SPECIAL REPORT

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North Korean Phone Money: Airtime Transfers as a Precursor to Mobile Payment System

By Yonho Kim

A man talks on his mobile phone while walking in downtown Pyongyang on December 15, 2018. (Photo by Dita Alangkara/AP)

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Summary

- With the significant rise in cell phone use during the Kim Jong Un era, North Koreans have come to increasingly rely on cell phone communications for financial transactions, using mobile airtime as a proxy for cash when transferring funds or making small, on-the-spot purchases of common goods and services.
- Such transfers are popular because of their reliability and ease. The high cost and inconvenience of purchasing more call minutes, or "phone money," coupled with the ease of transferring them, has created a secondary market for airtime.
- Airtime transfer has the potential to evolve into a formal mobile money system. This would give the market access to reliable and convenient funds transfer and digital payment services.
- A successful mobile money system is still far away, however. North Korea would need to raise the mobile penetration rate, make massive initial investments, adopt customer-friendly service, and address lack of trust in official financial institutions and the won.
- These changes could help open North Korea, providing valuable opportunity for the international community. As nations explore new ways to induce the country's denuclearization and encourage economic and social reform, a mobile money system could be a new opportunity for engagement.

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ABOUT THE REPORT

The airtime transfer system in North Korea has the potential to evolve into a formal mobile money system that would enable customers to deposit, send, and withdraw funds on their mobile phones. Such a development would require reforms that could open the country and provide valuable opportunities for international influence. Supported by the North Korea program at the United States Institute of Peace, the report is based on interviews with North Korean defectors, news reports, and related literature.

ABOUT THE AUTHOR

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North Koreans gather in Pyongyang's Kim Il Sung Square on January 4, 2018, to show support for the goals set out by Kim Jong Un in his New Year's address few days before. (Photo by Jon Chol Jin/AP)

Introduction

North Korea's rhetoric has increasingly emphasized economic development since Kim Jong Un took power in 2011. After declaring completion of the state nuclear force in his 2018 New Year's address, Kim announced in April 2018 a "new strategic line" that shifted from the parallel (*byungjin*) policy of pursuing both economic growth and nuclear weapons to concentrating on the economy.[1] Furthermore, fully aware of the failure of the inconsistent market policies of his father and predecessor, Kim Il Sung, Kim has shown greater tolerance for market activities and introduced some economic reform measures, including increased managerial latitude for state-owned enterprises (SOEs) and farmers' limited right to sell excess output at market prices. Although North Korea decided in early 2020 to return to its previous policy of pursuing nuclear and economic development simultaneously, the change has not pushed market concerns to the sideline. The nation is continuing to explore ways to revitalize its economy in the face of robust international sanctions. Indeed, in Kim's December 2019 speech to a plenary meeting of the Central Committee of the Workers' Party, which immediately preceded the return to byungjin, he stated that "the key front in today's offensive for making a breakthrough head-on is the economic front" and expressed a desire to "tap all the possible production potentials so as to fully meet the demand needed for economic development and people's life."[2]

The government is seeking to regain control over the economy, however, as well as to spur sustainable economic growth.[3] The country's devastating currency revaluation in late 2009

Since the introduction of 3G mobile telecommunications services in late 2008 . . . North Koreans increasingly rely on cell phone communications for conducting financial transactions.

destroyed trust in the North Korean won and reinforced a preference for foreign currency for transactions and savings. The subsequent dollarization of the economy, coupled with rampant unauthorized private finance and lending and investing for profit, led to unprecedented market activities in many sectors and helped the regime achieve monetary stability. But it came at a cost—a nonfunctioning official banking system.[4] Efforts to restore the trust of potential depositors have largely been unsuccessful despite newly established commercial banks offering competitive interest rates of up to 9 percent.[5] Further, although the government has introduced various cash cards, which are accepted widely in the capital city of Pyongyang, cash remains the primary form of payment across North Korea.[6]

Since the introduction of 3G mobile telecommunications services in late 2008, and as the government struggles to convince the market to use the new electronic payment technologies, North Koreans increasingly rely on cell phone communications for conducting financial transactions. More than one in five North Koreans have cell phone service (five million subscribers in a country of about twenty-five million people) and can make long-distance payments or money transfers through private networks of wealthy merchants (*donju*), who function as private local bank branches. Like the *hawala* transactions popular in the Middle East, North Africa, and South Asia, North Korean money transfers do not take place in cash but instead are based on communications between members of a network of donju. Receipt of payments is confirmed between senders and recipients by cell phone calls, and donju have their own clearing system.[7]

For settling small sums, however, many North Koreans transfer airtime or prepaid call minutes. In other words, they treat mobile airtime as a proxy for cash. The recipient can in turn transfer airtime minutes to other people or to professional airtime traders for money, indicating the existence of an active secondary market for airtime.

Similar markets in Kenya and elsewhere suggest that airtime transfer has significant potential to evolve into an official mobile money system that enables customers to deposit, transfer, and withdraw funds on their mobile phones and even take advantage of saving and lending services.[8] Were North Korea to adopt such a system, the interests of the state and the market could converge productively. The government would secure a powerful mechanism to mobilize private money and monitor the flow of capital, and the market would have access to reliable and convenient money transfer and digital payment services. Enhanced markets and commercial transactions could also strengthen people's economic self-sufficiency, providing a stronger coping mechanism against government mismanagement and ultimately leading to greater welfare and stability. However, several considerable obstacles stand in the way of the evolution of a successful mobile money system in North Korea. They stem from the fundamental tension between the government's desire to maintain control over its people and the people's lack of trust in official financial institutions and currency.

Airtime Transfer and Phone Money

The units that North Korean cell phone subscribers can trade with one another are call minute credits known as "phone money."[9] For a quarterly service charge of around ₩3,000 (approximately 10¢ US per month at black market exchange rates), cell phone subscribers receive two hundred call minutes and ₩150 in phone money per month (not related to the currency unit). Phone money can be carried over to the next month, but unused call minutes cannot. After using up the two hundred minutes, subscribers can use the ₩150 without having to pay an extra service charge. A one-minute call costs ₩4.2 in phone money, meaning an extra thirty-five call minutes become available after using up the two hundred minutes provided in the basic call plan. However, cell phone subscribers can also transfer the phone money to another subscriber up to a maximum of ₩150 per transaction.

After using the ₩150 in phone money, users who need more call time can recharge phone money with prepaid cards sold at official service centers. Payments can be made either in US dollars or Chinese yuan. The service centers accept both cash and the Narae card, a cash card that can be topped up with foreign currency only.[10] Interestingly, government service centers require subscribers to make payments in foreign currencies. One hundred won in phone money costs about $1 or ¥10.

Relative to the recharge costs, the initial two hundred call minutes in the basic plan are considered basically free. Because the 235 minutes in the basic plan—two hundred minutes plus thirty-five minutes from the ₩150 credit—cost as little as 10¢ per month, subscribers pay 0.04¢ per minute. However, the cost of call minutes on the prepaid top-up card jumps more than a hundred times to around 4¢ per minute.[11]

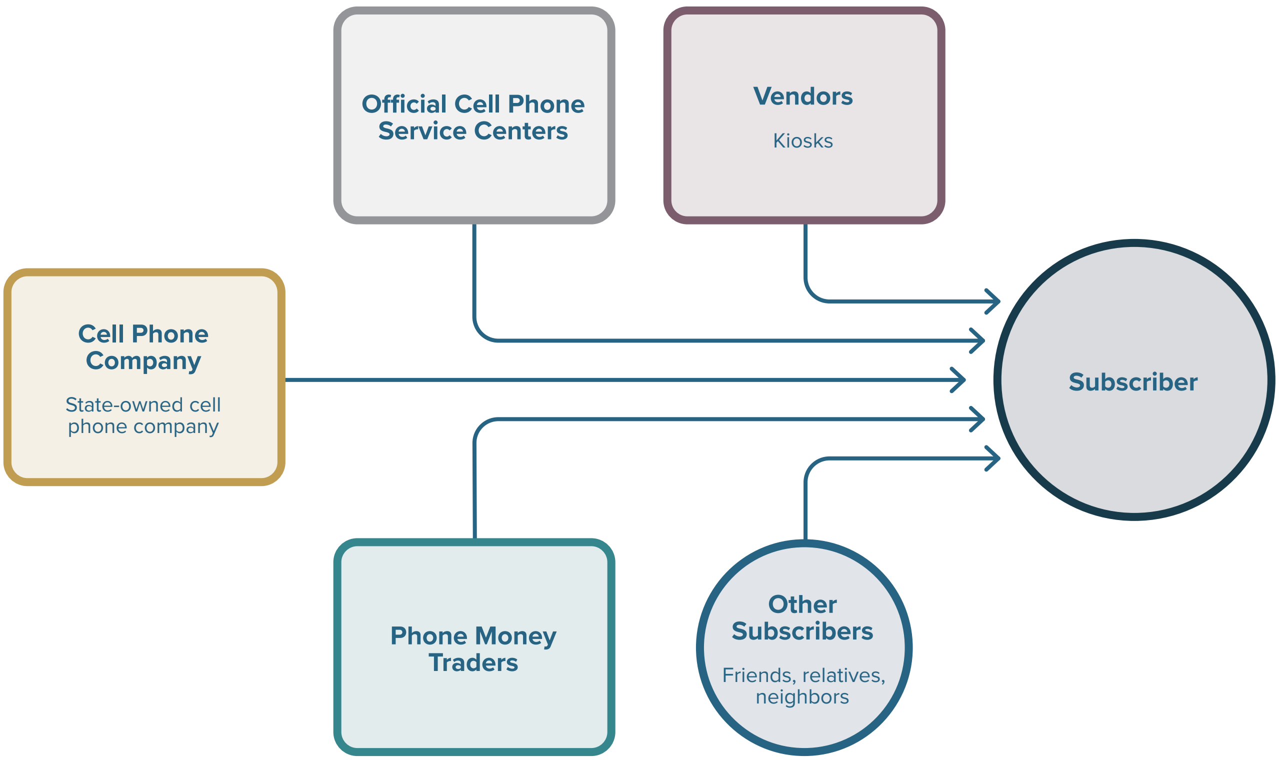
Interviewees for this report—which consisted of five North Korean defectors interviewed in Seoul, South Korea, in July and August 2019—all complained about the inconvenience of recharging at government service centers.[12] Located mostly in downtown areas, they are not easily accessible for those outside the cities. Subscribers who manage to make a visit often find that the centers have closed without advance notice. And because of the limited number of service centers, people frequently experience long wait times.

To avoid this inconvenience, subscribers frequently rely on phone money traders who sell cell phones, and who recharge their own phone money in large amounts on multiple cell phones at the service centers. Their stalls are readily found at local marketplaces (*jangmadang*) or in neighborhoods, where they hang signs reading "We buy and sell phone money." Kiosks are another popular and convenient venue, especially in Pyongyang. Subscribers can also buy phone money from their neighbors, friends, or other merchants. The price they pay depends to a degree on their ability to haggle. If their relationship is close enough, subscribers send phone money for free believing they will get the same favor from the recipient when in need.

Professional traders transfer phone money to their customers at the official recharge prices ($1 or around ¥10 per ₩100 phone money) plus profit margins. These margins, which can go as high as 10 to 20 percent, are open to negotiation depending on which side more desperately needs to sell or buy. They are kept in check, however, by the fact that local market prices of phone money are easily determined by checking on the spot, by cell phone, with different traders, merchants, or

FIGURE 1.

Phone Money Inflow



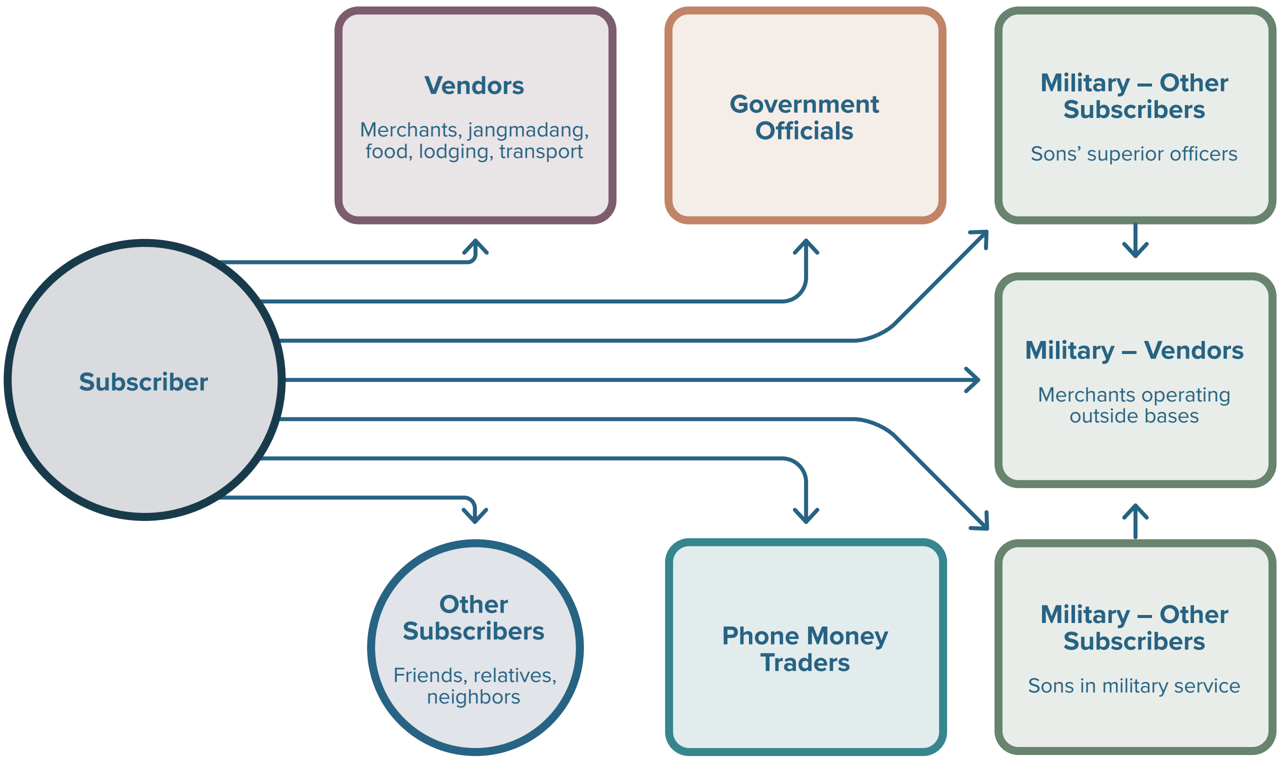
friends. Traders also buy phone money at prices lower than the official recharge rate. Here, too, profit margins are open to negotiation even though local market prices are available since the secondary market for phone money is active in North Korea. The recipient of the transfer can resell to other cell phone users or professional phone money traders for cash (see figure 1).

Phone money can be transferred easily by pressing *919 and then entering the recipient's phone number, the amount of phone money to be transferred, and the sender's PIN. Although no limits are set on how many times phone money can be transferred, each transfer cannot exceed ₩150. Four won is deducted for each transaction as a transfer fee regardless of the amount of phone money being exchanged.

Because of these constraints, merchants typically do not use phone money for their large transactions. For example, to transfer around $50 (about ₩5,000 in phone money), a merchant would have to make thirty-five transfers of ₩150 and pay transfer fees of ₩140 in phone money (thirty-five transactions times the ₩4 transfer fee) or $1.40. If enough phone money is not on hand, the merchant would be forced to buy from a trader at unfavorable prices. In this case, most merchants prefer a private money-transfer service provided by donju, which is much simpler. The sender needs to deal with only one local donju and has a better chance of paying

FIGURE 2.

Phone Money Outflow



lower transfer fees if the sum is large enough.[13] In contrast, phone money transfer is used mainly for settling small sums around $10 to $20, which is worth ₩1,000 to ₩2,000 in phone money. Still, interviewees pointed out that the significance of small transfers should not be underestimated because even $10 is a significant sum given average monthly living costs in North Korea.

USES OF PHONE MONEY

Phone money transfers (see figure 2) have been gaining popularity nationwide in North Korea as the number of cell phone subscribers has risen dramatically in the Kim Jong Un era.[14] In particular, according to interviewees, they are widely used by parents whose children serve in the military. Young North Korean men are subject to ten years of mandatory military service, but the military fails to provide them enough food. Parents usually cannot send phone money directly because cell phones for rank-and-file soldiers are banned, but they can buy food for their sons by transferring phone money to nearby food merchants or to their sons' superior officers. Officers manage to get illegal cell phones registered under other people's names in order to conduct their own business with smugglers.[15] After receiving phone money from parents, the officers give the sons food bought from merchants doing business near the military

A man uses his smartphone in Pyongyang, North Korea, on May 5, 2015. (Photo by Wong Maye-E/AP)

base. The amount of food the sons get, however, is less than the phone money would buy at the marketplaces. In this way, the officers effectively take bribes from the parents. Some soldiers manage to get and hide illegal cell phones registered under other names and thus are able to deal directly with the merchants. A more convenient way to feed these young men is for the parents to send phone money directly to the merchants. Regardless of the method, the soldiers receive food or even cash from the merchants at unfavorable rates. Still, phone money is the most reliable, most convenient, and fastest way for families to financially support their soldier sons.

Phone money transfers can also take place if the recipients (such as jangmadang merchants, retail stores, taverns, restaurants, bus ticket sellers) agree to provide goods or services at agreed prices. The recipients receive phone money at discounted prices, relieving them of the burden of having to visit the service center to recharge or buy phone money from other subscribers at unfavorable prices.

Cell phone subscribers can use phone money to purchase goods or services in an emergency. One interviewee said that although he lost his wallet while on long-distance business travel, he safely returned home with phone money his wife had sent. He paid for his one-night stay at a tavern, bus ticket, and food by transferring phone money from his wife to a tavern owner, a ticket seller, and a restaurant owner, respectively. In another case, a retailer from a rural area transferred phone money to a wholesaler in town when she found that she still owed $20 to $30 for wholesale goods after using up her cash.

When purchasing small quantities of goods or services, phone money is a good substitute for cash. Merchants at the markets encourage their customers without enough cash to pay with phone money. One woman confessed that, while at a jangmadang, she made an impulse cosmetics purchase using phone money.[16] Restaurants also accept phone money for small payments. Sellers welcome this electronic option, in part, because they provide customers with the ability to make purchases they otherwise might not. Furthermore, sellers do not have to worry about paying electronic transaction fees, such as the credit card processing fees that are typically charged in other countries. Instead, it is the customers who pay the fees, which are automatically deducted and paid to the government for each transfer. Even with this added cost to consumers, the convenience of phone money still makes it a favorable payment method.

Phone money is also a popular form of gift or bribe. One interviewee, who made decent money from market activities, said that he often transferred phone money to his girlfriend and parents as a gift. (Such gifts, he added, were an effective way of impressing his girlfriend.) Phone money is also a convenient way of sending wedding and birthday gifts to relatives who live in other provinces. Another interviewee said he sent phone money to the military officer supervising his son to be used for celebrating the officer's birthday.[17]

From Airtime Transfer to Mobile Money

Mobile money evolved to accommodate emerging customers' needs, growing out of funds transfers to merchants and for bill payments, savings, and loans. A mobile money system enables users to deposit, send, and withdraw funds on a mobile phone without needing a bank account. Airtime, a proxy for money, has discounted cash value in the secondary market because of the lack of institutional support for airtime transactions. In contrast, mobile money's cash value is maintained throughout transfers, even though transfer fees have to be paid. Customers can transact at any of the service agent outlets, which provides accessibility even in rural areas where banking services are not readily available. Given the unprecedented market activities of the Kim Jong Un era, demand for convenient and safe money transfers has been expanding. By introducing a formal mobile money system, North Korea could regain some control over the private money circulating outside the public financial realm even as it bolsters economic activity, self-sufficiency, and welfare among the people.

KENYA'S M-PESA PLATFORM

In many low-income countries across the globe, the integration of mobile phones and banking has proven a promising mechanism to stimulate economic growth and development. These models, and in particular that of Kenya, indicate that North Korean phone money may have the potential to evolve into a true mobile money system (even though microfinance through mobile money may not be available in the near future.) Mobile money has enabled the vast majority of Kenyans to access formal financial services despite the country's underdeveloped banking infrastructure, demonstrating the potential of mobile telecommunications to enhance economic development and poverty reduction.[18] As a result of its remarkable success at home, Kenya's mobile money system M-Pesa has spread to other parts of the developing world, including Tanzania, the Democratic Republic of Congo, Ghana, Mozambique, and Egypt.[19]

In some African countries, including Ghana, Kenya, Nigeria, Senegal, and Uganda, the explosion in the use of mobile phones in the early 2000s led to airtime (prepaid call minutes) being widely treated as a form of currency even before mobile money was introduced. After service providers introduced airtime exchange systems to enable subscribers to share call minutes across multiple prepaid cards, it quickly evolved into a cash remittance substitute. Given the lack of a working banking system, a large unbanked population, and the proliferation of cell

An M-Pesa booth in Nairobi on March 26, 2014. (Photo by Sven Torfinn/New York Times)

phones among the unbanked, subscribers found that airtime exchange was a convenient alternative to long-distance money transfer, a service traditionally limited to qualified bank account holders. The airtime recipient could resell the added airtime to other subscribers or use it to purchase goods or services as North Koreans do with their phone money transfers.[20]

Noticing the widespread use of airtime as a proxy for money, the British Department for International Development and Safaricom, Kenya's largest mobile service provider, partnered to launch the M-Pesa mobile platform in Kenya in 2007.[21] This platform provided unbanked subscribers with access to SMS (short message service) financial services, including depositing, sending, and withdrawing funds. As mobile money caught on, the M-Pesa service expanded to merchant payments, bill payments, savings in a virtual account (M-Shwari), money transfer between the service and a bank account, and—in partnership with banks—loans.

Kenya's M-Pesa is considered one of the most successful examples of mobile money service.[22] As a result of mobile money, Kenyans' access to formal financial services—provided by banks, insurance companies, post offices, mobile telecommunications service providers, and so on—rose to 83 percent in 2016.[23] In late 2018, the nation had 31.6 million active users of mobile-money transfer services, which means that more than 60 percent of the population now has access to a secure, convenient, and cost-effective funds transfer platform.[24] The number of vendors who use the M-Pesa exchange for payments has grown from 23,000 in 2010 to more than 110,000 today, allowing its users to purchase all major goods and services with mobile money and to be fully integrated into the marketplace.[25] M-Pesa's success facilitated the creation of numerous small businesses and jobs and extended financial inclusion to many low-income Kenyans.[26] As a result, Kenya's mobile transactions stood at $38.5 billion in 2018, a 10 percent increase from 2017, meaning that 44 percent of Kenya's GDP flowed through mobile money.[27]

Several factors made M-Pesa's success possible among the dozens of other mobile money systems launched worldwide. First, the high cost and high risk of existing funds transfer methods attracted Kenyans to the new platform. The most popular method of sending money before M-Pesa—having it physically transported by bus or taxi companies—involved high risk of non-delivery. The ill-functioning Kenya Post, the major formal remittance provider in the country, was costly and slow and often faced liquidity shortages at rural outlets. The formal banking system, with only 840 branches throughout a country nearly the size of Texas, could not compete with M-Pesa's almost 17,000 cash outlets.[28]

Second, a clear and effective marketing campaign addressed the common need for convenient, fast, safe, and affordable remittances. The "Send Money Home" campaign targeted traditional migrant urban workers who needed to send money to their families in rural villages. Such long-distance remittances were the primary income source for about one in five Kenyan households.

Third, the dominant market position of Safaricom allowed M-Pesa to take advantage of significant economies of scale. Its market share of 80 percent meant, Safaricom secured "a larger customer base for cross-selling the mobile money service, a larger network of airtime resellers which [could] be converted into cash-in/cash-out agents, stronger brand recognition and trust among potential customers."[29]

Finally, regulatory leniency on introducing the mobile money scheme on an experimental basis paved the way for the service to proceed afterward. Although domestic banks strongly opposed the proposition, the Central Bank of Kenya exempted M-Pesa from traditional banking requirements in return for Safaricom's commitment to depositing all customer funds in a regulated financial institution.

NORTH KOREA'S POTENTIAL

In many ways, North Korea faces the market conditions that Kenya did before launching M-Pesa. Most of the population is unbanked, and mobile penetration has grown exponentially since the launch of 3G service in late 2008. North Korea's official banking system is still struggling to regain the unbanked people's trust, which was damaged by the disastrous currency revaluation in 2009. Although cash cards for both domestic and foreign currencies have been introduced and banks are allowing withdrawal of deposits in won, the paucity of bank branches outside of Pyongyang still leaves formal banking services beyond the reach of most of the population.

Private money transfers are still not readily accessible for low-income, small-amount senders. The importance of credibility-based business relationships in the market increasingly compels merchants to have drivers of private, for-profit vehicles (*servi-cha*) deliver settlement costs. However, this service is mostly used for large-amount settlement costs; it is also time-consuming and susceptible to unexpected events en route, including detainment at checkpoints.[30] In contrast, private services provided by donju networks are convenient and fast because of cell phone communications. Nevertheless, interviewees said that donju would not bother to transfer less than $50 because they can earn more in fees from larger transactions.

The dominant market position of Koryolink, a joint venture between the state-run North Korea Post and Telecommunications Corporation and the Egyptian telecommunications firm Orascom, has commonalities with the Kenyan case. Koryolink, which has an estimated four million subscribers, had been the sole mobile phone service provider in the country until the government built a second mobile telecommunications network in late 2013, Gangseong Net, which is wholly owned by the Ministry of Post and Telecommunications under the brand name Byol. This new network is believed to have secured up to a million subscribers by early 2016.[31] Because both networks are managed by the government, a new mobile money system in North Korea would not face competition for market share. Orascom, despite its 75 percent stake in Koryolink, has been seeking a strategy for exiting the market in recent years because of North Korea's ban on the repatriating its profits to Egypt.[32]

Since phone money transfer was introduced in the early 2010s, the government is not known to have issued any regulations or crackdowns on private phone money trading. Interviewees asserted that security officials could easily have located phone money traders in the marketplace. For now, however, the government seems satisfied with the revenues from transfer fees, taking advantage of the lack of competition and increasing demand for convenient and reliable money transfer tools. Further, because recharging phone money can be paid for only with foreign currency, the transfer system allows the government to absorb household cash in foreign currencies that would otherwise have remained hidden in closets or under floorboards.

Although it is not clear whether Pyongyang is ready to implement one, a true mobile money system could be an important supplement to a functioning modern banking system. Indeed, since the early 2010s, the government has been pushing hard for an electronic payment system by introducing a series of bank-issued cash cards for both domestic and foreign exchange transactions and the electronic commerce system Okryu. North Korea's Central Bank also issued a cash card, Jonsung, for transactions conducted in won, including deposits, withdrawals, money transfers, and electronic payments. Workers in factories and firms are reportedly forced to get the cards to receive their salaries and to use when making purchases.[33] However, many people accustomed to cash transactions have been reluctant to switch to the government's electronic payment system. One interviewee testified that he carried cash cards not for practical purposes but for appearance of wealth and coolness they conveyed, pointing out that the lack of bank branches made reloading cash cards inconvenient in his hometown and that only a few stores and gas stations accepted them.

North Koreans might accept mobile money as an advanced alternative to the phone money system actively used by increasing numbers of cell phone users. In searching for a functioning information and communications technology–based financial system, the financial policy circle in Pyongyang is likely studying how mobile money can accelerate, manage, and control the circulation of domestic capital. In fact, the June 2018 issue of the North Korean quarterly journal *Economic Research* discussed future retail financial services based on mobile money.[34]

OBSTACLES

If Pyongyang is serious about introducing mobile money, it first needs to address deficiencies in its domestic infrastructure and its fiscal and monetary policy. It also needs to reconcile the goals of maintaining control over its economy and people and liberalizing commercial transactions and market activity.

Foreigners speak with a salesperson at a Koryolink cell phone rental booth at Pyongyang International Airport on January 22, 2013. (Photo by Jon Chol Jin/AP)

One of the first steps would be to raise the mobile penetration rate. In Kenya, even at the start of the mobile money era, 80 percent of the population had access to mobile phones. In North Korea, by contrast, the number of cell phone users is estimated at only around five million, some 20 percent of the population. The low penetration rate is a product of the extremely high costs of purchasing and topping up cell phones set by the state monopoly power.

In addition, although North Korea's mobile telecommunications infrastructure is stronger than its banking infrastructure in terms of the number of service centers, accessibility is still limited outside major cities. In Kenya, the numerous cash-in and cash-out outlets supported the early success of M-Pesa. For a successful launch of a mobile money system, North Korea will need to make massive initial infrastructure investments and adopt more customer-friendly service.

In the long term, a North Korean electronic payment system needs to be better aligned with the purpose of mobile money, which is to improve large-scale commerce and economic activity. So far, Pyongyang has been single-minded about mobilizing financial resources for the state's fiscal needs. Cash cards, by definition, were not aimed at providing credit to the people as credit cards do, but instead at absorbing foreign currency from households up front through a prepaid system. Cash withdrawal is therefore limited to certain amounts of domestic currency. The recently established provincial banks are no exception. They provide the financial services of deposit, money transfer, and cash card issuance without loans for the residents. Loans are available instead only to state-run firms and factories with good credit standing.[35]

The greatest obstacle to a mobile money system, however, is the people's lack of trust in official financial institutions. Although banks are increasingly accessible and having cash cards has become a symbol of wealth, people still rely on cash-based transactions and prefer informal financing and money transfers that can be completed without having to go through the government system. The biggest concern is that a large deposit would raise a red flag, leading security agencies to question the source of the funds and possibly confiscate them. Although the mobile telecommunications service has gained trust from subscribers and become an indispensable business tool for merchants, the convenience and reliability of cell phones do not offset people's concern about exposing their financial status and details of their business transactions to the repressive government. The interviewees all expressed this reservation and expected that in a new system only small amounts would be involved in each transaction.

The dollarization of the North Korean economy is another fundamental public trust problem that would affect the success of mobile money in the country. Since the failed currency revaluation in late 2009, foreign currencies—mainly the US dollar and Chinese yuan—have largely replaced the North Korean won as the primary vehicle for household savings and transactions.[36] Indeed, the number of US dollars a person has differentiates the wealthy from the poor in Pyongyang.[37] North Koreans use foreign currencies not only for large transactions but also for small, day-to-day transactions at the markets.[38] Kim Jong Un's tolerance of dollarization has led to significant market activities even under international sanctions. If the government ignores the reality of a distrusted North Korean currency and limits the mobile money service to won-based transactions, people will see little reason to adopt mobile money. However, because the government's focus has been on absorbing household stocks of foreign currency for its fiscal needs, it will take strong countervailing reasons and discipline for Pyongyang to allow dollar-based mobile money that involves both cash deposits and cash withdrawals.

Considering these obstacles and limited resources, the government is likely to approach mobile money services cautiously as it explores the right balance between enhancing services, infrastructure, and market activity and maintaining economic and political control. In the initial stages, it could introduce a money transfer service in won without dramatically increasing the number of official service centers, yet ensuring that the system works as intended and monitoring customers' reactions. Mobile money could also be added to the existing mobile payment services at online shopping sites through the North Korean intranet. Other early services enabled by mobile money could include payments at state-run stores in major cities, market tax payments made by merchants for vendor stall usage, and wage payments to employees at SOEs. However, a nationwide mobile money system serving both urban and rural population would require significant government investment to dramatically raise the mobile penetration rate and expand the network of service centers.

Policy Implications

The possibility of a mobile money system in North Korea presents an interesting consideration for the international community as it explores new ways to foster peace and stability on the Korean Peninsula. US policy on North Korea has historically focused on persuading Pyongyang to denuclearize using both pressure and incentives, including granting security guarantees and sanctions relief; providing light water reactors for electricity generation, heavy fuel oil, and nutritional aid; and holding out the promise of better trade relations with the international community. The use of economic incentives is based not only on the Kim regime's desire to strengthen its economic stability and legitimacy, it is also rooted in the recognition that encouraging economic reform can improve the welfare of the people, decrease the chances of instability in North Korea caused by economic dysfunction, facilitate a denuclearized North Korea's reintegration into the international economic community, and contribute to peacebuilding on the Korean Peninsula.[39]

Ultimately, the government in Pyongyang will need to decide whether it is willing to tolerate the trade-off between economic and political control and greater commercial and market activities.

If Pyongyang considers the development of a formal mobile money system, the international community should explore how investment and assistance in developing the country's telecommunications sector could be part of an incentive package that contributes to long-term economic engagement. For example, the International Monetary Fund and World Bank could share lessons learned from the successful transitions to mobile money in African countries. Given China's experience with moving from a socialist economy to state capitalism, introducing mobile payment platforms such as Alipay and WeChat Pay, and assisting North Korea's telecommunications sector, it may be best positioned to play a lead role.[40] Vietnam could contribute based on its economic reform trajectory. South Korea could as well, given its world-leading mobile penetration rate and language and cultural ties to North Korea.[41]

To be sure, various obstacles stand in the way of providing such assistance. The most significant is that North Korea would insist on complete control over domestic markets. Moreover, given the current international sanctions and inhospitable North Korean business environment, engaging with Pyongyang on mobile telecommunications and banking is impractical absent political progress and reform. Nevertheless, North Korea has strived to establish a modern banking system, supported in part by mobile phones, to manage and control its money circulation. In the long term, these developments could pave the way for the country's reform and opening. The integration between mobile phones and banking in many low-income countries has proven to be a promising mechanism to stimulate economic growth and development. Pyongyang appears interested in tapping into this new platform for an economic leap.

When the political and diplomatic conditions are appropriate, the international community should consider ways to leverage Pyongyang's interest in mobile banking and incremental economic reform to explore opportunities for economic engagement. If North Korea introduces a mobile money system that incorporates not only debit card transactions but also practically functioning microfinance, it would be a serious signal that the government is willing to extend credit and pay interest to the people, including the unbanked poor population. Ultimately, the government in Pyongyang will need to decide whether it is willing to tolerate the trade-off between economic and political control and greater commercial and market activities. The international community should be prepared and accommodating when that time comes.

Notes

The author thanks Good Farmers Research Institute, which arranged the interviews with North Korean defectors about phone money. Absent relevant publications, these interviews provided essential, detailed information on phone money transfer practices in North Korea.

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