North Korea's Economic Strategy, 2018

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This chapter takes the perspective of North Korea's leadership as it confronts difficult economic problems in the remaining months of 2018. The major current and potential issues are listed and prioritized. Short and longer-term remedies are presented, each with trade-offs that affect other economic and policy issues. Given the absence of direct reporting from North Korea, the issues and debates presented are speculative, designed to give the reader a more comprehensive understanding of North Korea's current problems than is ordinarily presented in western media. Kim Jong-un's recent diplomatic offensive, reaching out to South Korea, China, and the United States is, in this view, suggestive of these internal economic troubles in addition to the nuclear security issues.

The troubles are both short-term—the collapse in trade with China in just the past few months—and long-term, the slow-motion collapse of the communist country's "command" economy. And much more than in the past, the problems relate to the regime's unusual and dangerous monetary system, money being a normal issue for most governments but a relatively new one for this still partially rationed, or planned, oriented system. The leadership may have little choice but to let the domestic economy move further from the plan—allowing decentralized market and private activities more sway—than ever before. This would help cushion the central government from losses due to the sanctions and open the door to a much more prosperous future. Without major moves in this direction, inflation and unemployment may cascade into social crisis. It should be noted, that the recent Assembly Meetings, which annually focus on the economy, gave little official indication of policy changes, only a sense of digging in further to protect the regime from outside forces. But just a week later, Kim may have telegraphed an upcoming sea change when, in his address to the Party Central Committee plenum, that he is instituting a new Party Line, socialist economic construction, as the total focus of the Party and the country. Major changes, if they are to occur, will likely come after the upcoming important summits with South Korea and the U.S.[1]

There is little doubt that the economy in 2018 is in very poor condition, delivering one of the worst productivity rates—productivity in terms of labor and of capital—in the world, but it is important to recognize that this is due not to natural circumstances but to decisions the government has made over the years, and trade-offs it has already made. This suggests that astute government policy can create solutions and restore growth. Remedies of the sort expressed here, for example in liquidating, that is selling or leasing state assets to private buyers, raising fixed prices for state delivered electricity and for water and other utilities, and giving large pay raises to the millions of state workers who now rely on rations, while culling their numbers, would require difficult economic and social trade-offs; one might say there is no free lunch for Kim and his regime although no doubt they are looking for one, even in these summits. The chapter discusses just what kinds of decisions might be made and the likely consequences. Negotiations being set with South Korea and with the United States, and likely more discussions with China, may weigh heavily in how far Pyongyang will be willing to go in these respects. In my view the regime will be looking for: outright aid, payments for pushing back the nuclear weapons program, and premature relief from sanctions, which would only give the regime time to avoid the hard choices needed to permanently fix the broken economic system.

Key Players

Rather than taking the perspective of the single leader, Kim Jong-un, we treat economic issues as being dealt with by his cabinet and the government's many ministries, since the level of technicality is high and no one person could ever hope to make all the decisions even at a high level. Kim likely has a veto over any decision, even if he delegates the running of much of the government. By himself, he cannot change the nature of the problems facing his cabinet nor can he dictate the results, unless, that is, he suddenly agrees to end his nuclear weapons program. But even in that event, and removal of sanctions, problems would be severe, and reforms needed.

Key individuals in the cabinet and associated agencies are assessed to be:

- Pak Pong-ju, Premier of the DPRK Cabinet
- Roh Tu-chol, Vice Premier and Chairman of Planning Commission
- Kim Chon-gyun, President of the Central (Chosun) Bank,
- Kwak Pong-ki, (just retired) KWP Finance Chairman and Director Planning and Finance
- Chairman of the price setting commission
- Chairman of the state budget commission
- Chairman of each of the major industry divisions.

Of these, Pak and Roh are likely the most important. Both are survivors of purges, and Pak was close to both Kim's aunt, Kim Kyong-hui, and her late husband, Jang Song-thaek, who was executed by the regime in 2013. Over the years he has been associated with the dangerously deficient electric power sector and the light industry and textiles sector currently under UN and Chinese embargo. Roh has been his deputy in former positions and is now in charge of the all-important planning commission. The two were implicated in failed attempts to change the price system a decade ago, which some would argue were an effort at reform, but nevertheless have survived. Their experience and indispensable knowledge of North Korean industry may position them to give wise guidance to Kim Jong-un who, doubtlessly, can make or break any attempt to reform the country.[2]

Issues Confronting the Cabinet in 2018

Not since the famine of the mid-1990s has North Korea faced a more challenging economic environment. For the populace, the situation is not nearly so dire as it was in that period, but for the regime it is more complicated and involves much more political and financial risk. In the past, poor decisions meant people would starve and industries would close, but the regime, secure behind its command, or slave-like, economy, could hold fast. Now, poor decisions could bring the weakened socialist system to collapse with unknown consequences for the incipient market economy. Good decisions, in contrast, could move the economy well on the path to economic revitalization and reform. Positioned thus between progress and failure, Kim and his lieutenants must be facing very high tensions.

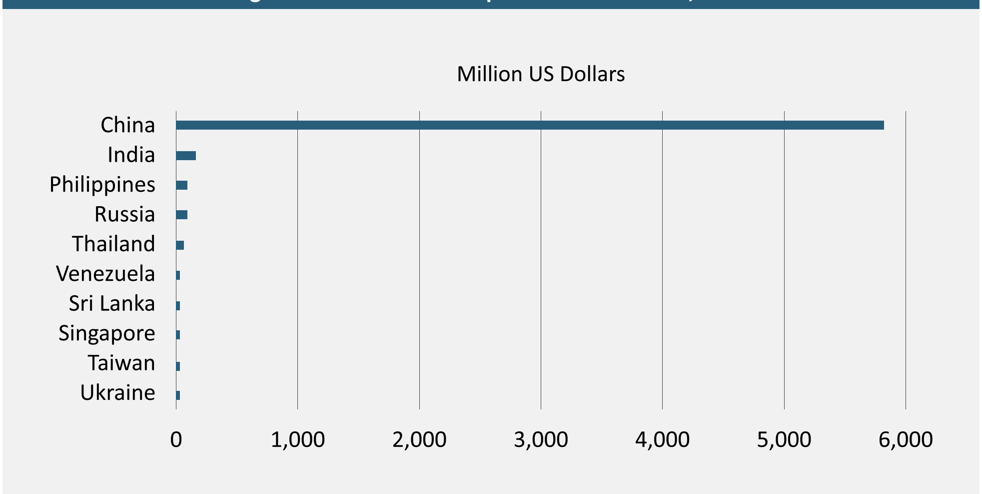
Of critical importance, economic authorities must, at all costs, prevent:

- A collapse of its currency, the won, leading to hyperinflation and popular unrest.
- A cutoff in Chinese crude oil deliveries that would strangle transportation and the military.
- A bad harvest that would lead to the need for grain imports which the country cannot afford.

They must work rapidly to defang UN and especially Chinese trade sanctions that are now aimed at crippling the general economy, not just raising the costs of the nuclear weapons program. And they must continue to give at least lip service to Kim's "byongjin" mantra, the creation of a powerful and prosperous country.

As for the disastrous foreign trade situation, exports in the early months of 2018 to China, by now North Korea's most significant trade partner (Figure 1), fell 85 percent from 2017 levels and imports began what looks to be a similar slide, down 30 percent in February from February 2017 (Figure 2).[3]

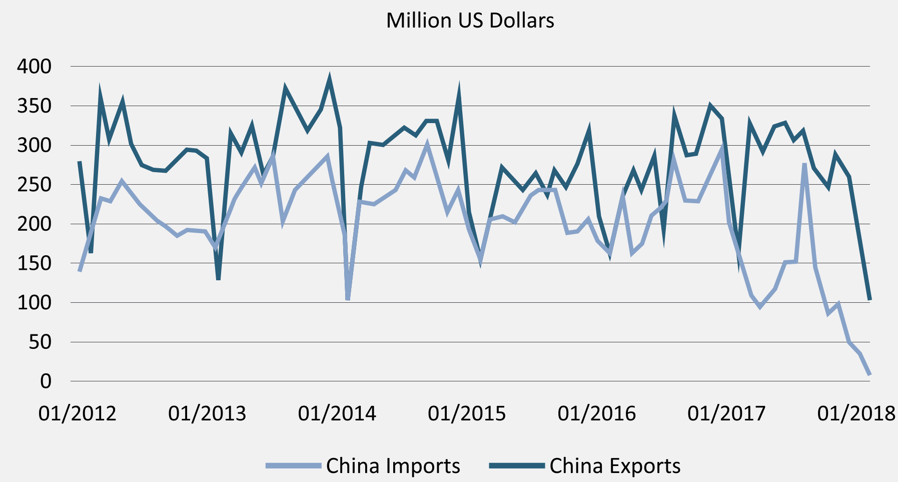
Figure 1: North Korea: Top Ten Trade Partners, 2016



Source: Global Trade Atlas, February 2018 data.

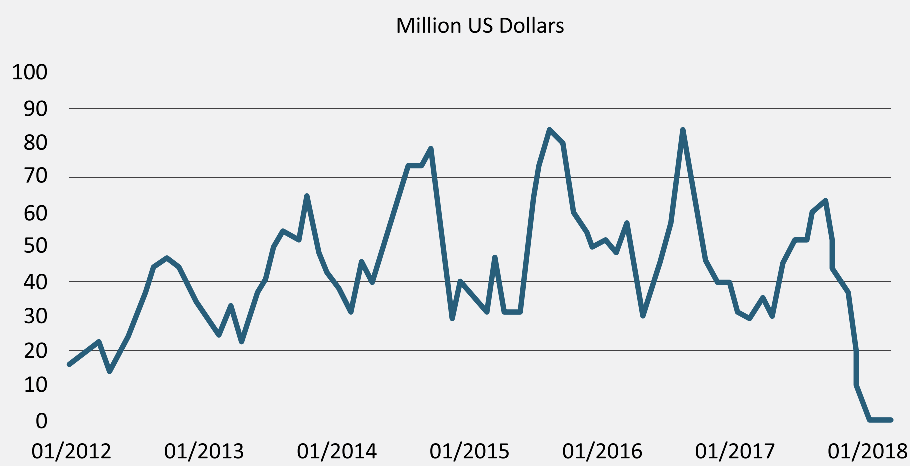
Textiles, one of the country's fastest growing industries in recent years, is experiencing a total collapse in external demand (see Figure 3). Coal and iron ore mining have also lost their large overseas markets, as has fishing. Even more surprising, imports of vital products, such as all petroleum products, grain, all electrical and non-electrical machinery, and vehicles, have fallen to near zero. Imports of consumer goods are down sharply as well. Except for petroleum products, North Korean imports are generally not sanctioned; so, the falls indicate a combination of even tougher action by China than required or a loss of hard currency by North Korean importers.

Figure 2: China-North Korea Trade: Jan 2012-Feb 2018



Source: Global Trade Atlas, Feb 2018 data.

Figure 3: China Imports of N. Korean Apparel Jan 2012- Feb 2018



Source: Global Trade Atlas, Feb 2018 data.

As discussed in some depth, below, falls of this magnitude cannot help but cause large reactions within the domestic economy and create jarring decisions for the government, for example on how to re-employ hundreds of thousands of textiles workers and miners. Ironically, to relieve growing pressures on the state's "command economy" decisions made by the cabinet may lead to much more liberalization, freeing large elements from the planned system. Without such a release, and a big move toward economic reform, the government may face financial crisis unlike any ever seen in North Korea. Ironically, North Korea's nuclear program, and the accompanying sanctions now applied strongly even by China and Russia, may thus be showing the way for the ultimate end of the regime's severe socialist system, and the advance of economic reforms that may save the country but not the regime. There is no doubt the regime will try to avoid that choice, probably hoping to garner aid from China, South Korea, and the United States in return for some slowing of the nuclear drive. Such aid, in the author's view, could forestall economic reform for some years but is unlikely to do more than patch the growing crevice in the failing state system.

Key economic decision areas for the regime can be loosely differentiated by macroeconomic and microeconomic topics.[4] On a day-to-day basis, the gaps, that is critical shortages, likely dominate the decision-making process, and may leave no time or energy for tackling the state's fundmental macroeconomic confusion.

Sorting out Macroeconomic Confusion

Money and exchange rate management

Oddly enough, money management is likely a rather new concern for the cabinet, but it surely has come to the forefront. The Kim government has done a remarkable job gaining control over inflation, which was in double or even triple digits during much of Kim Jong-il's administration, and stabilizing the unofficial exchange rate. The problem is that this stabilization has been achieved by allowing foreign currencies, mainly US dollars and RMB, to enter the economy and be used on an equal or even preferential basis as the won. It is a complex and dangerous development—in effect, the foreign currencies serve as savings vehicles for a population that has never had a way to save for the future. And higher savings, all other things being equal, reduce consumption and thus tamp down inflation. Instead of hoarding rice, and pushing up its price, people can hoard dollars, relatively confident they can use them to buy rice if necessary. The trick for the government is to give the population confidence that it can easily exchange the domestic won for the hard currency. Otherwise, at the slightest worry, people will massively dump won and destabilize marketplaces. This happened several times in the 2000s but, by keeping the markets open, the Kim Jong-un regime has helped the won/dollar rate to stabilize. It has also vastly expanded the use of money in place of government promised, but often not delivered, rations.

This policy carries obvious dangers, and very few countries allow foreign currency to be used to the extent that North Korea now does. A stampede easily can develop, in which everyone rushes to change won to dollars, creating a spiralizing effect that devalues the won and pushes hyperinflation. In this environment, the cabinet must give very high priority to protecting the won, even in the face of rapidly increasing trade deficits brought on by sanctions. Its choice, up to now, appears to have been to peg the won to the dollar at 8,000

(Figure 4).[5] This is relatively painless as long as the public has confidence the government can support that rate with reserve dollars and RMB. But any deviance from that rate could signal trouble and immediately cause a run on the currency. Decisions by the central bank governor, Kim Chon-gyun, will be critical. The government, together with the bank, must:

a. Make every effort to increase hard currency inflows to offset sanctions related stoppages. This could include higher risk sales efforts abroad, as can be seen in ship-to-ship transfers and all kinds of smuggling. In a worst-case environment, it may mean making weapons deals with rich buyers whom it normally would shun, given the risk of detection.

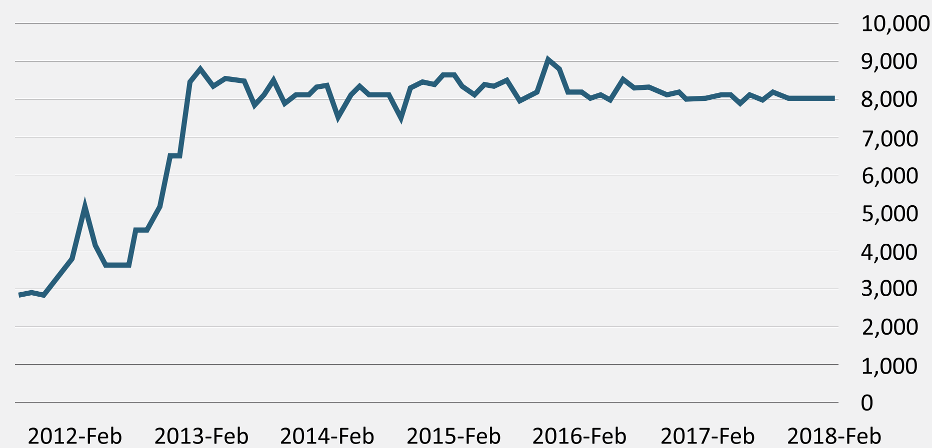
b. Import substitute where possible. This will be difficult since the country has long emphasized self-reliance and, except for some modern consumer products, imports only what it needs. Decreasing imports also have an inflationary impact and weaken already poor productivity.

c. Restrain issuance of won credit. An extremely tight monetary policy is needed to counterbalance the likely outflow of dollars. But this will make funding government operations, running state enterprises, and investment spending of all kinds difficult.

d. Sell won denominated bonds (the Foreign Trade Bank already sells some dollar bonds) and allow interest rates to rise to high levels to encourage won holdings, all an unmistakable bow to capitalism.

e. Develop contingencies in case of a run on the won. A likely option would be to close markets and prohibit foreign currency trading wherever possible, as occurred in December 2009. But with both dollars and won in everyone's pockets, this could prove impossible to arrange, leading to another disaster, with people in the streets.

Figure 4: North Korea won per US dollar: 2012-2018



Source: Daily NK, various issues.

Budget Management

The Worker's Party and the legislature meet in April to rubber stamp the government's annual budget. Many speeches are given but little information or data are provided. This year was no different and speeches gave no hints at any change in policies, despite the obvious crisis that has developed in the external sector. Kim Jong-un chose not to attend, perhaps suggesting policy is in flux, likely given the uncertain but important results of the coming diplomacy.[6] Behind the door solutions, all of which require important trade-offs, could include the following:

a. Raise taxes and fees to try to create a state surplus. The state has long boasted that it does not tax; so, this will be unwelcomed by the population, many of whom will not be able to pay any tax. Fees, moreover, drive a big wedge between those on fixed and low state incomes and those who earn much more in the market places.[7]

b. Reduce state spending to the bone, including for the military. Cut more state enterprises out of the system, forcing them to fend for themselves, including illicit trading. Allow more military units to engage in money making activities. Consider pausing the universal draft, allowing young men to directly engage in private production of goods and services.

c. Forcing loss-leading state enterprises to go off budget and off plan, or, as Pyongyang puts it, use the independent accounting system. The capital is still owned by the state but profits from its use, and the use of their extremely poorly paid work forces, can accrue to the managers. On their own, such factories often become more productive, buying and selling products in the markets and engaging in foreign trade. But many no doubt would fail, leaving their employees with no assets and no income.

d. Sell important state assets (the state, in effect, owns the whole country), and allow state enterprises to sell or privatize theirs, to pull in money. This will be the most attractive option to many, and is already being done on the margins, but also has unmistakable connotations of beginning Chinese style, or capitalistic, reforms. A party fight could begin over this sensitive issue; how Kim and senior officials, such as Pak Pong-ki and Roh Tu-chol, line up will be critical.

Constructing the Economic Plan

Despite all the talk of markets, North Korea still has a planned economy and the planning commission must try to allocate goods, services, and labor among state enterprises and the government. Millions of workers, perhaps half the country, rely on this system as does the entire public for essential products and services, including much of the food supply, fuels, electricity, heavy, and some light industry, mining, general infrastructure, social services and, education, and of course the huge military.

Kim's New Year's address laid out the government's economic priorities in very general terms, but the planners must do the more difficult work of specifically allocating resources among competing needs.[8] Machinery factories, for example, are not supposed to purchase their inputs from suppliers using a market price mechanism but instead are allocated inputs based on the plan, and they do not sell but simply allocate their final products to other factories. This is an incredibly complicated process, and it has, largely, broken down, with enterprises dealing with each other almost on a barter basis. But for many inputs, for instance, electricity and steel, and for all their labor, they still depend on the planned allocations.

Given the sanctions related drop in exports, this year the plan will have to scramble to reallocate inputs and outputs, and one can imagine a highly contentious process. Kim's address hints at this problem, saying local firms needs to fix their own problems.[9] If, for example, hundreds of thousands of textile workers are suddenly not producing for export, what are they supposed to be doing? In these circumstances, cabinet-level interference between industries is likely to absorb much of the government's energy.[10]

Market Liberalization

The Kim regime has survived, and in some ways prospered, by allowing continuous growth in market activity often at the expense of state enterprises and state control. Decisions will have to be made on how far they want this to go. At this point, price regulated consumer goods markets are quite prevalent. Hundreds of large government-sponsored marketplaces exist with rules set, and prices capped, for most consumer products. Policy issues surrounding these marketplaces, however, are huge. They include:

- The market regulations, fees, and price caps naturally create illegal trade activity outside the market places that currently do not appear to be policed.
- The government still provides most services, such as education and health care, but markets are developing for these and many other services and are much more difficult for the state to regulate. Pay for state service workers is abysmal.
- Labor markets are undeveloped, with most citizens having both state sponsored and private occupations. Pyongyang increasingly must deal with these inherent contradictions. State set wages, for example, probably average around 4,000 won per month, sustainable only with access to government provided rations of food, housing, and essential services. In the market economy, wages, more like contract earnings, may average a hundred times more than that, still a small income but enough to survive independent of the state. Tensions between the two wage systems, however, must be huge and growing. In the past, when such large gaps appeared between private and state workers, the state raised its salaries to match the market. In current circumstances, this would crush the state budget and lead to hyperinflation.
- Capital markets are developing spontaneously given the use of money throughout the system but are highly inefficient, small scale, and dangerously open to speculation and panic. The role of the incompetent banking system, needs to be examined and bolstered but this would require acceptance of capitalist practices, such as very high nominal interest rates.
- Real property markets are illegal, since all capital and land in theory is owned by the state or the collectives, but it is clear more and more housing and some other property is being traded privately, for large sums of US dollars. How far Pyongyang intends to let this go is not known. Currently it is sparking a boom in construction activity, not just in Pyongyang but also in other cities, but the weak legal basis for property rights must lead to rising tensions.

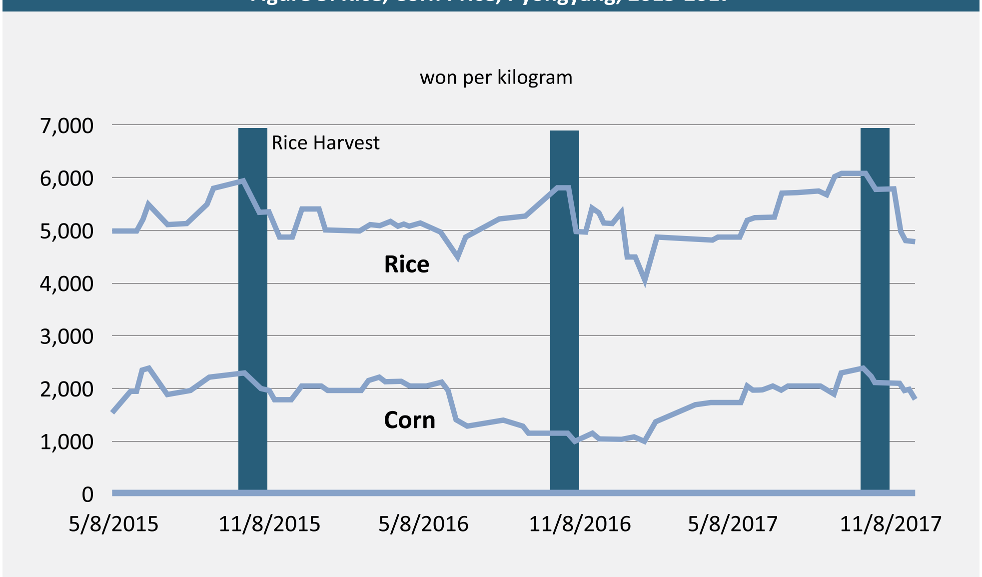
Patching Gaps, Microeconomic Policy

The emerging market economy is filling some gaps left by the broken planning mechanism, but the command economy still plays the dominant role in many industries, and shortages are thus commonplace. Unlike a market mechanism, where a shortage raises the price thus lowering demand and raising production, there is no automatic closer in the planned system. Bureaucrats must intervene and make needed on-the-spot allocations. Filling these gaps thus likely absorbs much of the cabinet's time and effort, even requiring Kim's intervention for important products. Kim appears to do less of this than did his father or grandfather, the latter being the supreme "fixer" but these still often will require high level attention. Premier Pak may be the most important such player as he has worked these issues for decades. Exports, in this planned system, are designed to earn the hard currency needed to fill gaps with imported products, as necessary. Sanction-killing exports are thus now creating a huge burden on the planned apparatus, as access to imports has all but disappeared.

Food Supply

North Korea's food supply appears barely adequate at present, despite a somewhat poor harvest last fall and a complete fall-off of cereal imports. With the seasonal lean seasons (May and July) approaching, the government is likely concerned with protecting food stocks and making sure prices do not begin to soar, while encouraging farmers to do their work to ensure a good harvest in the fall. So far, prices have been well behaved with no signs of an incipient famine (Figure 5). This could change quickly, however, with poor weather, and the government needs to put in place contingency plans for importing large amounts of grain. Grain reserves are likely very low, even for the military. There are no sanctions on agriculture and whether international aid organizations, public and private, will respond as they have in the past to signs of famine, is not known. One might expect China to offer several tens of thousands of grain as a gift for Kim's recent visit to Beijing, but needs would more likely be in the hundreds of thousands to several million tons if circumstances deteriorate.

Figure 5: Rice, Corn Price, Pyongyang, 2015-2017



Source: Daily NK, various issues

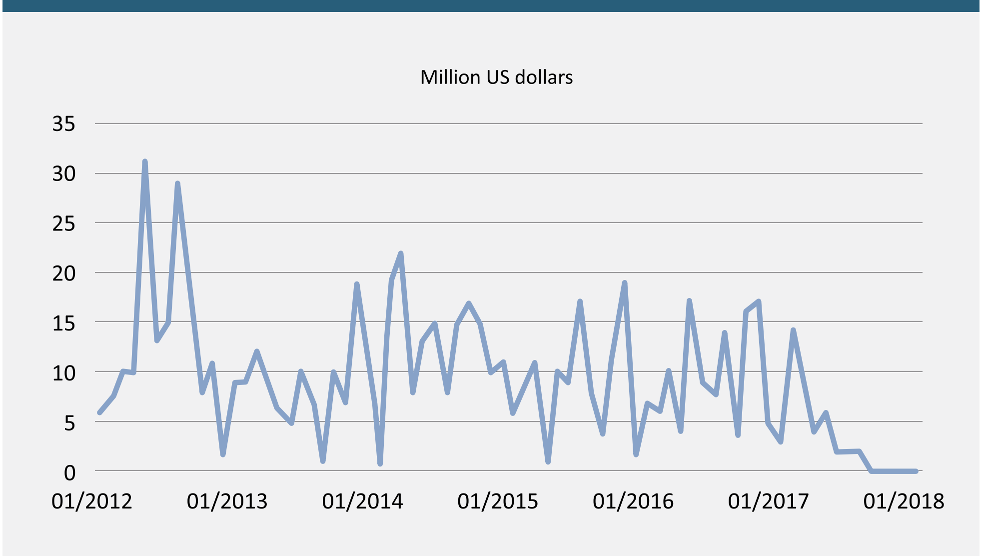
Important decisions needed by the government include how far to let private farming interfere with the much larger state farms and collectives. Kim announced a pilot program soon after he came to power to allow somewhat smaller work teams on the collectives that could enhance productivity and ultimately lead to private farming, but it is not clear how far this effort has gone. A major liberalization program would dissolve the collectives, as occurred in Deng's China, and generate a huge boost in productivity, but no evidence of such a far-reaching decision is available.

Usual allotments of fuel and fertilizer also must be planned—particularly difficult this year since China has cut off shipments of petroleum products (see below). Fertilizer production has largely been moved from petroleum feedstock to coal, however, so the farms are a little less exposed than in the past. *Daily NK* reports new efforts by the Party to push collectives to use oxen to replace tractors, amid human fertilizer collection campaigns, suggestions of trouble on North Korean farms and, likely, among the cadre who are not exempt from the collection program.

Petroleum

Other than money, the largest headache for the cabinet is likely energy, petroleum and electricity. No petroleum resources have been found, and virtually all its consumption is thus provided by China, mostly through a decades-long aid agreement that provides 600,000 tons (4.4 million bbl.) of crude oil a year. In addition, about 300,000 tons of refined petroleum products each year are imported at market prices, and most of these also come from China. But the latter have been sanctioned by the UNSC and, since November, China has supplied no diesel, kerosene, or gasoline fuels (Figure 6). Even more worrisome, crude oil deliveries are officially capped by the UNSC at the 150,000 tons per quarter rate, amid hints that these also could be halted should North Korea continue to test.

**Figure 6: China Exports Petroleum Products to N. Korea
Jan 2012 - Feb 2018**



Source: Global Trade Atlas, April 2018

Even with the crude supply unhindered, so far, the elimination of refined product imports is cutting significantly into the country's overall supply. Gasoline and diesel prices in officially sanctioned fuel stations have jumped and are much higher than world prices. Petroleum products always have been scarce; so they are used only when really needed, especially in transportation fuels, as a starter fuel for anthracite burning, portable electricity generation, and by the military, and any reduction thus hits hard. Especially problematic is the rising use of petroleum by taxis, private cars, and small generators used to provide needed back-up electricity for large apartment buildings and institutions, such as hospitals. The government must decide how much of the reduced supply goes directly to consumers in this way or to industry and the military. *Daily NK* claims this process is highly corrupted, and private buyers of refined products can make large profits, selling them to consumers desperate for the fuels.

- Analysts normally assume the military gets the first claim on petroleum supplies but, on the margin, this might not be the case, and in any case a decline in supply means ever tougher trade-offs, decided at top levels of the government. In the face of U.S. military threats, we can assume the North Korean air force is demanding more jet fuel for training flights, but the agriculture ministry will be equally demanding for fuel needed to move ahead with spring planting.

- Gasoline prices nearly tripled in Pyongyang soon after Trump and Xi met in Florida, early last summer, and as Chinese newspapers suggested, oil supplies might be on the chopping block (Figure 6). Prices later fell after it became clear the crude oil supply was affected but is still about 50 percent higher than it was a year earlier. This is a rare example of an external event dramatically impacting an important price in North Korea. Certainly, it caught the attention of the North Korean leadership, but not by enough to cancel an ICBM test.[11]

Electricity

Pak Pong-ju's grim-faced visit to the Pukchang thermal power plant last November serves as a reminder that if there is one industry that serves as a parable of North Korea's economic decline since about 1984, when the nuclear weapons program began in earnest, it is electric power. At that point, the industry was very strong, and power supply was abundant compared with overall economic output. The relatively new and giant Pukchang plant produced 1,600 MW, the equivalent of two large nuclear power stations, supplying Pyongyang and its industry with vast amounts of cheap power. Industry, railroads, and even agriculture were electricity intensive, drawing on huge investments in hydroelectricity in the Japanese period and in the 1950s and 1960s in thermal coal fired expansion, culminating with the Soviet supplied Pukchang. Likely envious of South Korea's rapidly expanding nuclear power capacity, Kim Il-sung then pointed the industry in the direction of nuclear plants which to this day have likely absorbed almost all of the power sector's investment resources, all with no return to the economy. Four shells of large nuclear power plants litter the North Korean landscape, direct casualties of the country's nuclear weapons program. Even today, a tiny pilot scale light water reactor (25 MW) is being prepared for start-up at the Yongbyon research center, many years late and of dubious utility to an economy now desperately short of power.[12]

Unreliable supply, especially to Pyongyang city and to several large consuming industries, is now fraught with danger for the regime, especially if there were a better public understanding of why the situation has deteriorated so badly. Capacity has not significantly expanded in thirty years, and output has declined due to ever older and less efficient equipment. Almost half of capacity is in hydroelectric power, which is seasonal and depends on rainfall, and the other half depends on locally mined anthracite coal. Ironically, sanctions that limit coal exports might be a short-term boon for the power sector, but the loss of foreign earnings to the mines must be devasting. Most of the industry remains firmly in the command economy system, with very low, almost meaningless, electricity prices set by the plan and equally low prices set for coal. Wages in the power industry and in coal mining also are very low.

Interestingly, even in an industry where scale is important, and monopoly forces always present, North Korean residents have reacted to the plan's failure by importing large numbers of small solar panels from China, setting them up and selling power on the street for cell phone charging, and they are using small generators to provide power for apartment use, buying diesel fuel at high prices on the market. This is probably not an efficient use of either capital or energy but illustrates the complexity of the dual economy system—electricity is free at the wall plug, but usually not available, and is available from the private vendor, but at a high cost.

Pak is probably trying to figure out a way to get the daily train of coal cars into the power plant, but he could, and should, be thinking of reorganizing the whole industry. An easy solution, it would seem, would be to charge a reasonable fee for power use, say the equivalent of five cents a kilowatt hour. Any consumer would easily pay that amount, much less than the cost of the solar panels, and the money would flow through the system, allowing new investments and proper pay for miners, and less of an incentive to export the coal. And this is what North Korea charges the few over the river buyers in China. But it is not so simple. By pricing electricity so cheaply for so long, the planned economy has built an industrial sector dependent upon and exceedingly wasteful of power. Market pricing would be devasting for much of the planned economy and, while it would easily resolve power shortages, could be the final straw to break the planned economy system.

Interestingly, *Daily NK* reports that Pyongyang is ordering new electricity meters for apartments in Pyongyang, suggesting there will be a charge for power usage. (Currently a small fee is required for each electricity using appliance, encouraging all such items to be turned on whenever power is available.) This could be evidence of new thinking in Pyongyang that could begin to change the country.[13]

Wages, the market for labor

Consistent with the dual nature of the economy, but inconsistent with any semblance of efficiency or fairness, North Korea has two very different systems of remuneration for workers. The state system still exists, and all state workers, the bureaucracy, state enterprises, and the military are paid according to a ration wage system. The money part of these wages—3,000 to 5,000 won per month—is inconsequential, buying one kilogram of rice a month in the marketplace, but the rations and perks provided by the state employers mean everything. And these rations and perks have little or nothing to do with productivity or risk taking and everything to do with loyalty to the party and the state. A key feature of the system is that since the money wage is worth so little, workers have no ability to save and invest for the future, even for the next month, and are thus completely in the arms of the state. It is little more than a slave system devised by the likes of Lenin and Stalin.

The other system is an unregulated private market system in which income is determined strictly by supply and demand, and by risks one is willing to accept in buying and selling. Some efforts apparently have been made to regulate this system as well, such as allowing some export earning firms to pay 30,000 won per worker per month, and some wholly owned foreign firms to pay 300,000 won per month—still only $40 at the market exchange rate—according to a pilot plan proposed by Kim in the first year of his administration. Workers in this part of the economy, however, receive no rations or benefits and must pay fees for everything, including bribes should they need to travel to Pyongyang. But they have much better access to the markets and to services offered throughout the economy than do state employees, such as taxi rides, medical care, and cell phones.

Neither system of wages is optimal, and most people or families engage in both, with state workers working side jobs and most women engaged in market activities to earn money. And the ability to arbitrage across the systems is great, for example paying large sums to a policeman to allow a prohibited activity, leading to persistent and growing corruption of the police state.

The cabinet must recognize this system as inefficient and ultimately unsustainable, but reform, creating a single market for labor, would be extremely difficult. A start would be to raise state wages to close to market levels, but this could not be afforded without huge budget increases and likely spiraling inflation, or by layoffs of literally millions of people. But doing nothing simply continues the erosion of the bureaucratic state, and with the erosion ominous overtones for regime stability.

Conclusion

In this difficult economic environment, the regime will be pressing hard to maneuver foreign powers to remove or reduce sanctions, and to provide aid that offsets some of the negative results. The latter, a drive for aid, will be particularly evident if the food supply turns negative this spring and summer. At this point, economic decisionmakers, and likely Kim Jong-un himself, do not know how successful they might be with diplomacy and thus must prepare for a continuation of sanctions that bite ever harder. And more astute leaders, probably including Kim Jong-un himself, must know sanctions relief would be only a temporary solution. The economy was in deep trouble long before sanctions restricted the country's foreign trade, and trade and investment with the U.S., in particular, is restricted much more by trade policy—North Korea being considered a non-market economy and thus the recipient of automatic, very high, tariffs—than by sanctions. This knowledge, which must be very apparent to experienced officials such as Premier Pak Pong-ju, in some ways diminishes the efficacy of sanctions; the regime knows their removal, though badly needed, would be a short-lived panacea, whereas loss of the nuclear weapons bargaining tool might be permanent. Sanctions, moreover, provide the regime excuses for poor economic performance.

In this context, astute decision makers in Pyongyang will try to offset some of the bite of the sanctions and gain leverage toward longer term reforms if that is their desire, by picking up the pace of already started, but tentative and faltering, liberalizing reforms. In a dollarizing economy, the regime needs money, both its own won and foreign exchange, to push back on the loss of foreign exchange earnings abroad and the erosion of state earnings at home. An example of a way to do that would be much faster liquidation of state property, selling or leasing factories, land and residences, to private agents to gain funds to combat dollarization and protect the won. This can already be seen somewhat in the building boom underway in Pyongyang and other cities, which we presume is driven by state-owned enterprises selling or leasing land and buildings to private interests. Another move would be to set electricity and other utility prices at much higher levels, as hinted at by reports of new metering requirements in Pyongyang apartments. This would energize the moribund power stations and improve efficiency of coal and power use but would likely require exemptions for large state enterprises whose technology and capital stock depend on cheap power. More far reaching would be moves to raise the salaries and wages of the millions of state employees to close to the wage levels provided in the private markets and reduce rations. Raising funds for such raises would be difficult if the regime is to avoid massive inflation but could include shifting many workers to private work, accomplished by giving them rights to the capital they now work with. Again, some of this already occurs.

But with all the hope for positive reforms, the opposite, de-liberalizing tact is possible as the regime faces intense political and economic trade-offs and must worry about slowly diminishing state resources and loss of state and party control. Conservatives will emphasize self-reliance, and thus import substitution, in reaction to the UN and Chinese sanctions, measures that would isolate and even further lower productivity of the system. Evidence for such a move could include several speeches Kim has given in recent years lamenting the large amount of Chinese consumer goods in Korean markets and emphasis in the April Assembly meetings on self-reliance.[14] We suspect that non-resolution of the nuclear weapons issue would virtually guarantee attempted, but probably not successful, moves in this backwards direction. One might argue, in fact, that the nuclear weapons program is itself aimed at isolation, and thus protection, of the command economy system.

In sum, the author thinks highly proactive measures are needed by the regime to prevent catastrophic unemployment and inflation conditions that will be brought on by continued sanctions, and that these are being considered by the economic leadership, but it is not at all clear that the party leadership will be tolerant of such radical moves. The only thing that is certain is that the system is in important flux and decisions made over the next few months, not just in Pyongyang but in Beijing, Seoul, and Washington, will be very important in determining the fate of North Korea's long experiment with socialism.

Endnotes

[1] Ha Yoon Ah, "Economic development key focus in North Korean rubber stamp parliamentary session," *Daily NK*, April 13, 2018; Dagyum Ji, "N. Korea to pursue new party line, denuclearization on own 'timetable': Rodong," *NK News*, May 28, 2018.

[2] William Brown, "Special Report: North Korea's Shackled Economy," National Committee on North Korea, March 2018.

[3] Global Trade Atlas, 1 April 2018; Chinese customs data, inexplicably, do not include shipments of crude oil, provided as aid, that should add about $20 million a month to the export figure.

[4] The cabinet of a command economy's government is like no other. Rather than delegate economic decisions to firms and individuals through the workings of a market price system, it takes ownership of all the means of production and tries to dictate output and distribution based upon a plan which it conceives itself. Elsewhere, these systems have collapsed due to the sheer weight of the billions of decisions that must be made, and North Korea is no exception. Its command economy collapsed many years ago and the plan itself is in shambles. But unlike any other country, ownership of capital still largely resides with the state so that the Worker's Party and the state still must directly manage large segments of the economy and millions of state employees. The failure of the planning mechanism probably makes things even worse, since the government lacks the ability to dictate the allocation of materials and labor in order to get desired outputs. Instead the system has fractured into a semi-market system where enterprise autonomy is highly desired. Factories are making their own decisions, utilizing their sunk capital and essentially serf labor that is attached to their enterprises. But division of labor is terribly weak in this mixed system and shortages abound. Much of the cabinet's time, therefore, must be in making on the spot allocations of key products and services.

[5] William Brown, "How is Pyongyang Controlling its Won?" *The Peninsula*, Korea Economic Institute of America, March 26, 2018.

[6] Ha, "Economic development key focus"; Ruediger Frank, "Economic Sanctions and the Nuclear Issue: Lessons fro North Korean Trade," *38 North*, September 18, 2017.

[7] Kang Mi Jin, "Authorities push tax on electricity generated by household solar panels," *Daily NK*, November 22, 2017.

[8] Ruediger Frank, "Kim Jong Un's 2018 New Year's Speech: Self-Confidence After a Tough Year," 38 North, January 3, 2018.

[9] Stephan Haggard, "Kim Jong-un's 2018 New Year's Address: The Nuclear Program, the Economy, and the Challenge to the South," *North Korea: Witness to Transformation*, Peterson Institute for International Economics, January 2, 2018.

[10] William Brown, "Can Sanctions Get a Mulligan?" *38 North*, October 6, 2017.

[11] William Brown, "Price Movements Suggest Volatile Food and Fuel Markets in North Korea" *The Peninsula*, Korea Economic Institute of America, December 18, 2017.

[12] "Progress at North Korea's Experimental Light Water Reactor at Yongbyon," *38 North*, February 19, 2018.

[13] Kim Sung-il, "Toll booths and electric meters latest government tax schemes," *Daily NK*, November 2, 2017.

[14] Ha, "Economic development key focus."