The North Korean Economy and U.S. Policy: Stability Under "Maximum Pressure"

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North Korea has been under international sanctions for several years. It is only under U.S. President Donald Trump's policy of "maximum pressure," however, that China, North Korea's most important trade partner, has begun enforcing these sanctions in a serious manner. Based on quantitative and qualitative data about North Korea's economy, this chapter shows that while the country has not been threatened by economic disaster or social collapse as a result of the sanctions, its economic situation under sanctions has been dire, particularly for those industries targeted by sanctions. Kim Jong-un claimed in mid-April 2019 that his country is unphased by sanctions, but the data tells a different story. The regime may come to be threatened by socio-political instability should foreign currency reserves dry up, but the U.S. may not be successful in maintaining the sanctions regime at its current strength for all that much longer.

In April 2017, the Trump administration summarized its foreign policy approach to North Korea. After months of mounting tensions over North Korea's nuclear and missile programs, the White House adopted a policy of "maximum pressure and engagement" towards the North Korean regime after a two-month strategy review.[1] This entailed pressuring the North Korean regime through harsh economic sanctions, while at the same time seeking engagement and dialogue. The end-goal was full abolishment of its nuclear arsenal. After the policy of "maximum pressure" was announced, the United Nations Security Council levied a wide range of economic sanctions on North Korea. These came to target its most important export goods, such as coal and other minerals, and banned member states from selling or otherwise transferring oil and fuel to North Korea in quantities above a certain volume, significantly limiting North Korea's ability to ensure its fuel supply. Through "maximum pressure," the Trump administration aims to squeeze the North Korean regime by targeting its economy, hoping that the economic pain inflicted upon North Korea will force the country to cede to U.S. demands for abolishing its nuclear weapons.[2]

To what extent are sanctions inflicting pain on the North Korean economy? This question often gets debated primarily along partisan lines. On the one hand, Trump and those who support his strategy tend to argue that "maximum pressure" was the chief cause for Kim Jong-un agreeing to the Singapore summit in June 2018. This line of reasoning assumes, in simplified terms, that the damage done to the North Korean economy as a result of sanctions has been dire enough to tip the scale regarding the regime's nuclear weapons. The Trump administration, however, regards the process as a road to something much more significant. It has stated continuously that through a negotiated solution to the nuclear issue, North Korea could become an equal member of the international community, not least as a trading partner—resulting in the prosperity that Kim Jong-un has long promised his people.[3]

On the other hand, some argue that the added sanctions under "maximum pressure" have had little to do with North Korea's willingness to negotiate with the United States. This reasoning, often but not always by critics of Trump's overall foreign policy and approach to North Korea, usually rests on an assumption that the damage done by the sanctions to the North Korean economy has not been strong enough to impact the regime's foreign policy direction.

In truth, we cannot know with any degree of certainty for what reasons the regime has played its diplomatic cards the way it has throughout the summits with the United States and South Korea. A serious analysis throughout the period of “maximum pressure,” however, is crucial for a nuanced understanding of the current state of the North Korean economy, and the regime’s strategic outlook during these negotiations. Based on both quantitative and qualitative data, this chapter argues that the sanctions that followed the inception of “maximum pressure” have not backed the regime into a corner, with no other option but to acquiesce to U.S. demands for negotiations and denuclearization. No data suggest a general, acute economic crisis in the country. At the same time, the North Korean economy has by no means gone untouched by the sanctions. Its exports to China have plunged along a timeline that roughly corresponds with geopolitical tensions between North Korea and the U.S. The country’s economy is suffering very seriously as a result, but is not yet on the edge of catastrophe.

“Maximum pressure” under Trump bears one very significant success, from the point of view of the U.S. administration: China has, all available indicators suggest, implemented sanctions against North Korea to a much higher degree than in the past. Because China makes up 90 percent of its trade flow, the country’s implementation makes or breaks any sanctions framework targeting North Korea. The reason for its tightened implementation is not necessarily the Chinese government’s ambition to adhere to international norms and standards such as UN sanctions. Rather, the main difference this time is that tensions between the U.S. and North Korea reached so high at the zenith of Trump and Kim’s war of words in 2017 that China perceived real risks to its strategic interests, likely fearing armed conflict on the Korean Peninsula.

Whatever China’s reasons, the North Korea economy has been badly hurt by Chinese sanctions implementation, but not badly enough to plunge into crisis. Sanctions have caused the regime big losses in foreign currency income from lost exports of coal and other minerals, fishery products, and foreign labor. It continues to import some goods from China and other countries, and most likely, the regime’s foreign currency assets are becoming increasingly depleted by the day. Sanctions have also made it difficult for the country to acquire sufficient amounts of fuel, as sanctions cap oil transfers by UN member states to North Korea. Even though both North Korea and other actors have routinely violated sanctions, sanctions impose a significant cost premium. Smuggling can make up for some of North Korea’s losses, but they impose economic costs regardless: it likely has to pay more for imports, and gets paid less for exports, in compensation for the added risk.

Though North Korea is in an economically dire position, “maximum pressure” does not yet appear to have achieved its policy objectives, or to have realized its full potential. Estimates that North Korea’s foreign currency reserves would dry up by the fall of 2018, for example, in hindsight appear to have been overblown.[4] The regime, due to its totalitarian governance system, has a high threshold for pain. For Trump’s sanctions policy to reach its full potential, it would likely need to be in force for several more years, with the full cooperation of both China and Russia, an unlikely prospect.

Methodology

This chapter uses a combination of quantitative and qualitative data to track the North Korea economy under the “maximum pressure” of sanctions. It focuses on the consequences of sanctions for the domestic economy. The quantitative data is sourced primarily from the *Daily NK* price index.[5] The *Daily NK* is an online news outlet run primarily by North Koreans who have resettled in South Korea (often known as “defectors”). They gather market price data for key commodities in North Korea on a bi-weekly basis, using contacts inside the country that report information such as market prices via cell phones.[6] This chapter uses market price data for rice, foreign currency (market exchange rates), and fuel, to analyze the economic impact of sanctions. The price data are, by no means, fully reliable, and must be carefully analyzed in context using complementary, qualitative information to create as full a picture as possible.

One of the most complicated issues when it comes to what market price data really tell us is that of cause and effect. Take gasoline prices, for example.[7] When gas prices spike in North Korea, as they have several times during the “maximum pressure” period, the cause could either be a decrease in supply, or an increase in demand. Without contextual analysis, it is impossible to conclude whether a price surge is caused by decreased Chinese supply, or by demand changes, such as increased hoarding either by North Korean civilians or the state. Moreover, U.S. policy and international sanctions are far from the only variable impacting the North Korean economy. Private supply of electricity, for example, has increased markedly in North Korea over the past few years, as increasing numbers of people are able to privately purchase solar panels for their homes.[8] North Korea, moreover, has long aimed to increase its energy independence by investing in techniques for turning coal into gasoline.[9] Such efforts may have increased during the latest round of sanctions, but they were not initially started as a result of the sanctions.

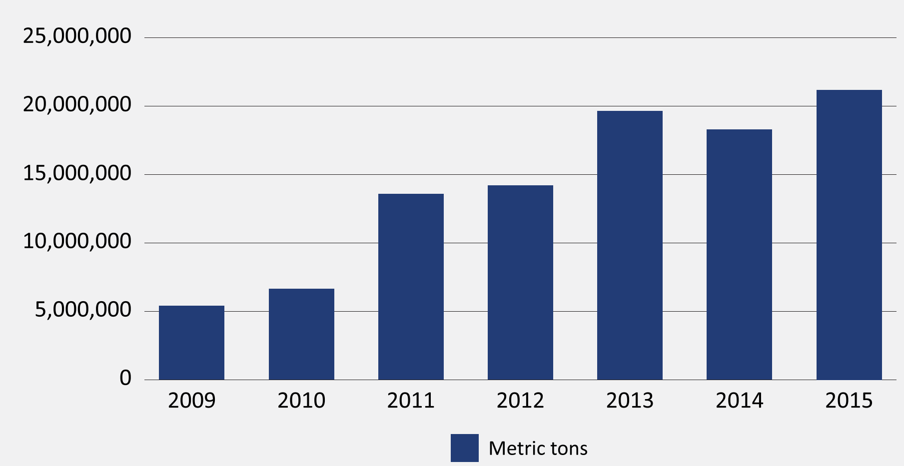
Changes in how the North Korean state manages the economy, too, may have become more urgently needed since the inception of harsher sanctions pressure.[10] Such changes would, however, likely have happened with or without the added sanctions pressure. As a final example, analyses of China’s coal imports from North Korea over the past two years contrasted with earlier periods in time are an important metric for surveying China’s sanctions implementation on North Korea. At the same time, China has long sought to decrease its coal imports in general, for both environmental and economic reasons.[11] In sum, it is important to understand whatever trends the numbers indicate in their proper context, drawing on a mix of qualitative and quantitative methods.

Background: Sanctions on North Korea, between Relaxation and Implementation

To analyze the impact of U.S. actions under Trump on the North Korean economy, we must first understand the general context in which sanctions were imposed in 2017 and 2018. What mattered most during this period was not necessarily the sanctions themselves, but China’s perception that U.S. military action against North Korea was a real possibility. North

Korea has been under various forms of international sanctions since 2006, when the United Nations Security Council (UNSC) instituted them following North Korea's first alleged test of a nuclear weapon. These sanctions, unlike those currently in place, specifically aimed at preventing North Korea from acquiring crucial components for its nuclear and missile programs.[12] Since then, the UNSC has adopted several subsequent rounds of sanctions on the country, with the much more general aim of isolating its economy to choke off the funding for its nuclear and ballistic missile programs.[13] Particularly from 2016 onward, the international community took clear aim at North Korea's exports of coal and other minerals, its main source of hard currency revenue. North Korea's exports of such commodities had

Figure 1. Chinese Imports of Anthracite and Iron Ore from North Korea, 2009-2015



Source: UN Comtrade.

increased vastly in the previous few years, and China was the almost exclusive buyer. Between 2009 and 2015 exports of anthracite and iron ore to China from North Korea increased by 293 percent (Figure 1).

Efforts by the UNSC to punish North Korea economically through sanctions were long undercut by Chinese refusal to implement the spirit, if not the letter, of the sanctions. The implementation pattern of UNSC Resolution 2270, for example, provides a pedagogical example. On January 6, 2016, North Korea conducted its fourth nuclear test. Only weeks later, on February 7, the country conducted a test of a long-range missile, through what it claimed was a satellite launch for peaceful means. In response, the UNSC adopted the hitherto strongest sanctions against its economy, taking direct aim at North Korea's coal exports. The resolution adopted on March 2 stated that "...the DPRK shall not supply, sell or transfer, directly or indirectly...coal, iron, and iron ore, and that all States shall prohibit the procurement of such material from the DPRK by their nationals."[14] The resolution, however, contained a provision excluding "[t]ransactions that are determined to be exclusively for livelihood purposes and unrelated to generating revenue for the DPRK's nuclear or ballistic missile programs."[15]

However, no one specified how, and by whom, it would be determined precisely what transactions were for livelihood purposes exclusively. Given the murky, non-transparent nature of North Korea's enterprise structures, it would seem a near-impossible task to ensure exactly which coal export revenues would go toward livelihood purposes or the weapons programs respectively. Following a long-established pattern, Chinese coal imports from North Korea did decrease significantly the very month sanctions were set to take effect, while international attention remained focused on the threat from North Korea. Only some months later, however, China's imports of North Korean coal soared, and in August of the same year, reached the highest levels hitherto on record.[16] Given the imprecise wording of the resolution's clause on humanitarian purposes, China could easily claim, and with some cause, that it was not actually obligated to halt any coal shipments from North Korea.

I, personally, in the summer of 2016, visited the border town of Dandong, on the bank of the Yalu (Amnok) river, across from the North Korean trading hub of Sinuiju. Around 70 percent of officially recorded trade between North Korea and China goes through the city.[17] Few of the people I spoke to, who were themselves involved in the border trade as consultants, truck drivers, trading company employees and the like, saw the sanctions instituted that year as a significant factor inhibiting or impacting trade between the two countries. The

Image 1. Trucks lined up to drive into the customs inspection area in Dandong, on their way to North Korea, late June, 2016. *Photo: Benjamin Katzeff Silberstein.*

overall tensions around North Korea's nuclear program were an impediment, said some, as was slumping Chinese demand for North Korean coal. Nonetheless, judging by the sheer number of trucks and trains crossing the bridge—admittedly a blunt and imprecise metric—no particular slump or lull could be spotted in Sino-DPRK trade at the time.[18] The total value of North Korea's mineral exports to China increased by 12 percent in 2016 compared with 2015, from $1.16 billion to $1.3 billion.[19]

Prior to the extraordinarily high tensions between the U.S. and North Korea starting around early 2017, economic sanctions on North Korea never had their intended effect since Chinese implementation was never fully consistent.[20]

The Sanctions Framework and Maximum Pressure: Beijing's Changed Implementation Pattern

With the war of words between the U.S. and North Korea in 2017, things changed. In 2016 and 2017, North Korea conducted an unprecedented number of tests of missiles and nuclear weapons. Late in 2016, a South Korean assessment concluded that North Korea was in the final stages of developing a nuclear weapon.[21] Kim Jong-un stated in his traditional New Year's Address on January 1, 2017, that the country was in the "final stages" of preparing to launch an inter-continental ballistic missile (ICBM).[22] President-elect Donald Trump tweeted in response that North Korea's development of a nuclear weapon capable of reaching parts of the U.S. "won't happen."[23] North Korean missile tests and diplomatic and military posturing that followed led up to the announcement in early March 2018, of the first-ever summit between the leaders of the U.S. and North Korea.[24] A brief look back at the sanctions levied by the UNSC in 2017, however, is necessary in order to grasp the economic pressure that North Korea faced.

Following the country's fifth nuclear test, the UNSC passed resolution 2321 on November 30, 2016, placing a cap on member states' imports of coal and various other key export goods from North Korea.[25] Nonetheless, the status of China's implementation of the resolution remained unclear, and some news reports, albeit difficult to confirm, suggested that China continued to import some quantities of capped goods from North Korea.[26] On August 5, 2017, the hitherto strictest UNSC resolution ever on North Korea was passed, banning all of North Korea's exports of coal, iron ore, and seafood.[27] The resolution followed several North Korean tests relating to its ICBM-development, most notably on July 4, 2017, when it claimed for the first time ever to have successfully launched one with the capability of reaching the continental United States. The UNSC further tightened sanctions through resolution 2397, adopted on December 22, 2017, following further North Korean tests of both ICBMs and nuclear weapons.[28] Resolution 2397 capped member states' exports and "transfer[s]" of oil and fuel products to North Korea at 4 million barrels or 525,000 tons per year, roughly the quantity of crude oil that state-owned China National Petroleum Corporation (CNPC) is said to supply to North Korea.[29]

Chinese trade data for North Korea are often difficult to follow because of spotty publication patterns. It is also impossible to fully verify the accuracy of the data, as Beijing could choose strategically which numbers to publish in what form, and direct certain exports and imports to be recorded in a manner such that they do not display a violation of the caps set by the sanctions, even when, in practice, they go above such limits. Some data strongly suggest that Beijing has adapted trading patterns with North Korea more to its perceived national security interests, rather than sanctions themselves. For a granular understanding of how the Trump administration's sanctions policy has impacted North Korea, one needs to go down to the level of trade patterns for individual goods, as is briefly done below.

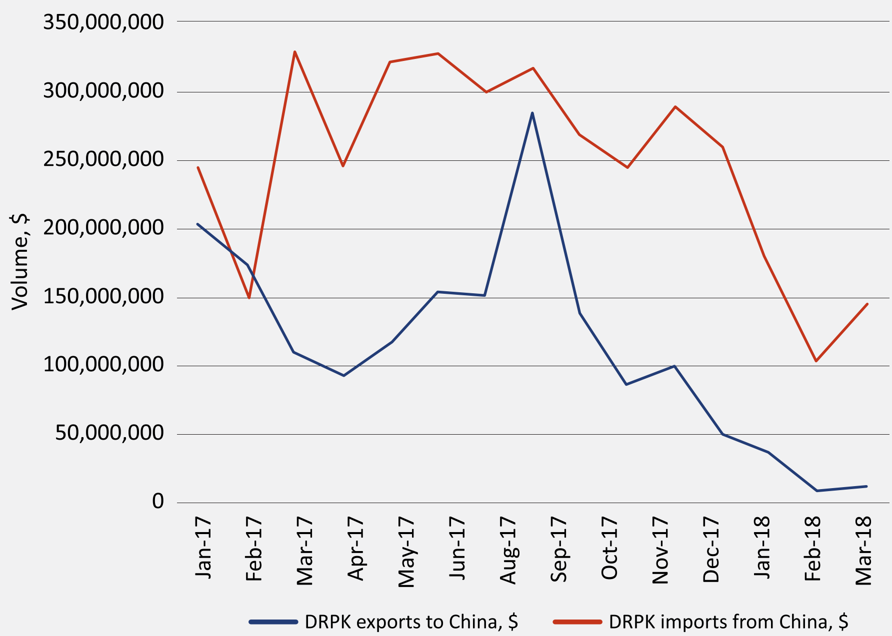
Despite some variation in the trade of certain goods, it is clear that, overall, sanctions have put a massive dent in North Korea's exports and foreign currency income throughout the period of "maximum pressure." What's crucial to remember, however, is that even though there might be a correlation in the timing of Beijing's drawing down on trade with North Korea and added sanctions frameworks, this does not mean that sanctions, in their own right alone, caused Beijing's strengthened economic pressure on North Korea. As the review of past sanctions implementation patterns above shows, Beijing has often interpreted sanctions frameworks in rather liberal ways and made the most use possible of loopholes such as the "humanitarian exemption" for North Korea's coal export proceeds. What changed in the winter and spring of 2017 was that for the first time in decades, there seemed to be a real risk of war at hand on the Korean Peninsula.[30]

Whether or not the risk of war was real, however, does not matter for the purposes of this chapter. Rather, the most important fact is that from Beijing's vantage point, war did seem to be a real possibility. In contrast with past tensions around North Korea, the Trump administration took several tangible steps to back up its rhetorical posturing with real action.[31] The timing of Beijing's actions to pressure North Korea economically strongly suggests a correlation with U.S. action, rather than UN sanctions. In other words, Trump's aggressive rhetoric and threats toward North Korea in 2017 achieved something that few U.S. leaders before him did: it forced Chinese action and massively strengthened compliance in pressuring North Korea economically.

This is supported not least by the sequence of events. UNSC resolution 2397, imposing a ceiling on North Korean oil imports, was adopted in December of 2017. Beijing, however, took action to limit oil and fuel sales to North Korea much earlier than this. CPNC—a state-owned company—drastically reduced fuel sales to North Korea between May and June of 2017, and in late June, decided to suspend sales completely.[32] Though the decision was ostensibly taken on commercial grounds, Chinese fuel transfers to North Korea have long-since occurred on a mix between commercial and political, concessionary terms.[33] Had Beijing wanted to continue selling fuel to North Korea even though the latter could not pay full market prices, it would have been able to do so. The timing of the decision coincided with a general heightening of tensions between the U.S. and North Korea, and with the specific inception of the U.S. policy of "maximum pressure," which was officially announced in mid-April 2017, with particular emphasis on the role of China in helping increase pressure on North Korea.[34] It is unlikely that China would have taken these strenuous measures to pressure North Korea were it not for U.S. actions and the ensuing tensions.

Throughout 2017, trade between North Korea and China fell substantially (Figure 2). North Korean exports to China, in particular, fell massively, first dropping by 37.7 percent for 2017.[35] Between January and September of 2018, they dropped by 59.2 percent, with exports falling by a whopping 90.1 percent. Out of the entire $11.11 billion trade volume, $10.11 billion consisted of exports by China to North Korea, according to Chinese customs figures,[36] a massive trade deficit that may, in essence, amount to an economic subsidy from China to North Korea. These figures may well have been moderated later as trade may have increased during the last few months of the year. One South Korean news outlet, *Chosun Ilbo*, reported in the summer of 2018 that Beijing had substantially increased fuel transfers and fertilizer exports to North Korea following Kim Jong-un's visit to China, in proportions that would amount to a breach of sanctions.[37] These news reports have not been confirmed by Chinese or other government authorities.

Figure 2. North Korea-China Trade, January 2017-March 2018, in U.S. Dollars



Source: Korea International Trade Association (KITA).

The North Korean Economy under "Maximum Pressure": Evidence from Market Price Data

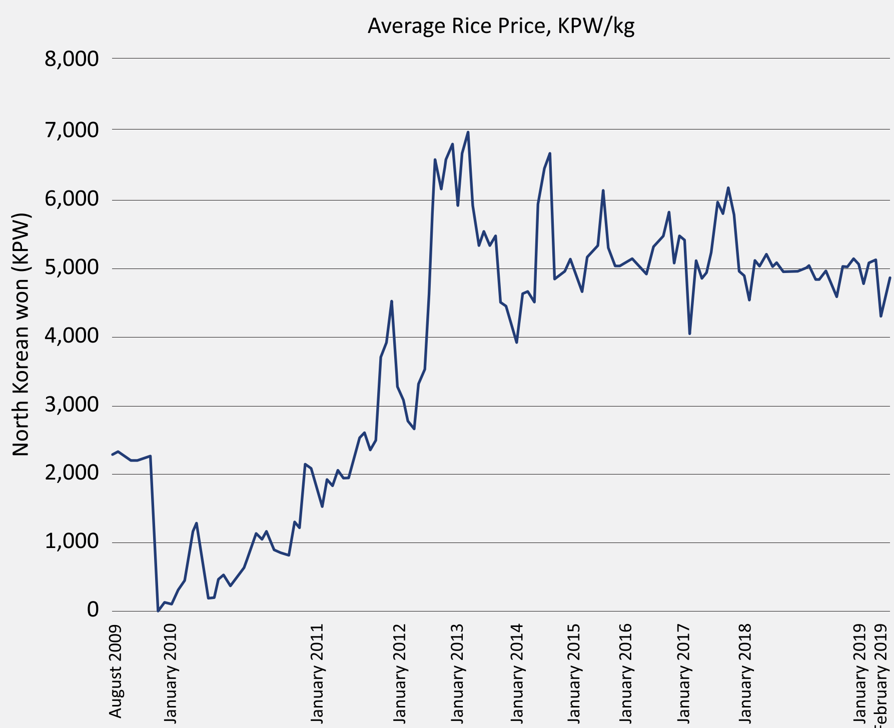
The consequences inside North Korea of this drastically harshened international economic environment under "maximum pressure" are interesting and somewhat contradictory between different sources of data. On the one hand, we have anecdotal information suggesting stark difficulties in several sectors of the economy, particularly in those targeted by the sanctions. On the other hand, there is little in the quantitative data—primarily, market prices inside North Kore—to suggest any general sense of crisis or massive shortages as a result of the sanctions. Rather than contradicting each other, however, these different forms of data paint a fairly nuanced picture of the trends and general state of things in the North Korean economy. That the sanctions—or, rather, China's changed implementation patterns—have hurt the North Korean economy is difficult to dispute. Even with substantial, meaningful quantities of smuggling and sanctions evasion by partners in China and Russia, the extent to which the bulk of North Korean trade has been curbed by the sanctions is simply too great to have compensated to any meaningful extent for the shortfalls. At the same time, market price data suggest that the economy, particularly the market sector, hasn't experienced any acute, drastic shortages.

An explicit purpose of the sanctions all along was: to hurt the sector of the economy entirely owned by the state, in order to choke off funding for weapons programs, while leaving the non-state sector as untouched as possible.[38] Yet, the two sectors are closely connected through various linkages, not least since likely hundreds of thousands of North Koreans are employed in sectors such as mining and textiles.[39] This section analyzes the most important market price data available, and the following one deals with qualitative, anecdotal but important evidence to assess the extent to which North Korea has been able to circumvent sanctions, as well as the state of the North Korean economy. All of the following market price data come from the Daily NK market price index.[40]

Rice prices

Because rice is the main staple of North Korean food consumption, it is often used as a general proxy for the level of food prices in the country. People consume a wide range of other goods as well, but given that virtually all North Koreans who can afford to do so consume rice, market prices for the good are the best resource to assess the country's food situation.[41] As demonstrated in Figure 3, rice prices have stabilized significantly over the past few years, and remained stable throughout the period of "maximum pressure."

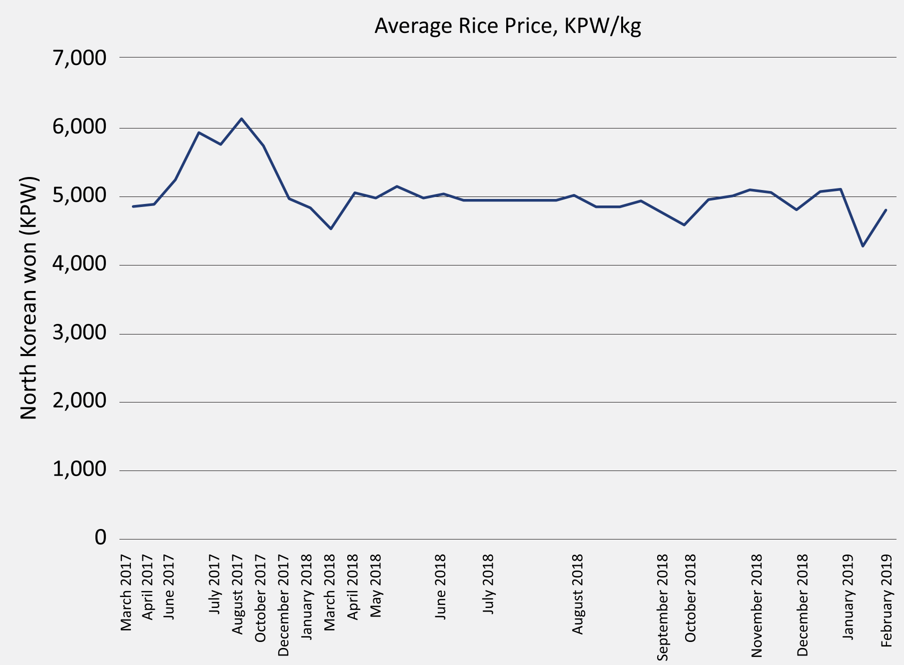
Figure 3. Average Rice Prices for Pyongyang, Sinuiju, and Hyesan, 2009-2019



Source: *Daily NK* market price index.

Rice prices have ranged between 4,000 and 6,000 North Korean won (Korean People's Won, KPW) since around 2015, and mostly remained at 3,000–7,000 or below since early 2012, when Kim Jong-un came to power (Figure 4). Harvests have tended to improve since 2010, according to estimates by the World Food Program surveying teams in the country.[42] Remarkably, prices have stabilized even further during the "maximum pressure" period.

Figure 4. Average Rice Prices for Pyongyang, Sinuiju, and Hyesan, Spring 2017-Winter 2019



Source: *Daily NK* market price index.

There are a number of possible factors that can explain this stability. For one, sanctions never targeted food imports, and are not directly aimed at production factors for food, such as fertilizer. Nonetheless, such inputs have become scarcer as a result of sanctions, as the World Food Program has reported.[43] Regardless of the stability that the data appear to show, both sanctions and weather conditions very likely did cause shortages in North Korean food production both in 2017 and 2018. Anecdotal information supplants and re-enforces this picture. In early 2019, for example, citizens were mobilized to gather manure to be used for fertilizer. This is not a unique event, but reports from inside the country suggest that the scale of mobilization has been larger than usual.[44] Spare parts for agricultural machinery, moreover, became more difficult to import under sanctions, as did fuel and oil to power those machines. This past year's harvest was reportedly heavily impacted by dry weather conditions, as a heat wave struck the Korean Peninsula between the spring and fall of 2018.[45]

Nonetheless, as the numbers show, no major disaster was ever at hand, at least as of the spring of 2019. The country's harvest, judging by the information currently available, was significantly worse in the marketing year of 2018-2019 than the previous year, and it may have decreased by almost a fifth overall. We do not know for sure, and high-quality data are scarce.[46] Nonetheless, a bad situation is not necessarily a disastrous one. A lower harvest does not necessarily translate into famine. For the millions of North Koreans already getting by on very little, however, even a relatively minor change in food availability could spell significant trouble. It is important not to be complacent about the potential for human suffering while trying to accurately assess the state of the North Korean food economy.[47]

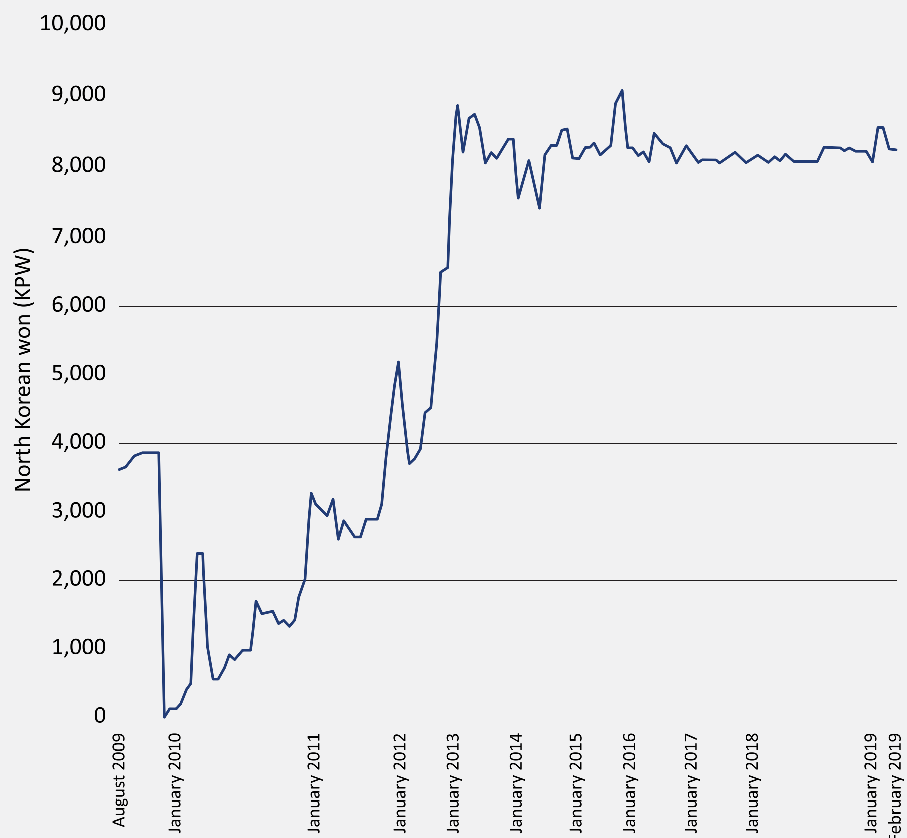
Ironically, comparative underdevelopment cushioned some potential blows from sanctions. North Korean agriculture, for example, is poorly mechanized, and shortfalls in fuel and spare parts may have had a relatively marginal impact. Moreover, the country has continued to import rice from China, which may have partially alleviated some of the shortfalls caused by the bad weather and constrained fertilizer imports.[48] The most important stabilizing factor, however, for both 2017 and 2018, has likely been the changes in agricultural management instituted under Kim Jong-un.[49] Though the range and scope of these changes remain unclear, the state now lets farmers keep around 30 percent of their harvests for themselves, while allowing them to organize in smaller, likely more efficient, work units. According to reports from inside North Korea, these management changes have been a crucial factor in raising the efficiency of farming.[50] These productivity improvements are likely a key reason for food shortages seemingly not becoming acute, despite poor weather conditions. It is also possible that rice prices have not adjusted to the new supply levels yet, or that the government is using storage to compensate for the shortfall to keep market prices stable. Imports from China and improved efficiency in domestic farming are the two chief reasons why market prices for staple food have remained relatively stable throughout the sanctions period.[51] Though fertilizer is likely more difficult to import because of the sanctions, had there been a major, disastrous shortage, it would have been visible through spikes in the market price data.

However, it is also possible that the food price stability is not indicative of stable supply. Over the past few months, *Daily NK* has reported several times about factory closures in Pyongyang and other cities, as well as coal mines operating on reduced capacity, as a result of difficulties stemming from sanctions.[52] The state and market economies may be fairly separated in many respects. However, workers in state firms are market consumers. If consumers have less money they can spend on food, it does not matter if supply contracts. Sellers still cannot raise their prices to levels at which a majority of consumers cannot afford to purchase their goods. Food prices in North Korea, in other words, may already be at the so-called *reservation price* for what consumers are prepared to pay. Thus, even with supply decreasing, prices can still remain stable even though the economy is experiencing severe difficulties.

Currency

Neither rice (including the central production factors for its farming), nor food in general, is targeted by the sanctions; however, currency is a different matter since the sanctions take explicit aim at the sources of income for the North Korean state. Given the steep decline in North Korean exports, the stability in North Korea's market exchange rate for U.S.-dollars and Chinese renminbi (RMB) is perplexing. Because it is earning less foreign currency as a result of its exports dropping, the KPW should have depreciated against both the dollar and the RMB. Though we do not know for sure to what extent the state and market economies are interrelated, aside from a few isolated hikes, the exchange rates for both currencies have remained stable throughout the period of "maximum pressure." As Figure 5 shows below, for the U.S. dollar, the past couple of years have even been an *unusually* stable period in comparative terms.

Figure 5. Average KPW-USD Market Exchange Rate in Pyongyang, Sinuiju, and Hyesan, Summer 2009-Winter 2019

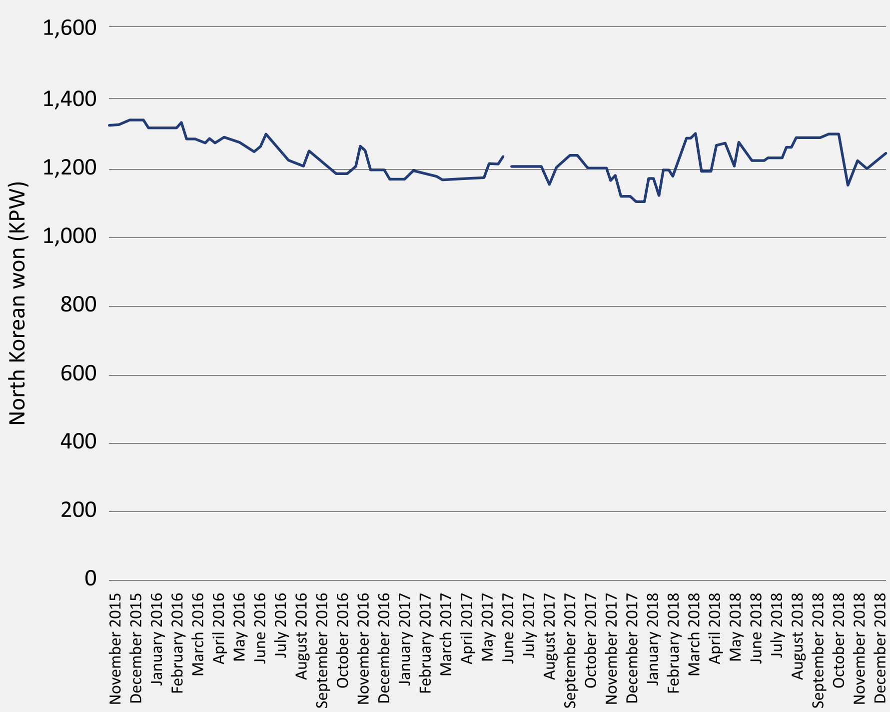


Source: *Daily NK* market price index.

Figure 6 below shows that while the KPW is more volatile against the RMB than the dollar, the period of "maximum pressure" does not stand out in a particular way. The RMB generally fluctuates more than the dollar, even though it is likely the currency to which the KPW is pegged.[53]

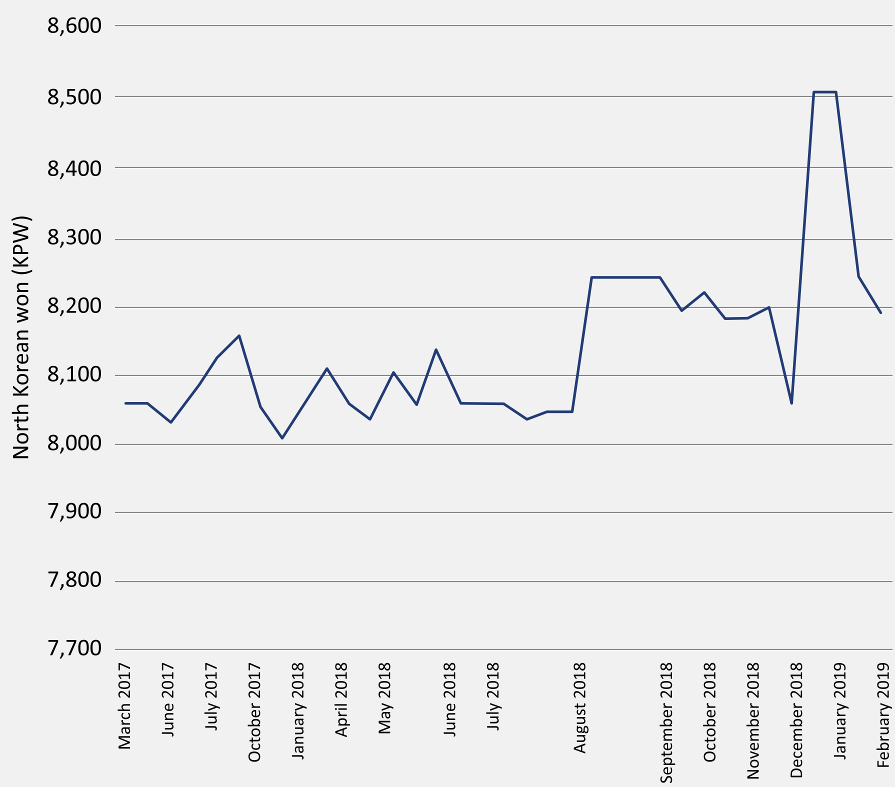
Looking at the "maximum pressure" period in isolation, the impression is one of overall stability for the exchange rate against both the dollar (Figure 7) and the RMB (Figure 8).

Figure 6. Average KPW-RMB Market Exchange Rate in Pyongyang, Sinuiju, and Hyesan, Fall 2015-Winter 2019



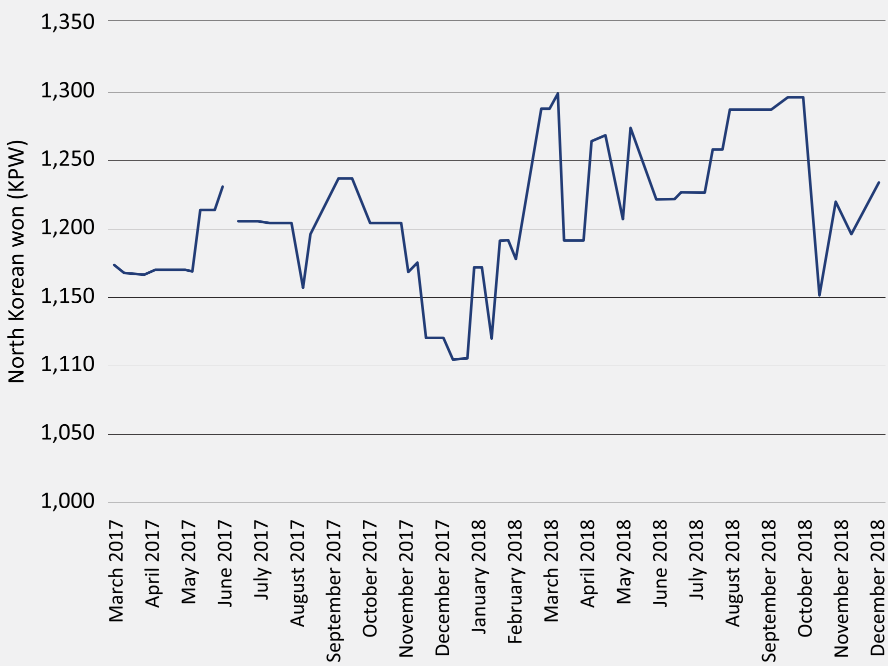
Source: *Daily NK* market price index.

Figure 7. Average KPW-USD Market Exchange Rate in Pyongyang, Sinuiju, and Hyesan, Spring 2017-Winter 2019



Source: *Daily NK* market price index.

Figure 8. Average KPW-RMB Market Exchange Rate in Pyongyang, Sinuiju, and Hyesan, Spring 2017-Winter 2019



Source: *Daily NK* market price index.

The RMB has fluctuated quite significantly throughout the period of "maximum pressure." It has not, however, gone outside of its ordinary span in any noteworthy way. None of this should be read as evidence that the currency situation has gone untouched by sanctions. Given the steep fall in trade with China, that cannot have been the case. The government may have taken measures to keep the exchange rate stable, such as contracting the supply of won, expanding the supply of foreign currency on the markets,[54] ordering state-owned enterprises that hold significant assets of foreign currency to keep these tight and not use foreign currency for domestic transactions, or a combination of such measures to stabilize the market. The most obvious possibility is that trade has not actually dropped in quantities as significant as customs data show. This may be true, but as the following section will show, smuggling and sanctions-evading trade could hardly make up for the great shortfalls in lost coal exports.

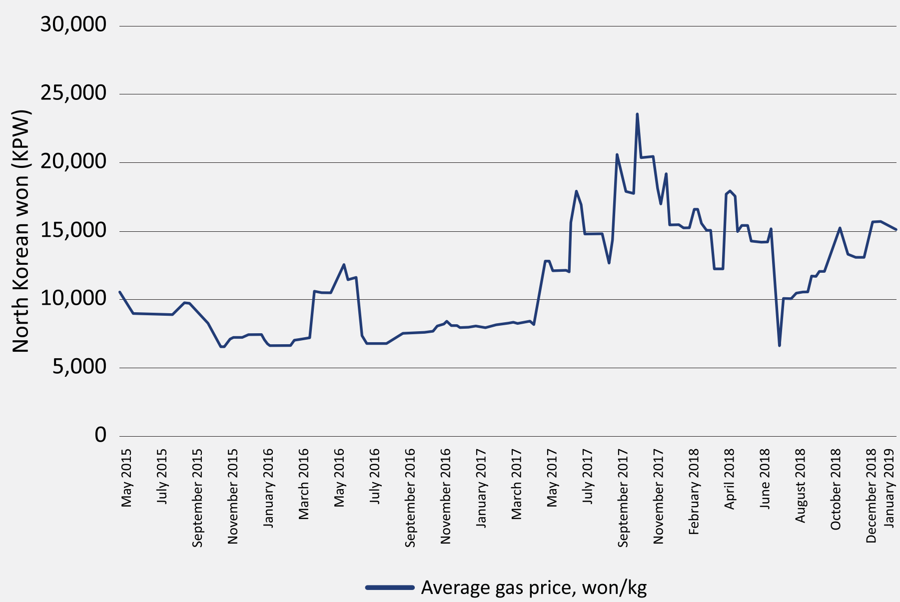
We can only speculate, but the data strongly suggest that whatever impact sanctions have had on the currency has not been strong enough to register in any visible way. In case the KPW had gone toward depreciating massively against the dollar or RMB, there are no measures within the reach of the government that would have been enough to stop it. Thus, the data on market exchange rates suggest a significant level of stability in the economy under sanctions. The regime's foreign currency reserves are likely shrinking fast, however. Should exports continue to be significantly lower than their imports, this may cause the state to soak up more foreign currency from the markets, causing a depreciation of the won against the dollar and RMB.

Gasoline[55]

Gasoline is the good that has seen the starkest impact from increased sanctions pressure. As with other goods, what truly matters is not sanctions themselves, but the extent to which China chooses to implement them. Fluctuations in the market price for gasoline follow along more neatly with geopolitical tensions than any other good for which we have market price data available. In the winter of 2019, prices appear to have settled into a new equilibrium adjusted to sanctions. This price level is higher than in normal times, to be sure, but also does not seem to reflect widespread shortages (Figure 9).

The steepest price increase on record came in the spring of 2017, around the same time that CNPC supposedly cut off commercial fuel sales to North Korea. Thereupon, prices climbed at several points of increased tension around North Korea's nuclear program, almost certainly from a combination of China drawing down on its supply, and domestic demand increasing through a combination of hoarding and soaking up fuel by the military and the state.[56]

Figure 9. Average Price for One Kilo of Gasoline in Pyongyang, Sinuiju, and Hyesan, Spring 2015-Winter 2019



Source: *Daily NK* market price index.

After several months of steep volatility, prices seem to have stabilized in a range between 12,000 and 15,000 won per kg, dropping as low as 8,560 per kg for one observation in the spring of 2019.[57] This is higher than the pre-sanctions fluctuations between 7,000 and 8,000 won/kg, but significantly lower than the high-points reached in the fall and winter of 2017, of around 20,000 won/kg, even hitting close to 24,000 won/kg at one point. While this new equilibrium under sanctions is likely strenuous for the sectors of the economy that rely heavily on fuel use, such as transportation and fisheries, it is likely not catastrophic. Had fuel costs increased to levels that severely constrained the functioning of the market system, for example, it would have been visible in market price data for rice and other goods. Ironically, North Korea's economic weakness is also its strength. Due to the relatively low rate of mechanization in agriculture, for example, higher fuel prices have a lower marginal impact on production costs than they would have in a more advanced economy. Transportation is already constrained by poor infrastructure, and long-distance travel is relatively uncommon compared to most other countries. Most people, particularly outside of Pyongyang, are not dependent on car or bus travel in their everyday lives. At the same time, the volatility of the fuel prices clearly shows that North Korea is vulnerable to sanctions pressure.

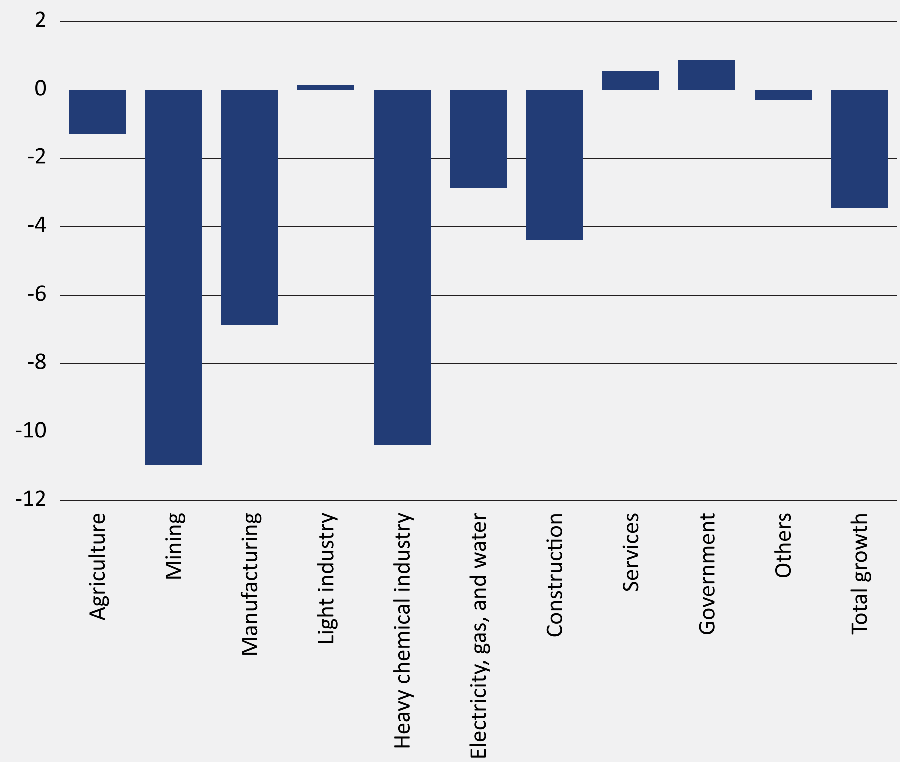
The North Korean Economy under "Maximum Pressure": Contextual Evidence

As much as the market price data suggest stability, they should not be interpreted to mean that North Korea has not suffered under "maximum pressure." Certain sectors, such as coal, steel, textiles, and fisheries, have suffered immensely from Chinese enforcement of the ban on these goods being imported by UN member states. This, in turn, translates into shortages and hardship for localities such as Musan in the northeast, one of North Korea's largest sites for iron ore production.[58] The coal industry, too, has seen income decrease drastically as a result of China's sanctions implementation. This led to lower coal prices domestically, with positive side-effects for electricity consumers since its supply has become more abundant as a result of sanctions.[59]

The pressure on the industries under sanction seems particularly grim. This only makes sense given the steep drop in trade with China (Figure 10). It should come as no surprise that South Korean estimates of North Korea's economic situation show stark contractions in several key industries. The latest estimates from Bank of Korea, South Korea's central bank, cover 2017. Since North Korea-China trade contracted further in 2018, the situation likely got more difficult in that year. Bank of Korea releases little information about its methodology for calculating these figures, and the data should be read with skepticism since there is little North Korean data for these projections. These figures are best read as indicative of trends, not precise measurements.

The general trend and approximate magnitude make sense. Take the figure for the steep drop in mining; in the context of reports from inside the country of mines lying idle in the north of the country, this makes sense. What, precisely, this means in practice is difficult to say, but to get a sense of the proportions involved, consider the fact that major industrial plants and mines can each have tens of thousands, and sometimes 100,000, people employed.[60] When exports drop so steeply, huge numbers become unemployed or see their incomes drastically reduced. Many likely leave these industries to make a living

Figure 10. Estimated Growth in North Korea by Industry, 2017



Source: Bank of Korea
Note: “Agriculture” includes Fisheries

in the market economy, but a significant share probably remain unemployed. In the long run, because the state industries hit particularly strongly by the sanctions tend to have low productivity, their contraction may lead to productivity gains for the economy as a whole. In the immediate- to medium-term, however, sanctions have likely caused significant increases in unemployment, particularly in the northeastern rustbelt region.

Smuggling and illicit trade can make up only for a relatively small proportion of the losses from sanctions. Both Japan and the U.S. have publicized intelligence documenting, for example, illicit transfers of oil and fuel from primarily Chinese ships to North Korean ones. Such “ship-to-ship transfers” (STS) go around UN sanctions by not being recorded in trade figures. Throughout virtually the entire period of “maximum pressure,” STSs have been reported relatively regularly. In December of 2017, for example, the U.S. urged the UNSC to blacklist ten ships that had been spotted conducting STSs transferring oil to North Korea.[61] Most recently, on January 18, 2019, Japan’s Ministry of Foreign Affairs published pictures of “a vessel of unknown nationality” and a North Korea-flagged tanker conducting a transfer of fuel.[62] In early February of 2019, a report by a UN expert panel overseeing the implementation of sanctions on North Korea said that STSs had increased greatly throughout all of 2018, and according to one unnamed member state, North Korea had surpassed the import limit of 500,000 barrels of refined petroleum.[63] According to one news report, the panel claimed that a total of 57,000 barrels of refined oil products had been transferred to North Korea. This may be a significant quantity, but it is still far below the cap of four million barrels per year. Smuggling, moreover, is expensive. Whatever quantities of oil and fuel North Korea can import through illicit transfers, it has to pay more than it ordinarily would, since the sellers are taking a greatly increased risk in violating UN sanctions. At the same time, whatever limited quantities of coal, minerals, and other sanctioned goods North Korea can sell through smuggling, it has to get paid less, because buyers need an incentive to continue purchasing its goods at this higher level of risk. Similarly, in 2018, intermittent reports suggested that both China and Russia continued to host North Korean labor despite this being banned by UNSC resolutions.[64]

While these events do constitute holes of sorts in the sanctions regime, their importance should not be overstated. Suppose China has exaggerated the drop of imports from North Korea between January and September of 2018, which it claimed was 90 percent. Even if the actual drop was only half that, it still would deal a massive blow to the North Korean economy. While loopholes may be a serious issue from a political point of view, the "maximum pressure" policy has still achieved its goal of inflicting significant harm on the North Korean economy even if that harm may not be enough to push North Korea to concessions on its nuclear program.

Finally, what about North Korea's foreign currency reserves? No one outside the regime knows how large these reserves are, and the regime itself might not even know the precise figure. Foreign currency is crucial for the regime's ability to supply the military and top-level administration with fuel and other necessary commodities, and the state may be partially using them to shore up exchange rate stability on the market. Moreover, at least part of the vast trade deficit with China is likely supported by foreign currency payments for imports. In early 2018, one South Korean estimate held that North Korea's reserves of dollars would "dry up" by October of that year.[65] There is no evidence to suggest that this happened, but by all metrics, Pyongyang must be losing significant amounts of foreign currency by the day. Should reserves become particularly tight, the regime may increasingly turn to the private markets and civilian savings of RMB and forcibly confiscate increasing amounts. This could spark a true economic crisis, should significant shares of the population lose their trust in the market system.

Conclusion

The Trump presidency has had a significant impact on the North Korean economy. For the first time in the history of sanctions against North Korea, China began to comply with UN sanctions and put serious economic pressure on North Korea. China's reaction likely resulted from concerns that the U.S. may actually take military action and destabilize the region, rather than a genuine concern for sanctions compliance. Though sanctions pressure has not thrown North Korea into a disaster, it has posed difficulty for the regime's main export industries. Sanctions have likely not had a distinct, causal impact on North Korea in the nuclear negotiations. After all, much of the North Koran system is designed to operate outside of the official framework of the global economy. It is clear, however, particularly given Kim Jong-un's plans for economic development, that North Korea places a high priority on having sanctions scaled back.

Trump has stated that North Korea could become an "economic powerhouse" and hinted at the possibility of U.S. investments. This makes sense given North Korea's abundance of cheap labor and natural resources. In practice, however, Trump's vision for North Korea may seem more of a threat than a promise to the regime. Kim Jong-un clearly favors economic development that can be kept at bay from the rest of society, such as special economic zones. Should North Korea become ripe for foreign investment after a long process of denuclearization and normalization of its relationship with the international community, Chinese and South Korean firms would likely dominate among potential investors. Chinese firms that already have ties to North Korea know the business environment and could utilize contacts already developed. South Korean firms would have an advantage in language and government support, should a progressive government be in power in Seoul. Firms from these countries would also fare much better in North Korea's totalitarian environment. There is currently nothing to suggest that any economic changes in North Korea would be followed by political reforms or liberalization.

At the present time of writing, a couple of months have passed since the anticlimactic summit in Hanoi between Kim and Trump. Surprisingly, North Korea appears to have demanded that all sanctions levied since 2016 be lifted.[66] Trump's claim that North Korea demanded that *all* sanctions be lifted at once may not be literally accurate. As this chapter shows, however, those are the only sanctions that truly hurt the North Korean economy in any significant way. The inconclusive outcome of the summit means that for now, these sanctions remain in place. The Trump administration has vowed to keep them in place for now, and National Security Adviser John Bolton has even signaled that the U.S. may step up sanctions if North Korea doesn't take steps toward denuclearization.[67] The question remains, however, how long the U.S. will be able to keep up the sanctions pressure up at its current level. As of June, sanctions pressure remained surprisingly intact, despite the lack of international consensus on policy on North Korea. The South Korean government is clearly frustrated by the lack of progress in talks between the U.S. and North Korea, and it seems as if Moon Jae-in expected an outcome from Hanoi that would allow his government to proceed with inter-Korean economic projects such as the tourism zone in North Korea's Mt Kumgang, and the Kaesong Industrial Complex near the 38th parallel dividing the two countries. Moon was scheduled to make a significant announcement the day after the Hanoi summit, likely announcing progress on one or both of these inter-Korean projects, but after the lack of progress in Hanoi, probably had to change his plans.[68] China, too, the most crucial factor when it comes to sanctions on North Korea, is likely becoming increasingly frustrated at the lack of clear progress in the talks, and the government is unlikely to be able or willing to keep the same level of sanctions implementation up for much longer in the absence of clear signs of progress. Should North Korea really be threatened by an economic crisis as a result of sanctions, China will likely both loosen up on implementation eventually, as it has in the past, while donating items such as food and fuel—and perhaps, covertly, foreign currency—to avoid social instability that could spill over into its own territory.

None of this, however, would be enough to keep Kim Jong-un's constituents happy in the long run. Kim may not face the threat of losing a popular election, like leaders of democratic countries would fear. Still, he has staked much of his credibility on economic progress, and particularly the politically loyal upper-middle classes of "Pyonghattan," the North Korean capital's *nouveau riche*, likely expect their economic opportunities to continue growing. He continues to promise economic improvement in public statements, and claimed in a speech to the Supreme People's Assembly on April 14, 2019, that North Korea remains virtually unphased by sanctions, determined to go ahead with their current policy trajectory come what may.[69] Though a significant proportion—likely a majority—of North Koreans favor the nuclear program, it is doubtful whether the general public agrees with Kim's assessment that the economic pain is a worthy price to pay. None of this is to say that social instability will arise anytime soon as a result of sanctions, but in the longer-term trajectory, Kim has strong reasons to worry. North Korea can certainly muddle through and weather the sanctions pressure for a long time, but the question is whether that is enough.

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