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Success and Failure of North Korean Development Strategy

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Abstract

This study seeks to clarify the characteristics of the DPRK development strategy, examining how a self-reliant development strategy led to economic difficulties in the country. The author describes how the strategy to construct a self-sufficient economy negatively affected investment capital, production costs, and the trade balance, causing problems that included a foreign debt problem, a lack of consumer goods in the 1970s and 1980s, and a shortage of food and energy in the 1990s. North Korea's self-supporting economic structure has persisted, despite food and power shortages. Today's economic growth, led by personal consumption, is strengthening this structure. It has been argued that a serious challenge to the self-supporting structure will arise during the next stage of economic development.

Keywords: self-reliance, heavy industry, shortage of consumer goods, foreign debt

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Success and Failure of North Korean Development Strategy

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During the last decade of the 20th century, the North Korean people faced serious economic crises, including food and energy shortages. Although the food and energy situation has improved since that time, the standard of living remains low. In 2014, the GDP per capita of the Democratic People's Republic of Korea was 1,053 dollars in official statistics—less than Myanmar's GPP of 1,270 US dollars or Bangladesh's GDP of 1,115 US dollars in the same year.[1]

During the Cold War era, by contrast, idealistic economists gave the DPRK economy high ratings. The nation was praised for its remarkable industrialization and improved standard of living, following the Korean War (1950–1953). Commentators argued that the DPRK's economic development strategy, which prioritized investment in heavy industries, was a successful model of self-reliance (Robinson 1965; Nishikawa 1976).

The regime has insisted that its current economic stagnation has been caused by US policies that isolate the DPRK and physical disasters, such as floods. Idealistic economists have remained silent about the economic situation in the DPRK since the 1990s. However, it is unfair to ignore inconvenient phenomena or to limit the causes of a problem to external factors. The present study aims to clarify the characteristics of the DPRK development strategy, examining how the self-reliant development strategy resulted in economic difficulties.

The self-reliant development strategy

Many developing countries in the early stages of industrialization have concentrated their investments in the light-industry sector. This approach aims to replace imported consumer goods with domestic products. The DPRK development strategy stands in contrast to this approach because it concentrated investments in the heavy-industry sector, which supplied machinery, raw materials, and power, rather than the light-industry sector, which supplied consumer goods.

The DPRK economic development strategy was known as “the building of an independent, national economy” (*Charipjok minjok kyongje konsol* in Korean). It consisted of the following objectives:

1) To build up the country using domestic labor and national resources;

2) To prioritize the development of heavy industry;

3) To develop the economy in a diversified way;

4) To equip the economy with up-to-date technology;

5) To obtain goods in short supply and those unable to be produced at home (Hong Sung Un 1984).

North Korea’s strategic aim was to build a self-sufficient economy, prioritizing investment in the heavy-industry sector so that it could supply power, machinery, materials, and artificial manure to the light-industry and agriculture sectors. Products that were indispensable or in high demand would be produced domestically. Foreign trade would play a secondary role: used to import things for which there was little demand, items in short supply, and those that could not be produced domestically. Only products that were surplus to domestic demand would be exported.

In November 1970, Kim Il Sung, the Supreme Leader, declared that the country had been transformed into “a socialist industrial state.” In 1978, the government announced that it had exported more than half a million tons of rice and tens of thousands of tons of maize to approximately 20 countries (*Foreign Trade* 1978). On January 18, 1983, the DPRK Central Bureau of Statistics announced, through the Korean Central News Agency, that the country was 98 percent self-sufficient in machinery production and 70 percent self-sufficient in the production of raw materials and fuels.

As soon as the regime proudly made public the fruits of its socialist industrialization, the DPRK’s foreign debt problem came to light, revealing that the development strategy had some inherent problems.

Negative aspects of self-reliant development

The strategy to construct a self-sufficient economy negatively affected the DPRK's investment capital, production costs, and trade balance. First, heavy industries generally require higher levels of investment than light industries. In a country with no domestic source of funds, such as a rich agricultural sector, funds had to be raised from abroad to advance preferential investment in heavy industries.

Second, importing goods in short supply and items that cannot be produced domestically requires a substantial amount of foreign currency. This currency can only be obtained by exporting products that are surplus to domestic demand, produced cheaply enough to be sold for profit in the international market. As industrialization progresses, the importation of materials not available at home tends to increase. At the same time, investment in the export industry decreases because domestic industries come first. In this situation, a limited amount of foreign currency is obtained.

Third, dependence on local raw materials and techniques limits the ways in which cheap raw materials and intermediate goods can be supplied by international markets, causing a rise in production costs. When heavy-industry production costs rise, costs also rise in light industries and agriculture, which use energy, materials, machinery, and chemical fertilizer produced by heavy industries. If the rising production costs are not offset by the government to match product prices, the output of products in all economic sectors, including daily necessities and food, will decrease.

Socialist industrialization and external funding

Under Japanese rule, many industrial facilities were built in North Korea, including the chemical fertilizer factory in Hungnam (Hungnam Fertilizer Complex today), power plants on the Amnok, Pujon, Hochon, Changjin, Tokro, and Sodusu Rivers, and the iron works in Kenjiho (Hwanghae Iron Complex today). In addition, several coal and ore mines were established in the northern part of the Korean Peninsula. These gave the DPRK an initial set of conditions that was more advantageous than those of many newly rising nations. After liberation on August 15, 1945, 1,034 enterprises were nationalized. Their property value amounted to 4 billion and 431 million won, four times the national budget of 1 billion, 116 million won for FY 1946 (*Otnosheniia Sovetskogo* 1981, 25–27; Josonjungangtongsinsa 1949, 117).

Apart from 19 power plants, the enterprises taken over by North Korea were inactive: 64 coal and ore mines were fully flooded; 178 coal and ore mines were partially submerged or destroyed; important equipment and facilities were damaged at 47 enterprises. Not only did North Korea restore the destroyed factories and flooded mines, the Soviet Army, which occupied the northern half of Korea, delivered supplies and engineers to assist in the nation's industrial rehabilitation (Kim Il Sung 1948, 189–190; *Otnosheniia Sovetskogo* 1981, 16–17).

The government announced its Two-Year Economic Plan (1949–1950) on February 1, 1949 and entered into an agreement to receive financial support from the Soviet Union on March 17th. The Soviet Union agreed to loan the DPRK 222 million rubles over three years, while the DPRK agreed to repay this sum at 2 percent annual interest. During that year, the Soviet loan played a large role enabling the DPRK to restore and expand industrial facilities, including the Kangson Steel Plant (Chollima Steel Complex), the Songjin Steel Plant (now the Songjin Steel Complex), the Munpyong Smelting Factory, Chongjin Steel Plant (Kim Chaek Steel and Iron Complex today), Nampho Glass Factory, Pyongyang Machine Production Factory (Huichon-Ryonha Machine Tools General Factory today), Pyongyang Textile Mill, and Suphung Hydroelectric Power Station, during that year.

During the Korean War (1950–1953), the People's Republic of China, as well as Poland, Czechoslovakia, Romania, Hungary, the German Democratic Republic, Bulgaria, Albania, Mongolia, and the People's Republic of Vietnam joined the USSR in assisting the DPRK by sending aid such as textiles, clothing, food, and pharmaceutical products. Thanks to this aid, the government was able to move inland and to expand machine plants, in conjunction with munition production.

After the war, friendly countries sent significant free economic aid to the DPRK. Kim Il Sung urged the allied leaders to assist in constructing industrial facilities to produce machinery, raw materials, and energy, rather than providing the food and clothing aid that North Koreans longed for. As the Three-Year Economic Plan (1953–1956) and Five-Year Economic Plan (1957–1961) were carried out, *Rodong Sinmun*, the daily of Workers' Party of Korea, announced that grants from friendly countries totaled 500 million rubles (new), equivalent to both 550 million dollars (*Rodong Sinmun* 1963) and approximately 2,220 million rubles (old), as they were priced before the redenomination of 1961. This amount seems moderate because, according to the later calculation of Soviet economists, the total um of those grants was 800 million rubles (new) from 1953 to 1957 (*Koreiskaia narodno* 1975, 50).

The USSR helped to restore or build 20 economic projects, including the Suphung Hydroelectric Power Station, Hungnam Chemical Factory (Hungnam Fertilizer Complex today), Kim Chaek Steel Plant (Kim Chaek Steel and Iron Complex today), Nampho Non-ferrous Metallurgical Works (Nampho Smelter Complex, closed in 2000), Pyongyang Textile Mill, Madong February 8 Cement Plant, Sinpho Fish-Canning Factory, Ryongsong Meat Processing Plant, Kilju Plywood Factory, Sariwon Tractor Repair Shop (Sariwon Tractor Accessory Factory today), and Pyongyang Radio Station. The GDR committed itself to constructing the Pukjung Machine Plant, which produced diesel engines (Pukjung Machine Complex today), the Pyongyang Printing General Factory, Pyongyang Textile Machine Factory, Hamhung Electric Appliances Plant (Hamhung Youth Electric Appliances Plant or June 1st Factory today), Hungsang Ceramic Factory, and local industrial facilities. Czechoslovakia helped to construct the Huichon Machine-Tool Works, Unsan Tool Plant (or July 13th Factory), Tokchon Motor Plant (Sungri Motor Complex today), and hydroelectric plants on the Pujon and Hochon Rivers. Hungary supported the building of the Kusong Machine-Tool Works (or April 3rd Factory), Ponggung Dye-Stuff Factory, and Pyongyang Measuring Instruments Factory. Poland committed itself to building locomotive-repair plants in Wonsan and West Pyongyang (theWonsan Railway Rolling Stock Complex and Kim Jong Tae Electric Locomotive Complex today); it also restored coal mines at Anju and Sinchang. Romania helped to construct the Sunghori Cement Factory and the Sunchon Aspirin Factory (Sunchon Pharmaceutical Factory today). Bulgaria supported the construction of the Taesong Tile Factory (Taesong Ceramic Factory today), Pyongyang Wooden-Barrel Factory (later merged with the Pyongyang Wood Processing Factory), and Kanggye Wood Processing Factory. The PRC gathered labor and material support to help repair the Suphung Hydroelectric Power Station, construct the Pyongyang Rubber Factory and Sinuiju Enameled Ironware Factory, and expand the facilities of the Wonsan Ironsmith Cooperative. This free economic assistance played a crucial role in the early success of both economic plans, as North Korean scholars recognized at the time (*Uri narawi* 1958, 292, 355).

After the post-war rehabilitation, a Seven-Year Economic Plan (1961–1967) was devised. It was then decided to prolong the plan by three years. Although the regime claimed that the delay was caused by strengthened military construction, it should be noted that the expected Soviet aid package was not implemented in the early 1960s. The DPRK and USSR agreed that the USSR would provide industrial facilities, to be paid for by the DPRK. However, the projects announced in the agreements of March 17, 1959, December 24, 1960, and June 6, 1963, as well as the August 5th protocol in 1963, were not fully carried out (*Otnosheniia Sovetskogo* 1981, 169–172, 240–245). Soviet aid restarted during the late 1960s. On June 20, 1966, the USSR promised to cooperate in expanding the Kim Chaek Ironworks, building the Pukchang Thermal Power Station (a crude-oil processing factory), and constructing an ammonia production factory. On October 21, 1967, it also promised to help construct coal-mining facilities, an electric machine-production plant, and a railroad-carriage factory (*Otnosheniia Sovetskogo* 1981, 240–245, 282: *Rodong Sinmun* 1966). The first stage of construction of the Pukchang Power Station was completed in 1970. The Unggi Oil Refinery Plant (Sungri Chemical Complex today) began operations in 1973, while the coal field at the Yonghung Youth Coal Mine (Kumya Youth Coal Mine today) was built at the end of the 1960s. However, other projects were either canceled or not completed within the period of the prolonged Seven-Year Plan (1961–1970).

During the 1960s, Chinese aid began to play a larger role than before. The DPRK and PRC signed contracts related to loans and free aid to build economic facilities on

September 27, 1958, October 13, 1960, March 28, 1961, and December 28, 1965. The amount was not announced, except that the loan mentioned in the agreement of October 13, 1960 was worth 420 million rubles.

Thanks to Chinese assistance, the Hyesan Paper Mills began operations in 1963, followed by the Sinuiju Textile Mill printing shop and the Hoeryong Sugar Factory in 1964. A radio communication equipment factory opened in 1965; the Manpho Thermal Power Station, Unbong Hydroelectric Power Station, and Hamhung Wool Mills opened in 1967. The Kanggye Knitting Mill, Huichon Thermal Power Station, and Amnokgang Tire Factory opened in 1968, while the Huichon Electric Tube Factory (Huichon Youth Electricity Complex today) opened in 1969. A radio-parts factory and a radio-apparatus factory opened in 1970; the Ryangchaek Bearing Factory (or October 30th Factory) opened in 1975 (*Rodong Sinmun* 1959; *Dangdaizhongguode dianzigongye* 1987, 656–659; *Dangdaizhongguode fangzhigongye* 1994, 561; *Dangdaizhongguode duiwaijingjihezuo* 1989, 52, 177, 180, 186).

Although it is unclear how much Soviet and Chinese aid the DPRK received during the 1960s, these contributions clearly helped to complete the process of socialist industrialization, forming the nation's self-supporting economic structure.

Debt issues

Before the DPRK's unpaid debts to Western countries and Japan emerged in the 1970s, the country was in debt to the USSR. On October 13, 1960, the DPRK and USSR agreed that the USSR would cancel 760 million rubles worth of past debts; the DPRK would pay back the remaining 140 million rubles to the USSR over 10 years, starting in 1967. The repayment start date was changed in 1971 and the period was extended for 14 years under an agreement made on June 20, 1966 (Josonjungangtongsinsa 1962, 135–136; *Otnosheniia Sovetskogo* 1981, 240–245). The start date was changed again in 1976, when the period was extended for another 5 years. The Soviet Union also postponed the repayment start date for the loan, which by then totaled 400 million rubles. In 1981, the period was extended by 10 years via an agreement made on February 9, 1976 (*Otnosheniia Sovetskogo* 1981, 343–348).

Not only did the Soviet Union defer the DPRK's debt repayment, it also gave the country a new loan. The September 15, 1970 agreement between the DPRK and the USSR stated that the USSR would help to fund the construction of plants to produce car batteries, enameled wires, micromotors, carriages, carbides, and gray slag. The loan amount associated with this agreement is not clear, even today. By contrast, the loan amount agreed on February 9, 1976 had been already announced. According to this agreement, the Soviet Union would provide the DPRK with 117 million rubles worth of credit to expand the Kim Chaek Ironworks and to construct the Chongjin Thermal Power Station, a bearing plant, an ammonia plant, and an aluminium plant (*Otnosheniia Sovetskogo* 1981, 279–283, 343–348).

Of the projects named in these agreements, the Taedonggang Car Battery Plant began operations in 1981; the enameled wire shop at the Pyongyang Electric Cable Factory (or March 26th Factory) in 1979; the Pyongyang Electric Application Factory, which produced micromotors, in 1986; the Chongjin Thermal Power Station in 1986; the Ryongsong Bearing Factory (or September 18th Factory) in 1986; the ammonia production shop at the June 7th Factory (formerly Aoji Chemical Factory) in 1982; and the Pukchang Aluminium Factory in 1985.

China also offered aid during the 1970s. The DPRK concluded economic cooperation agreements with the PRC on October 17, 1970; on August 15, 1971; on October 9, 1972; on June 18, 1973; and on August 30, 1974. Sariwon Textile Mills launched in 1974, and the Chongchongang Thermal Electric Station began full operations in 1978. A super high frequency tube plant began operations in 1978 and an artificial crystal facility launched in 197. Other new factories included the pump sub-factory of the Huichon Precision Machinery Factory (or February 26 Factory) in 1980; the Ponghwa Chemical Factory, which refined oil, in 1981; the Chongchongang Chemical Factory (Anju Insulating Material Factory today); a radio instrument factory in 1982; and a dry cell factory in 1984. The No. 8 Ironworks launched in 1986, while the Sunchon Thermal Electric Station began full operations in 1988

(*Dangdaizhongguode duiwaijingjihezuo* 1989, 157, 177, 180, 189; *Dangdaizhongguode dianzigongye* 1987, 666–667, 671, 674; *Dangdaizhongguode dianligongye* 1994, 510). Although neither the status of the PRC loan nor the DPRK's repayment situation were ever announced, continuing projects, carried out with Chinese help, show that China, as well as the Soviet Union, refrained from pressuring the DPRK to replay its loans.

In contrast to this Soviet and Chinese generosity, capitalist countries strictly enforced the repayment of loans.

The DPRK began negotiating with Western European countries to import factory equipment at the end of the 1960s, conducting business with Western European countries and Japan during the early 1970s. At that time, the DPRK did not have enough foreign currency to repay capitalist countries. On October 21, 1974, Kim Jong Il, who had been named "the only successor of Comrade Kim Il Sung," ordered all economic sectors to conduct a "Seventy-Day Battle" to meet the nation's annual goal of 1974 early, including increased production of export items (Kim Jong Il 1987, 251–252). As a reward for this campaign, the Six-Year Economic Plan was completed one year and four months early, in 1975. However, the international prices of nonferrous metals, the DPRK's main export item, plummeted in the aftermath of the oil crisis of 1973. For this reason, the DPRK could not acquire sufficient foreign currency to repay the capitalist states it had borrowed from.

In 1975, the DPRK's outstanding loans became a problem for 11 countries, including Japan, France, the Federal Republic of Germany, and Sweden. The amount owed to these countries totaled 1 billion 242 million dollars. The first creditor was Japan, said to have lent North Korea 386 million dollars by the end of 1975 (*Yomiuri Shimbun* 1975; *Herald Tribune* 1975; *Sankei Shimbun* 1976).

The North Korean regime emphasized its increased production of nonferrous metals and exploitation of new export items. On July 1, 1976, Kim Jong Il visited the Komdok Mine (Komdok Mining Complex today), the largest producer of lead and zinc on the Korean peninsula. He directed the workers there to earn "foreign currency of hundreds of millions of pounds for one year" (Kim Jong Il 1987, 360–361). On December 1st, the workers of Komdok launched a production uplift campaign, known as the "Three-Revolution Red Flag Movement," which spread across the whole country. On July 15, Kim Il Sung instructed the officials in charge to organize the Unha Trading General Bureau, a corporate group, specialized in producing and exporting light industrial products. During a meeting between the Worker's Party and the government, held between November 30 and December 6, Kim Il Sung instructed every provincial government to establish trade companies to exploit export goods in local manufacturing (Kim Il Sung 2005, 384–385). At the 19th plenary meeting of the 5th WPK Central Committee, held on December 12, 1979, he ordered every central government ministry and committee to organize its own trade company (Kim Il Sung 1988, 453).

The measures taken by the two political leaders appeared to work. The DPRK repaid the interest on its external debts from 1979 until 1984. The Second Seven-Year Economic Plan (1978–1984), designed to produce 2.2 times the total industrial output, was announced to have been successful. However, given its declining credibility with capitalist countries, the DPRK had no choice but to depend on socialist countries for external economic relations.

Coping to the shortage of consumer goods

Since the DPRK invested more heavily in producing capital than consumer goods, the North Korean people naturally experienced a shortage of goods, as industrialization proceeded. The political leadership understood that the lack of consumer goods and food made it difficult to call the DPRK was "the paradise of the people," even though public dissatisfaction with living conditions was not expressed in the form of strikes or protest movements. In the early 1980s, the Polish crisis stimulated the regime to take measures to improve the quality of life in the DPRK.

Poland, like the DPRK, also owed money to capitalist countries in the 1970s. A rise in edible meat prices on July 1, 1980 triggered a large-scale strike in Gdansk, provoking a proclamation of martial law on December 13, 1981. The Worker's Party of Korea released an article in the party newspaper on January 6, 1982, supporting the declaration of martial law and criticizing “Solidarity,” the labor union leading the strike, as a counterrevolutionary element (*Rodong Sinmun* 1982). The Worker’s Party of Korea was aware of the dangers of impoverishment. Kim Il Sung and Kim Jong Il made speeches on improving living standards in 1983 (Kim Il Sung 1991, 344–352: Kim Jong Il 1996, 400–408).

One measure taken to improve living standards was the “August 3rd People’s Consumer Goods Production Campaign,” established on the instructions of Kim Jong Il on August 3, 1984. This campaign set up organizations known as “home workteams,” “sideline workteams,” and “home welfare service columns,” to make products from factory byproducts and scraps. On June 23, 1990, it was announced that the production of “August 3rd consumer goods” had increased 3.4 times, while product variety had increased to 10,000 different kinds of products over four years (Yon Hyong Muk. 1990).

Another measure to improve living standards was the promotion of joint ventures with capitalist countries. The regime expected to receive a large investment in its light-industry sector by stepping up joint ventures with foreign businesses. The Equity Joint Venture Law was enacted on September 8, 1984, and the DPRK successfully attracted investments from Korean businessmen living in Japan. Between 1986 and 1989, 98 contracts were signed, of which 48 had begun operations by 1989, totaling 113 billion yen (Pak Samsok 1990), about 790 million dollars. However, neither Japanese businessmen in Japan nor entrepreneurs in other capitalist nations showed any interest at all. The DPRK had already lost Japan’s trust by stopping its interest repayments to Japan in November 1983 and to other creditors in March 1984.

Although these efforts to improve living standards paid off in their own way, they did not modify the traditional principles of industrial investment. Instead, they merely treated symptoms caused by the DPRK economic development strategy. The Third Seven-Year Economic Plan (1987–1993) was based on preferential investment in heavy-industry sectors and on economic ties with socialist countries, as before.

A growing shortage of investment funds

Although the DPRK was not a full member of the Council for Mutual Economic Assistance (COMECON), it benefited from a combination of a barter-and-trade system and friendly prices among COMECON members. Consequently, it traded mainly with socialist countries. The collapse of socialist governments in Eastern Europe and the end of the Cold War in the late 1980s led to the destruction of the international socialist market system. On January 29, 1990, COMECON countries agreed to conduct bilateral trade in hard currencies, replacing previous barter arrangements based on friendly prices. The DPRK and the Soviet Union, which was the DPRK's largest trading partner, signed a new trade agreement based on hard-currency trade on November 2nd. Economic cooperation with other countries in Eastern Europe was suspended during that time.

This change in the mode of trading damaged the North Korean economy. Although the Soviet Union's total trade with the DPRK was 17.7 billion rubles in 1990, it plunged to 6.1 billion rubles in 1991, a third of the original amount. The DPRK's total debt to the USSR grew to 2.85 billion rubles in 1991 (Moiseyev 1991), about 4.76 billion dollars. The USSR stopped crude oil imports to the DPRK, leading to restrictions on the use of gasoline in urban areas of North Korea (apart from production sectors) on Saturdays and Sundays, beginning in June 1992. Thanks to its self-supporting structure, however, the socialist DPRK economy continued to grow until 1993. In 1992, North Korea's GDP was 20.8 billion dollars, rising to 20.9 billion dollars in 1993 (UNDP 1998). The Third Seven-Year Economic Plan then ended; during its implementation, industrial output increased 1.5 times, less than the 1.9 times originally estimated.

In response to reduced economic ties with the Soviet Union and Eastern European countries, the DPRK sought to expand commercial relations with capitalist countries. On December 28, 1991, North Korea established a Free Economic Trade Zone in the Rajin-Sonbong District, enabling foreign capitalists to conduct business alone. The government announced that the FETZ construction project required 7 billion dollars in investments by 2010, of which 4.2 billion dollars would be needed to build infrastructure. By 1994, however, investment from abroad totaled only 35–36 million dollars. The economic zone was not attractive enough to persuade foreign capitalists to ignore the debt issue. In 1994, the North Korean economy began to shrink: in 1994, its GDP was 15.4 billion dollars (UNDP 1998).

In the summer of 1995, the North Korean people suffered massive flood damage, totaling 15 billion dollars (Department of Humanitarian Affairs 1995). The submergence and outflow of farmland and the destruction of agricultural infrastructure led to a serious famine, during which 336,000 people died of starvation (Moon Ho Il 2011).[2] The flooding of coal mines also caused severe energy shortages. Since the government had to finance disaster recovery, investment in heavy industries, which underpinned the DPRK's self-supporting structure, was depleted. The socialist economy continued to shrink until 1996. In 1995, North Korea's GDP was 12.8 billion dollars; in 1996, it was 10.6 billion dollars (UNDP 1998).

The regime called on UN agencies and foreign countries to provide emergency assistance, while also mobilizing its military and urban and office workers to restore the agricultural and power sectors.

In the agricultural sector, between 1995 and 1997, a "Rice-Planting and Weeding Battle" mobilized labor forces. During this period, UN agencies offered technical assistance to improve cultivation, in accordance with soil conditions, and to introduce semiannual double crops. In 1998, a "Potato Revolution" was launched to diffuse potato production throughout the country; "Land Alignments," designed to level and rezone damaged fields, were also promoted. Thanks to these efforts, food production recovered sufficiently to meet domestic demand in 2005 (FAO/WFP 2004).

In 1996, in the power sector, the December Thermal Power Plant in Nampho and the first stage of construction of the Kumgangsan Power Plant in Anbyon were completed. The Pukchang Thermal Power Station, which had been forced to cease operations when the coal mines were submerged, resumed work in 1997. In addition to these large-scale power stations, local governments promoted the construction of small and medium-sized power plants in 1998. The total national power generation was 1.65 million kW in 1997, recovering to 3 million kW in 1998, 5.03 million kW in 2011, and 7.5 million kW in 2012; the latter exceeded the highest past level.

A new stage of economic development

Although the revival of food and power production did not seem sufficient to meet the country’s needs, it restored the ailing North Korean self-reliant economy. In 2011, annual revenue in the national budget rose to its previous highest level of 1994, while GDP surpassed that of 1993, the previous highest level. Per capita GDP also exceeded 1993 levels in 2013.

In parallel with disaster recovery, the leadership prepared for the next phase of economic development. The first Five-Year Plan for the Development of Science and Technology was launched in 1998. In 2000, domestically produced computer-numerical control machines began to be introduced at major machine-tool factories. During the late 2000s, model factories were designated as computer-controlled, integrated production units in the food, poultry, and machinery industry; they were expected to drive production efficiency in all economic sectors. At that time, the process of producing iron without coke was made practical, a change that was expected to reduce the cost of pre-ferrous production.

We cannot overlook the Chinese auxiliary role in North Korea’s recovery process. During this time, the PRC strengthened its economic presence and became known as “a world production center” (METI 2001, 27) and later as “the Workshop of the World.” Chinese consumer goods arrived just as DPRK light-industry factories cut production or closed down, due to a lack of energy. In 2003, the PRC government decided to provide grant aid worth 24 million dollars to build the Taean Friendship Glass Factory; construction began in 2004 and the factory was completed in 2005, making the DPRK a target of Chinese investment. The flow of Chinese direct investment to the DPRK totaled 1.12 million dollars in 2003. In 2004, it rose to 14.13 million dollars; in 2012, it reached 109.46 million dollars (Ministry of Commerce of People’s Republic of China 2006, Ministry of Commerce of People’s

Republic of China 2012).

The regime also counted on assistance from the Russian Federation, the successor to the Soviet Union. The Russian government requested cooperation with the DPRK on expanding its railway network and pipelines. On September 17, 2012, the RF and DPRK signed an agreement that forgave 90 percent of the DPRK's 11 billion dollar debt, allocating the remaining 10 percent to the joint project (*Wall Street Journal*. 2012; Josonjungangtongsin 2012). In October 2014, the Russian plan to construct and modernize the DPRK railway, known as “Pobeda,” began.

Alongside quantitative and technological improvements in production, public levels of consumption increased. In the past, the party and government had tried to increase production while curbing consumer spending. In the 21st century, foreign capital was allowed to flow into sectors related to personal consumption. In 2003, general markets were set up in Pyongyang and other large cities. In 2008, a mobile phone service was launched; in 2009, fast-food restaurants and shops opened jointly in Singapore and Pyongyang. In 2012, the Kwangbok Shopping Center opened, with investment from China. In 2013, a taxi business was established to serve local inhabitants in Pyongyang. Skating rinks and swimming pools were constructed in Pyongyang and other large cities.

A mechanism was established to enable increasing consumption to drive production in the manufacturing sectors. A revision of the Enterprise Law in 2014 empowered all state-owned enterprises to implement their own production plans, apart from state assignments. This allowed factories and companies to carry out production activities that directly reflected consumer needs. The expansion of production in the industrial sector would continue until demands were satisfied.

Conclusion

Arguably, the DPRK’s self-supporting structure became established around 1970, when socialist industrialization was achieved. However, inherent weaknesses in the self-reliant development strategy, including a lack of foreign currency and rising production costs, began to materialize in the form of outstanding debts and shortages of consumer goods during the 1970s and 1980s. Natural disasters in the mid-1990s exacerbated the need for investment funds.

It is notable that the self-supporting economic structure persists, despite food and power shortages. Economic growth, led by the newly permitted desire for personal consumption, strengthens this structure.

When production meets consumer demand, economic development advances. At this step, producers must cultivate overseas demand, work to reduce the cost of their products, and remove trade barriers. This will be a serious challenge to the DPRK’s self-supporting economic structure, which tends to increase production costs and lacks hard currency. Future predicted economic cooperation with the Republic of Korea and Japan could influence the DPRK to turn its self-sufficient economic structure into an open one.

At the same time, if economic growth driven by consumption fails for any reason, North Korea will keep its existing self-supporting structure. The UN Security Council adopted Resolution 2371 on August 5, 2017, prohibiting new joint ventures with the DPRK and new investments in current joint ventures. This resolution restricts China and Russia’s economic activities in or with the DPRK. Although the impact of this restriction was not immediately felt, it is expected to put the brakes on consumption-led economic growth in future, while sustaining the closed economic structure that allows the DPRK to strengthen its arms industry and promote the independent development of nuclear weapons.

Note

1. Official statistics have been compiled by the Central Bureau of Statistics, DPRK. In the past, details were published by official media, such as the Korean Central News Agency; however, only fragments of information were announced after the late 1960s. The recent official statistics mentioned in this article were reported by the DPRK delegation at the United Nations Development Program (UNDP) and communicated to foreign journalists and researchers through the Academy of Social Sciences, DPRK.

2. Although commentators have various opinions about the number of people who starved to death due to famine during the mid-1990s, Dr. Moon calculated the number demographically, based on figures from a census conducted by the DPRK government, in cooperation with the United Nations Agency (Moon Ho Il. 2011).

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