The DPRK's Decrepit Economy, Pyongyang's Achilles Heel

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For a country ever on the brink of mass starvation, the DPRK in 2008 appears to have inched yet closer to an economic abyss that may generate famine and starvation not seen since the mid-1990s. This comes at a time when the Six Party Talks have reached what could be a turning point. In the talks, North Korea's decrepit economy serves as a primary source of leverage that parties in the talks are wielding to move decision making forward. "Great Leader" Kim Jong-il, who ever portrays himself as invincible, may find that the economy is his Achilles heel.

The confluence of several forces now is complicating the economic exigency faced by Pyongyang. The first is the global food shortage and rising prices combined with a poor crop outlook for farms and halting recovery in industries within North Korea. The second is the hardening of attitudes by the new South Korean President Lee Myung Bak who has declared an end to unrequited South Korean economic assistance to the North. This is joined by indications that China is reducing the flow of food aid to its nettlesome neighbor. The third is improved international trade performance by the DPRK stemming from investments in industrial production by Chinese companies in the northern region and by South Korean firms in the Kaesong Industrial Complex.

North Korea's leaders now face a policy dilemma. A January 2008 joint newspaper editorial by the Communist Party, military, and youth militia stated that "at present, no other task is more urgent or more important than solving the people's food problem and eating problem." Kim Jong-il reinforced this priority by stating that the most important and urgent issue for us now is to bring about a turnabout in the building of the economy and in the lives of the people." The Kim regime currently faces the archetypical economic trade-off between "guns and butter." The question is under the Six Party Talks, whether the DPRK will retain the "guns" (nuclear weapons) in hope that they can be used as leverage to extract "butter" (food imports) through a form of

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diplomatic black mail – a technique that has worked in the past, or whether the other five members of the talks can induce Pyongyang to give up the "guns" in order to obtain critically needed "butter" at this time. Only time will tell which side has the greater leverage, but for North Korea, the food crisis is shifting the fulcrum to its disadvantage. Exports are unlikely to increase fast enough to offset rising food prices and a possible decline in food aid by South Korea and China.

A Second Arduous March

The indicators for 2008 point toward the approach of the worst famine in the DPRK since the first "Arduous March" in the mid-1990s. Even leaders in Pyongyang are preparing the people for what they call a "Second Arduous March." In April 2008, the Asia Regional Director for the UN World Food Program (WPF) stated that the food situation in North Korea is clearly bad and getting worse, and external assistance is urgently required to avert a serious tragedy.[1] A study by Marcus Noland of the Peterson Institute for International Economics claimed that "North Korea is once again headed toward widespread food shortage, hunger, and risk of outright famine."[2]

In the DPRK's agricultural sector, the problem is a combination of shortages of agricultural inputs from the industrial sector (including electricity), the non-delivery of fertilizer from South Korea, poor crops in 2007 (down 26% from 2006) along with sub-par spring crops in 2008, and the continuing inefficiency of an agricultural sector caught in transition between planned, collective farms and a system based on markets with private management of land. The U.N. Food and Agricultural Organization has projected a food shortfall in the DPRK of 1.66 million metric tons for 2008.[3]

Actually, this growing food shortage constitutes something akin to the world food problem writ large for the masses in North Korea. It could not be happening at a worse time. In past years, humanitarian aid to North Korea could be provided out of stocks of relatively cheap, surplus food in world exporting countries. Since 2006, those stocks have dropped by about 20% as the world is consuming more food than it is producing. As a result, global food prices have soared. According to the International Food

Policy Research Institute, in 2007 the international food price index rose by nearly 40% (9% in 2006) and by another 50% over the first quarter of 2008. The Institute's analysis suggests that food prices will remain high for years to come.[4]

Actual food price levels in North Korea are difficult to generalize about because consumers pay different prices, depending on how they obtain the food and where they live. Those who receive staples through the Public Distribution System (PDS) pay almost nothing while those who buy on the open market pay much higher prices depending on demand and supply.

As of April 2008, in markets in major North Korean cities, rice prices reportedly had risen past the 2,000 won per kilogram level – double the 1,000 won per kg at the end of 2007. Haeju, the heart of the DPRK's bread basket, saw its rice price rise above 2,750 won, a record high. The people's mantra reportedly has become, "Let's earn enough today to buy one kilogram of rice!" Many farms are not being worked because laborers have to spend their time foraging in the mountains for edibles (roots and grass).[5] Reports indicate that the public food distribution system in Pyongyang was suspended in April 2008. A refugee stated that those with food are hoarding it instead of taking it to market because they either are waiting for a better price or they think they might need it for themselves.[6]

This situation does not bode well for the DPRK. Food commitments by the WFP and other agencies are usually made in dollar amounts that purchase less and less as prices rise. The global food shortages also mean that any food shipped to North Korea means less is available to countries in Africa and elsewhere to feed similarly hungry people. Will Western nations countenance taking food from starving children in Africa and sending it to ease what many consider to be Pyongyang's self-generated predicament? Food aid to the DPRK is rapidly becoming a zero sum game for donating countries. In 2006, moreover, Pyongyang announced to the WFP that it did not want or need large amounts of food aid. In 2008, there has been no plan by WFP donors or by North Korea to seek additional WFP funds to fill the rising food gap.[7]

Under South Korea's previous policies, it generally continued to send food and fertilizer to the North, even when tensions were

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high. Under the new President, Lee Myung Bak, however, South Korea has stated that it will not send fertilizer and food aid until Pyongyang "requests it." Pyongyang's leaders, however, are reluctant to grovel before the South and possibly lose what they see as the initiative in the current standoff. Even if they requested fertilizer aid, it would be too late for the current growing season. The DPRK regime, moreover, not only has diverted food aid to feed the military and maintain power, but "Great Leader" Kim uses food aid for his propaganda. He reportedly states, "I am strong. Other countries give food."[8] Begging for it would demolish the myth.

The Economy – Decrepit or Recovering?

The obverse side of North Korea's food shortage is its decrepit economy and the inability of the industrial sector to provide inputs into the agricultural sector as well as to export enough to generate the foreign exchange needed to purchase food on global markets. Since the "arduous march" in the mid-1990s, the conventional wisdom has been that the worst of North Korea's economic crisis had passed with the help of foreign assistance. Food imports, particularly from

South Korea and China, staved off starvation among a sizable proportion of the people, and the economy seemed to be recovering.

The DPRK's gross national product in purchasing power parity prices (PPP) — prices adjusted to international levels — was estimated at $40 billion by the U.S. Central Intelligence Agency for 2006 and $70.8 billion by the economic consulting firm Global Insight for 2007. Per capita national income was estimated at $1,800 to $3,094 in PPP values or roughly in the range of that of Zimbabwe, Uzbekistan, Bangladesh, or the Sudan. According to Global Insight, in market prices, North Korea's GDP in 2007 was an estimated $15 billion compared with $969 billion for South Korea (whose per capita GDP was $19,812). A remarkable fact is that in the post-Korean War period and into the mid-1970s, living standards were higher in North Korea than in either South Korea or China. Now, North Korea is far behind its globalized and industrialized neighbors.

It should be noted that scholars and government officials produce a variety of estimates of North Korean growth rates and GDP. Some estimates show gradual recovery, but others argue that real per capita GDP has been stagnant or even declining over the past decade. The basic problem is the lack of rigorous data and institutions for data collection. Another problem is that estimates of inflation are difficult to obtain and are inherently unreliable. Conversion to real values, therefore, is problematic. Also, as in most planned economies, officials who report data often are under pressure to meet certain targets. Unlike the situation in the West where officials tend to "sugar coat" existing data to make them more palatable, in the DPRK the underlying statistics often are "rubberized." The data, themselves, may be stretched or compressed, according to official expectations. What can be said for certain, however, is that a sizable part of the North Korean population lives on the edge of existence. In few countries today, does a small decline in GDP or summer flooding cause massive starvation and growth stunting as it does in the DPRK.

As shown in **Figure 1**, growth in estimated real gross domestic product (GDP) in the DPRK dropped into the negative range for most of the 1990s before beginning to recover in 1999. From 2004 to 2006, growth continued at about 2%, up slightly from earlier years. In 2006, the economy shrank by 1.1%, but in 2007 grew by an estimated 2.4%. In essence, the picture painted by the Bank of Korea is that the DPRK's economy has been expanding moderately but still is below its 1989 level. The U.S. National Intelligence Council, however, estimates that recovery has still not occurred and that the DPRK economy has been stagnating or declining for the past several years.

In 2007, South Korea's President Myung Bak's stated in his plan, "Vision 3000: Denuclearization and Openness," that if North Korea denuclearized and opened, his administration would make North Korea's national income $3,000 per person within ten years.[9] Considering that the current nominal GDP per capita is about $655, that would imply a growth rate of about 16% per year – higher than that in China but perhaps not beyond reach. This offer was soundly denounced by Pyongyang.[10]

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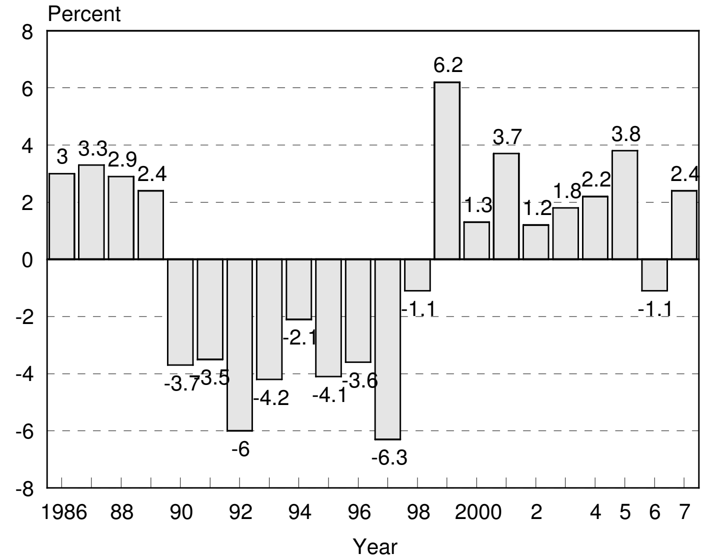
Figure 1. DPRK Estimated Annual Growth Rates in Real Gross Domestic Product



Sources: Bank of Korea and Global Insight

Self Sufficiency and Reforms

The Pyongyang regime has pursued a policy of *juche* or self-reliance that implies self-sufficiency and isolation from the world economy. The economic practice of *juche* has minimized international trade relations, discouraged foreign direct investment, and fostered what it considers to be core industries — mostly heavy manufacturing. As the need for international trade has become apparent, however, officials have used imports to promote self sufficiency. An article in a 2008 DPRK journal stated, "Correctly improving the import structure is an important way to vigorously accelerate the construction of a powerful socialist economic state while defending the country's economic self-sufficiency."[11] This oxymoronic idea of using imports to defend national self-sufficiency is reminiscent of China's Deng Xiaoping's dictum referring to reforms that it matters not whether a cat is black or white, so long as it catches mice. In North Korea's case, it seems to matter not whether the food comes from home or from abroad, as long as it makes the country self sufficient in feeding its people.

A key component of *juche* is the development of a strong military. Kim Jong-il has broken with the tradition of an equal emphasis on the civilian and military sectors of the economy to give the highest priority to the military. He insists that North Korea can be a "country strong in ideology and economy" only when its military is strong.[12] The country, therefore, has been developing its industries within the context of a military-industrial complex with strong links between heavy industry and munitions production. Some of North Korea's munitions industries (manufacturing dual use products) are virtually indistinguishable from those supplying civilians.[13] The "military-first politics" have been used to signify the privileged status the Korean People's Army holds and to stress the ascendant position of the military relative to the power of the Korean Workers' Party, the traditional center of the DPRK's decision making.[14]

As with other isolationist economies in the contemporary world of globalization and interlinked societies, North Korea has been plagued with the negative effects of its attempts at self sufficiency and diversion of scarce resources to the military. It suffers from technological obsolescence, uncompetitive exports, economic privation, and a lack of foreign exchange. These difficulties, together with advice from China and the demise of the Stalinist economy in Russia, have compelled the Pyongyang regime to introduce some economic reforms, or what they refer to as "adjustments." In many cases, these reforms have merely given official recognition to changes that already have occurred.[15] The DPRK also has been examining the Vietnamese model of development and *do moi* (reform). Kim Jong-il reportedly prefers the Vietnam-style of gradual economic reform rather than the abrupt Chinese style.[16]

In North Korean factories, reforms include greater control over prices, procurement, wages, and some incentives to increase profits in order to distribute them based on individual performance. The regime also is looking to implement reforms in agriculture similar to those implemented in China (along the lines of the rural household contract system). In the mid-1990s, North

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Korea's agricultural work squads had already been reduced in size. Now they are moving toward family oriented operations with farmers allowed to retain more of any production exceeding official targets.

Although small markets have long existed in North Korea, Pyongyang did not legalize such farmers' markets until June 2003. This followed the formal recognition of commercial transactions between individuals and the 1998 revision to the constitution that allowed individuals to keep profits earned through legitimate economic activities.[17] Now free markets and shopping centers that use currency, not ration coupons, are spreading. The Pyongyang Central Market, for example, became so crowded that a new, three-story supermarket had to be built. Pyongyang's Tongil market with its lines of covered stalls stocked with items such as fruit, watches, foreign liquor, clothes, Chinese-made television sets, and beer from Singapore also is bustling with sellers and consumers reminiscent of those in other Asian countries.[18] Visitors to Pyongyang in late 2006 indicated that the market was thriving with all types of products, with some shoppers driving European cars.[19]

A curious development is that the North Korean won has been depreciating so quickly that residents are turning to foreign currency (dollar, yuan, euro, and yen) for everyday transactions. One estimate is that about $100 per North Korean household (roughly $500 million) has been unofficially amassed and circulated in private markets.[20] An even more curious development is a report that counterfeit $100 bills or supernotes are circulating among North Korean merchants (at a 30% discount) as if they were real currency. Businesses are using them as a hedge against inflation and for convenience. Because prices are going up fast, the 5,000 won note (worth $0.75 to $1.50), the highest denomination note, requires a stack of 600 or more bills for a $1,000 transaction. While photocopied counterfeits are not accepted, skillfully produced supernotes reportedly circulate throughout the country.[21]

The North Korean population is gradually becoming re-accustomed to operating in open markets. This has raised fears by the DPRK regime of encroachment by capitalism into their socialist economic system. On August 26, 2007, Kim Jong Il announced that "markets have become anti-socialist, Western-style markets." This has led to a steady stream of government edicts restricting market activity across the country. At first, authorities prohibited women under the age of 40 from selling goods in Pyongyang markets. Then, on December 1, the authorities banned women under the age of 49 from running businesses in Pyongyang. (Since males are officially required to be at their assigned workplaces, women generally run the businesses.) Certain products, such as videos of South Korean dramas, movies, and other so-called non-socialist elements, are also banned from central markets.[22]

Foreign Investments and Industrial Revival

The DPRK leadership, in a joint editorial at the beginning of 2008, emphasized the need for rebuilding the national economy, particularly mining and the metal, chemical, and light industries. They noted the construction of a large-scale hydroelectric power plant completed in 2007 and set out the goal of constructing an economically powerful state by 2012.[23]

A key method of reconstructing the industrial state has been to invite foreign direct investments into certain areas while imposing rigid controls. Under the Joint-Operation Act of 1984 to 1994, there were 148 cases of foreign investment worth about $200 million in North Korea. Of these 148 cases, 131 were from pro-North Korean residents of Japan. In 1991, Pyongyang opened the Rajin-Sonbong free trade zone and established the Foreigner Investment Act. To 1997, some 80 investments totaled $1.4 million. Other areas receiving foreign investment include Nampo, Pyongyang, Kosung-gun, Shimpo, and Wonsan.

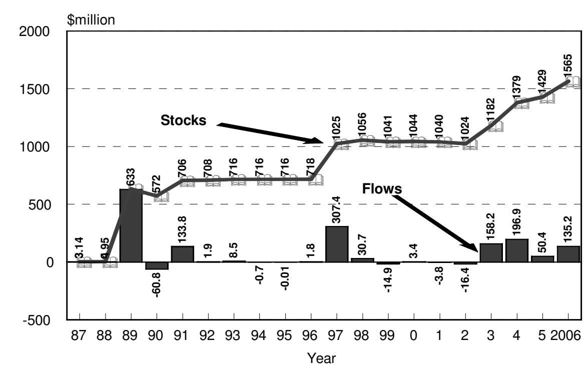
Foreign companies in North Korea include 50 South Korean companies (e.g., Hyundai, Daewoo, Taechang, LG, Haeju, and G-Hanshin), DHL, ING Bearing Bank; Japan's Hohwa, Saga, and New Future Ltd. companies; Taiwan's JIAGE Ltd., and the China Shimyang National Machinery Facility Sales Agency Corporation.[24] The U.N. Development Programme is promoting the Tumen River Valley Development Project, which aims to develop business based on transit transportation, tourism, and commissioned processing trade.[25] Mt. Kumkang has been developed with the cooperation of South Korea's Hyundai

corporation into a tourist destination for South Koreans and a venue for the reunions of families separated by the DMZ.

According to data compiled by the United Nations Conference on Trade and Development (UNCTAD) since 1987, the DPRK had a cumulative $1.56 billion in foreign direct investment (FDI) as of the end of 2006. Annual FDI flows have been sporadic, even negative in some years, but since 2003, they have been rising. (See **Figure 2**) In 2007, both South Korea and China increased their investments in North Korea.

Since 2000, the DPRK has attempted to emulate China's highly successful free trade zones (FTZ) by establishing the Sinuiju Special Administrative Region (SAR) on the northwestern border with China and Kaesong (Gaesong) Industrial Complex along the border with South Korea. Since being established in 2002, the development of the Sinuiju SAR has been stymied, partly because of the arrest by Beijing of Chinese businessman Yang Bin, a Chinese-Dutch entrepreneur who was named as its governor, on charges of illegal land use, bribery and fraud. After Kim Jong-il's visit to China in 2006, Sinuiju appears to be receiving new attention. Foreign currency management groups reportedly are moving in, and ordinary citizens are being replaced y residents of Pyongyang and other areas.[26]

Figure 2. Foreign Direct Investment Flows and Stocks



Source: United Nations Conference on Trade and Development. Foreign Direct Investment database .

The KIC resulted from an initiative led by the Hyundai Group, beginning in 1998, that coincided with South Korea's "sunshine policy" to improve intra-Korean relations. It is located about 106 miles southeast of Pyongyang and 43 miles north of Seoul, just across the demilitarized zone (DMZ) in the DPRK. The purposes of the KIC, as stated by South Korea, have been to develop an industrial park in which South Korean businesses could manufacture products using North Korean labor, provide an opening for North Korea to liberalize and reform its economy, and ease tensions across the DMZ. Although begun primarily as a private sector venture, both governments are heavily involved in the project. Groundbreaking occurred in June 2003 and again in April 2004. Hyundai Asan and the Korea Land Corporation (both from South Korea) have been developing and managing the complex.

South Korean companies operating in Kaesong receive certain incentives from the ROK government and have certain rights as determined by negotiated agreements with the DPRK. The KIC is a duty-free zone, with no restrictions on the use of foreign currency or credit cards and no visa required for entry or exit. Property and inheritance rights are ensured. The corporate tax rate is 10 to 14% with an exemption for the first five years after generating profits and a 50% reduction for the ensuing three years.

The South Korean government (through its Inter-Korea Cooperation Fund) offered companies that establish their operations in the KIC (in the pilot project and first phase) loans with low interest rates equal to those applied to public works projects. Out of the first 26 firms either to begin operations or contemplate beginning operations in the near term, 25 applied for loans from the Inter-Korea Cooperation Fund.[27] South Korea also provides political risk insurance that will cover financial losses up to 90% of a company's investment in the KIC or up to five billion South Korean won ($5.4 million). Under a South Korean law passed in April 2007, South Korean small and medium-sized firms operating in the KIC are eligible for state subsidies and other benefits equal to their counterparts at home.[28]

The project is planned to be completed in three phases. The first encompasses 800 acres with as many as 300 South Korean

firms operating in the complex. At the end of phase three, the plan calls for as much as 4,800 acres in the industrial zone with as many as 1,500 firms employing 350,000 North Korean workers and producing $16 billion worth of products per year. It also includes 2,200 acres in a supporting zone with residential facilities (dorms), commercial establishments (hotels, restaurants, offices, conference rooms), and tourist facilities (golf course, peace park, theme park). The Master Plan also includes an expansion zone of 1,600 acres for industrial use and 4,000 acres for support. This would be used after phase three and would accommodate an additional 500 companies, 150,000 employees, and estimated production of $4 billion per year. Counting the expansion zone, the grand totals for the Master Plan would be 6,400 acres for the industrial zone (10 square miles), 6,200 acres for the supporting zone, 2,000 companies, 500,000 workers, and $20 billion per year in products. The industrial and supporting zones together cover an area roughly one-fifth the size of Washington, DC.

The development of the KIC has been subject to some modifications and delays, such as the moratorium on new factories that the South Korean side imposed for several months after North Korea test-fired medium and long-range missiles in July 2006. As of late 2007, the 800 acres of the industrial zone envisioned in phase one had been prepared. The South Korean government estimates that this site will be fully operational at the end of 2010, with about 450 manufacturers and about 100,000 DPRK workers,[29] although the new South Korean Administration could halt further development until there is a resolution of the North's nuclear program.

As of mid-2006, 1,800 companies had applied for entry into the KIC and had requested 5,112 acres. Of these 1,800 companies, 365 were in mechanical manufactures (auto parts, bolts, etc.), 298 in garments, 261 in textiles, 198 in electronics, and 112 in chemical materials (rubber, plastic, etc.). Other products to be manufactured include shoes, bags, toys, accessories, and other products.[30]

As indicated in **Table 1**, by November 2007, over 50 companies had begun operations in Kaesong and were employing about 20,000 North Korean workers. An additional 2,000 North

Korean workers were engaged in the construction of the complex, and over 500 were working in managing the complex,[31]

Table 1. Number of Firms and Workers in the Kaesong Industrial Complex

	End 2005	End 2006	November 2007
No. of South Korean Manufacturing Firms	11	15	52
Approx. No. of North Korean Workers	6,000	11,000	20,000
Approx. No. of South Korean Workers	n.a.	700	800

Sources: ROK, Ministry of Unification, Update on the Gaeseong Industrial Complex (As of February 17, 2006); Key Statistics for Gaeseong Industrial Complex (As of January 31, 2007); Current Status of Operation in the Gaeseong Industrial Complex, November 23, 2007.

Of the $374 million initial cost for the first stage, $223 million was to be provided by the South Korean government. The supporting infrastructure is gradually being built. In December 2006, the Korea Electric Power Corporation connected North Korea and South Korea by a 100,000 kilowatt power transmission line and in June 2007 began transmission of high-voltage electricity for use by the companies in the KIC. In December 2007, the two Koreas started daily train service across the demilitarized zone. The KIC also is connected to South Korea by a road that has more than 100 vehicles per day passing through the checkpoints.[32]

As shown in **Table 2**, in 2006, the KIC-produced goods totaled $73.7 million, up from $14.9 million worth in 2005. Production for the first nine months of 2007 was on course to more than double in 2006. As of the end of September 2007, 43.2% of the cumulative production total had been in textiles, 25.2% in metals and machinery, 19.2% in electronic products, and 12.4% in chemical products.

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Table 2. Production by Category in the Kaesong Industrial Complex ($Thousands)

	Textiles	Chemical Products	Metals and Machinery	Electric and Electronic Products	Total
2005	6,780	1,768	5,250	1,108	14,906
2006	27,793	10,900	20,853	14,261	73,737
Jan.-Sept. 2007	57,726	13,893	27,872	25,720	125,211
Total	92,299	26,561	53,975	41,089	213,854

Source: ROK, Ministry of Unification, Key Statistics for Gaeseong Industrial Complex (as of September 30, 2007).

Currently, all products made in the KIC are shipped to South Korea for sale there or for export after clearing customs in the ROK. The primary export destinations are China and Russia. Other than labor, land, and site construction materials, there now is no local procurement of inputs into the manufacturing processes in the KIC nor are products manufactured in the KIC sold in North Korean markets. Most companies there use labor-intensive manufacturing processes with raw materials and intermediate goods from South Korea shipped to Kaesong for final assembly. As the KIC is expanded, however, companies could procure some of their manufacturing inputs locally.[33]

It is not yet clear whether South Korean companies operating in the KIC are doing so primarily for political purposes or whether their operations in the complex are economically viable. Also, it is not clear whether companies in the complex would be economically viable without South Korean government support in providing infrastructure and loans with below-market interest rates. The KIC does provide small and medium-sized businesses access to labor costs lower than those in China or Vietnam, a workforce that speaks the same language, and proximity to large markets in South Korea. Some companies appear to be using production in Kaesong to replace factories in China, South Korea, or elsewhere, but others may be using government-subsidized loans and political risk insurance to invest in politically popular projects. The long list of companies that have applied to enter the KIC, however, indicates that investments there likely are seen as profitable for most businesses. It also should be noted that an estimated 40% of the small and medium-sized South Korean companies that established operations in China have not been successful there. Many have withdrawn from that market. The KIC is viewed as essential for survival by some of these companies.[34]

The experience of some of the early investors in Kaesong may be indicative of the economic viability of the project. ShinWon (clothing) established operations in the KIC to take advantage of the dexterity and lower cost of North Korean workers, favorable logistics, and the lack of non-tariff barriers in China and Southeast Asia. It considers its Kaesong factory to be optimal when compared with those it has in China, Indonesia, Vietnam, and Guatemala.

Samduk Trading Company produces high-quality shoes in the KIC. Start-up costs were high because of the need to train workers. It took eight months for some production lines to reach 60% of the productivity level of South Korean companies. The Romanson Company (watches) finds the KIC superior to production in China because of the common language and low labor costs. The Moonchang Company (uniforms, seat covers, leisure clothes) faced a rough start in dealing with its North Korean workers but feels it is now on the right track.

A controversial issue has arisen with respect to the KIC and the proposed South Korea-U.S. Free Trade Agreement. South Korea had requested that products exported from the complex be considered to have originated in South Korea in order to qualify for duty free status under the proposed FTA. Such a provision had been included in other South Korean FTAs. The U.S. position, however, is that only products made in South Korea would be included in the FTA.[35]

The language of the proposed Korea-United States FTA (signed but not yet approved by Congress) does not provide for duty-free entry into the United States for products made in

Kaesong. Annex 22-B to the proposed FTA, however, provides for a Committee on Outward Processing Zones to be formed and in the future to designate zones, such as the KIC, to receive preferential treatment under the FTA. Such a designation apparently would require legislative approval by both countries.

Other issues raised by the KIC have been the conditions for North Korean workers, whether they are being exploited,[36] as well as the hard currency funds the industrial complex provides for the ruling regime in Pyongyang. South Korean officials, as well as other analysts, point out that average wages and working conditions at Kaesong are far better than those in the rest of North Korea.

A key aspect for the ability of the DPRK to weather the current food crisis is how much the North Korean government derives in hard currency from the KIC, including leasing fees and its share of the wages of North Korean workers. The wages are first paid in hard currency (dollars) to a North Korean government agency that deducts for certain items before paying the North Korean workers in won or in chits to be exchanged for food and necessities. If the government collects about $22.50 per month (in social insurance taxes plus the socio-cultural fee) for each of the 12,446 workers at Kaesong in March 2007, its monthly receipts from wages would have amounted to approximately $280,000 per month or $3,360,000 over a year (although the socio-cultural fee reportedly goes to the Kaesong city, not the central government). In addition, there are land lease fees and other payments to the North Korean government. When the project was initiated, Hyundai Asan paid North Korea $12 million for a 50-year lease on the entire Kaesong site. Hyundai Asan and the Korea Land Co. also purchase sand and gravel and other raw materials from North Korea for use in site development at Kaesong.[37] Companies in the KIC also pay North Korea's job reference agency (recruiting agency) a commission of $17 per employee sent.[38] In 2007, the companies in Kaesong had not been operating long enough there to have to pay corporate income taxes to the DPRK.

In 2004, the Hyundai Research Institute estimated that North Korea could receive $9.55 billion in economic gains over the course of nine years if the KIC were to be developed fully and operated successfully. This would include $4.6 billion in foreign currency earnings with $700 million derived directly from the operation of the KIC, $2.5 billion from sales of raw materials and other industrial products, and $1.4 billion from corporate taxes.[39] Considering that in international trade in goods in 2006, North Korea exported $2.4 billion and imported $3.7 billion, the estimated total gains of $9.55 billion over nine years associated with the Kaesong Industrial Complex would be quite significant (provided it progresses according to plan). Currently, however, earnings from the KIC mainly benefit those actually employed there.

Heretofore, the KIC has been kept separate from inter-Korean wrangling. Operations have continued despite rising tensions over security issues. In March 2008, however, Pyongyang expelled eleven South Korean officials from the KIC.[40]

Investment From China

China plays a key role in building North Korea's ability to feed itself. Beijing currently is somewhat vexed at Pyongyang. Several issues make the DPRK a thorn in the side of China. The DPRK proceeded with its nuclear test despite warning not to do so from Beijing. The dismal economic conditions in North Korea have pushed a wave of refugees across the border into China, and a famine in 2008 would likely exacerbate this flow of destitute and desperate human beings. China also hosts the Six Party Talks on denuclearization of the DPRK.

China, therefore, has a direct interest in economic reform and recovery in the DPRK. Chinese business interests with support from Beijing are beginning to invest widely in the North Korean economy. Unlike, South Korean investors, the Chinese are allowed to invest in enterprises fully integrated into the DPRK economy. They also have provided machinery and equipment to existing North Korean factories.

Chinese investment in mineral extraction in the DPRK seems to represent an easing of the DPRK constitutional ban against "cultural infiltration (Article 41). This has been interpreted to include international economic integration and globalization.[41] However, Pyongyang seems to be treating investment from China as being "not contaminated" relative to those from South Korea or other nations. South Korean investments are carefully walled off

from the average North Korean citizen, whereas China has been able to invest in production facilities in various locations.

According to Chinese sources, from January to October 2006, the Chinese side approved 19 new investments in the DPRK, with negotiated investment of $66.67 million. Cumulative investment up to the end of October 2006, included Chinese government approval of 49 investments in the DPRK with negotiated investment of $135 million.[42] These figures seem understated. Since 2006, Chinese investments have increased significantly. The projects of the investment covered such fields as food products, medicine, light industry, electronics, chemical industry and minerals.

Major Chinese investments involving mining and minerals in the DPRK include the following:[43]

- China Tonghua Iron and Steel Group has invested 7 billion yuan (approximately $875 million) in developing the DPRK's Musan Iron Mine. This mine is the largest open-cut iron mine in Asia with verified iron-rich ore reserves reaching seven billion tons.
- China's Tangshan Iron and Steel Company [China third largest steel company] has signed a letter of cooperation intent with the DPRK to build a steel smelting plant with annual output of 1.5 million tons. It is to be jointly funded by the DPRK and is to involve joint development and utilization of nearby iron ore.
- The China Iron and Steel Group reportedly is ready to develop a molybdenum mine in the DPRK with a goal of producing more than 10,000 tons of molybdenum concentrate per year.
- China's Jilin Province has cooperated with the Hyesan Youth Copper Mine (containing the largest copper deposit in Asia), Manp'o Zinc and Lead Mine, and the Hoeryo'ng Gold Mine. One project is to transmit electricity from Jilin's Changbai County to the DPRK in exchange for the gold, copper, and other ores.

- China's Heshi Industry and Trade Company along with the International Mining Company have set up up a joint venture with the DPRK's So'gyo'ng 4 Trade Company called the "DPRK-China International Mining Company." The Chinese side is to provide equipment and capital, while the DPRK is to contribute mineral resources and the existing facilities.
- China Minmetals has a joint venture with the DPRK at the Ryongdu'ng Coal Mine.
- China's Zhaoyuan Shandong Guoda Gold Stockholding Company has a joint venture to mine the gold in the DPRK's Mt. Sangnong and to ship all the mined gold concentrate to Zhaoyuan for smelting.

International Trade

The DPRK is gradually acknowledging that international trade holds the key to economic development, feeding its people, and regime survival. Despite its isolation, emphasis on *juche*, and fear of contamination by capitalist society, North Korea does trade with other countries. For Pyongyang, the foreign economic sector plays an important role in that it allows the country to import food, technology, and other merchandise that it is unable to produce in sufficient quantities at home. According to trade statistics compiled by the International Monetary Fund, the DPRK had at least some trade with 80 of the 182 countries or customs territories that report their trade data to the Fund.[44]

Since North Korea does not export enough to pay for its imports, it generates a deficit in reported merchandise trade that must be financed by other means. Pyongyang has to find sources of foreign exchange — other than from its overtly traded exports — to pay for the imports. The DPRK regularly uses its military threat to "extort" aid and other transfers from the United States, Japan, and South Korea, and its hapless economic policies combined with its military-first budget priority generates food shortages that elicit international humanitarian assistance. This has helped Pyongyang to finance a surfeit of imports. North Korea also has been accused of involvement in illicit or questionable

economic activities, particularly the illegal drug trade and sales of military equipment. These apparently have been used to generate the foreign exchange necessary to fill this trade gap.

DPRK trade has been rising in recent years, although much of this increase can be attributed to investments by South Korea and China. As shown in **Table 3**, in 2006 North Korea exported an estimated $2,356 million in merchandise (up from $1,630 million in 2005) while importing $3,723 million (up slightly from $3,667 million in 2005) for a merchandise trade deficit of $1,367 million. For 2007, most data are not yet available, but both exports to and imports from China and South Korea are up considerably, but those with other major trading partners have fallen.

Table 3. North Korean Trade by Selected Trading Partnerfor Selected Years, 1994-2007

($ in millions)

North Korean Exports to:										
	1994	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
World	1,039	892	1,062	1,106	1,153	1,203	1,445	1,630	2,356	n.a.
China	181	42	37	167	271	395	582	497	468	582
Japan	328	203	257	226	234	174	164	132	78	0
S. Korea	176	122	152	176	272	289	258	340	520	765
Russia	44	7	8	15	10	3	5	7	20	34
India	13	34	17	19	4	2	3	41	50	n.a.
Thailand	9	9	18	22	41	47	83	112	153	36
Germany	57	20	20	19	25	17	93	15	17	14
North Korean Imports from:										
	1994	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
World	1,286	1,435	2,376	3,520	2,646	2,675	3,226	3,667	3,723	n.a.
China	467	329	451	571	467	628	794	1,085	1,232	1,392
Japan	171	148	207	1,065	133	91	89	63	44	9
S. Korea	18	212	273	227	370	435	439	715	830	1,032

Russia	70	48	36	56	47	112	205	198	191	126
India	41	35	159	176	195	181	144	78	96	n.a.
Thailand	13	38	203	116	190	225	264	226	250	192
Germany	59	32	53	82	141	71	67	62	59	37
Balance of Trade	-247	-543	-1,314	-2,414	-1,493	-1,472	-1,781	-2,037	-1,367	n.a.

Source: S. Korean data from S. Korea, Unification Ministry. World trade data from International Monetary Fund, *Direction of Trade Statistics*, annual editions. Country data from World Trade Atlas. World sum is the estimated total North Korean trade (from IMF using trading partner data) minus trade with South Korea reported to the IMF plus trade with South Korea reported as intra-Korean trade by South Korea.

Note: Global Insight estimates North Korea's balance of trade to be -$1.581 billion in 2004, -$1.375 billion in 2005, and -$1.411 billion in 2006, but these figures apparently do not include trade with South Korea. n.a. = not yet available.

North Korea's major trading partners have been China, Japan, South Korea, Russia, Germany, Brazil, India, Thailand, Singapore, and Hong Kong. The United States has virtually no trade with North Korea. Thailand and India also are becoming major suppliers. Major imports by North Korea include machinery, minerals, plant products, and chemical products.[45] In particular, imports of energy materials and foods reflect Pyongyang's attempts to remedy these fundamental shortages.

Despite current tensions over Pyongyang's nuclear program, imports appear to be growing and may have exceeded their peak in 2001 when a large shipment of food aid from Japan artificially increased the import total. Fuel imports from China, food imports from various countries, and supplies of material and components for assembly in the Kaesong Industrial Complex account for most of the increases. It is apparent that China and South Korea increasingly are becoming the largest sources of imports for the DPRK.

Major export markets for the DPRK have been China, Japan, and Thailand with South Korea developing as a major market

following the easing of relations. In Europe, Germany has been North Korea's major trading partner, and in Latin America, Brazil is developing as a market for North Korea's exports. Since 2003, exports to Japan have declined — due to trade sanctions and friction over the DPRK's admitted kidnappings of Japanese citizens. North Korea's major exports include ores, coal, animal products, textiles, machinery, electronic products, and base metals.

A recent remarkable development has been North Korea's increase in exports of primary products (such as fish, shellfish and agro-forest products) as well as mineral products (such as base metallic minerals). Pyongyang reportedly has imported aquaculture technology to increase production of cultivated fish and agricultural equipment to increase output of grains and livestock. It also has imported equipment for its coal and mineral mines. Much of the coal and mineral exports have resulted from partnering with Chinese firms through which the Chinese side provides modern equipment in exchange for a supply of the product being mined or manufactured. The production from the Kaesong Industrial Complex also has become significant. North Korean exports to South Korea ($765 million) in 2007 were nearly third larger than exports to China ($582 million).

Meanwhile, traditional exports of textiles and electrical appliances have been declining. This reflects North Korea's unstable power supply, lack of raw materials and components imported from abroad, and the need to ship finished goods to China or another third country for final inspection. This diminishing ability of North Korea to provide a reliable manufacturing platform for the least complicated assembly operations does not bode well for the country's future ability to generate the exports necessary to balance its trade accounts.

China is a major source for North Korea of petroleum imports. According to Chinese data, exports to the DPRK of crude oil reached $282.0 million and shipments of oil (not crude) totaled $95.4 million. These two categories accounted for 27% of all Chinese exports to the DPRK. China, however, does not appear to be selling this oil to North Korea at concessionary prices. In 2007, the average price for Chinese exports of crude oil to North Korea was $0.54 per kilogram, while it was $0.49 for such exports to the

United States, $0.43 for South Korea, $0.48 for Japan, and $0.29 for Singapore.[46]

China has been a major source of food imports for the DPRK. In 2007, China exported a total of $252.9 million of various edibles (Harmonized System categories 1-23). The largest category was meat with exports of $42.2 million, followed by cereals, prepared meat, and milled products. Of the $36.5 million in cereal exports from China, $25.8 million was in rice. China exported $12 million in tobacco products to North Korea about half as much as it did in rice, even though starvation in the DPRK was widespread.

Table 5. China's Exports by Major Food Categories to the DPRK
($million)

	2005	2006	2007
Meat	104.2	111.9	42.2
Fish And Seafood	4.2	10.8	14
Vegetables	7.2	8.8	11.8
Edible Fruit And Nuts	4	2.5	2.6
Cereals	50.3	16.9	36.5
Milling;Malt;Starch	24.1	27.5	35.8
Misc Grain,Seed,Fruit	11.2	9.7	19.7
Fats And Oils	11.3	26.5	29.5
Prepared Meat,Fish,Etc	5.3	10.1	36.3
Beverages	8.2	6.3	6.1
Total Food	250.0	246.8	252.9

Source: Global Trade Atlas.

An examination of the prices that China charged for its exports of rice shows an average price per kilogram of semi or wholly milled rice (HS 100630) of $0.32 in 2007. The price for other countries was $0.44 for Hong Kong, $0.52 for South Korea, $0.43 for Russia, and $0.74 for Japan, but it was $0.26 for Liberia, $0.28 for Cuba, $0.30 for Nigeria, and $0.26 for East Timor. Of course, rice comes in different varieties with varying prices, but it appears that the DPRK was receiving rice at somewhat reduced prices.

Conclusion

The DPRK now faces a dilemma with major consequences for its long suffering working class. The question is whether its long-term security would be better served by complying with the Six Party Agreement and receive food and energy assistance as well as a lifting of economic sanctions, or whether it should take a chance that increased export earnings and humanitarian aid will keep the country from falling into the abyss of famine and mass starvation. As Kim Jong Il faces on this dilemma, he may find that his Achilles heel is his country's decrepit economy and inability to feed its own people.

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