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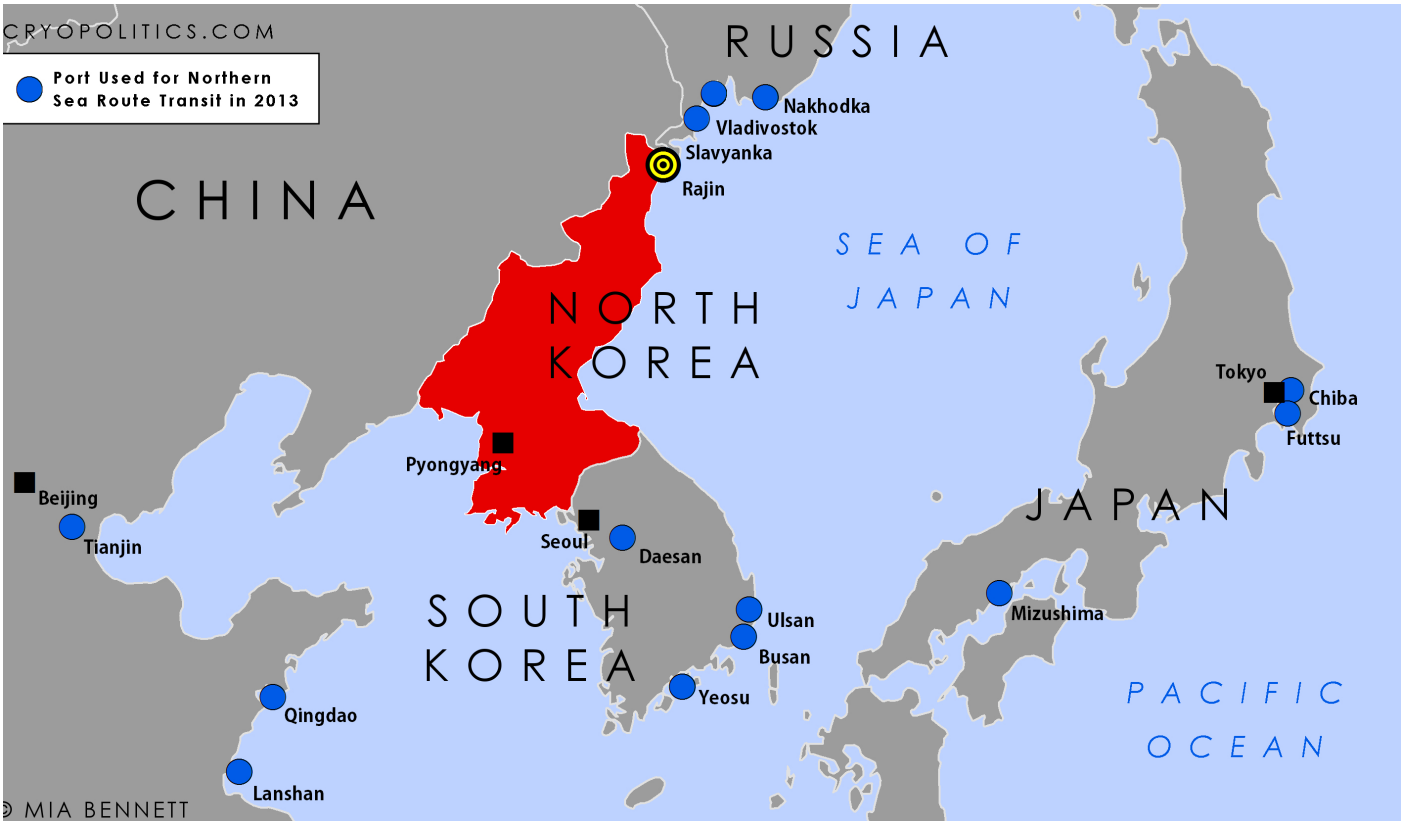
By Artyom Lukin and Liudmila Zakharova



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COVER: Map showing the proximity of the Russian Federation to the Democratic People's Republic of Korea. Map used with permission from Mia Bennett. Mia Bennett holds the copyright for the map.

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Abstract

Russia's relations with North Korea are often ignored in the West. The conventional view is that Russia's role with respect to the North is purely political and diplomatic, predicated on Russia's permanent membership in the UN Security Council. Often overlooked is the fact that Russia maintains a range of economic links with the DPRK. Taken together, they constitute quite a substantial leverage that Russia can exercise over North Korea, when and if it chooses to do so. The paper aims to investigate the economic dimension of the Russia-North Korea relationship. The article also examines North Korea's domestic economic situation, mostly drawing upon Russian expert assessments.

Key Words

Russia, North Korea, DPRK, Russia-North Korea economic relations, China-North Korea economic relations, North Korean labor, economic sanctions

Russia's relations with North Korea are often ignored in the West, being completely overshadowed by China's. The conventional view is that Russia's role with respect to the North is purely political and diplomatic, predicated on Russia's permanent membership in the UN Security Council and participation in the now defunct Six-Party Talks. Often overlooked is the fact that Russia maintains a range of economic links with the Democratic People's Republic of Korea (DPRK). Taken together, they constitute quite a substantial leverage that Russia can exercise over North Korea, when and if it chooses to do so. The paper aims to investigate the economic dimension of the Russia-North Korea relationship.

The bulk of the paper looks at the most significant sectors of economic interaction between Russia and the DPRK, arguing that official statistical data on bilateral trade do not reflect the full picture. Special attention is given to energy flows from Russia to North Korea, detailing Russia's oil supplies to Pyongyang. The issue of North Korean workers toiling in Russia is also addressed. The report examines Russia's transportation and telecommunication links with North Korea, especially the Khasan-Rajin rail and port project operated by the state-owned Russian Railways. Finally, the article assesses North Korea's domestic economic situation and its potential socio-political impact, mostly drawing upon Russian expert assessments.

Major Sectors of Russia-North Korea Economic Interaction

Economic exchanges between Russia and the Democratic People's Republic of Korea are a far cry from the heyday of the 1970s and 1980s when the Soviet Union accounted for up to 50% of North Korea's foreign trade. According to trade statistics, Russia is now responsible for a mere 1.2% of the North's external trade, which still makes it the DPRK's second largest trading partner (albeit a very distant second, after China, which holds the unassailable top position with 92.5%).[1] Although formal customs data significantly understate the actual volume of Russian-North Korean trade, economic exchanges with North Korea barely register in Russia's economy (with the partial exception of the North Korean labor whose presence is quite noticeable in the Russian Far East). The limited nature of Russia's economic engagement with the North is due to several factors. First, the DPRK is short on hard currency and thus is not a particularly attractive export market. Unlike the former Soviet Union, Russia is not willing to sell North Korea goods at friendly prices or provide preferential long-term loans. Economic dealings with the North are pragmatic and market-based. This differentiates North Korea from Russia's post-Soviet allies, such as Belarus, to whom Russia does extend unilateral economic benefits.

Second, heavy international sanctions deter Russian companies, particularly major ones, from doing business with the DPRK. Severance of banking channels with the North, which makes settlement of payments and money transfers virtually impossible, is the biggest obstacle. Russian Ambassador to Pyongyang Alexander Matsegora admits: "Under sanctions normal trade is impossible, mainly because legal payment settlement flows are blocked. This is exactly why

[1] Kent Boydston, "North Korea's Trade and the KOTRA Report," August 1, 2017, https://piie.com/blogs/north-korea-witness-transformation/north-koreas-trade-and-kotra-report?platform=hootsuite&__s=%5Bsubscriber.token%5D&__s=uodw3dvouwdwzbqqastf.

Russian-North Korean trade is almost at the zero level now. . . . As long as the DPRK is under such severe sanctions, any substantial development of trade and economic relations . . . has to be postponed."[2]

Finally, North Koreans' reliability as commercial partners still leaves much to be desired. As Georgy Toloraya and Alexander Vorontsov point out:

> Russian businessmen are experiencing the same old hurdles, familiar for decades of cooperation under the Soviet Union: North Koreans seem to pursue short-term individual gains; unilaterally modify agreements; one-sidedly introduce new rules (sometimes retroactively) unfavorable to investors; break obligations; and deliver goods late. Decision-making mechanisms in North Korea are still opaque, decisions are often based on the spontaneous impulses of higher authorities that cannot be contacted, and there is general lack of coordination between different branches of the state system and economic organizations. Problems with communication persist.[3]

That said, there might be some changes occurring in North Korea's approach to business with Russia. According to one practitioner of Russia-North Korea relations, since around March 2016, that is, when the first package of tough UN sanctions was imposed, the North Koreans have acted more seriously and business-like.[4] Sanctions are apparently making the North adopt more flexible and effective business practices in its dealings with foreign partners, including Russia.

General Trade. According to Federal Customs Service of Russia, in 2016, bilateral turnover stood at $76.8 million. North Korean exports ($8.8 million) included frozen fish (24.6%), parts and accessories for tractors (22.3%), articles of apparel and clothing accessories (16%), and wind musical instruments (12.4%). Russian exports ($68 million) consisted mainly of bituminous coal (75%), lignite (5%), petroleum oils and gas (4%), as well as wheat (5%), and frozen fish and crustaceans (3%).[5] Bituminous coal is an important raw material suited for making metallurgical coke, which is used in smelting iron ore. This type of coal is not found in North Korea, so the DPRK has to procure it from abroad. According to the International Trade Centre data, China had been the main supplier of bituminous coal to the DPRK until 2014, but since 2015, North Korea has received most of its coal imports from Russia (85% in 2015 and 75% in 2016). North Korea runs a chronic deficit in bilateral trade with Russia that is compensated by other economic exchanges, particularly by the exportation to Russia of North Korean labor.

[2] Interview of Russian Ambassador to the DPRK Alexander Matsegora, April 14, 2017, http://www.mid.ru/web/guest/nota-bene/-/asset_publisher/dx7DsH1WAM6w/content/id/2729503 (in Russian).

[3] Georgy Toloraya and Alexander Vorontsov, "Russia's 'Turn to the East' Policy: Role of Northeast Asia and the Korean Peninsula," *International Journal of Korean Unification Studies*, vol. 24, no. 3, 2015, p.59.

[4] Remarks of a Russian official at the roundtable on Russia-North Korea relations held at Far Eastern Federal University, Vladivostok, February 2017.

[5] Calculated by Liudmila Zakharova based on the data of International Trade Centre, http://www.intracen.org.

There is some evidence of much higher volume of trade flows between Russia and North Korea that go undetected by official customs reports. This indirect trade is channeled through third-party countries, mainly China. According to Russia's Ministry for the Far East Development, up to one third of China's exports to North Korea (roughly $900 million in 2015) was actually made up of Russian-originated goods.[6] This indirect trade is mostly constituted by petroleum products.

Oil. China has long been regarded as the exclusive supplier of oil and petroleum products to North Korea. This conventional view needs to be reconsidered as more and more evidence emerges that Russia is the other major provider of crucial fuel resources to the DPRK.

The Russian-North Korean border with the railway "Friendship Bridge" in the background. *Photo by Leonid Kozlov.*

It is estimated that China exports about 500,000 metric tons of crude oil and 270,000 tons of oil products to North Korea each year.[7] Russian-originated oil supplies to the DPRK, mostly gasoline and diesel fuel, are estimated to be within the range of 200,000-300,000 tons per year, which amounts to roughly $200-300 million in the current prices. These assessments are based on Russian and international sources. In particular, the senior-level North Korean defector Ri Jong-ho claims that North Korea secures up to 300,000 tons of oil products from Russia, making Russia even more important than China when it comes to the DPRK's fuel imports apart from crude.[8] According to Ri, shipments of Russian fuel are largely mediated through Singaporean brokers, traditionally Asia's principal oil trade hub. Singapore may have played the role of the main intermediary for Russian fuel supplies to North Korea in the years prior to Ri's defection that occurred in 2014. In recent years, however, most sources say that it is China that has been acting as the

[6] "Alexander Galushka: Russia and the DPRK aim for a mutually beneficial cooperation without intermediaries," Ministry for the Far East Development, Oct. 10, 2015, http://minvostokrazvitia.ru/press-center/news_minvostok/?ELEMENT_ID=3713 (in Russian).

[7] "As U.S. and China find common ground on North Korea, is Russia the wild card?" *Reuters*, May 3, 2017, http://www.reuters.com/article/us-northkorea-usa-russia-idUSKBN17Z0B7.

[8] "N. Korea procuring Russian fuel via Singapore dealers: defector," *Kyodo News*, June 28, 2017, https://english.kyodonews.net/news/2017/06/6f47a07fd486-update1-n-korea-procuring-russian-fuel-via-singapore-dealers-defector.html.

key middleman in petroleum product trade between Russia and North Korea.[9] Gasoline and diesel are declared at the Russian customs as destined for China, Singapore, or elsewhere, but they end up in the DPRK. Selling oil via China makes sense mainly because direct financial settlements between Russian exporters and North Korean importers have become increasingly difficult due to international banking restrictions on the DPRK, while Chinese dealers have developed sophisticated conduits and mechanisms to conduct all kinds of business transactions with North Korea, including yuan-denominated deals and barter trade.

Procuring oil products from Russia, either directly or indirectly through China, makes perfect economic sense for North Korea, considering Russia's proximity to the DPRK and the Russian oil industry's high competitiveness, especially in the wake of the ruble's drastic depreciation in 2014-15. Several oil refineries are situated in the Russian Far East, while the Eastern Siberia-Pacific Ocean (ESPO) oil pipeline's main terminal sits near Nakhodka. Fuel shipments from Russia are carried by North Korea's coastal tankers that load at Russian Far Eastern ports, such as Vladivostok, Nakhodka, and Slavyanka. While North Korean tankers are relatively small, the distances travelled between Russian terminals and the DPRK's east coast mean roundtrips can be completed in as little as three days.[10] All Russian oil supplies to North Korea are carried out by private companies and executed on strictly commercial terms, based on world market prices. They possibly include some premium markup for risks involved in dealing with a heavily sanctioned country. This situation is different from China whose crude is delivered to North Korea via a state-owned pipeline, apparently at subsidized prices and on long-term credit, thus essentially constituting energy aid to the DPRK.[11]

Risks relating to oil trade with North Korea were made abundantly clear when, in June 2017, *the U.S. Treasury* Department's Office of Foreign Assets Control (OFAC) sanctioned the Vladivostok-based oil trader Primornefteprodukt and its parent company Independent Petroleum Company (IPC, Nezavisimaya Neftyanaya Kompaniya) for their dealings with North Korea. Their blacklisting was made pursuant to Executive Order 13722, which gives the Treasury Department the authority to sanction entities operating in the North Korean energy sector. The ever-present threat of U.S. sanctions is likely to deter large Russian companies, who have significant international interests, from dealing with North Korea. The OFAC action against IPC and Primornefteproduct did seem to make a chilling effect on the Russia-North Korea oil business.[12] However, Russian oil trade with North Korea is not going to stop, as it will likely shift to obscure small companies, relying on Chinese intermediaries, with minimal exposure to possible U.S. penalties.

UN Security Council Resolution 2375, adopted on Sept. 11, 2017, in response to Pyongyang's sixth nuclear test,

[9] That said, it seems that some oil transactions between Russia and the North continue to be mediated by Singapore-based firms (Leo Byrne, "Justice Department filing reveals North Korea's money laundering, oil trade," *NKNews*, August 24, 2017, https://www.nknews.org/pro/justice-department-filing-reveals-north-koreas-money-laundering-oil-trade/).

[10] Leo Byrne and James Byrne, "Mapped: North Korea's oil routes," *NKNews*, August 28, 2014, https://www.nknews.org/2014/08/mapped-north-koreas-oil-routes/.

[11] However, China's petroleum products, such as gasoline and diesel, are sold to the DPRK at market prices.

[12] Leo Byrne, "North Korean tankers stay away from Russia, two months after OFAC sanctions," *NKNews*, August 9, 2017, https://www.nknews.org/pro/north-korean-tankers-stay-away-from-russia-two-months-after-ofac-sanctions/.

capped exports of refined petroleum products to the DPRK at two million barrels per annum. That still leaves legal room for Russian fuel supplies, but the bigger question is whether North Korea will be able to pay for them, considering that the series of UN-mandated bans on its main export items have shaved off up to 90% of its currency inflows from foreign trade.

Labor. Labor exports from North Korea to Russia are perhaps currently the most substantial part of their economic bilateral relationship. There has long been a natural complementarity between Russia's constant shortage of manpower and North Korea's surplus labor. North Korean guest workers first came to the Russian (then-Soviet) Far East in the late 1940s under inter-governmental agreements. From the late 1960s to the early 1990s, at any given moment, there were between 15,000-20,000 North Korean laborers working in the USSR.[13] According to some estimates, Russia is the world's biggest recipient of North Korean contract labor, that is, those who arrive on work visas.[14] China may host a higher number of North Korean labor migrants, but many of them enter the country and stay there illegally.

North Koreans working on a construction site in Vladivostok. *Photo by Leonid Kozlov.*

As of 2017, there are over 32,000 North Korean workers in Russia.[15] Around 44% of the North's laborers (14,000) are in the Russian Far East, while the rest go to Russia's other regions, mostly big cities, such as Moscow, Saint Petersburg, Irkutsk, Krasnoyarsk, Omsk, Yekaterinburg, Nizhny Novgorod, and some others. At least 70% of the North Korean workers in Russia are employed in construction and related services, such as home renovation, while the rest find jobs in fishing, agriculture, logging, and restaurant services. This structure of employment significantly differs from the Soviet times when the majority of North Koreans were hired to work in the timber industry and lived on isolated compounds in remote areas. The stereotype of the North Koreans toiling in Gulag-like labor camps in Siberian wilderness persists in the West and is even reproduced by official reports.[16] In

[13] Andrei Lankov, "A brief history of North Korean laborers in Russia," *NKNews*, June 30, 2017, https://www.nknews.org/2017/06/a-brief-history-of-north-korean-laborers-in-russia/.

[14] Marcus Noland, "North Korean Exports of Labor," Dec. 15, 2014, http://blogs.piie.com/nk/?p=13692.

[15] Interview of Russian Ambassador to the DPRK Alexander Matsegora, April 14, 2017, http://www.mid.ru/web/guest/nota-bene/-/asset_publisher/dx7DsH1WAM6w/content/id/2729503 (in Russian).

[16] See, for example, the US Department of State's Trafficking in Persons Report 2017, June 2017, https://www.state.gov/j/tip/rls/tiprpt/2017/, pp. 336-338.

reality, North Korean lumberjacks in Russia, numbering just over 1,000, can now only be found in Amursky Territory (*Amurskaya Oblast'*). The virtual disappearance of North Korean loggers from Russia is due to the general decline of the Russian Far East's timber industry which was hit hard by high export duties introduced by the Russian government in the mid-2000s in order to discourage the exports of unprocessed wood.[17] Furthermore, in the 2000s the manual labor of loggers began to be increasingly replaced by wood harvesting machines.

There are surprisingly few North Koreans working in agriculture even though the rural sector in Russia has been experiencing acute labor shortages. The main reason seems to be that farmers and agribusiness enterprises in the Russian Far East prefer to deal with the Chinese who, unlike the North Koreans, provide not only labor, but also machinery, fertilizers, etc. and often guarantee certain levels of returns from agricultural land.[18] This shows limitations on the use of North Korean menial labor in Russia.

There are noticeable differences in patterns of North Korean labor in Russia and China. In Russia, almost all North Korean guest workers are males hired to perform physically demanding jobs, while in China, the majority of North Korean workers are females employed in the textile and seafood industries as well as the food service and hospitality sectors.[19] Moreover, Chinese firms sometimes hire North Koreans with high skills such as software engineers,[20] which Russia doesn't do.

It is well-known that North Korean workers who are permitted to go abroad must "share" a substantial part of their earnings with the DPRK authorities and their representatives such as consular officers, managers, and plain-clothed security agents. Russia is no exception. The amounts of such loyalty payments may range within $300-900 a month, mainly depending on the locality, season, and worker qualifications. Pyongyang's annual revenue from the North Korean guest workers in Russia can reach $200 million per year.[21] That said, a sizable portion of the money never reaches North Korea's state coffers, being pocketed by officials and security agents stationed in Russia who are supposed to oversee and manage the guest workers. According to some sources, the level of corruption among the DPRK's officials in Russia is quite high.

North Korean workers are left with at least $300 per month as their personal disposable income.[22] This amount is far more than the $50-70 a blue collar worker could earn in North Korea. Moreover, it is considerably higher than

[17] Artyom Lukin's email communication with Denis Park, a Khabarovsk-based North Korea expert, July 2017.

[18] Artyom Lukin's email communication with Denis Park, a Khabarovsk-based North Korea expert, July 2017.

[19] Adam Cathcart, "Chinese discourses on the new North Korea sanctions," *Sino-NK*, Sept. 12, 2017, http://sinonk.com/2017/09/12/chinese-discourse-on-the-new-north-korea-sanctions/.

[20] Artyom Lukin's conversation with North Korea researchers from northeast China. Vladivostok, March 2017.

[21] This is comparable to the amount of cash Pyongyang gets from the North Koreans toiling in China, which is estimated to be between $100 and $200 million (Sylvia Yu, "Gaps in records cloak China's North Korean 'slave labourers' in mystery," *The South China Morning Post*, August 10, 2017, http://www.scmp.com/news/china/policies-politics/article/2105851/gaps-records-cloak-chinas-north-korean-slave-labourers?utm_source=t.co&utm_medium=referral).

[22] These assessments are based on multiple interviews and conversations, including those with employers of North Korean labor and North Korean workers themselves.

an average North Korean laborer would make in China (according to some reports, $120-150 a month)[23] and in the Middle East ($200).[24]

Bribes amounting to $500-700 have to be paid for the privilege of working in Russia (for comparison, bribes for being sent on a work assignment to China average $200).[25] After completing a tour in Russia, which usually lasts two or three years, a guest worker can return home with $4,000-6,000, which is a very hefty sum by North Korean standards. In many cases, the money is used to launch a family-owned business, such as a retail stall, eatery, or sewing shop thus contributing to the ongoing *de facto* marketization of the DPRK's economy. Workers also invest in their children's education, and they buy homes as well.[26]

North Koreans working on a construction site in Vladivostok. *Photo by Leonid Kozlov.*

North Korean workers who spend a few years in Russia cannot but undergo some cognitive changes, having experienced the life in a "normal" country where they can see substantially higher levels of prosperity and personal freedoms. A series of interviews conducted with North Korean guest workers in Vladivostok by Far Eastern Federal University researchers showed that the DPRK labor migrants adapt to life in Russia relatively easily and quickly. According to the interviews, the North Koreans, while in Russia, actively use mobile networks and the internet.[27] According to some Russian sources who have regular direct contact with the North Korean workers, in private conversations, they often criticize their higher-ups, even though such criticisms almost never extend to the DPRK's supreme leadership. There is little doubt that the sojourn in Russia does contribute to some emancipation in the North Koreans' thinking. Defections of the North Korean laborers in Russia are extremely rare. This is not surprising: North Koreans go to Russia not to emigrate, but to make money and bring it home to their families.[28]

Pyongyang is definitely interested in expanding the workforce exports which provide it with a stable flow of hard

[23] Yu, "Gaps in records cloak China's North Korean 'slave labourers' in mystery."

[24] "Kuwait tells AP: North Korean workers welcome amid crisis," *AP News*, August 10, 2017, https://apnews.com/d5c20e4ef36b4658a2ac5385a2e6f344.

[25] Andrei Lankov, "Slavery to dream about," *Carnegie Moscow Center*, June 30, 2017, http://carnegie.ru/commentary/71394 (in Russian).

[26] Lankov. "Slavery to dream about."

[27] The interviews were conducted in 2016 by Far Eastern Federal University researchers led by Associate Professor Kirill Kolesnichenko.

[28] Lankov. "Slavery to dream about."

currency revenue. According to Russian sources, in bilateral discussions, North Korean officials keep bringing up the issue of sending more workers to Russia. The importance of Russia in this respect has only risen as other traditional importers of the North Korean workforce, such as Middle Eastern and Southeast Asian countries, are turning away from Pyongyang under American pressure and in the wake of Kim Jong-nam's assassination at the Kuala Lumpur Airport. There are also signs that China may be restricting the use of North Korean workers as relations between Beijing and Pyongyang are at a historical low.[29]

In recent years, the number of North Korean guest workers in Russia has stood within the range of 30,000-40,000 individuals. Russia remains interested to continue to import hard-working and disciplined North Korean labor. In the eyes of many Russians, North Koreans have a major advantage over guest workers from Central Asia, who currently constitute the main source of labor migration to Russia, since the DPRK citizens are non-Muslims and hence are perceived not to pose a terrorist threat.[30] Unlike Central Asians, the North Korean migrants are considered law-abiding and do not give much trouble to law-enforcement authorities. Back in the 1990s, there were several cases of North Koreans engaged in currency counterfeiting and drug trafficking, but this problem no longer exists.[31] In March 2017, the deputy director of the Migration Department of Russia's Ministry of Internal Affairs visited Pyongyang to discuss further cooperation regarding North Korean labor exports to Russia.[32]

The United Nations Security Council Resolution 2375, adopted on Sept. 11, 2017 in response to North Korea's sixth nuclear test, banned Member States from providing or renewing work authorizations for DPRK nationals in their jurisdictions, even though it did not demand immediate expulsion of North Korean guest workers whose contracts had been signed prior to the resolution adoption. However, upon expiration of their current contracts and work authorizations, all North Korean workers will have to leave Russia without being replaced by any new DPRK nationals. It remains to be seen how Russia will implement the ban on North Korean labor.[33] The UNSCR's respective clause is very laconic and somewhat short on specifics, thus leaving room for legal interpretations.

Transportation Links. With the exception of China, Russia is the only country that maintains overland transportation communications with the DPRK. Russia and North Korea are connected by a railway bridge across Tumen (*Tumannaya*) River through which cargo and passenger trains travel. In some cases, the bridge can also be used for the passage of cars and trucks. In addition to the existing railway link, in 2015, the two sides decided to build a dedicated automobile

[29] "Chinese factories suspending North Korean labor imports," Daily NK, August 18, 2017, http://www.dailynk.com/english/read.php?num=14679&cataId=nk01500.

[30] "The Far East will be left without builders: how the sanctions against the DPRK will impact the region," *PrimaMedia*, August 10, 2017, http://primamedia.ru/news/612921/ (in Russian).

[31] Artyom Lukin's conversations with law enforcement officials in Vladivostok, Feb. 2016.

[32] News release by the Russian Embassy in the DPRK, March 18, 2017, http://www.rusembdprk.ru/ru/posolstvo/novosti-posolstva/357-o-sedmom-zasedanii-rossijsko-korejskoj-rabochej-gruppy-po-resheniyu-voprosov-svyazannykh-s-realizatsiej-mezhpravsoglasheniya-o-vremennoj-trudovoj-deyatelnosti (in Russian).

[33] "North Korean nationals work in Russia legally -- labor minister Maksim Topilin," Echo Moskvy, Sept. 26, 2017, https://echo.msk.ru/news/2062534-echo.html.

link which was planned as a floating (pontoon) bridge across the Tumen.[34] However, this plan has been indefinitely postponed due to the lack of funding and rising strategic uncertainties.

Russian Railways locomotive pulling a passenger rail car headed for North Korea. *Photo by Leonid Kozlov.*

In 2006, when inter-Korean relations were in a détente phase, Russia, South Korea and North Korea signed an agreement to connect the Trans-Siberian railway with a future Trans-Korean railway. As the first stage, it was decided to modernize the infrastructure between the Russian border railway station of Khasan and Rajin (Najin) port in North Korea. Russian Railways, a state-owned company, invested about $300 million into the upgrade of the 54-kilometer railroad stretch between Khasan and Rajin as well as the modernization of the cargo terminal at the third pier of the Rajin port.[35] In essence, a new railroad was constructed, boasting double-gauge tracks so as to make it compatible with both Russian and Korean rail cars.

The initial aim was to create a freight hub in Rajin, which would move containers from Asia to Europe and vice versa through the Trans-Siberian railway. It was envisioned that before the Trans-Korean railway becomes operational containers would come by sea from South Korea's Busan to North Korea's Rajin and then be loaded onto trains for a trans-Eurasian journey by the Trans-Siberian. However, by the time the construction work had been completed in 2014, North-South relations were at a low point, and Seoul had lost enthusiasm for the project. RasonKonTrans, a joint stock company set up by Russian Railways (70% of the shares) and the port of Rajin (30%) to operate the project, was left without South Korean customers. Instead of handling container traffic between South Korea and Europe as originally planned, RasonKonTrans had to switch to trans-shipments of Russian coal bound for China. Currently, coal makes up the bulk of the traffic passing through the Khasan-Rajin rail link, being loaded onto China-bound ships at the RasonKonTrans-owned terminal in the port of Rajin.

So far, the Rajin project is producing a loss for Russia. The operating breakeven point will be achieved if the annual freight volume handled by the joint venture exceeds 5 million tons. In 2017, the cargo volume is expected to reach 2 million tons.[36] Apart from the Kaesong Industrial Complex, which was shut down in February 2016 by Seoul's decision to withdraw, the Khasan-Rajin project may well be the single biggest foreign direct investment in North Korea. For

[34] "A floating automobile bridge will be built between Russia and the DPRK," *Gudok*, Oct. 20, 2015, http://www.gudok.ru/infrastructure/?ID=1311879 (in Russian).

[35] The DPRK authorities leased the pier to Russia for 49 years.

[36] Takayuki Tanaka, "Russian-North Korean company draws up war contingency plan," Nikkei, August 18, 2017, https://asia.nikkei.com/Politics-Economy/International-Relations/Russian-North-Korean-company-draws-up-war-contingency-plan.

Russia, strategic considerations involved in this undertaking may be even more important than purely commercial interests. The project gives Russia a direct presence in a North Korean port strategically located close to the Russian and Chinese borders. It is noteworthy that from the very beginning the Khasan-Rajin venture was vigorously supported by then-CEO of Russian Railways Vladimir Yakunin, reputedly a member of Vladimir Putin's inner circle. Even after Yakunin's departure from Russian Railways in 2015, Moscow has continued to back the project. Russia secured exemption of RasonKonTrans' operations in Rajin from the provisions of the UNSC Resolutions 2270 (March 2016), 2321 (November 2016), 2371 (August 2017), and 2375 (September 2017) that imposed a general ban on North Korea's coal exports as well as joint ventures with the DPRK.

Air Koryo aircraft at the Vladivostok airport.
Photo by Leonid Kozlov.

In May 2017, a sea ferry line linking Vladivostok and Rajin was launched, using the DPRK-flagged and -crewed *Mangyongbong* ferry boat. It seems to be the only regular ferry line North Korea currently maintains with a foreign country. The Russian operator of the ferry line is a small private logistics firm InvestStroyTrest which is based in Vladivostok and has representation in Rajin.[37]

In addition to the rail and sea connections, Russia is the only country, besides China, that maintains permanent scheduled air service to the North. Currently, there are two flights per week between Vladivostok and Pyongyang operated by North Korea's *Air Koryo*. All the other international airports with scheduled year-round service to North Korea are China's Beijing, Shenyang, and Shanghai. Regular overland and air links make Russia an indispensable gateway for North Korea and the only available alternative to China. Senior North Korean officials travelling abroad routinely take Aeroflot flights via Vladivostok and Moscow. For example, in August 2017, the DPRK's ceremonial head of state, President of the Presidium of the Supreme People's Assembly of North Korea Kim Yong-nam traveled to Iran via Russia rather than China, even though the China route was shorter.[38] Incidentally, North Korean national flag carrier *Air Koryo*'s fleet entirely consists of Russian and Soviet-made aircraft: Tupolevs, Ilyushins, and Antonovs. This means that North Korea is dependent upon Russia for spare parts and some maintenance services. North Korean civil aviation pilots get their training at the Ulyanovsk Institute of Civil Aviation.

Russia is the only country other than China on which North Korea relies for access to the global internet. For a number of years, the Russian company SatGate has provided Pyongyang with a backup connection to the world's

[37] See InvestStroyTrest's website at http://rajin-investstroytrest.ru/.

[38] Elizabeth Shim, "North Korea's Kim Yong Nam leaves for 10-day Iran trip," *UPI*, August 1, 2017, https://www.upi.com/Top_News/World-News/2017/08/01/North-Koreas-Kim-Yong-Nam-leaves-for-10-day-Iran-trip/6961501575985/?spt=su&or=btn_tw.

cyberspace via satellite links.[39] However, most of North Korea's internet traffic still is routed through China. The Chinese monopoly on North Korea's external digital traffic was broken in early October 2017, when a major Russian telecom company, TransTeleCom, began providing an internet connection to the DPRK via its fiber optic lines that run alongside the Khasan-Rajin railway.[40] TransTeleCom is a subsidiary of state-owned Russian Railways. The decision to allow North Korea internet access via Russian networks could not have possibly been made without approval from the Kremlin.

Finance. Until recently, Russia was one of the few countries whose financial institutions carried out regular transactions with North Korea. Tellingly, in 2007, the Russian Far East's Khabarovsk-based Dalcombank became the only bank in the world that agreed to perform the delicate task of mediating the transfer to North Korea of $25 million of the Kim regime's assets that had been previously frozen in Macao's *Banco Delta Asia* by the U.S. Treasury action.[41]

UNSC Resolution 2270 (March 2016) effectively suspended any bank cooperation between Russia and North Korea. The almost complete absence, at present, of legal banking channels with North Korea begs the question of how financial operations are at all possible between Russia and the DPRK. In particular, how does the North Korean government repatriate the revenue collected from its laborers who work in Russia? The primary option seems to be cash. North Koreans normally convert the rubles they earned in Russia into U.S. dollars and then bring them to the DPRK as cash . The amount of cash operated by North Koreans in Russia can be quite impressive. For example, in 2015, a Vladivostok-based commerce official from the North reportedly absconded to South Korea with $2 million.

Under Russian customs regulations, individuals leaving the country can carry with them cash not exceeding the equivalent value of $10,000. One can safely assume that many North Koreans departing Russia carry cash close to the $10,000 limit and sometimes even in excess of it. Customs officials at the Vladivostok airport routinely report incidents of North Koreans boarding flights for Pyongyang caught with sums of cash well above the permitted amount.[42] One can also speculate that diplomatic pouches might be used to transport cash from Russia to North Korea—although there have been no publicly reported incidents.

Another option to move money between Russia and the DPRK would be through Chinese banks as many Russian banks, especially in the Russian Far East, maintain dollar and yuan correspondent accounts with China. In this case, North Koreans convert their rubles into dollars or yuan and wire them to a Chinese bank. However, since 2016, Chinese financial institutions have become increasingly reluctant to handle North Korean money transfers, which means that the DPRK has to rely even more on cash mules.

[39] "North Korea's Ruling Elite Are Not Isolated," Recorded Future, July 25, 2017, https://www.recordedfuture.com/north-korea-internet-activity/. See also, Your Friendly North Korean Network observer, 2014, https://nknetobserver.github.io/.

[40] Martin Williams, "Russia Provides New Internet Connection to North Korea," *38North*, Oct.1, 2017, http://www.38north.org/2017/10/mwilliams100117/?__s=uodw3dvouwdwzbqqastf.

[41] "Dalcombank transfers Macao funds to N. Korea," *RIA Novosti*, June 25, 2007, http://sputniknews.com/world/20070625/67734563.html.

[42] See, one typical press report of such an incident. "A North Korean tried to bring out of Vladivostok $25,000 undeclared," *PrimaMedia*, June 7, 2017, http://primamedia.ru/news/596518/.

Illicit Trans-Boundary Networks. There is some evidence of illicit trans-border networks formed by Russian, North Korean, and Chinese nationals. According to some reports, the North Korean city of Rajin has become a major hub for the trade of illegally caught wild crab. Russian and foreign poachers bring the illicit seafood catches to Rajin, where it is then shipped to China. In April 2017, at the Bilateral Intergovernmental Consultations on Illegal, Unreported and Unregulated Fishing, Russia formally raised with Pyongyang its concerns over the crab issue.[43] These illicit networks are not limited to the seafood sector. In October 2015, Far Eastern customs officials reported successful interdiction in the Sea of Japan of a large shipment of Russian-originated jade that was headed for North Korea, with China as the final destination. The smugglers operating a vessel bound for the North were two Russian citizens.[44]

Russian Assessments of North Korea's Economic Resilience

North Korea has not published regular economic statistics since the 1960s. Only separate bits of statistics are made available with some time lag. According to scholars at the Economic Institute of the DPRK's Academy of Social Sciences, in 2014 the country's GDP amounted to $26.132 billion, the population stood at 24.895 million people, and the GDP per capita was $1,053.[45] It is not clear what methodology is used by the North Korean statistics agency to calculate the GDP and whether it includes informal sector production. What is interesting is that this GDP figure is much closer to the South Korean estimates of North Korea's nominal gross national income (GNI) published annually by the Bank of Korea (USD 28.93 billion in 2014) than the DPRK's GDP at current prices published by the UN Statistics Department (USD 17.4 billion in 2014). What is clear, though, is that North Korea's internal economic situation has been improving in recent years.

Liudmila Zakharova visited Pyongyang to conduct field research in late May-early June 2017. When comparing impressions to her previous stay in the city in 2005, Zakharova noticed that the city has enjoyed significant development in terms of construction, public and commercial transport, food supplies, and entertainment. According to Russian diplomats stationed in the DPRK, the most visible changes have taken place during the last three or four years and are not restricted to Pyongyang, but can be seen in some other cities, such as Wonsan, Chonjin, Nampho, and Rajin.[46] There are signs of a construction boom and fledgling real estate market in North Korea.[47] That being said, economic growth cannot guarantee the regime stability and its ultimate survival. In fact, there have been multiple historical cases of revolutions and uprisings against ruling regimes breaking out at times of relative affluence. As Andrei Lankov

[43] Ivan Korotayev, "What are crab fishermen hiding?" *Konkurent*, March 28, 2017, http://konkurent.ru/index.php?cont=article&id=&ida=14919 (in Russian). See also, "At All-Russian Scientific and Research Institute for Fisheries and Oceanography (VNIRO), fourth round of Russian-Korean consultation was held," April 21, 2017, HTTP://WWW.VNIRO.RU/RU/NOVOSTI/VO-VNIRO-SOSTOYALSYA-CHETVERTYJ-RAUND-ROSSIJSKO-KOREJSKIKH-KONSULTATSIJ (in Russian).

[44] "A major contraband of semiprecious stones intercepted by Far Eastern Operative Customs Unit: 3 tons, over 50 mln rubles," *Russian Federal Customs Service*, October 20, 2015, http://www.customs.ru/index.php?option=com_content&view=article&id=21871:2015-10-20-11-53-40&catid=40:2011-01-24-15-02-45 (in Russian).

[45] Liudmila Zakharova's conversation with North Korean economic scholars, Pyongyang, June 2017.

[46] Zakharova's interviews with Russian diplomats stationed in Pyongyang, May-June 2017. See also, Leonid Kozlov, "North Korea: A Trip Report," *FPRI E-Notes*, August 31, 2017, https://www.fpri.org/article/2017/08/north-korea-trip-report/.

[47] Andrei Lankov, "Building socialism: N. Korea's construction boom and shaky private enterprise," *NKNews*, August 4, 2017, https://www.nknews.org/2017/08/building-socialism-n-koreas-construction-boom-and-shaky-private-enterprise/.

reminds, neither the American Revolution of 1776, the French Revolution of 1789, nor the Russian Revolution of 1917, came at a time when the lifestyle of each country's citizenry could be described as destitute.[48] The DPRK leadership may well understand the social and political risks that come with economic growth, especially the danger of income polarization becoming too conspicuous. Relative prosperity, leading to ever rising expectations, might eventually prove even more dangerous for the regime than austerity and destitution. Alexandre Mansourov, a former Soviet diplomat in Pyongyang who is now a U.S.-based North Korea analyst, argues that the regime does not want the living standards to rise fast or too high because that could result in social and political destabilization.[49]

Despite declarations of self-reliance, the North Korean economy still depends on the outside world for important products like crude oil, gasoline, diesel fuel, coking coal, many kinds of industrial equipment, vehicles, and foodstuffs. To reduce this dependence, the country's leadership is pushing for import substitution. Achieving self-sufficiency in energy is obviously a top concern and priority. Pressed by international sanctions, the DPRK needs to make sure that it can sustain a possible energy cutoff. To achieve this goal, North Koreans have been working on ways to produce synthetic liquid fuel from coal. This development is a key part of the DPRK's efforts to create a "carbon-based chemical industry" under the five-year economic strategy (2016-2020) announced by Kim Jong-un at the 7th Party Congress in May 2016.[50] It is not unprecedented for national economies to drastically reduce their dependence on foreign oil that becomes unavailable under the externally imposed isolation. Nazi Germany and Apartheid South Africa were relatively successful in creating large-scale coal liquefaction industries.[51] At present, several countries, including China, operate coal-to-liquid-fuels projects. It is debatable whether, and how quickly, the DPRK can establish its own liquefaction industry even if it has the requisite technologies. Apart from coal, which the North possesses in abundance, this kind of chemical production needs massive capital investments and requires significant energy inputs, both of which Pyongyang lacks.

Chronic power shortages are one of North Korea's major economic vulnerabilities. The country is extremely reliant on hydropower stations which, according to North Korean official sources, provide 56% of the national power-generating capacity.[52] The U.S. Energy Information Administration estimates that hydropower provides up to 74% of the North's electricity consumption.[53] Hydropower output depends on precipitation and drops drastically in dry years. Developing nuclear energy has long seemed an obvious option for North Korea to bolster its energy security. Since as early as the 1960s, the DPRK has been making efforts to build an atomic energy industry.[54] Lack of funding

[48] Andrei Lankov, "North Korea's economy is improving – but this may not save Kim Jong Un," *NKNews*, August 14, 2017, https://www.nknews.org/2017/08/north-koreas-economy-is-improving-but-this-may-not-save-kim-jong-un/.

[49] Cited in Evan Osnos, "The Risk of Nuclear War with North Korea," *The New Yorker*, Sept. 18, 2017, https://www.newyorker.com/magazine/2017/09/18/the-risk-of-nuclear-war-with-north-korea.

[50] Kim Jong-un, *The Report of the Korean Workers' Party Central Committee to the Party's Seventh Congress,* May 6-7, 2016 (Moscow: Knizny Mir, 2016), p. 53-54 (in Russian).

[51] See, for example, Daniel Gross, "Thanks for the Cheap Gas, Mr. Hitler!" Slate, Oct., 23, 2006, http://www.slate.com/articles/business/moneybox/2006/10/thanks_for_the_cheap_gas_mr_hitler.html.

[52] *Investment Guide to the Democratic People's Republic of Korea* (DPRK: Korea Foreign Investment and Economic Cooperation Committee, 2016), p.18.

[53] Energy Information Administration, https://www.eia.gov/beta/international/analysis.cfm?iso=PRK.

[54] Ilya Dyachkov, *Non-peaceful Atom* [*Nemirny Atom*] (Moscow: MGIMO, 2016), p. 97.

and Pyongyang's severely restricted access to the international market of civilian nuclear technologies have seriously hampered the North's progress in this area. However, the DPRK continues to pursue nuclear-power generation. In particular, work has continued on Experimental Light Water Reactor at Yongbyon.[55] There might also be other nuclear facilities in development and under construction whose primary function is civilian rather than military. So far Pyongyang has not treated its civilian atomic sector as the top priority, with most of the resources going into military-related nuclear programs. This situation, however, may change, especially if the specter of external trade and energy blockades loom larger. The DPRK may accelerate its civilian energy program in order to produce operational reactors as soon as possible.[56]

Some Russian experts, who have interacted with North Korean scientists and students coming to Russian universities, notice that in recent years the North Koreans have displayed an increased interest in the fields related to civilian nuclear energy. Some evidence suggests that the North is focusing on relatively primitive nuclear reactor designs with low safety standards,[57] which might be especially dangerous in a seismically active area such as the north of the Korean Peninsula. The main concern is that the North Koreans may attempt to launch nuclear power plants with substandard and poorly tested reactors. Doing so would keep with the North Korean tradition of sacrificing safety standards in order to accelerate construction of high-priority industrial facilities.[58] Part of the reason for carrying out such a hazardous move could be strategic. Pyongyang might locate its nuclear power plants close to the DMZ so as to create risks not only for itself, but also for South Korea and Japan. Finally, nuclear power plants may be used as a shield to deter a possible attack on the North. The U.S. and South Korea might have to think twice before conducting military strikes in the areas where North Korea's active nuclear power plants would be located.

What happens to North Korea if the current sectoral sanctions on Pyongyang are enhanced to the level of an all-out economic blockade? Such a scenario could materialize if China and Russia cut all, or almost all, economic ties they still maintain with the North, especially energy shipments. This scenario may not necessarily mean the end of the DPRK. North Korea is probably the only non-continental-size economy in the modern world that can survive in the conditions close to autarky. Some economists call North Korea "the poorest advanced economy in the world," meaning that North Koreans have succeeded in building a comprehensive industrial structure able to produce a wide range of capital goods like railroad locomotives, cargo vessels, turbines and generators for power plants, numerically controlled lathes, etc.[59] The North Korean economy is consciously constructed in such a way as to maximally reduce dependence on foreign partners, while the population is thoroughly indoctrinated to endure various hardships stoically.

[55] "North Korea's Yongbyon Facility: Probable Production of Additional Plutonium for Nuclear Weapons," *38 North*, July 14, 2017, http://www.38north.org/2017/07/yongbyon071417/. See also, the IAEA Director General's report, August 25, 2017, https://www.iaea.org/About/Policy/GC/GC61/GC61Documents/English/gc61-21_en.pdf.

[56] Electricity produced by nuclear power plants is also essential for the energy-intensive technology of coal liquefaction (see above). This might serve as another argument in favor of the speedy deployment of nuclear energy.

[57] Artyom Lukin's interview with Oleg Shcheka, professor at Far Eastern Federal University, expert in nuclear technologies, Vladivostok, May 2017.

[58] Soviet technical specialists who assisted the DPRK in the 1960s repeatedly noted North Koreans' willingness to cut corners in terms of safety standards for the sake of construction speed (Ilya Dyachkov, *Non-peaceful Atom* [*Nemirny Atom*] (Moscow: MGIMO, 2016), p. 97.

[59] Jeff Baron, "What if Sanctions Brought North Korea to the Brink? 'Well, in 1941…'" (Interview with Mitsuhiro Mimura), *38 North*, Sept. 7, 2017, http://www.38north.org/2017/09/jbaron090717/.

It would be a mistake to think that the worsening of living conditions caused by external pressure would take North Koreans to the streets against their rulers.

A complete or near-complete economic blockade will no doubt deal a hard blow to the DPRK and cause ordinary North Koreans much suffering, but it may not be nearly enough to bring the regime to its knees. The country did not implode in the 1990s when, in the wake of the Soviet Union's demise, the North was left without the biggest economic patron. The DPRK's foreign trade collapsed, and millions of North Koreans experienced starvation. The national economy is now much more resilient and flexible than it was in the early 1990s, thanks in no small part to the introduction of de facto market mechanisms. Core industries, including agriculture, have become more self-reliant. Harvested grain crops in North Korea increased from 5.03 million tons in 2012 to 5.89 million tons in 2015. The country must produce around six million tons of grain crops to satisfy domestic demand. Thus North Korea may be approaching basic food self-sufficiency. The North also likely has created strategic reserves of some imported key commodities such as oil and petroleum products.

Conclusion

After China, which accounts for the bulk of North Korea's foreign transactions, Russia is at present the second most important economic partner for Pyongyang. However, Russia, unlike China, cannot serve as a major market for North Korea's main commodities because Russia itself is rich in natural resources. Therefore, North Korean merchandise exports to Russia are miniscule. However, there are at least three areas where Russia does make a difference for the DPRK: (1) imports of bituminous coal from Russia, (2) exports of North Korean labor to Russia, and (3) imports from Russia of petroleum products, even though much of the oil trade is disguised by using Chinese and other intermediaries. Russia also remains the only country, apart from China, that provides the DPRK with regular transportation and telecommunications links—via air, rail, sea, and the internet—connecting the isolated nation to the outside world. Should Russia decide to curtail or terminate its economic contacts with the North, Pyongyang will feel real pain.

Russian-North Korean economic transactions are mostly pragmatic, driven by market demand and supply. Almost all Russian entities that deal with the North are private firms that seek commercial profit. The only exception is the Khasan-Rajin port and rail project, owned and operated by the state-controlled Russian Railways. Moscow sees its hefty investment in the port of Rajin not only as a potentially profitable venture, but also as a foothold in the strategically important location at the junction of North Korean, Russian, and Chinese borders. Unlike China, which provides economic assistance to the North such as deliveries of crude oil on preferential terms, Russia is not ready to subsidize the North. It is hard to think of any scenario where Russia would return to the Soviet pattern of being a major donor for the DPRK. The current leadership in Moscow is only willing to provide direct and indirect subsidies to those countries, mostly in the former Soviet Union, which it sees as belonging to Russian sphere of influence and

those which have agreed to enter Russian-dominated institutions such as Eurasian Economic Union.[60] North Korea matches neither of these conditions.

As long as the DPRK remains under UN-mandated sanctions, any meaningful development of Russia-North Korea economic ties is hardly possible. Moscow voted for the UNSC sanctions and enforces them, even though they carry obvious economic costs for Russia.[61] Unilateral sanctions imposed by the United States pose another problem for Russian companies. Some Russian companies and individuals have already been hurt. The U.S. sanctions alone will not be able to stop Russia's economic interactions with the DPRK, but they are making major Russian companies, particularly those with significant international operations, skittish about any dealings with the North. Of special concern is the omnibus sanctions act on Russia, Iran, and North Korea signed by President Trump on August 2, 2017. This law creates potential risks to Russian companies dealing with the North, especially oil traders and employers of North Korean labor. It also singles out the Russian Far East's ports of Vladivostok, Nakhodka, and Vanino for their possible handling of North Korean vessels.[62] Moscow always has the option of taking special measures to protect Russian companies from U.S. penalties, such as compensating them for financial losses they might suffer due to U.S. sanctions. The Kremlin took such steps with regard to some companies targeted by the Western sanctions in the wake of Ukraine and Crimea crises. Whether or not Moscow takes this option in the case of North Korea will depend, to a large extent, on the importance it attaches to the Korean Peninsula.

Regardless of the factors discussed throughout this report, North Korea's economy has been visibly improving under Kim Jong-un. At least, this was the case until the latest round of harsh UN-mandated sectoral bans. But what can be the effects of the ever-tightening sanctions? The majority opinion among Russian North Korea experts is that even a near-complete blockade of the North, with the buy-in from China and Russia, will not bring Pyongyang to its knees. The regime is likely to survive, albeit at the price of the suffering, and perhaps starvation, of millions: "They would eat grass, but won't abandon their nuclear weapons," as President Putin put it.[63] Attempts to impose full isolation on the North may push Pyongyang to take risky and even desperate actions, such as launching poorly constructed nuclear power plants or peddling its nukes and missiles to rogue international actors.

[60] Venezuela represents the other case of Russia providing hefty financial assistance to a foreign country. However, Moscow gives loans to Venezuela mostly because the Kremlin-affiliated Rosneft company has a major stake in the country's huge oil assets and hopes to profit from them (See, "Special Report: Vladimir's Venezuela-Leveraging loans to Caracas, Moscow snaps up oil assets," *Reuters*, August 11, 2017, http://www.reuters.com/article/us-venezuela-russia-oil-specialreport/special-report-vladimirs-venezuela-leveraging-loans-to-caracas-moscow-snaps-up-oil-assets-idUSKBN1AR14U).

[61] That said, Russia can reap some benefits from the sanctions. The ban on North Korean coal led to the rise in demand for Russian anthracite on Asian markets (Artyom Lukin's conversation with a Japanese scholar, Vladivostok, July 2017), while the ban on North Korean seafood exports is going to raise the profit margins of the Russian Far East's fishing industry.

[62] "Countering America's Adversaries Through Sanctions Act," August 2017, https://www.congress.gov/bill/115th-congress/house-bill/3364.

[63] "Putin: North Korea Would 'Eat Grass' Before Giving Up Nukes," *NPR*, Sept. 5, 2017, http://www.npr.org/sections/thetwo-way/2017/09/05/548676414/putin-north-korea-would-eat-grass-before-giving-up-nukes.