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The Key to the North Korean Targeted Sanctions Puzzle

At no point in the history of U.S. nonproliferation and counterproliferation policy have financial sanctions been so central to U.S. efforts to prevent or rollback the acquisition of nuclear weapons in countries such as North Korea and Iran. Despite this crucial role, financial sanctions have been examined almost solely from the sender's perspective, that is, the country imposing the sanctions. Few focused policy analyses have measured the effects of these instruments from the target's perspective.

In the case of North Korea, the use of counterproliferation-focused financial sanctions raise an unwelcome but avoidable puzzle. The United States and the international community have been sanctioning the Democratic People's Republic of Korea (DPRK) for decades—targeting, in particular, its procurement of dual-use equipment and components—yet its nuclear programs continue to grow.

This study confronts that puzzle and seeks to better understand the diverse effects of counterproliferation sanctions by looking at the problem from the target's perspective. North Korea has traditionally been viewed as a black box, but there are now opportunities to gain insights into the inner workings of the regime by analyzing the operations of its state trading companies. Among the 26,000 North Korean defectors currently living in South Korea, there is a small sub-group of former managers and senior officials who have the operational

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Despite being sanctioned for decades, why have North Korea's nuclear programs continued to grow?

experience of working in these DPRK state trading companies. Based on 21 in-depth interviews with this unique set of North Korean defectors, this study finds that—contrary to expectations—financial sanctions have had the unintended net effect of actually strengthening North Korean procurement networks.

The results of this study are presented in four parts. The analysis first considers the puzzle that, despite growing and sophisticated sanctions, North Korea's nuclear procurement continues unabated. It then considers three potential explanations. To test these explanations, the analysis delves in detail into "North Korea, Inc.," the system of trading organizations and relationships that feeds the Pyongyang regime. It concludes with an assessment of the three explanations, and the implications for policymakers grappling with the challenge of a nuclear North Korea.

The Rise of Sanctions

As North Korea passed key thresholds in its nuclear weapons development, the international community and the United States responded with increasingly stringent sanctions. How did sanctions become a dominant policy tool?

From Iraq to North Korea

Diplomacy aside, three primary options lie in the U.S. foreign policy toolkit to prevent proliferation: the use of force, cyber action, and targeted sanctions. The first is one the United States will not likely use on the scale observed in Iraq and Afghanistan, given the public's fatigue with foreign wars.[1] (The exception would come as a large-scale military response to a direct attack on the U.S. homeland.) The second is still at a relatively early stage of development. While the Stuxnet computer worm was deemed effective in temporarily setting back Iran's nuclear program, it was also reportedly cost- and time-intensive. Most importantly, it was dependent on a few rare instances where Iran had commercial interactions with Western companies for procurement purposes.[2] Such opportunities currently do not exist with the North Korean nuclear programs.

Few focused policy analyses have measured sanctions' effects from the target's perspective.

Policymakers are using targeted sanctions, the third instrument, with greater frequency for several reasons—they entail a low cost of implementation (ideal in a time of austerity in Washington); they send highly visible political signals to targets; they reassure key audiences that threats are being robustly addressed; they provide an alternative to military intervention; they offer a proven mechanism through which to coordinate with friends and allies; and they ostensibly afford greater precision in targeting a regime's leadership, thereby sparing the country's general population.[3]

The ability to target regime leaders with improved accuracy is the product of a painful process that first began following the debacle of economic sanctions against Iraq after the first Gulf War.[4] After numerous studies and reports highlighted the devastating impact of general economic sanctions on Iraq's population—particularly children—governments dramatically altered the manner in which they structured and implemented sanctions.[5] They replaced general sanctions with targeted ones, of which financial sanctions are the most common type. The primary objective became guiding a target regime's leadership to a desired policy outcome by inflicting focused financial pain or denying a target's freedom of action in the international financial system.[6] The ability to freeze the overseas assets or bank accounts of a target regime's leaders has become the precision-guided instruments of economic statecraft.[7]

> State trading companies offer insights into the inner workings of the North Korean regime.

U.S. Sanctions on North Korea

Despite their rise in use, financial sanctions remain poorly understood in terms of their disparate tactical purposes and their impact on North Korea. There are two main types of financial sanctions that the United States is concurrently applying to North Korea: U.S.-supported UN Security Council Resolution (UNSCR) financial sanctions and U.S. Treasury financial sanctions.

The first type, UNSCR financial sanctions, involve a series of three core resolutions (UNSCR 1718, UNSCR 1874, and UNSCR 2094) passed in the wake of North Korea's nuclear tests in 2006, 2009, and 2013, respectively. UNSCR 1718 introduced financial sanctions; UNSCR 1874 added robust implementation of the sanctions to give the resolution "teeth"; and UNSCR 2094 strengthened and expanded the scope of prior UN sanctions by making key financial sanctions mandatory for member states.[8]

The second type is U.S. Treasury Department financial sanctions. Signed by President George W. Bush in June 2005, Executive Order (E.O.) 13382 authorizes U.S. government agencies to freeze the assets of WMD proliferators and their supporters, isolating them financially. Designations under E.O. 13382 prohibit all transactions between the designees and any U.S. person, and freeze any assets the designees may have under U.S. jurisdiction.[9] At its launch, E.O. 13382 identified three North Korean entities (among eight foreign ones overall) as contributors to proliferation. The Treasury Department's Office of Foreign Assets Control (OFAC) later included an additional nineteen North Korean entities and four individuals to this restricted list.[10] These actions led to the United States freezing the assets of a Swiss company that served as a technology broker and procurer of weapons-related products in Europe for the North Korean military.[11]

The primary justification for U.S. sanctions has been President Bush's designation of North Korea as a threat to U.S. national security in E.O. 13466 on June 26, 2008, because of "the current existence and risk of the proliferation of weapons-usable fissile material on the Korean Peninsula."[12] Expanding on E.O. 13466, President Obama applied tougher sanctions on North Korea when he announced the continuation of the national emergency with respect to North Korea in June 2013.[13] Through this measure, the Obama administration reinforced the legal and administrative basis for U.S. sanctions against the nuclear-armed country's regime.

Of these two types of sanctions, Washington has prioritized U.S. sanctions given their enhanced scope under national executive orders. (Irrespective of North Korea's potential return to and progress in multilateral talks, these Treasury Department financial sanctions will continue, as they are designed to protect the U.S. financial system.)[14] U.S. sanctions can be implemented to block access to assets of certain individuals and entities, should such assets come under U.S. jurisdiction.[15] These attributes have added a remarkable degree of precision to a previously blunt policy tool.

Unpacking the Puzzle—Three Alternative Explanations

Despite the unprecedented expansion of financial sanctions targeting the Pyongyang regime, North Korea has continued to further develop its nuclear programs. There are three possible explanations.

Explanation #1: Sanctions are Effective, but Have a Limited Impact

Proponents of sanctions argue that they are useful in raising transaction costs for the regime in running its state trading companies (STCs), but the regime's ability to evade these measures limits their effectiveness. According to this view, absent sanctions, North Korea's nuclear programs would be even larger and more sophisticated than they are today. Current and former sanctions-focused U.S. officials cite heightened transaction costs as the primary indicator that sanctions have "teeth." As a former senior Treasury Department official noted, "Targeted measures have been effective in applying pressure on North Korean entities. They now have to go to greater lengths to conduct illicit activities. The extra steps entail additional costs. As a result, we're having an impact on their bottom line."[16] The additional costs in this respect were deemed to be a form of pressure.

Explanation #2: Sanctions are Irrelevant

According to this view, as the target of sanctions for decades, North Korea has become adept at studying new sanctions and devising a particular method or practice that minimizes their effect.[17] This systematic approach arguably has enabled the larger and more sophisticated North Korean state trading companies to stay a few critical steps ahead of the game. Earlier sanctions may have had an impact at the outset, but North Korean companies have benefited immensely from an increasingly globalized Chinese economy on its border—North Korean companies have greater opportunities to procure in the expanding Chinese economy, where foreign firms have been setting up production facilities inside of China to manufacture goods for the domestic market.[18]

The sheer volume of bilateral China–North Korea commercial activities easily overshadows any sanctions-related transaction costs incurred by North Korean state trading companies. As defectors point out, the large North Korean STCs affiliated to elite branches of the regime engage in a number of different commercial activities, ranging from legitimate (e.g., mineral trade) to illicit (e.g., procurement of dual-use industrial equipment). For an elite regime organization, higher transaction costs that an STC incurs in a procurement deal with a Chinese middleman are readily offset by the profits made by an STC specializing in North Korean mineral resource exports to China.[19] In 2011, annual bilateral China–North Korea trade was approximately US$6 billion, of which an estimated 60 percent was related to the rapidly growing mineral resource trade.[20] In addition, China has political and strategic reasons for turning a blind eye to North Korea's commercial activities, which it officially refers to as "economic development activities."[21] As long as the North has a compliant ally and a porous land border, sanctions will arguably have a negligible impact on the North Korean regime's overall procurement success.

Explanation #3: Sanctions Inadvertently Strengthen North Korean Procurement

This particular explanation has few if any adherents, but is nevertheless a logical possibility. As increased sanctions force large North Korean trading companies to pay higher and higher commission fees, those companies attract more sophisticated Chinese middlemen to help them procure. In practice, North Korean STCs could rent the full array of these Chinese middlemen's more advanced capabilities, ranging from procurement to sales documentation to shipping logistics.

The Banco Delta Asia incident was reportedly an important learning experience for DPRK elites.

Defectors particularly cite the Banco Delta Asia (BDA) incident in Macau in the mid-2000s as an important learning experience for Pyongyang elites—one that led to adjustments and modifications in the regime's evolving evasion practices in response to U.S. and UNSCR sanctions.[22] A common misperception is that the U.S. Treasury Department froze North Korean accounts in BDA, a Macau-based bank, following an investigation into illicit DPRK activities. In fact, the Monetary Authority of Macau seized the bank and froze the North Korean accounts to protect the Macanese financial system after the U.S. Treasury Department's designation of BDA as a "primary money laundering concern" triggered a run on the bank.[23] The North Korean regime soon after began to limit its exposure to jurisdictions that were sensitive to U.S. policy measures.

Assessing the Three?

How can we assess these explanations? One approach is to treat North Korean proliferation activity as a business case study and specifically examine procurement through the lens of North Korea, Inc.—a web of the North Korean regime's largest state trading companies affiliated to the Korean People's Army (KPA), the Worker's Party of Korea (WPK), and the Cabinet. By combining operational insights from defectors who used to work in these STCs with PRC–DPRK commercial and trade data and practices, one can test which of the explanations best captures the effects of sanctions.

This method helps overcome the compartmentalization that often characterizes research on North Korea. International security analysts primarily seek out proliferation patterns and practices identified in other nuclear aspirants' development activities in an effort to better understand North Korea's program. Analysis of procurement still focuses on *what* is procured rather than *how* it is procured. As a result, there is a major gap in our understanding of commercially-structured processes involving a variety of actors spanning a host of regions, which is what comprises current procurement programs and proliferation networks.[24]

One important source of data for conducting a rigorous assessment of the three explanations is the regularly overlooked North Korean defector community in South Korea. In the past, the 26,000 defectors have been treated as members of a monolithic group who came from the same low political class and fled North Korea for the same reason—food scarcity. In reality, three distinct groups of North Koreans comprise the defector community.[25] The first group consists of the largest number of defectors, most of whom were commoners who fled North Korea in the late 1990s and early 2000s to escape famine and lingering food insecurity.[26] The second group mostly consists of traders in the originally small informal markets, which sprout up on the North Korean side of the border with China. The third group, the smallest, is a composite of informal market traders and former North Korean STC officials, who left North Korea in the late 2000s and early 2010s.

This third group of former STC officials is unique because they came from the upper political class in North Korea. Although the material standard of living was higher for these officials and their family members, the pressure and stress of having to generate revenues for their company sufficient to pay the requisite bribes to senior WPK officials while contending with intense competition from other state trading companies often created unbearable situations. These bribes functioned like variable costs, which often increased suddenly when local WPK officials demanded larger payments. In many cases, former STC officials had to borrow from short-term lenders at high interest rates to pay these larger bribes.[27] A tipping point for members of this subset to defect was a business deal gone bad in China, where the business partner reneged on the agreed terms of the deal, resulting in a shortfall in cash or kind. Rather than face punishment, these former company officials defected to South Korea and arranged for their immediate family members to join them.[28]

Identifying, further segmenting, and interviewing the members of this third group has proven critical to this study. Their operational knowledge of the various stages involved in proposing, establishing, and running a procurement deal constitutes a still untapped source of information regarding deal-structuring practices, partner selection, payment of bribes, cultivation of political relationships, monetization of political relationships, bookkeeping, and much more. These defectors' insights provide a glimpse into the regime's previously opaque decision-making structure.

Inside North Korea, Inc.

By examining how North Korea, Inc. functions, one can develop a new framework for examining the ways in which the regime procures prohibited goods amid intensifying sanctions. As interviews with defectors reveal, these companies—most of which have links to the military and party—serve the regime's task-specific purposes. In terms of the nuclear programs, some of the STCs are assigned with generating revenues (e.g., mining sector), while others are tasked with specific procurement activities. The combination provides a self-financing, networked model of procurement. Side deals are quite common and are intended to provide opportunities for the companies to generate an operating budget from which most staff wages are drawn, but only after the required 10 percent “revolutionary funds” are first sent to the Kim family.[29]

Origins of North Korean State Trading Companies

Starting in the early 1980s, North Korea launched its state trading companies as a means for earning foreign currency to finance the 1989 World Festival of Youth and Students. Although hosting the World Festival turned out to be a fiscal disaster, it provided the impetus for what became the model for other DPRK state trading companies.[30] In a desperate move to generate much needed foreign currency to purchase staple goods and energy, North Korea launched more state trading companies—a key determinant of success was an affiliation with powerful political figures in the inner circle of the regime leadership. Close ties to a powerful figure enabled fairly consistent access to high-value commodities that could be sold abroad to earn foreign currency for the regime.[31]

By refining the management and operation of North Korea, Inc., the Kim regime during the second half of the 1990s was largely able to weather the after-effects of an imploding national economy, failed economic policies, debilitating natural disasters, and the Great Famine.[32] Abandoning the Public Distribution System (PDS) after its collapse during that famine enabled the North Korean leadership to further focus on its survival efforts by concentrating its attention on the welfare of regime elites. The rapid growth of informal markets in the early 2000s in the North Korean regions close to the border with China was the result of the breakdown of the PDS, but also the leadership’s siphoning of scarce resources for its own use.[33]

STCs Today—In China

North Korean state trading companies evolved over the past decade to capitalize on the dramatic rise in commerce and trade between China and North Korea.[34] This increase in China–DPRK trade has three main drivers. First, the Communist Party of China (CPC) leadership created political and economic agreements with their WPK counterparts in late 2009, through which the CPC has directly encouraged the increased participation of private Chinese firms. Second, the Chinese national economy continued to grow and globalize with the new trend of foreign companies setting up more in-country production facilities for the domestic market. Third, recent sanctions sparked the formation of an incentive mechanism that began to draw in Chinese private companies, who provided a strategic commercial service as middlemen for North Korean state trading companies.

By migrating to the PRC national economy and using Chinese middlemen, large North Korean state trading companies have been able to develop more durable procurement networks that have enabled them, in practice, to rent the formidable capabilities of these Chinese middlemen. The rise in financial sanctions effectively created an incentive mechanism whereby Chinese middlemen demanded larger commission fees, citing the greater risk they assumed by engaging in commercial transactions with North Korean entities. Defectors report spikes from the previous 5 percent commission rate to a current average of 15 percent.[35] In particular, following the application of more U.S. and UN Security Council-mandated financial sanctions in 2009, defectors noted that North Korean state trading companies significantly reduced their procurement activities in traditional markets in Eastern Europe and the Middle East.[36]

Using private Chinese middlemen has made North Korean procurement networks more durable.

Taken together, the rise of Chinese–DPRK trade and the increase in financial sanctions have improved procurement networks for North Korean state trading companies. Unlike previous incarnations, North Korean state trading companies now exhibit three key features: many of the larger companies operate inside of China; most of their counterparts are private Chinese companies, not Chinese state-owned enterprises; and most are attracting more sophisticated Chinese business partners who act as middlemen in transactions designed to evade sanctions.[37]

Understanding Chinese–DPRK Commercial Deals

To better understand macro-level Chinese-DPRK trade, we must examine the micro-level building blocks of North Korea, Inc.—Chinese–DPRK commercial deals and the actors that enable them. According to defectors, state trading companies employ two types of middlemen in China: conventional Chinese middlemen and *hwa-gyo* middlemen. Key private Chinese firms use *hwa-gyos*—i.e., ethnic Han Chinese who possess North Korean residency.[38]

Defectors note the intense competition between *hwa-gyo* and non-*hwa-gyo* middlemen when they bid for procurement contracts tendered by North Korean state trading companies operating inside China. While competition among service providers would normally lower commission fees, the greater determinant in North Korean state trading company officials' evaluation of bids is the package of services that would enable their company to effectively complete a procurement deal.

Defectors elaborated on how *hwa-gyo* middlemen are particularly effective in procurement. As one defector explained, "The large North Korean state trading companies prefer to use *hwa-gyo* middlemen because they're Han Chinese who speak fluent Korean. It's much easier to communicate with them. Their double residency also allows them to travel easily within North Korea or China on multiple trips."[39] *Hwa-gyo* middlemen also benefit from near invisibility to sanctions implementers. For example, for a German company running a factory in China that manufactures products for the domestic market, the sale of dual-use industrial equipment to a *hwa-gyo* does not raise a red flag of potential contribution to North Korea's nuclear weapons development program—nothing exists in the required sales documentation that would alert the German company to a possible link to a North Korean state trading company.[40]

As such, *hwa-gyos* usually win the bids because of the unique combination of services they provide North Korean trading company officials compared to non-*hwa-gyo* middlemen. (In some instances where a North Korean state trading company awards a contract to a *hwa-gyo* middleman, it pays a marginally higher commission fee. One of the defectors noted that this extra amount is like a convenience fee because it is easier for a North Korean STC to communicate with a Korean-speaking *hwa-gyo*.)[41] The instances where *hwa-gyo* and non-*hwa-gyo* middlemen cooperate tend to be ones where the *hwa-gyo* conducts the primary procurement assignment and sub-contracts a non-*hwa-gyo* partner to handle secondary logistical matters and shipping arrangements related to delivering the consignment to the state trading company's regional headquarters in a designated North Korean city.

So a Sino–DPRK commercial deal plays out in the following stages: first, a KPA-affiliated North Korean state trading company issues a tender in a trade association newspaper in a large Chinese city to procure industrial equipment with metallurgy applications. Private Chinese companies submit a proposal with specific terms and conditions for completing this deal. The North Korean STC's primary evaluation criteria for selecting a Chinese middleman are expedited delivery schedule, ability to arrange all transportation logistics regarding shipping from point of purchase in China to point of final delivery in North Korea, and ability to complete all necessary documentation with a China-based foreign company. After selecting and finalizing a Chinese middleman, both parties sign a contract outlining the type and quantity of the item needing procurement, the delivery schedule with date and end destination, and the payment schedule (how and when to pay the commission fee—calculated as approximately 15 percent of the overall value of the deal; usually with a small portion provided upfront and the remainder upon satisfactory completion of the transaction).

In stage two, the Chinese middleman arranges and completes the purchase of the industrial equipment from a China-based foreign manufacturer, which includes all sales documentation as well as insurance on the consignment prior to shipping. The middleman then sub-contracts another private Chinese company to handle all the logistics of final delivery to the previously agreed city in North Korea on a specified date.

In stage three, the North Korean STC's head office inspects the consignment, and if satisfied, acknowledges receipt of the consignment in North Korea. The North Korean state trading company then delivers the remaining portion of the 15 percent commission fee to the Chinese middleman, which marks the conclusion of the transaction.

Verdict on the Three Explanations

The first explanation, that sanctions are effective but limited, appears least convincing. On one hand, sanctions did reduce North Korean commercial activities with some countries due to concerns held by those countries' companies about triggering a freezing of their assets or incurring reputational damage. (Actually, one of the most effective aspects of targeted sanctions is the U.S. Treasury Department's ability to dissuade reputation-conscious companies to either cease or avoid initiating commercial dealings with a designated entity. A public warning is usually sufficient to deter such companies.)[42] However, the overall effect of sanctions has deepened trade and commercial relationships between North Korean state trading companies and private Chinese firms. This trend has transformed North Korean–Chinese commercial dynamics and brought new, sophisticated Chinese actors within the North Korean orbit.

With respect to North Korea's WMD programs, the regime's largest achievements—a successful long-range ballistic missile launch in December 2012 and its largest explosive yield with the third nuclear test in February 2013—came during the peak of the application of U.S. and international sanctions on North Korea. On the surface, this appears to be a proportional relationship: the more application of sanctions, the more progress North Korea made in expanding and further developing its missile and nuclear programs. This puzzle has grown in recent years.

The second explanation, that sanctions are largely irrelevant, fails to capture some of their most important consequences, but it does point to powerful causal forces at work. Advocates of this view are right to point to the globalization of trade as a factor that undercuts the effectiveness of sanctions as a policy tool. They also correctly point to the pivotal role of the CPC in supporting the moribund North Korean economy.[43] What this perspective fails to appreciate, however, is the central role of private Chinese actors rather than the role of party bureaucrats in Beijing when it comes to commercial activities. Rather than playing "politics" to keep an old ally afloat, the CPC leadership has been playing "commerce" by unleashing private Chinese entities to make money from

North Korean state trading companies. With its limited scope, this explanation fails to account for the unexpected effects sanctions had on the transformation of North Korean procurement and trade networks—e.g. migrating business activities to Chinese commercial hubs to reduce exposure to sanctions-implementing actors.[44]

The third and most counterintuitive explanation, that sanctions have actually served to improve North Korea's procurement channels, finds surprising support. As a result of sanctions, North Korean state trading companies were compelled to deepen relations with Chinese firms and, most importantly, pay higher premiums to Chinese middlemen to carry out illicit procurement. These higher premiums drew a different class of Chinese businessmen—the largely untraceable *hwa-gyo*—with the effect that North Korean procurement channels became more sophisticated and durable than in the past.

Prior to the application of the recent rounds of targeted sanctions, North Korean state trading companies conducted most of their major procurement activities in Eastern Europe and the Middle East. During the 1990s, North Korean managers from these companies would directly purchase from private companies and state entities in these regions and transport the illicit items on rusty North Korean freighters or Soviet-era transport planes chartered in Ukraine or the Russian Far East. North Korean STCs usually listed proliferation-linked components as "spare parts of bulldozers" in the manifest.[45] While they were more primitive and entailed volume constraints, defectors note that these evasion techniques were reliable and effective.[46]

To be sure, the North Korean regime would have conducted business with Chinese partners—even in the absence of sanctions—because it lacked viable alternatives. However, the unintended consequences of sanctions are that they may have strengthened North Korean procurement activities. This effect could prove more important in the long term than any costs that sanctions impose. Still, this conclusion has to come with provisions. The data in its current form is still too limited to draw broad conclusions, but it is certainly sufficient that policymakers will want to consider the downstream consequences of sanctions and the ways in which these sanctions might strengthen, as well as weaken, a targeted regime.

Sanctions have strengthened the North Korean regime by forcing it to innovate.

In summary, sanctions have strengthened the North Korean regime by forcing it to innovate. The large North Korean state trading companies did not constitute the innovation—their newly formed procurement channels with unique Chinese middlemen operating in the globalizing Chinese national economy did. More efficient Chinese middlemen-centric procurement networks based in a globalizing Chinese national economy have replaced the North Korean regime's previous method of conducting direct transactions and utilizing its freighters for shipment.

The scale of this innovation grew significantly after then-Premier Wen Jiabao signed a set of economic development, tourism, and education agreements in October 2009 that, while sounding innocuous, served as political cover under which Chinese companies could justify their growing commercial activities with DPRK state trading companies. For instance, under the main UN Security Council resolutions passed in response to North Korea's nuclear tests in 2006, 2009, and 2013, there are specific clauses that permit member states to engage in economic development and humanitarian activities with North Korean entities. These clauses comprise a loophole which Chinese companies use to justify their commercial interactions with North Korean state trading companies.[47]

Implications for U.S. Counterproliferation Policy

Sanctions are the central pillar of U.S. counterproliferation policy, but they are too often discussed in simplistic terms. Like any policy instrument, sanctions will have costs, benefits, and unexpected consequences—both good and bad. The early results of this research with North Korean defectors suggest that we need to have a better understanding of how sanctions work in practice. We also need to closely examine, in particular, the countermeasures that targeted regimes might take, as well as those of groups that work with them. Too often, the discussion of sanctions focuses on their impact on a regime leader in specific or the government in general, rather than at the level of the broker, the client, and the middleman. The focus also often centers on governments and not the private business entities with which they interact. Understanding the positive and negative effects of sanctions requires an additional lens, one that sees markets. It is a field of research as well-suited to business analysts as to nonproliferation and counterproliferation experts.

> North Korea's new procurement architecture may also introduce new vulnerabilities.

This reality affords policymakers some opportunities. For example, North Korea's new procurement architecture may also introduce new vulnerabilities. Defectors describe intense competition between and within *hwa-gyo* and private Chinese middlemen groupings.[48] Given that these middlemen periodically utilize procurement channels which transit through congested ports in Singapore and Kuala Lumpur, monetary rewards leading to the interdiction of North Korea-bound consignments could prove to be effective in disrupting DPRK procurement networks. For these middlemen, this incentive program could present opportunities to expose and nullify a competitor.

In the end, though, policymakers have to go beyond judging the value of sanctions simply on the basis of whether they impose costs, a low and perhaps irrelevant standard. The issue is not whether a given sanction creates a cost—presumably most do. The real question is whether on a net basis, the effect of imposing that cost strengthens or weakens the target. Do they emerge worse off for having paid the cost, or better off for having evolved and innovated their way around the initial sanction? The North Korean regime has become more sophisticated at this game, in part because we have forced it to innovate. We need to be more sophisticated as well.

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26. Author's interview with North Korean defector #5, July 3, 2013, Seoul.
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28. Author's interview with North Korean defector #1, July 3, 2013, Seoul.
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31. Author's interview with North Korean defector #15, July 5, 2013, Seoul.
32. Author's interview with North Korean defector #2, July 3, 2013, Seoul.
33. Author's interview with North Korean defector #11, July 4, 2013, Seoul. For a detailed study of the causes and consequences of the breakdown of the PDS, see Stephan Haggard and Marcus Noland, *Famine in North Korea: Markets, Aid, and Reform* (New York, NY: Columbia University Press, 2007), pp. 51–73.
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35. Author's interview with North Korean defector #3, July 3, 2013, Seoul; Author's interview with North Korean defector #4, July 5, 2013, Seoul.
36. Author's interview with North Korean defector #3, July 5, 2013, Seoul; Author's interview with North Korean defector #9, July 5, 2013, Seoul.
37. Author's interview with North Korean defector #3, July 3, 2013, Seoul.
38. Author's interview with North Korean defector #6, July 3, 2013, Seoul.
39. Author's interview with North Korean defector #11, July 4, 2013, Seoul.
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