects on condition of cutting the requested investment expenditure by a specific amount, in which case the gestation periods of funds for planned projects needs to be extended. The supply of products from the project come to be postponed, too. Such a sequence worsens the general shortage.<sup>21</sup>

*Self reinforcing mechanism of shortage:* Although North Korea set up adjustment periods after plan periods, the shortage caused by industrial imbalances was not ameliorated. This can be explained by the dynamic relationship between industrial imbalances and shortages.

Because the economy has been suffering chronic shortage of raw materials and intermediate goods, the authorities regarded expansion of the energy sector and extractive industry as the most urgent task to ameliorate shortages in producer goods including raw material and intermediate goods.<sup>22</sup>

From 1961 to 1964 state investment in extractive industries such as coal and mining grew faster than that in metallurgy and machine building (see Table 2), two major sub-branches of heavy industry. For example, in 1964, 45.6 percent of total state investment to the industrial sector went to electricity, coal, and mining compared to 37.3 percent in 1961, while 1964 investments in metallurgy and machine building took 17.2 percent, and 15.3 percent in 1961.

In view of North Korea's investment priority on heavy industry, such a shift in the investment structure indicates that the urgent need to expand the energy and extractive industrial sector limited the expansion of major heavy industries such as metallurgy and machine building. This made the leaders always feel

---

21 For Hungary, a study reports that the gestation periods are often 50–100 percent or more longer than planned. A. Brody, "About investment cycles and their attenuation," *Acta Oeconomica*, Vol. 31, pp. 1–2.

22 For the mechanism of overexpanding extractive industry in the Soviet-type economies, see J. Winiecki, *ibid.* ch. 3.

an insufficiency of investment in this important area. The deformed investment structure could not be balanced and the spillover of shortage from heavy industry to other sectors of the economy has intensified.

*Inefficiency in external economic relationship:* Because of the limited reserves of natural resources and the small scale of its economy, external economic relationships could not but have vital importance for North Korea. Even though it has pursued a supposedly self-sufficient industrial system under the flag of the *juche* ideology, raw materials such as crude oil and coking coal and a large part of industrial facilities had to be imported from other socialist countries as well as from Western countries. Moreover, chronic shortage and backwardness of industrial technology caused by inefficiency of its economic and political system intensified the need of the economy for imported inputs and industrial facilities.

Nevertheless, economic policy to build a self-sufficient industrial system made it impossible for North Korea to develop comparative advantage through specialization and technology improvement. Therefore, it had to secure raw materials and industrial facilities mainly through barter according to trade agreements with the Soviet Union, after whose dismantlement it has relied upon barter with China. The acceleration of market-oriented reform in China since 1992, however, and deteriorated export capability of North Korea, have brought about significant reductions in the trade volume.

As a result, in order to import the oil and cereals vital to its survival, North Korea had to export commodities such as steel, coal, and cement for which itself felt sharp shortage but which, to make things even worse, require relatively short processing. It further intensified the extent of shortages, and reports about low operation rates in the manufacturing sector testifies that.

## Macroeconomic Implications of Changes in Economic Policy

Recently North Korea has been concentrating its efforts on building the Najin-Sunbong Free Economic and Trade Zone (NFETZ) and on promoting export by decentralizing part of foreign trade rights. It also declared it would give the first priority of economic policy to agriculture, light industry, and foreign trade during three years of adjustment (1994–1996), but we have not been able to find any convincing evidence, however, of sincerity in the declaration. Thus, this section only deals with the policy impacts of construction of the NFETZ and those of partial decentralization of foreign trade rights on the economy.

*Construction of the Najin-Sunbong Free Trade and Economic Zone:* North Korea announced a plan to construct the NFETZ at the end of 1991, and it promulgated related laws and regulations beginning October 1992. In 1993 it also proposed a relatively detailed blueprint to attract foreign capital to the area.<sup>23</sup>

The NFETZ of North Korea is different from the special economic zones of China in various ways. Among other roles the NFETZ is supposed to become a “center for entrepot trade,” a “bonded area for processing and assembling,” and a “base for production of import substitutes” under administrative control. This contrasts with the SEZs’ role in China as a “bidirectional window” designed to link the Chinese economy and the international market for the purpose of market-oriented reform. Considering the remoteness and economic isolation of the NFETZ as well as political uncertainty of North Korea, it will probably be difficult for now to build the NFETZ relying on external funds and materials.

According to North Korea’s investment guide to the NFETZ for foreign investors,<sup>24</sup> expected average investment per project

---

23 The Committee for the Promotion of External Economic Cooperation, *Golden Triangle: Najin-Sunbong* (Pyongyang: 1993).

for the chemical, electronic, and textile industries is approximately \$500 million, \$50 million, and \$10 million respectively. Considering that in China average investment scale of foreign capital per project is some \$2 million, North Korea is overly optimistic. On the other hand, among sixty-eight projects listed in the investment guide to the NFETZ, thirty-six pertain to heavy industry and are deemed to be oriented to import substitution. The characteristics of the NFETZ imply that the gestation period of funds will be considerably longer than expected by the planners, not to mention the low attractiveness of the NFETZ to foreign investors due to them.

All this taken into account, the construction of the NFETZ will be a great burden to North Korea's shortage-plagued economy. In view of poor result of foreign capital inducement into the zone as yet and its remote location, construction of infrastructure and industrial facilities and housing for the labor will only be possible with a huge supply of already scarce domestically produced raw materials and intermediate goods as well as internal financial resources.

*Decentralization of foreign trade rights:* Recently North Korea has allowed establishment of foreign trade companies (FTC) independently or under the auspices of administrative organs at various hierarchic levels. In the process, the ranges of business for FTCs have been broadened compared to the monopolistic pattern of business in the past and the decision-making power for the composition of exports and imports was decentralized partially for FTCs. Such changes brought about certain competitive actions among them. The number of existing FTCs was said to be over 200 by the end of 1994.

Efforts for the promotion of exports, however, were doomed to failure because they were not accompanied by the measures

---

24 The Committee for the Promotion of External Economic Cooperation, *ibid.* pp. 13-20.

to remove structural obstacles to an efficient foreign trade system. Because of lack of scarcity prices, overvalued currency, proliferation of black markets and rent-seeking activities, producers insulated from the external market, and excessive interference in trade activities by the party and the government, export potential of the economy cannot be exploited and the trade pattern is distorted.<sup>25</sup> In addition, as the seller's market prevails in the shortage-plagued North Korean economy, the FTCs and industrial enterprises compete for the same steel products, coal, and cement, which also are major exports. And the shortages get worse and worse.

Abrupt interference in the process of trade by powerful organs and individuals seeking to accrue commissions from limited export capability and strong import demand is another source of distortion of commodity composition of trade and of unreliable trade practices in North Korea's FTCs. Under such circumstances, on one hand North Korea's commodity composition of exports is determined by the accessibility of materials rather than by the comparative costs of production, and on the other hand that of imports is decided by the scale of rent accruing rather than by their importance to the economy.

To sum up, with North Korea's existing economic system we cannot expect that partial decentralization of foreign trade rights and establishment of these FTCs will bring about an increase in export. The worst result of such policy changes is that it adds more shortage pressure to the economy as rent-seeking activities of the FTCs and the party cadres prevails.

---

25 For the theoretical discussion about the impossibility for the Soviet-type economies to realize comparative advantage in external trade, see J. Wilczynsky, "The Theory of Comparative Costs and Centrally Planned Economies," *Economic Journal* (March 1965), pp. 63-80.



## Political Economy of North Korea's Economic Reform

As was analyzed above, the North Korean economy has been subjected to a sustained and comprehensive shortage phenomenon; the shrinking external trade in the 1990s only accelerated its degeneration. Shortages in the economy have continuously intensified due to the ideological constraint, operational inefficiency of the centrally planned economy, self-reinforcing mechanism of industrial imbalances, and inefficient external economic relationship. Moreover, recent changes in economic policy that are confined within the existing economic system will inevitably exacerbate distortions in resource allocation and will sharpen the extent of shortages.

Such limitations came about because North Korea has been unable to adopt the market-oriented reform with which other socialist countries are familiar. As early as the beginning of the 1980s the Chinese leaders, for example, judged that adoption of market mechanism and linkage between internal market and external market through scarcity prices are indispensable for sustained economic growth and improvement in living standard of the people. Thus, the speed of expansion of the market mechanism in China could have been faster than what was expected by outside observers. North Korea, however, faced with the worst economic situation in its history, stubbornly clings to its Soviet-type economic management.

If we typify the reform processes of socialist countries, a Soviet-type economy faced with system-specific economic problems will choose either to improve the planning mechanism or to take market-oriented reform measures, according to the relative costs of the alternatives. If the price in terms of its economic/political/social impact is deemed too high for a Soviet-type economy to adopt a market mechanism, the decision maker will decide to reform the economy by improving the planning mechanism. Market-oriented reforms will be adopted

only when the shift costs less than the potential savings in operation of the system.

In this context, given China's politico-economic conditions at the end of 1970s, its adoption of market-oriented reform can be explained by a relatively low transition cost compared with the operating cost of their centrally planned economy, as perceived by the reform-minded leadership. In contrast, for the moment, the transition cost in terms of political risk and macroeconomic controllability perceived by the North Korean leadership is tremendous relative to the operating cost of the Soviet-type economy. Therefore, North Korea still seems to be trying to improve its planning mechanism and external economic relationship without systematic reform of the current resource allocation system.<sup>26</sup>

Nevertheless, as analyzed in this study, North Korea's limited policy changes such as the construction of NFETZ and partial decentralization of foreign trade rights could well aggravate shortages, bring about significant hidden inflation, and widen the black market. As the negative impact of limited policy changes on the economy becomes clear, the relative costs of reform policies deemed by the leadership will change. Then, as the perceived relative cost of institutional shift decreases and operating cost of the Soviet-type resource allocation system increases not only in terms of macroeconomic controllability but in terms of political stability, the leadership cannot but seek market-oriented reform as the alternative. In view of North Korea's continuously degenerating economic conditions, however, as time passes costs to implement market-oriented reform measures in terms of macroeconomic side effects such as unemployment and inflation will also increase.

---

26 For theoretical analysis of the differences in the reform paths of North Korea and China, see Seung-Yul Oh, "Economic Reform in North Korea: Is China's Reform Model Relevant to North Korea?," *The Korean Journal of National Unification*, Vol. 2, (1993), pp. 127-51.

## Conclusion

Now we are in a position to answer the questions raised in the introductory section of this study.

First, the prevailing shortage in North Korean economy is not a transitory phenomenon caused by changes in the international circumstances but a chronic one endogenous to its Soviet-type economic system. Shortages in the economy have been aggravated by the interaction of its ideological bias, operational inefficiency of central planning, and the self-reinforcing mechanism of shortage.

Second, in view of the characteristics and sources of shortage in North Korea, limited policy changes it has recently attempted may well exacerbate the shortages in the economy. The degenerating economy cannot be revived by policy changes confined within the existing economic system, and the shortage-plagued economy will continue to siphon off the welfare of its people.

Third, the Kim Jong-il regime will realize that there exists a trade-off between maintenance of the ideological heritage of Kim Il Sung and revival of the ailing economy. As time passes, it will also be clear for Kim Jong-il that the legitimacy of his power success can be established only by economic recovery.

Nevertheless, it will take a considerable time and trial-and-error procedure for the North Korean leadership, inexperienced reformers that they are, to adopt a market-oriented reform strategy. The prerequisites for the market-oriented reform in North Korea are reinterpretation of the *juche* ideology and the leadership's understanding of characteristics and sources of chronic shortages in the economy. The most serious shortages North Korea faces are time, and flexibility of idea.