

Keeping alive:

Understanding North Korea's supply lines and the potential role of sanctions

Mikael Weissmann



Executive summary

Against all the odds, the Democratic People's Republic of Korea (DPRK, North Korea) has survived two decades of acute crisis since the end of the Cold War. It has neither collapsed nor reformed itself, despite the dire state of its economy and the existence of extensive international sanctions. This has been possible as it has skillfully adapted to circumstances and found new ways to maintain supply lines and revenue streams, developing and using a range of suppliers and altering their relative importance over time, as well as the way in which they operate, in order to circumvent sanctions. Furthermore, they have also been able to develop new ones. There has also been a shift away from direct state control over illicit and semi-official activities, towards putting more trust in market mechanisms and obtaining the state's and the regime's share through different forms of "loyalty schemes", bribery and public-private constructions. This shift has made it more difficult to target the different sources of revenue.

It is possible to identify ten supply lines and revenue streams: (a) The shadow economy and semi-official trade; (b) the "court economy"; (c) international trade; (d) the Kaesong Industrial Zone; (e) the export of labour and remittances; (f) mobile phones; (g) tourism ; (h) the arms trade; (i) illicit activities; and (j) foreign assistance. The shadow economy and semi-official trade have been crucial to keeping the state functioning, and the regime as well as the wider population alive. The success of the court economy has been crucial for the survival of the regime. The revenues gained from the export of labour and the national mobile phone network are also surprisingly large. The arms trade continues to bring in revenue, as do tourism and remittances, but none of these are as important as they once were. Illicit activities continue to be a major source of revenue. However, as the government becomes more skilled at hiding its involvement, it is increasingly difficult to estimate the amounts involved or obtained by the regime. International trade, most notably with China and South Korea, is also a major source of income. Foreign assistance also contributes, but is very limited in comparison.

There is currently a wide range of sanctions on North Korea. These sanctions have been a complete failure in fulfilling their aim of halting North Korea's nuclear weapon programme. They have, however, had a substantial impact on the country. Under their pressure, North Korea has been forced to adapt to a new reality, not least by hiding its involvement in illicit activities and finding new revenue streams. It has been highly successful at both.

In trying to refine and design new sanctions, it should be clear that there is no silver bullet. First and foremost, it is important to do the utmost to implement the sanctions currently in place, including monitoring and fine-tuning their implementation. All possible efforts should be made to get those states which do not currently comply to do so. Sanctions will not work as long as China and to some extent South Korea continue to engage with North Korea.

Sanctions should target the following areas:

1. **The court economy** should be a prime target for international sanctions. Financial sanctions are likely to be the most effective.
2. **The export of labour** should be targeted by sanctions. It is a major revenue stream and, moreover, an area in which dependence on Chinese compliance is less important.

3. Existing sanctions on **International trade** should be fine-tuned and developed. It is extremely doubtful that they will make a major difference, however, as North Korea's number one trading partner, China, is unlikely to comply. Nonetheless, such sanctions send a signal and are disruptive in Pyongyang.
4. Efforts to implement sanctions that target the **arms trade** should continue, not least the work to detect, monitor and intercept suspicious cargoes and financial transactions in and out of North Korea.
5. Sanctions targeting **illicit activities** should be fine-tuned and developed in order to increase their effectiveness. Efforts should be made to convince China to increase its pressure, in particular because apart from China, there are few channels left for North Korean illicit activities.
6. **The Kaesong Industrial Zone** is in theory a good and easy target for sanctions, and its closure would be a major blow to the regime. However, in practice this is beyond the control of the international community, and it is unlikely that South Korea would be willing to close Kaesong.

The following areas should not be targeted by sanctions:

1. **The shadow economy and semi-official trade** are not good targets for sanctions. They are difficult to target, and doing so would be likely to have a disproportionate impact on ordinary North Koreans.
2. **Remittances** are under control and there is no need for, nor would there be any likely impact from, more sanctions.
3. **The mobile phone network** offers limited opportunities for successful sanctions. In addition, the proliferation of mobile phones should not be a target for sanctions because increased communication in a closed authoritarian state such as North Korea is a positive development.
4. **Foreign assistance** is not an area that should be targeted by international sanctions.
5. Outgoing **Tourism** is not possible to develop effective sanctions against. Nor would it be a good thing if wanting North Korea to open up.

About the author

Dr. Mikael Weissmann is Research Fellow at the Swedish Institute of International Affairs (UI). He is also a Research Associate at the East Asian Peace program at the Dept. of Peace and Conflict Research, Uppsala University. His research focuses on peace and security East Asia, with emphasis on China. He has been conducting research on North Korea for more than a decade. He received his Ph.D. in Peace and Development Research from the University of Gothenburg in 2009. He has been a visiting fellow at the University of Warwick (UK) as well as Peking, Renmin, and China Foreign Affairs University (China). Among others, he has written the monograph "The East Asian Peace: Conflict Prevention and Informal Peacebuilding" (Palgrave, 2012).

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1. Introduction¹

Since the end of the Cold War, the Democratic People's Republic of Korea (DPRK, North Korea) has survived against all the odds through two decades of acute crisis. It has neither collapsed, nor reformed itself. In fact, it has not only survived, but also succeeded in resisting pressure and sanctions from the international community aimed at rolling back its nuclear programme. It is clinging to life despite its corrupt deity-cult leadership, limited resources, and largely failed economy and agricultural production. (For an up-to-date account of the dynamics behind North Korea's struggle for survival see Lankov 2013b; Bennett 2013.)

North Korea's economy is crucial to the survival of the regime. The regime needs to ensure that its population can be kept alive. Even more importantly, however, it needs to satisfy the demands of the national elite. The latter is key to regime survival, and its needs nearly always trump the human rights and welfare of the wider population. Near-divine or not, the Kim dynasty would fall if the elite revolted or the state collapsed. If the economy is to survive, North Korea is dependent on its links with the outside world as a supply line and lifeline. This is recognised by the international community, which has targeted North Korea's economic engagement with the outside world through a range of sanctions, including prohibitions on the export of luxury goods to North Korea and the trade in precious metals and diamonds, asset freezes, and sanctions against North Korea's financial sector (see below).

Despite being the target of international sanctions, it is clear that enough supply lines exist to keep the North Korean economy going and sufficient revenue coming in to ensure the regime's survival. The more we know about these supply lines, the better the international community will be able to customize its sanctions and incentives in order to maximise its ability to encourage North Korea to roll back its nuclear programme, including its means of delivery. This knowledge is crucial, as it is clear that in this respect, the sanctions have thus far been a failure (Kim and Martin-Hermosillo 2013; Maass 2011; Wertz 2013).

If we are to develop measures that are effective at targeting those areas which will have a direct or indirect impact on the elite and the regime while at the same time ensuring that they as far as possible have a minimal impact on ordinary North Koreans, it is crucial to gain a better understanding of how the North Korean economy and its supply lines work. Thus, this report traces and analyses the supply lines that keep the state and the regime functioning, and puts these in the context of international sanctions. First, it briefly outlines how the North Korean economy has developed and works, and the extent of international sanctions. Second, the ten supply lines that keep the North Korean regime alive are traced and analysed, and placed in the context of international sanctions. The conclusions discuss whether – and, if so, how – sanctions should be used in respect of each supply line.

The absence of reliable information makes studying North Korea methodologically highly problematic. Nothing is certain, and one has to rely on best guesses and estimates. There is nobody on the ground to report objectively on what is happening. Nor are there any reliable economic statistics – and there have not been any for 60 years or so. The rumours, information,

statistics and data that flow from the country often lack good grounding. The original source is often hard to identify, and often turns out to be wrong. Over time, anecdotal evidence and rumours take on the status of truth. The alleged execution of Kim Jong-un's uncle, Jang Song Thaek, by dogs; the 700 000 Chinese tourists who visit North Korea, and the executed ex-girlfriend of Kim Jong-un, who later appeared on television, provide just three recent examples. This report addresses methodological difficulties by systematically reviewing, selecting, analysing and critically assessing state-of-the-art knowledge about North Korea. In this way, it is possible to identify and aggregate the best estimates and most accurate assessments.

2. The North Korean economy

The North Korean economy is in a zombie state. It has been bypassed by three decades of the Asian Economic Miracle, which has created the conditions for rapid economic growth and trade liberalisation among its neighbours. North Korea's economy is designed to be self-reliant and closed. It is best described as "Stalinist with National characteristics". The means of production are state-owned, economic planning is centralised and there is a lack of the freedoms required for a market economy. Its design also emphasises the needs of the military, which is a major actor in the economic system (Noland 2000).² Paradoxically, the emphasis on self-reliance has over time increased its dependency on the outside world. North Korea is now heavily dependent on its neighbours for economic aid and trade, and these economic interactions – both official and unofficial – are crucial for North Korea's survival. As a result, the economic sector has, out of necessity, become an important link to the outside world for the economically fragile North Korea.

At the end of the Cold War, China's and the Russian Federation's interest in and need to support North Korea diminished, and North Korea's economic interactions with the outside world decreased. A famine in the 1990s killed an estimated 1 million people, and trade once again increased. There are uncertainties about the state of the North Korean economy because no reliable statistics exist. Existing datasets (Noland 2012) indicate that in the period 1970 to 1990, per capita income grew by 30–100 per cent. Most of this growth was then lost in the first half of the 1990s, when per capita income fell by 30 to 75 per cent. Economic growth once again increased in the late 1990s until 2009, when the now infamous currency reform was implemented. However, despite the fact that per capita income increased by about 25 per cent, according to most sources, it is still far below pre-1990 levels. In short, the post-Cold War period has not been a period of joy in North Korea.

The 1990s famine was a period of crucial change in North Korea. As the centrally planned economy collapsed, a second, illicit economy developed. The collapse of the food distribution system forced people to rely on the black market for survival. There was a boom in private-sector economic activity. Small markets, and illicit and semi-official cross-border trade became a lifeline for North Koreans. This illicit economy has continued ever since, sometimes with the regime's blessing, at other times despite crackdowns on its activities.³ Today, it is crucial for the survival of the regime and the people of North Korea. Despite attempts to roll back marketization, it has prevailed and the official and illicit economies are now interlinked.

Something that is beginning to look like crony capitalism has developed, as the strength of the shadow economy combined with the extent of bribery have eroded state domination of the economic sphere.

3. Sanctions

There is currently a wide range of sanctions on North Korea.⁴ The main purpose of these is to force the regime to halt its nuclear programme. Sanctions may also be important in the process of persuading North Korea to open up and reform its system, but this is not the principal purpose of the sanctions.

The European Union (EU) has implemented the United Nation sanctions on North Korea within the framework of the Common Foreign and Security Policy (CFSP).⁵ The EU has gone further than the UN in certain areas. The sanctions currently in force are:

1. an embargo on arms and related materiel and services;
2. a ban on the export of certain goods and technology with a dual use;
3. a ban on trade in gold, other precious metals and diamonds;
4. a ban on the export of luxury goods;
5. restrictions on financial services and transactions;
6. a ban on publicly provided financial support for trade where such support could contribute to North Korea's nuclear-related, ballistic missile-related or other weapons of mass destruction-related programmes;
7. enhanced monitoring of the activities of banks domiciled in North Korea and their subsidiaries and branches, as well as of other financial entities outside North Korea;
8. inspection of and prior information requirements on cargoes to and from North Korea, including refusal of access to EU airports for certain flights;
9. restrictions on travel to the EU;
10. the freezing of funds and economic resources;
11. measures to prevent certain specialist teaching or training.

In terms of halting North Korea's nuclear weapon programme, the sanctions have been a failure (Oh and Ryu 2011; Wertz 2013). There may have been some success stories, such as in 2013 when the North Korean ship *Chon Chon Gang* was interdicted and had its cargo of weapons from Cuba confiscated by Panama – an international actor with a tiny stake in North Korea-related security matters. Nonetheless, the sanctions have had a substantial impact on North Korea. Under pressure, North Korea has been forced to adapt to a new reality, hiding its involvement in illicit activities and finding new revenue streams. It has been highly successful at both.

4. Keeping North Korea afloat: supply lines

In spite of its almost failed economy and economic system, there remain enough supply lines to keep the North Korean economy functioning – successfully avoiding state collapse and ensuring enough revenue to keep the Kim dynasty in power. Its survival can be attributed to a number of different factors, such as the development of a parallel shadow economy that allows the state and its officials to obtain their share, the continuing success of the so-called court economy, which provides for the dynasty and its followers, and a range of supply lines ranging from legitimate trade to outright illegal activities such as the drug trade and counterfeiting. Together, these revenue streams have been able to keep North Korea functioning at a level at which outright state collapse, a revolutionary uprising or an elite-driven coup d'état have been avoided.

It is crucial to understand that North Korea is not dependent on a single stream or even a few revenue streams, but has over the years developed a broad range of supply lines. It is impossible to isolate North Korea by eliminating just one of these. Any attempt to cut off revenue streams has been made even more difficult because North Korea has been able to alter not only the relative balance between its existing supply lines, but also the way in which the supply lines are operated, and to create new ones when needed. This has ensured that revenue streams have been maintained. Nonetheless, all this has increased North Korea's dependency on China and on the ability to cross the Chinese border.⁶

Two other important transformations have occurred that are important to take into account when trying to understand the North Korean economy. First, economic interactions with the outside world have become more legitimate as North Korea's dependency on illicit trade has reduced. Second, there has been a shift away from direct state control over illicit and semi-official economic activities. Although still highly dependent on the state for protection, including the paying of "loyalty offerings" as well as bribes, an entrepreneurial class has developed that is to some extent independent and has a degree of discretion over how to conduct its economic affairs. This reduction in state control is underscored by the failure of its attempts to roll back the marketization initiated in the 1990s, either through currency reforms or other means.

In sum, to survive the North Korean regime needs adequate supply lines in order to achieve three aims:

1. First, and arguably most importantly, there is a need to keep the elite content. This includes obtaining enough revenue – legitimate as well as illegal – to obtain the commodities needed for a relatively comfortable and privileged life for the elite, as well as making sure that the goods and merchandise they want are provided. Part of this includes turning a blind eye to bribery in the "private sector" as well as to marketisation and illicit or semi-official cross-border trade with China.
2. Second, there is a need to obtain not only funds, but also the luxury goods demanded by the senior leadership around Kim Jong-un. The import of luxury goods has increased every year since Kim Jong-un took power, from USD 446 million in 2010 to USD 645

million in 2012 (S. Kim 2013). This is twice the average under Kim Jong-il (S. Kim 2013), underscoring the importance of luxury items to the survival of the regime. This is not always a simple task as the “extras” they are looking for are targeted by international sanctions.

3. Third, there is the need to avoid state collapse, that is, to keep the North Korean economy at least barely functioning. The planned economy has not functioned since the 1990s, so other sources are needed to avoid state collapse or a potential uprising.

Having painted a dire picture of North Korea’s economy, it should be noted that there is evidence to suggest that it has been improving recently. Recent evidence suggests that there was economic growth of 0.8 per cent in 2011 and 1.3 per cent in 2012, and that North Korea is now running a current account surplus (Greitens 2014, pp.104–5; Noland 2012). The accuracy of these figures is debated, but they suggest that the North Korean economy is not necessarily headed for the abyss.

4.1 The shadow economy and semi-official trade

Promoted or not, the shadow economy has reached a stage where it has become one of the factors keeping the regime alive. It is helping the overall economy work well enough to make it possible to avoid state collapse, as it is the “open markets” (*jangmadang*) and the illicit and semi-official economy that provide mechanisms for access to food and other goods by ordinary North Koreans. Furthermore, these forms of private sector activity are crucial to the survival of the private merchants, and ensure an extra income stream for government employees and organisations at all levels through bribery and similar arrangements. In a system as corrupt as North Korea’s, everyone makes sure to take their cut. This private-public symbiosis works because in North Korea it is impossible to survive, let alone succeed in the commercial sector without including the government, or at least people with good connections, in your business model.⁷ These market activities also ensure a supply of different foods for government employees, who would otherwise be dependent on the state to provide heavily subsidised food and other goods, which is no longer something that can be relied on. This in turn increases corruption because in the context of market prices, government salaries are nominal – and a way must be found to procure the cash needed to buy goods in the market place.

The development of open markets has spread market practices throughout the North Korean economy and society, and led to a blurring of the lines between state-owned companies and private enterprises. There is now a range of private enterprises allowed to operate by government officials, albeit in return for a payoff of 30–70 per cent of the profits (Lankov 2013a). It is illustrative that it is now common practice to see privately run shops registered as state outlets (Lankov 2013a). Furthermore, these open markets are a major driver of the cross-border trade with China, from where as much as 90 per cent of the goods sold originate (Greitens 2014, p.94). Even if 90 per cent, which is a number that has circulated for a long time, might be an overestimation, it is clear that the lion’s share of goods are coming from China.

Thus, the shadow economy is of the utmost importance to regime survival. Nonetheless, with the exception of China, there is little that sanctions could do to target this section of the economy. Furthermore, it would not necessarily be a good target for sanctions. Crucially, the shadow economy works as a lifeline for ordinary North Koreans. Even if a successful blow against these activities could have an impact on the regime, the likely effects on ordinary citizens would be disastrous. These include a high risk of starvation, and possibly even widespread famine.

In addition, the development of the shadow economy and the linked practices is the only example of the creation of institutions that at least exhibit a semblance of “free market mechanisms”. All other attempts by the outside world to convince North Korea to open up its economic system and accept some kind of market model have failed. Thus, the practices and institutions created through the shadow economy and semi-official trade have the potential to be a force for change, eroding the existing system. That is not to say that they necessarily have been or will be such a force. Drawing on previous experience, it is clear that the Kim dynasty has a surprisingly strong ability to survive. Nor should one be fooled into thinking that the national elite would support such a change, as they tend to see the current system as the one most beneficial to them. They expect to lose everything in the event of a regime collapse, rather than becoming members of a nouveau riche post-communist class.

4.2 The court economy

In addition to the state economy, there is a court or “royal” economy that works as a crucial supply line for regime survival. This economy is separate from the state economy, operated by the Korean Worker's Party's (KWP) offices 38 and 39 with the purpose of acquiring the funds necessary to support the senior leadership's lavish lifestyles and rewarding their supporters (Hassig and Oh 2009, pp.90–91; Kan et al. 2010; Hassig et al. 2004). Thus, the court economy is absolutely crucial to the survival of the regime, as the source of the money that makes it possible to purchase the luxury goods and pay the bribes that the national elite requires to support the regime.

The court economy is funded from both legitimate and illicit sources. Party-owned trading companies sell the most marketable commodities, including gold and agricultural products such as pine mushrooms and seafood. It also obtains its share of the trade in illicit goods, such as drugs, counterfeit pharmaceuticals (mainly Viagra), currency (dollars and yen) and cigarettes. Drawing on trade statistics from other countries, it has been suggested that the value of this trade is several hundred million dollars annually. Contributions also come from the arms trade. It is difficult to assess how much this trade contributes as most of the profits are likely to remain within the military. The contribution is estimated at between tens and hundreds of millions of dollars. Significant funds are also drawn in the form of “contributions” and “loyalty offerings” from North Koreans working abroad. It is estimated that at least 50 per cent is withheld (see below) (Hassig and Oh 2009, p.90).

In sum, the court economy is vast and crucial to regime survival. In many ways it is what is regarded as most important by the regime, and should consequently be a primary target for sanctions. It is of course difficult to target, as the failure of existing sanctions to successfully undermine the court economy shows. Not only does it work in secret, but it also crosses national borders and sectors. It also works with full discretion and the total support of the regime. The kind of sanctions likely to be most effective are those which target financial services and transactions by North Korea. Sanctions should be pursued in all areas from which the court economy obtains its funds. It would be particularly important to extend and fine-tune the financial sanctions, making it as difficult as possible to manage and use the funds operated by offices 38 and 39.

4.3 International Trade

For North Korea as for all countries, trade is a major source of income. Moreover, something which is often forgotten, North Korea has natural resources such as minerals, forestry products or seafood to export (Yoon 2011; Kyung-soo 2011). This makes trade a mutually beneficial endeavour. North Korea has trading relations with 70 or so countries, but in practical terms its trade is with China and through inter-Korean trade within the Kaesong Industrial Zone (KIZ). China is North Korea's key trading partner, and its dependency on China is increasing. According to South Korean statistics from the Korea Trade-Investment Promotion Agency (KOTRA), it accounted for about half of North Korea's overseas trade in the past decade, and 68.4 per cent of North Korea's total trade was with China in 2012 (88.3 per cent excluding inter-Korean trade).⁸ The total value of trade in 2013 was USD 6.5 billion, and the value of exports grew by 17.2 per cent and of imports by 5.4 per cent on the previous year (Hoe 2014).

North Korea is heavily dependent on crude oil from China, and its mineral exports represent a major revenue stream. Its anthracite exports brought in USD 1.37 billion in 2013 (Yonhap 2014b). Since the early 1990s, China has accounted for almost 90 per cent of North Korea's energy imports and, according to some estimates, as much as 45 per cent of its food imports. According to KOTRA, and a view shared by the author, this dependency is expected to increase as a consequence of international sanctions, geographical constraints and the limitations on the availability of North Korean exports (Yoo 2013).

Sino-North Korean engagement is a deep and extensive engagement that goes beyond official trade and official trade statistics. It includes, for example, Joint Ventures, 138 of which were established between 1997 and 2010 (Thompson 2011). Being mainly with small and medium-sized companies – only two of the top 100 Chinese companies invest in North Korea (Thompson 2011) – these ventures create flexible revenue streams. China's importance is boosted by the fact that trade in the Chinese Yuan has been allowed since February 2008. Access to and the use of the Yuan have surged. This surge was boosted by the failed currency reform of 2009, which reduced the value of the North Korean Won by 99 per cent. As is mentioned above, China is according to some estimates also thought to account for 90 per cent of the goods on the open market in North Korea, and China is crucial to the export of labour and many of the illicit revenue streams used by North Korea.

There are signs that trade might have decreased since December 2013, when Kim Jong-un's uncle, Jang Song Thaek, a key interlocutor and proponent of business links with China, was purged. Pyongyang officials and trading companies have become more cautious, and a certain mistrust has developed in China (Ishida 2014), but it is too early to draw conclusions about the final outcome. Given the dependency on China, however, even if trade decreases somewhat, the overall picture would remain the same.

Thus, North Korea's trade with China is a major supply line, crucial for keeping the North Korean economy afloat and its regime in power, not least because South Korea can no longer be relied on as an external trading partner. The ability to target this stream using sanctions is dependent on China's willingness to implement new measures, which it tends to be reluctant to do beyond a minimal level. Nonetheless, it is a line of supply that should be targeted by the international community as it is a major revenue stream. Sanctions should target all areas except those of direct importance to the life and health of the general population. Current sanctions that aim to restrict North Korea's transport links, including those which ban trade in weapons and dual-use technologies, precious metals and diamonds, and the export of luxury goods, should be fine-tuned and extended. The same is true of sanctions that target financial transactions and services. These measures should be taken despite the fact that existing sanctions have not been successful in changing North Korea's behaviour, at least not in the way the international community would have liked. Realistically, it is unlikely that new sanctions will make a major difference, as China's support seems unlikely, beyond its vote in the Security Council and paying lip-service. That, however, is no reason to refrain from imposing new sanctions, which send signals to and create obstacles for the regime in Pyongyang.

4.4 The Kaesong Industrial Zone

North Korea's second-largest trading partner is South Korea. Total trade between the two Koreas was USD 1.5 to 2 billion per year between 2007 and 2012 (Republic of Korea Ministry of Unification 2014). Today, however, the Kaesong Industrial Zone is the only remaining avenue for direct economic cooperation. The zone employed almost 50,000 North Koreans and had a trade value of USD 1.971 billion in 2012. As a government-controlled entity, it is of crucial importance because any surplus generated, including from taxation of the wages paid to North Korean workers, goes directly to official coffers (Myong-hyun 2013). It is also an important source of hard currency, as payments are made in US dollars.

Closing the complex would be a major blow to the North Korean regime. If the international community wished to strike hard at North Korea, and its access to hard currency, attempting to convince the government in Seoul to close the zone down would be an option. It is of course highly unlikely that such an attempt would succeed. South Korea, in seeking to reunite its northern sisters and brothers, takes a longer-term view, and its priorities are not necessarily the same as those of the international community. It should be noted, however, that the closure of the zone between May and September 2013 demonstrated that the zone is not all-important.

4.5 The export of labour and remittances

The export of North Korean labour and the remittances sent back by ethnic Koreans abroad are two sources of revenue that are seldom mentioned. This is unfortunate, in particular in the case of the export of labour which has developed into one of the regime's major sources of revenue. North Korea has expanded the presence of contract labour abroad since the mid-2000s. Drawing on data from the International Network for the Human Rights of North Korean Overseas Labor (INHL), it is estimated that 74–81,000 North Koreans have been sent to work abroad in 40 different countries, and a further 20,000 are working in the Chinese border region.⁹ They are engaged in works including logging in Russia, operating restaurants in China and South East Asia, and carrying out construction work in the Middle East and Africa. The estimated value of the export of labour varies.¹⁰ The Peterson Institute for International Economics, one of the leading authorities on North Korea's economy,¹¹ estimates that North Korea netted USD 88 million a year in contract labour remittances between 2006 and 2011, USD 28 million from Russia, USD 40 million from China and USD 20 million from the rest of the world. The estimate for 2012 is somewhat higher. Contract workers are thought to have remitted an additional USD 25 million, making USD 113 million in total.

In addition to the export of labour, remittances are sent to North Korea from ethnic Koreans in South Korea and Japan. Of the 27,000 or so defectors to South Korea, it has been estimated that about half send money back to their families. It is estimated that remittances in 2011 exceeded USD 11 million, an amount that increases as the number of defectors increases and they become more integrated into South Korean society (Greitens 2014, p.59).¹² Although a substantial part of this money goes to ordinary citizens, it is thought that 20–30 per cent is lost in transaction costs, including loyalty offerings, bribes and fees to middlemen.

The amount of remittances from ethnic Koreans in Japan has historically been high. The exact amount is open to debate, and estimates ranged from USD 2 billion to under USD 100 million in the early 1990s. Japanese restrictions and crackdowns on pro-Pyongyang associations mean that the amount has decreased. In 2013, the Japanese Finance Ministry recorded USD 20 million in remittances in the previous three years (Park 2013). However, the accuracy of these figures is difficult to assess as remittances are often sent outside official channels. Nonetheless, it is clear the level is substantially lower than it used to be.

In terms of economic significance, the remittances are of course important for the ordinary citizens who receive them, and the lion's share reaches the family in question. For the regime, their importance is more limited. The regime's share would be only a part of the estimated 20–30 per cent transactions costs – of an already relatively small amount.

In terms of sanctions, remittances are under control. They have been limited through existing financial sanctions, making it highly unlikely that remittances will ever again become a major source of revenue.¹³ Because so much of the remittances channelled to North Korea reach their intended targets, they do more good than harm for the population. On balance, remittances are keeping people and families alive rather than sustaining the regime. Moreover, even if this were

not the case, remittances cannot be stopped – the diaspora always finds a way to send money home. If sanctions make sending remittances more difficult, the transaction costs might become larger but the money will still get through.

The export of labour is a different question, as it is both a major source of income and an area where new sanctions could have an impact. Successfully limiting opportunities for North Koreans to work abroad would be a major blow to the regime's revenue stream. The export of labour is also an area where there is less dependency on China's willingness to impose restrictions, as only 10 per cent of the workers are based in China. In addition, China might not be a stumbling block as it has recently begun to limit North Korean work visas, impose visa restrictions, cap one-year work visas and halt short-term visas for unskilled workers (Ishida 2014).

4.6 Mobile phones

Once something for the privileged few, access to mobile phones has been spreading in North Korea. The number of domestic subscribers reached 2 million in May 2013, up from 1 million the year before, and handsets and subscriptions have become an important source of income.¹⁴ South Korean experts estimate that the income from selling handsets at a mark-up together with the government's 25 per cent cut of the network (the other 75 per cent is owned by the Egyptian company, Orascom) had raised USD 400–600 million by the end of 2013 (Kim 2014, p.40). The profit from subscriptions alone in the first three quarters of 2013 was USD 230 million (Chosunilbo 2014), leading to an estimated annual profit of USD 307 million of which the regime's 25 per cent cut would be USD 77 million. These figures exclude the fees paid by foreigners who since January 2013 have been allowed to keep their phones during visits. SIM cards are sold on arrival. In addition, Orascom has been prevented from repatriating its part of the revenue from Koryolink (USD 422 million in 2013), which if confiscated could add further to North Korean coffers.¹⁵

This already substantial revenue stream has the potential to grow, as North Korea has improved its domestic production of handsets which have a higher profit margin than those imported from China and sold at a mark-up. There is also potential for an increase in its cut of subscription fees in the future.

As it is mostly a domestic activity, there is limited scope to limit this revenue stream through sanctions. The best target would be to restrict the export of the components necessary to build handsets, and the provision of the services and material needed for the upkeep of the network. However, even if this were possible, this is not necessarily an area where the international community should try to intervene, as increased communication in a closed, authoritarian state such as North Korea is likely to have positive benefits.

4.7 Tourism

Tourism is a source of income that from time to time has questions raised about its importance, and whether it does more good than harm. In principle, North Korea promotes tourism for two reasons: to bring in foreign exchange and for propaganda purposes. Tourist income used to be substantial. Hundreds of thousands of South Koreans visited a number of approved sites, such as Mount Kumgang and Kaesong City, each year between 1999 and 2008. These visits ceased after a South Korean tourist was fatally injured in 2008. To some extent, however, South Korean tourists have been substituted by Chinese tourists, who currently account for 95 per cent of total visits. It is estimated that 250,000 Chinese visited in 2012.¹⁶

However, the Chinese are a poor substitute in terms of income generation. As Andrei Lankov (2013c) notes, the tourists tend to be relatively less well-off Chinese citizens from the three neighbouring provinces in China who now have enough spare money to travel. North Korea is a good and inexpensive option for those unable to afford to travel to Europe or South East Asia. As a result, the Chinese tourists do not provide the same level of revenue as the South Koreans did. No open data exist on the income received from tourism, but it has been estimated at no more than USD 100 million per year – and this is probably a high estimate (Unnamed South Korean expert cited in Greitens 2014, p.53).

Although highly visible, Western tourism is negligible in reality at an average of 2000 visits per year. Even allowing for a suggested increase to 4000 visits in 2012, the revenue generated is estimated at to no more than USD 400,000 per year, about 0.001 per cent of GDP (Shanghaiist 2013).

In sum, tourism does make a positive contribution to the North Korean economy, in particular by bringing in hard currency. There are only limited options in terms of sanctions, because the vast majority of tourism and related income comes from China, and outgoing tourism is difficult to prevent. In addition, in the opinion of the author, tourism can lead to beneficial change in the long run, regardless of the effectiveness of the control that exists on interactions between tourists and North Koreans, as the population will learn more about the outside world, and vice-versa (see Weissmann 2012, chapter 5).

4.8 The arms trade

Historically, the arms trade, including missile and nuclear know-how, has been one of North Korea's foremost sources of revenue, bringing in hundreds of millions of dollars each year. A Congressional Research Service report estimated that the value of North Korea's conventional arms trade with developing nations between 1998 and 2001 was USD 1 billion (Nations and Grimmett 2006, p.53). In 2009, some analysts estimated that the arms trade was generating USD 1.5 billion per year (Solomon 2009). This revenue stream has been dwindling as a consequence of UN Security Council resolutions, although Pyongyang continues to pursue the arms trade.

International sanctions have forced the regime to develop multiple, tiered circumvention techniques in order to avoid detection, and it has become increasingly difficult to monitor North

Korea's arms trade. In 2010 the UN Security Council Panel of Experts reported that the best estimate for arms and missile exports was USD 100 million or more per year (UN Security Council 2010, p.27). This estimate remains the best available, as the panel has not been able to determine whether the arms trade has increased or decreased since 2010 (UN Security Council 2014, pp.17–18).

Thus, sanctions have had a major impact on the arms trade as a revenue stream. The efforts to circumvent sanctions are a clear sign of this. The implementation of existing sanctions should continue, not least the work to detect, monitor and intercept suspicious cargoes and financial transactions in and out of North Korea.

4.9 Illicit activities

It is clear that illicit activities have provided and continue to provide a lifeline for the regime in North Korea. (For a more in-depth review of North Korea's illicit activities see Wyler and Nanto 2008; Greitens 2014; Nanto 2009; Kan et al. 2010.) Even after the US and the international community initiated a range of operations targeted at such activities, drug trafficking, and the smuggling of contraband such as endangered species, counterfeit cigarettes and pharmaceuticals continue to be a major source of income –as does North Korean involvement in currency counterfeiting, although evidence is more limited in the latter case. The exact value of these illicit activities is difficult to assess, but a 2008 estimate (Wyler and Nanto 2008) that the revenue obtained from illicit activities is as much as USD 500 million per year, or one-third of North Korea's annual exports, gives an indication of its level of importance.

Since 2005, pressure on these activities has increased, and North Korea has shown great adaptability as sanctions have forced new ways to conduct the illicit trade. The trade has become less visible, but not necessarily declined. It is clear that the Chinese border area has become more important over time, as sanctions have limited the ability to use traditional shipping routes. There has also been an emerging shift in the level of government control.¹⁷ The production of illicit goods has been either decentralised or conducted by state-tolerated private entrepreneurs. There has also been a broadening of participation, with illicit activities no longer being an elite affair but now also including ordinary North Koreans. The income that reaches the regime has decreased as a consequence of these changes.

It is of course possible that Pyongyang has become more skilled at hiding its involvement, but this is highly unlikely to be the sole explanation. Even if working without formal linkages to the state, nobody is ever totally independent in North Korea. To be successful requires good connections within the government in order to ensure protection as well as access to goods. Without protection from contacts within the state apparatus, independence, freedom and possibly life are likely to be short-lived. Participation in an illicit trade such as drug trafficking requires access to the goods to be traded, obtained from the government organisation that produces them or the military, or protection for your own production, as well as access to facilities and labour – be it a factory or a prison camp.

As external pressure increases, the regime is looking inwards for domestic sources from which to extract revenue. The regime, and its officials, has become more reliant on market mechanisms rather than direct control to extract their cut, be it through loyalty offerings, bribes or other forms of contributions. Different forms of public-private collaboration have also developed, state entities and private individuals have joined together in different illicit activities, where a division of labour occurs between state and private-sector actors. The drug trade is a good example of this practice (Hastings 2014). There are of course also officials who go into business for themselves as a side-line to their normal employment.

In conclusion, illicit activities continue to be a crucial supply line for the regime. Existing sanctions have put a lot of pressure on North Korea. Although they have failed to affect the North Korean nuclear programme, they have had a major impact on how illicit activities are undertaken. North Korea has adapted to circumvent rather than conform to the aim of the sanctions. For good and ill, government involvement is more hidden, much of the production has moved into North Korea and the trade has moved to the Chinese border. This limits the international community's ability to get much further without Chinese assistance. However, there is at least some evidence that the regime's income has decreased (Greitens 2014). Sanctions should continue and be fine-tuned and expanded in order to increase their effectiveness at reducing revenue streams from illicit activities. The fact that the number of channels has been restricted increases the potential to make a substantial impact if China were to increase its pressure.

4.10 Foreign assistance

Although food assistance has been important in helping to feed North Koreans in the decades since its domestic agriculture collapsed, today such assistance is very limited. According to recent data from the Hyundai Research Institute, foreign assistance amounted to USD 63.1 million in 2013, a 47 per cent fall on 2012 (cited in Yonhap 2014a). In other words, this is now a limited line of supply. In the US, most forms of economic assistance are prohibited or limited to purely humanitarian assistance. Having provided over USD 1.3 billion between 1995 and 2008, there has been almost no contribution since early 2009 (Manyin and Nikitin 2014). The contribution of the European Union is also limited, albeit more substantial. In the past two decades, over EUR 366 million has been provided in the form of agricultural support, food aid, and medical, water and sanitation assistance. Since the European Community Humanitarian Office (ECHO) in Pyongyang was closed in 2008, the focus has been on long-term, focused humanitarian assistance (European External Action Service 2014).

Foreign assistance is not an area that should be targeted by international sanctions. On balance, as foreign assistance is both limited and mainly focused on humanitarian needs, its benefits to the population outweigh the benefits for the regime. In addition, donors have demanded access and monitoring. This is a very different situation from that in the mid-1990s to the second half of the 2000s, when the level of assistance was larger and involved far less scrutiny, particularly in the case of China and South Korea. Furthermore, existing international sanctions impose

strict limitations, limiting assistance with the exception of that targeted specifically to the humanitarian and development needs of the civilian population, or for denuclearisation. Furthermore, existing sanctions provide a range of measures to control financial transactions and assets, and transportation. It is important now to increase the efficiency of the mechanisms for monitoring how assistance is used and, once again, to try to convince China to do the same.

5. Conclusions and policy recommendations

The North Korean economy, and by extension the regime, has survived despite its dire state and extensive international sanctions. This has been possible by skilfully adapting to new circumstances, and finding new ways to maintain supply lines and revenue streams. North Korea has been able to develop and use a broad range of supply lines, new and old. It has also over time been able to alter the relative importance of these, including the way in which they operate to avoid sanctions. Furthermore, they have also been able to develop new ones. In addition, there has been a shift away from direct state control over illicit and semi-official activities, instead putting more trust into market mechanisms and obtaining the state's and the regime's shares through different forms of loyalty offerings, bribery and different forms of public-private constructions. These shifts have made it more difficult to target the different sources of revenue.

In terms of supply lines, the development and utilisation of the shadow economy and semi-official trade have been crucial to keeping the state and regime in power, as well as the population alive. The success of the court economy has been crucial to regime survival. Of the supply lines, the export of labour and the revenue drawn from the national mobile phone network stand out, being both new and surprisingly large. The arms trade continues to bring in revenue, as do tourism and remittances, although none of these three are as important as they used to be. Illicit activities continue to be a major source of revenue. However, as the government has become more skilled at hiding its involvement, it has become increasingly difficult to estimate the actual amounts involved or obtained by the regime. International trade is also a major source of income, with China together with South Korea the main trading partners. Foreign assistance also contributes, but is very limited in comparison.

International sanctions have had a major impact on North Korean options and behaviour, despite failing to halt its nuclear programme as intended. Its options have grown more and more limited over time, and North Korea today is almost totally dependent on China for both legitimate and illicit trade, as well as for access to the outside world through the Chinese border.

So what can be done to improve current sanctions? And what should future sanctions look like? It should by now be clear that there are no silver bullets. First and foremost, it is important to do the utmost to implement existing sanctions, including monitoring them and fine-tuning them where appropriate. All possible efforts should also be made to persuade those states which are not currently complying with them to do so. Sanctions cannot fully succeed as long as China and to some extent South Korea continue to engage with North Korea. In the latter case, the level of engagement has been fluctuating but decreasing over time. Nonetheless, South Korea

is likely to continue to engage as it is Korean brothers and sisters who are living north of the demilitarised zone, with whom it will want and need to unify one day. It is crucial to try to convince Beijing to go beyond minimal implementation, as in the end the impact of sanctions will always be largely dependent on China's actions. This is even more the case now, as North Korea's dependency on China is at an all-time high and there are few signs that the trend will change even if North Korea were to try to involve others, such as Russia. Realistically, however, China will not suddenly change its policy on North Korea, as its interests are not the same as those of the West. Nonetheless, it is important to try to engage China when implementing the sanctions regime, as without China any effects will be limited.

More specifically, sanctions should target the following areas:

1. **The court economy** should be a primary target for international sanctions. Financial sanctions are likely to be most effective.
2. **Labour exports** should be targeted by sanctions. They are a major revenue stream and an area where dependence on Chinese compliance is less important.
3. **International trade** should be targeted by international sanctions. Existing sanctions should be fine-tuned and developed. It is highly unlikely that they will make a major difference, however, as it seems likely that North Korea's primary trading partner, China, will not comply. Nonetheless, such sanctions send a signal and create obstacles for the regime in Pyongyang.
4. Efforts to implement sanctions targeting the **arms trade** should be continued, not least the work to detect, monitor and intercept suspicious cargoes and financial transactions in and out of North Korea.
5. Sanctions targeting **illicit activities** should be fine-tuned and developed in order to increase their effectiveness. Efforts should be made to convince China to increase its pressure as, besides China, there are few channels left for North Korean illicit activities.
6. **The Kaesong Industrial Zone** is in theory a good and easy target for sanctions and its closure would be a major blow to the regime. However, in practice this is out of the hands of the international community, and it is unlikely that South Korea would be willing to close Kaesong.

The following areas should not be targeted by sanctions:

1. **The shadow economy and semi-official trade** are not good targets for sanctions. They are difficult to target, and to do so would be likely to have a disproportionately negative effect on ordinary North Koreans.
2. **Remittances** are under control and there is no need for, nor any expected impact from, more sanctions.
3. The **Mobile phone network** offers limited opportunities for successful sanctions, but the proliferation of mobile phones should not be a target for sanctions as increased communication in a closed, authoritarian such as North Korea is likely to have positive benefits.

4. **Foreign assistance** is not an area that should be further targeted by international sanctions.
5. Outgoing **Tourism** is not possible to develop effective sanctions against. Nor would it be a good thing if wanting North Korea to open up.

6. Endnotes

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² For an in-depth analysis of the North Korean economy see Nanto and Chanlett-Avery (2010).

³ Market activities have been encouraged at times, as in the early 2000s when there were experiments with loosening control as a way to reduce the problem of food shortages. More recently, in particular since 2008–2009, there has been a crackdown on “free market” activities, which had resulted in an increase in power and wealth among merchants. This crackdown can be seen most clearly in the 2009 currency reform, which in effect wiped out private savings (Lankov 2013b, pp.126–32).

⁴ For a detailed description of the EU’s measures see Council Decision 2013/183/CFSP of 22 April 2013, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:111:0052:0074:EN:PDF>. Details of the UN sanctions can be found at <https://www.armscontrol.org/factsheets/UN-Security-Council-Resolutions-on-North-Korea>. For an overview of all the sanctions on North Korea, including those by individual states, see http://www.sanctionswiki.org/North_Korea. (All sites accessed 1 September 2014.)

⁵ A number of non-European countries, including the US, have also implemented unilateral sanctions outside the UN framework. See http://www.sanctionswiki.org/North_Korea for details (accessed 1 September 2014).

⁶ On the historical development of North Korea’s dependency on China see Swanström and Weissmann (2004a, b) and Weissmann (2012), chapter 5.

⁷ There are also examples of government officials working in the private sector to supplement their government income and rations.

⁸ Statistics from KOTRA, cited in Yoo (2013).

⁹ The data on the export of labour are difficult to assess. The estimates used here are taken from a report by the INHL (2012, p.19). This report is also used by Sheena Chestnut Greitens in her 2014 report on illicit activities in North Korea, although she adds up the numbers to 60–65,000 (Greitens 2014, pp.54–57). Other sources mention 30–40,000 (Chosun Ilbo 2012), 46,000 (Chosun Ilbo 2013) or talk in terms of “Several tens of thousands of North Korean workers...in north-eastern China [in 2014]” (Ishida 2014). Numbers as high as 120,000 have been circulating (see Noland 2013). The INHL estimates that 20–25,000 workers were sent to

Russia, 27–28000 to China (7–8000 to work in local restaurants and construction sites, and 20,000 to Jilin, Tumen and Hunchun cities, which connect China to the Tumen River), 15,000 to South East Asia, 15,000 to the Middle East, 7–8000 to Africa, 5000 to Eastern Europe and 5000 to Mongolia (INHL 2012, p.19).

¹⁰ One problem with estimating the value of revenue from labour remittances is that it is difficult to know how large the regime's cut is for expenses and loyalty offerings. Estimates here range from 50 per cent to as much as 90 per cent.

¹¹ Personal communication with Marcus Noland, 10 June 2014.

¹² There is a consensus among experts that the amount is about USD 10 million/year.

¹³ It is highly unlikely that this would be the case even without sanctions. The vast ethnic Korean population in Japan that used to send large amounts to their relatives in North Korea has over generations become less inclined to do so. The amounts recorded in the 1990s will never be repeated.

¹⁴ This is not the same as 2 million North Koreans owning a mobile phone, as the subscription structure encourages ownership of more than one handset, and 25 per cent of phones are for official use (Y. Kim 2013).

¹⁵ The amount originates in an audit report by Deloitte cited by Williams (2013). A copy of the full report is available at http://www.nkeconwatch.com/nk-uploads/10__IFRS-30-September-2013.pdf (accessed 21 September 2014).

¹⁶ These numbers are the subject of some debate, but 250,000 seems to be the best estimate. At one point a North Korean official claimed that as many as 700,000 Chinese were visiting North Korea. This statement cannot be verified elsewhere, and is likely to be untrue or the result of some kind of misunderstanding.

¹⁷ In the mid-1970s to mid-1990s, it was common practice for North Korean officials to be heavily engaged in smuggling a range of products. From the mid-1990s to the mid-2000, the pattern changed as North Korea shifted its focus to the production of different products, such as counterfeit currency and methamphetamine, rather than distribution, which was outsourced to different criminal organisations (Greitens 2014).

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SWEDISH INSTITUTE OF INTERNATIONAL AFFAIRS

Visiting Address: Drottning Kristinas väg 37, Stockholm
Postal Address: Box 27 035, 102 51 Stockholm
Phone: +46 8 511 768 05 Fax: + 46 8 511 768 99
Homepage: www.ui.se