

Eight Changes in North Korean Economy and Society under the Kim Jong Un Regime

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and Society under the Kim Jong Un Regime

1. Introduction

Today, two extreme views compete on North Korea's economy and society. One view was originated during the hard times when severe food shortages caused mass starvation, factories halted operation because of electricity shortages and other issues, and homeless teenagers wandered marketplaces. According to this perspective, economic and social conditions in the Democratic People's Republic of Korea (DPRK) still remain extremely backward, with famine prevailing. This view goes on to suggest that improvements are mostly reserved to the ruling class in large cities including Pyongyang.

According to the relatively new viewpoint, the North Korean economy is currently on the path of rapid marketization, and the society is changing fairly quickly. This positive image of the DPRK is backed by foreign visitors' testimonies on the economic development; new high-rise apartment buildings; over 4 million mobile phone subscribers; and North Korean products available in large-city department stores and other retail channels.

How can two such conflicting opinions coexist? One reason is a lack of information, coupled with imperfect delivery and interpretation of the data. It also does not help that North Korea's social and economic changes are largely uneven.

As of 2018, North Korea is experiencing neither a devastating famine nor a balanced, high growth across the country. Significant progress is being made compared to Kim Jong Il era, but at a pace far from breathtaking. Change is quite uneven between regions, classes, and industries. Marketization has skewed distribution of wealth favorable to the middle and high-income class, while living

conditions of farmers and other low-income groups remain stagnant. Still, the economy and society at large have been developing and changing since Kim Jong Un's rise to the power.

Based on this perspective, the study aims to share from an objective point of view how the DPRK economy and society have changed in recent years. It will put an emphasis on the fact that the country has clearly been on a recovery path from the 1990s crisis, and another massive famine outbreak is no longer a possibility in the future. Also, we authors would like to stress that all the recovery and changes inside the hermit kingdom fall short of substantial economic development or the formation of a civil society.

This study aims to reveal policies and the current status of eight key areas with prominent changes of the DPRK economy and society under the Kim Jong Un era. The authors focused on contents that would help the ROK government's active preparation for geopolitical changes on the Korean Peninsula. Each chapter is dedicated to one area and has a main author: market and industry (Lee, Seogki), enterprise and labor (Hong, Jea Hwan), finance and currency (Joung, Eunlee), science technology and IT (Kang, HoJye), education (Cho, Jeong-ah), class, region, and generation (Jeong, Eun Mee), gender and reproduction (Park, Young-Ja), and culture and trends (Jeon, Youngsun). Brainstorming sessions were held for each chapter before the authors began writing.

In this research, authors took an interdisciplinary approach to comprehensively interlink internal economic and social changes in the DPRK. Contributors to this study are experts who devoted an

average of two decades to research fields such as economy, society, politics, science, education or culture of North Korea. They brought together policies and current situations from their respective fields identifying economic and social changes in the Kim Jong Un era based on keywords. Authors counted on the results of brainstorming sessions with those contributors selecting keywords and wrote respective chapters reflecting the context of each change.

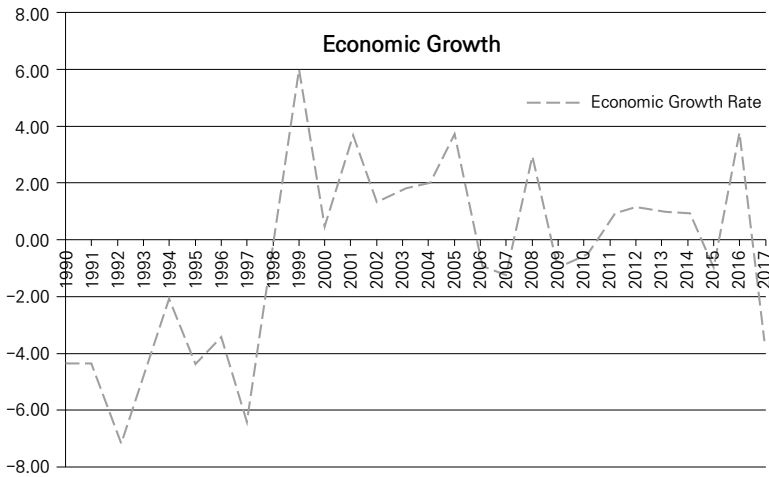
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2. Market and Industry: Industry in Recovery Backed by Market

Economy in Slow but Steady Recovery

After hitting rock bottom in 1998, North Korea's economy has been picking up since Kim Jong Un took power, according to the Bank of Korea (BOK) estimates. In fact, the real pace of the recovery may be faster as the BOK statistics seemingly failed to reflect the impact of marketization, which has deepened under the young Kim's leadership.

<Figure> North Korea's Economic Growth Trend



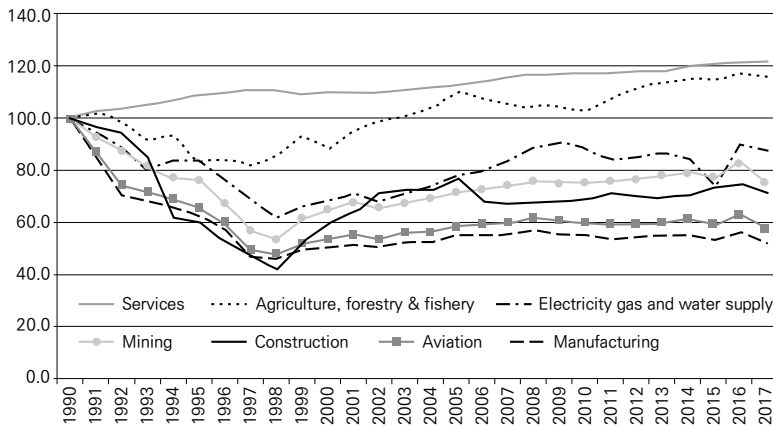
Sources: Bank of Korea, <www.ecos.bok.or.kr> (data accessed September 28, 2018)

However, since the 2000s, North Korea has been experiencing a highly imbalanced economic recovery by industry or sector. Manufacturing appears to be the most lagging. The expansion of overseas trade, centered around minerals export and the growth of service industries alone can push the economy forward only so far, which counters the positive view on the radical growth of DPRK economy. In this study, authors will review the current situation of

the North Korean economy per industry in the Kim Jong Un era.

Today, the biggest engine of economic growth in North Korea is the service sector, driven by commerce and retail industries centering on general markets. In addition, production capacity has begun to signal a recovery in manufacturing, in contrast to the mid- and late-2000s. Energy conditions have also seen progress. While there is little growth in electricity generation, residents and industrial facilities now have a moderately improved access to utility thanks to a wider adoption of renewable resources, energy-saving efforts, and investment in finding new energy sources.

<Figure> Production Trends by Industry (Year 1990=100)



Note: This index demonstrates nominal GNI of each industry.

Service Industry: Growth Engine Boosting Employment and Investment

Replacing heavy industry, an area used to drive the economic growth in the past, the service sector has emerged as the main growth engine of the DPRK economy. A weakened planned economy gave room for commerce and retail to thrive. In turn, other service industries such as transportation and accommodation also took off. North Korea's inflating service sector is spurring economic turnaround in a number of ways, including investment, employment, market creation, and fiscal expansion. To explore where the DPRK service sector stands now and how it is changing, this study looks into general markets, the private-driven service sector's linchpin, along with the tourism industry, a prime example of service industries that are growing under the direction of the government.

General Markets: Starting Point for Economic Recovery and Site for People's Livelihood

General Markets are widely considered the pivot for commerce and retail, two drivers of North Korea's marketization. Developing both in quality and quantity, general markets are an intersection of economic relationships for almost all economic entities in the DPRK.

Tourism: Free from Shackles of Ideology and Political Propaganda

Tourism is one of the most notable service industries that Pyeongyang is strategically fostering. Once considered a means of ideological propaganda, the North Korean government now sees tourism as a promising export industry. It has improved tourism-related infrastructure and developed tourist products to attract international travelers. Today, it is no longer uncommon to spot Western tourists interacting with locals in Pyeongyang.

Utility: Some Progress without Fundamental Solution

To address energy shortages, Pyeongyang has introduced a number of measures. While ramping up the electricity supply, it has also sought out various measures at policy level: the modernization of the energy grid; utility supply management; development and promotion of renewable energy sources; and steady investment in energy-saving among others. These policy measures appear to improve local supply conditions to some extent. However, Pyeongyang's effort to boost energy supply with the construction of water-power plants and the renovation of thermal power plants has brought only limited outcomes.

<Photo> The Korean Peninsula at night viewed from space



Source: Yonhap News.

Manufacturing: Signs of Limited Recovery with Huge Imbalance per Sector

Amid North Korea's economic rebound in the 2000s, the biggest concern was a slow pace of recovery in manufacturing. Lately, there have been signs that the manufacturing sector is finally coming back. The machinery industry is especially noteworthy. At the moment, it is estimated to be the highest-performing industry in the Kim Jong Un regime. Taking a closer look, development and production are on the rise not only in industrial machines such as machine tools and agricultural machines but also transport machines such as motorcars, trucks, and fishing boats. Moreover, a booming machinery industry has paved the way for the domestication and modernization of equipment production, thereby enhancing the

competitiveness of other light industries. The machine industry's rebound might be attributable, in large part, to a steady increase in machines imports from China; a wide introduction of CNC (Computer Numeric Control) machine tools; and the birth of a domestic machine market. In contrast, the metal and chemical material industries have failed to make substantial progress, despite the long endeavor since Kim Jong Il's time to enhance production capabilities.

<Photo> Trucks on display at a square



Source: Yonhap News.

<Photo> Made-in-North Korea equipment and facilities in Ryukung Kimchi factory



Source: Yonhap News.

Light Industry: Growing Number of North Korean Goods with Greater Competitive Edge against Chinese Products

Centering on processed food, goods produced in the DPRK have increasingly been in competition with made-in-China rivals in the domestic market. One factor at play is the income growth of middle and higher classes, which has led to a reduced popularity in low-price Chinese products and raised demands for North Korean goods. It has also been attributed to the enhanced quality of facilities in domestic light industry enterprises.

<Photo> North Korean products available at a retail store within a large distribution network



Source: Yonhap News.

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3. Enterprises and Labor: Increasing Autonomy for Businesses

More Autonomy Granted to Business Management

North Korea's economic system rooted in a planned economy has failed to adequately incentivize economic activities. Fundamental flaws inherent in the planned economy have caused the DPRK's economic downfall from the 1980s. To address this, Kim Jong Il's economic policy team made some shifts. It guaranteed more autonomy in business management, allowed non-official marketplaces to some extent, and bolstered incentives.

Following his father's legacy, Kim Jong Un also granted more autonomy to enterprises. First, the central government has lessened management plans that it assigns to companies. Second, enterprises are enabled to devise and implement plans that suit their respective conditions. Third, autonomous pricing is allowed for some products. Fourth, it was legalized to attract investments from underground investors or "*dongu* (money masters)."

Unfortunately, such changes fall short of producing a visible outcome, as North Korean enterprises continue to struggle over physical constraints including energy and resource shortages. Once those shortages are addressed, Pyongyang's new enterprise policy is expected to have a substantial impact on its targets.

Factories and Enterprises Struggling to Operate Normally

To operate the planned economy smoothly, Pyongyang opted for a selection and concentration strategy. When the economy

plummeted, the central government stopped to rein in all factories and enterprises in the country under the planned economy system. Instead, its attention was narrowed down to production facilities of national importance. Utility and other resources are now mostly reserved for coal mines, power plants, iron mills, munitions factories, and essential-goods plants. The rest are left to survive on their own. As a result, many regional factories end up failing to operate normally, trapped in electricity and resource shortages.

<Photo> Pyeongyang bag factory



Source: Yonhap News

Note: Workers are producing bags in the Pyeongyang bag factory completed in June 2017.

Another major obstacle to normalizing enterprise operation is “social mobilization tasks” imposed on them. The regime has forced factories and enterprises to provide funds, materials or labor for state projects such as the construction of power plants or roads.

These “tasks” are a major burden that has grown only heavier under the Kim Jong Un regime.

<Photo> Construction site of Wonsan-Kalma coastal tourist area



Source: Yonhap News

Note: Construction site of Wonsan-Kalma coastal tourist area. Parts of the project are carried out by “socially mobilized” enterprises.

8.3 Workers

For most North Korean workers, the monthly wage is around 5,000 won, roughly the price of one kilogram of rice in *jagmadang* (unofficial marketplaces). In regional factories, where work, food rationing, and wage are all too scarce, fewer than 50% of employees have an “actual work” to do.

Some employers exempt workers without work from going to work and social mobilization in exchange for a set monthly payment to factories or enterprises. Widely known as “8.3 workers,” these absent workers earn a living from private economic activities, maintaining their factory or enterprise employee status with

bribery. As for companies, the money from 8.3 workers help them secure funds for government contribution or social mobilization tasks when normal operation becomes a daunting goal.

Today, enterprises in the DPRK struggle not just to operate normally, but also to deal with a host of tax and quasi-tax burdens. In turn, their employees are unpaid and left to survive on their own. Unless those demanding conditions come to an end, 8.3 workers are unlikely to disappear.

***Dongu* Amassing Wealth, Taking Advantage of State Enterprises**

A key element in Pyongyang's socialist planned economy is banning individuals from owning a means of production. In reality, however, individuals, most notably *dongu*, make profit by taking advantage of state enterprises or running their own businesses. Some of these underground capitalists provide funds or resources to state-run companies in exchange for corresponding returns. Others may borrow the title or production facilities of a state enterprise in order to engage themselves in production activities by investing in resources, materials, and labor.

Such arrangements bring benefits to both companies and *dongu*. For enterprises, it is a way to raise funds and make profits to afford both operation and social mobilization tasks. For underground investors, it provides a relatively safe way to run their own business with a secured electricity supply.

Since Kim Jong Un took power, *dongu*'s influence in the business world has grown. Given that Pyongyang legalized some types of private investments of *dongu* in 2014, their venture to entrepreneurship is likely to continue.

What is at stake is how far the current regime will allow the privatization of the means of production. It remains to be seen what measures Pyongyang will take down the road.

<Photo> Taxis in Pyongyang



Source: Yonhap News

Note: Taxis operating in Pyongyang. Reportedly, many of them are owned by *dongu*.

People Looking for Jobs

Due to the regime's nature, an official labor market is impossible to be formed in North Korea. Every resident who is capable of economic

activities except for students, soldiers, and senior citizens, is assigned to a workplace by the state and required to work there.

In reality, however, an unofficial labor market has appeared and developed, albeit in a primal form. Labor supply has soared thanks to more and more unpaid employees looking for another job. Demand, too, has increased, mostly from privately-operated factories and enterprises.

Unfortunately, current economic conditions in North Korea have failed to provide a labor demand sufficient to match supply. In fact, many jobseekers resort to self-employment to make ends meet. Still, it is true that private employment is swelling in line with the development of small- and mid-sized craftwork, commerce, and service businesses. The types of private employment vary in the DPRK: one may find a job at a workshop, a store or a restaurant that is nominally state-owned but effectively run by individuals. The wide penetration of cell phones has facilitated hiring combined with a high demand for work among the recently growing number of the unemployed.

Workers Aspiring Overseas Deployment

To earn foreign currencies, Pyongyang has sent labor to China, Russia, Kuwait, and more. Around 50,000-100,000 North Korean workers are estimated to have worked abroad since Kim Jong Un's rise to power. The figure may have been in decline due to international sanctions.

Life is hardly easy for the overseas workers. They are often subjected to intense labor and unfair compensation. Further, many of them are required to live in groups near the workplace. Their private life is under regulation with restrictions on going out alone or having a mobile phone. Nevertheless, many DPRK workers prefer overseas work, seeing it as a good opportunity to earn a good sum of money. While the wage may fail to properly compensate their hard labor, workers abroad have a chance to earn extra money from “commissions,” essentially a side job.

As overseas jobs are widely considered an opportunity to get a round sum, competition for such positions is fierce. Candidates are screened by their family background (*songbun*), party membership, and criminal history. Bribery is believed a must among applicants.

4. Finance and Currency: Development of Private Finance and Reform of Public Finance

Characteristics of North Korean Official Financial System and Background of Change

For decades, North Korea had a single-bank system, which had been completed with the 1976 integration of the Commercial Bank into the Central Bank of the Democratic People's Republic of Korea. Under the system, the government provides state agencies with essential funds for the operation and enterprises with funds for expansion and reproduction. Meanwhile, the financial sector supplies liquidity for enterprises. In other words, private finance is essentially a supplement to public finance.

In North Korea, therefore, cuts in the state budget create additional loan demand for businesses. If banks fail to secure sufficient resources to meet the demand amid an economic crisis, financial strains might be difficult to avoid for businesses. Their hardship, subsequently, contracts the planned economy and worsens the state budget, creating a vicious circle.

Likewise, the 90s economic crisis caused a fiscal crisis in North Korea, calling for financial reform. Two legislations were enacted in the 2000s: the Act on Central Bank in 2004 and the Act on Commercial Bank in 2006. Functions of the new Commercial Bank were separated from the Central Bank after 2014.

It is dubious whether those reforms are at work. After all, North Koreans tend to shy away from depositing money at banks for a couple of reasons. First, it is difficult to withdraw a deposit at a customer's convenience. Also, the prevalence of illegal economic activities made North Koreans extremely reluctant to disclose their

income. In an attempt to absorb money circulating in the shadow economy to the official economy, the regime instituted two unsuccessful currency reforms in 1992 and 2010, which ended up causing a hyperinflation. Private finance flourished rather than being thwarted; economic entities resorted to foreign currencies, causing the dollarization of the domestic economy.

Formation and Development of Private Financial System

North Korea's private finance has evolved to add remittance to its offerings along with currency exchange and loans. Money transfer is available anywhere in the country, through a quite evenly-developed, inter-regional network of local marketplaces. Increase in product circulation entails increase in currency circulation. Notably, freight businesses are burgeoning. Merchants no longer need to come and bring the ordered products with themselves; they now make a call and have their orders delivered. In North Korea, each region now has trade masters (*mulju*), who also offer banking services.

<Figure> North Korea's unofficial inter-regional remittance system



Data: Based on author's research

North Korea-China Trade and Development of Overseas Remittance

The aforementioned remittance system may seem to be out of the blue. In truth, however, it originated from an unofficial, private trade settlement system between North Korea and China. In fact, it would hardly be an overstatement to say that North Korea-China trade was born as a peddler trade.

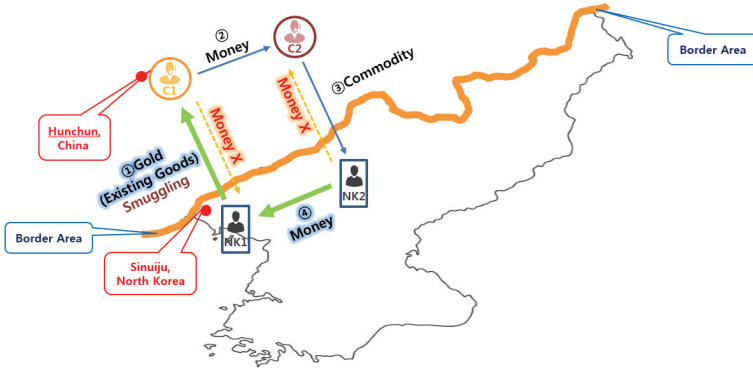
As late as the early 1990s, private international trade was reserved to those who had personal connections to both countries, such as Chinese nationals of Korean descent, ethnically-Chinese North Koreans, and North Koreans with family or friends in China. In the mid-90s, the North Korean regime relaxed trade regulations.

Ordinary citizens could start a trade with China by borrowing a permit for international import and export from an enterprise. Large DPRK wholesalers now could place their orders via phone, without traveling across the North Korea-Chinese borders.

In the early days of the bilateral trade, North Korean vendors offered mostly small and less valuable goods to Chinese customers, until economic reforms in the 80s elevated the standard of living in China. Demand for gold jumped among Chinese customers. North Korean merchants began to smuggle the precious metal to China and, in return, a massive amount of cash flowed into the DPRK.

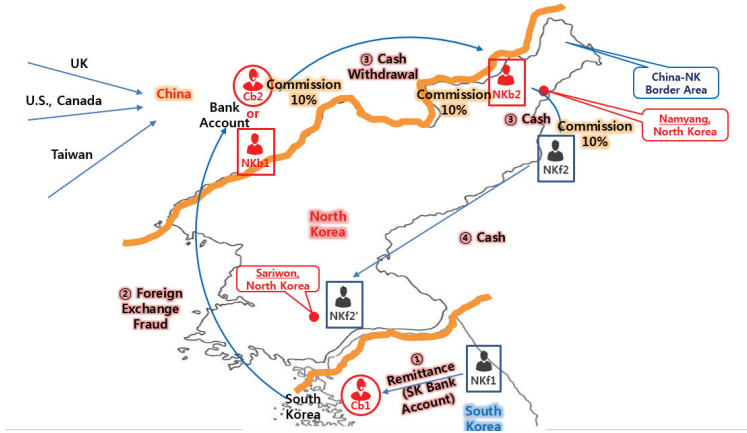
A surge in gold trade facilitated the progress of an unofficial trade settlement system between the two countries. The system expanded its reach to South Korea and other nations, creating a three-way settlement system among North Korea, China, and a third-party country. The transfer system itself, however, is hardly unique. It is similar to other remittance instruments through unofficial mediators, such as hawala in Islamic countries and hundi in India. Compared to the two, the North Korean-Chinese system is different in that the money passes through China and that remaining families in North Korea receive the money in a foreign currency instead of the local one.

<Figure> Private trade settlement system between the DPRK and China



Data: Based on author's research

<Figure> Three-way unofficial money transfer system among North Korea, China, and a third-party country (South Korea, the U.S. and UK, etc.)



Data: Based on author's research

Financial Reform under Kim Jong Un

Financial authority in North Korea assumes that a sizeable amount of currency is in private ownership. A major goal of the Kim Jong Un regime is for the official state economy to absorb idle capital. Notably, in contrast to the botched currency reform in 2009, Pyongyang has adopted some capitalist measures to attract these idle, private-owned funds.

First, it stresses “credibility” of banks, and released an announcement that “No one will ask whether you are the owner of the money or where your deposit came from.” Indeed, some North Korean residents acknowledged that they could withdraw not just the principal but even interest from their bank accounts. Second, electronic payment cards are increasingly common, especially around Pyongyang. Card readers have been installed in more and more shops. Check cards, similar to South Korea’s public transportation “T-money card,” appear to be the most popular. Guaranteeing correct change all the time without revealing the user’s identity, they are available in a growing number of places. Most notably, the Central Bank of the DPRK launched Jonsong Card, a local currency-based electronic card. Jonsong Card, which also offers a remittance service, is expanding its member stores.

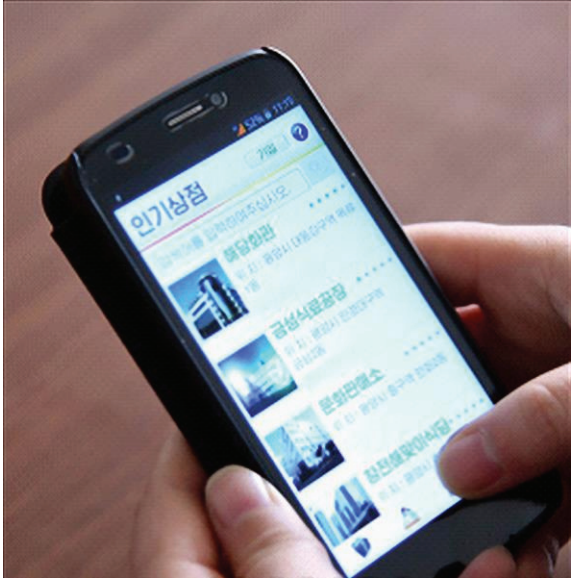
<Photo> Electronic payment card in use



Source: Yonhap News

On the other hand, the communications revolution has made the impossible possible in many ways. One of the changes is product delivery. The logistical transformation in North Korea has brought about a wide range of new services from diner food delivery to local and international courier services. Delivery and payment are available on mobile apps.

<Photo> North Korean resident shopping on mobile



Source: Yonhap News

Another sign of progress is mobile transfer of money with the fee of around 20-30%. Likewise, the North Korean economy under Kim Jong Un is marked by promoting the reformative measures of market-friendly institutions under the socialist planned economy.

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5. Science, Technology, and IT: North Korea's Development Strategy for the Future

Industrial Revolution of the New Century

Pyeongyang's recent emphasis on science and technology is characteristic of the socialist regime. This tendency traces back to early days of the Kim Il Sung regime, after the liberation from imperial Japan, when leaders were convinced that science and technology were essential to the new country's defense capacity and economic development. As the power passed on to Kim's son and grandson, the agenda lived on with technologies that reflect the current environment and policy.

The Kim Jong Un regime's initiative, probably in recognition of international trends, is called "the Industrial Revolution of the New Century," which is a step toward the 4th industrial revolution. At the moment, North Korea's industrial science and technology do not seem to be on the verge of the 4th industrial revolution. Rather, the Industrial Revolution of the New Century aims to deepen the 3rd industrial revolution, where North Korea currently stands at.

Behind the New Century Revolution is the regime's discourse on the age of informatization and knowledge economy, which has been refined under Kim Jong Un's rule. It is in this context that Pyeongyang has put an emphasis on Computerized Numerical Control (CNC) with regards to industrial production, which is related to automation and unmanned technology. CNC machines, as the name suggests, are tools for computerized control used in manufacturing. Pyeongyang's goal is to build a "comprehensive production system," in which every step of production is controlled by computer. CNC is a symbol of Pyeongyang's ambition to

transform industrial production systems at large with science and technology.

This vision, born in Kim Jong Il's time, was translated into actual policy under his son's leadership. Kim Jong Un provided his first guidance of this vision during his field tour of production units in July and August, 2018. The regime emphasizes the need to advance toward an era of knowledge economy and information industry under its young leader's guidance.

CNC: Combination of Machine Manufacturing and IT

CNC machines and technology are a combination of computerized numerical control and information technology. Domestication of CNC can improve resource efficiency and the precision of the final product. Demand is high for CNC tools in the arms industry, in which metal manufacturing is an important part, since cutting-edge arms are essentially made from cutting-edge machines. Pyeongyang has concentrated on CNC technology as part of its advanced arms development programs, including nuclear weapons. Under Kim Jong Un, the DPRK's new economic strategy is to adopt these wartime technologies for civilian industries.

Pyeongyang's CNC development first began in the 1980s under Kim Jong Il's orders. In the 90s, North Korean technicians succeeded to produce 4-axes machines, and reached a cutting-edge level in the late 2000s, according to state propaganda. The level of CNC technology is highly related to the level of producing space

launch vehicles, ICBMs and SLBMs. Considering that Pyongyang recently declared the completion of its first ICBMs, its CNC technologies might have reached a top level as well.

At this point, therefore, it may be desirable for the regime to take advantage of the technology for civilian areas, namely the domestic economy and people's everyday life, in order to spur economic development. CNC capabilities can help create a comprehensive production system, a foothold for unmanned and automated mass production. A successful adoption of CNC technology for civilian products will enhance the quality of North Korean products. Their quality may further improve if international quality management standards, stressed in Pyongyang's recent rhetoric, are met in production processes.

North Korea's Information Networks: Internet and Intranet

The North Korean regime operates a nationwide network to facilitate the flow of information. This network is unique in some aspects—most notably, it has a dual structure of an internet (accessible to overseas web sites) and intranet (a closed internal network). The two have little difference in configuration. Citing concerns such as “national security,” Pyongyang restricts digital access to the outside world for intranet users. The domestic intranet network is called “*Gwangmyong*.” Concerning the DPRK's wired virtual network, key institutions and areas are connected via fiber optic, while home users still rely on copper cables.

Mobile Communications Network in the DPRK: Koryolink and Kang Song Network

The spread of information and communications technology across the globe began to be reflected in Pyongyang's ICT policy after Kim Jong Un took office. Koryolink, North Korea's wireless communications provider, had secured around 500,000 users by 2010. The total number of subscribers doubled to over a million in 2012. Around this time, North Korea's domestically-produced mobile phones made their way into the market. Hitting the 2 million mark in 2013, more than 3.7 million North Koreans were estimated to have mobile phones as of 2017.

The Kim Jong Un regime allowed another mobile service provider, Kang Song Network, to operate in the country. Koryolink, a joint venture between the state and a foreign telecommunications company, offers two types of plans: North Korean-only and foreigner-only. In contrast, the domestically-financed Kang Song Network is available only to locals. Koryolink's foreigner-only service provides access to international internet networks in North Korea. In other words, users can be connected to the World Wide Web if their phones are equipped with Koryolink's for-foreigner USIM or a WIFI repeater. This has made it possible to take a picture in North Korea and immediately post it on the internet, or make a video call between North and South Koreans via Kakaotalk, a popular instant message app in South Korea.

<Photo> Koryolink



Data: <<https://www.voakorea.com/a/3591225.html>>.

Note: A portable wifi router (widely known as “eggs” in South Korea) product of Koryolink. Equipped with a foreigner-only SIM, this USB router offers an access to the World Wide Web.

North Korean citizens may have access to the World Wide Web in major universities and research institutions. A member of such organizations can gain access with a prior approval from the state. Kim Jong Un’s rise to power has made it easier to acquire the approval for students and researchers on ICT studies. Still, internet access is mostly out of reach for ordinary citizens. They may obtain indirect access by filing an information acquisition request to the Grand People’s Study House, electronic libraries, and local science and technology dissemination rooms.

Smartphones and Tablet Computers

In the early days of Koryolink’s operation, most of its users used

imported mobile phones. North Korea's first domestically-manufactured mobile phone, Ryusung, was released in 2011. Ryusung's successors slowly gained popularity as new models continued to hit the market under three local smartphone series, Pyeongyang, Arirang, and Jindalae. Around 20 phone models are now available in North Korean mobile phone stores, allegedly made of mostly-Chinese parts assembled in North Korean factories.

Like the rest of the world, North Koreans, too, use smartphones to send messages and pictures as well as to call. Although the access to international networks is blocked, they can look up information on intranet or buy goods on online stores. The camera is one of the most frequently used functions—North Koreans are no different in wanting to capture the important moments of their lives.

Meanwhile, North Korea's paper shortages have strained the supply of printed materials including textbooks. This has made North Korean educators turn to tablet computers. Local production of tablet PCs began in around 2013. Today, there are 5-6 tablet makers in the country, offering brands to domestic consumers such as Noul, Samjiyon, Achim, Ryonghung, Arirang, Ulrim, and Myohyang. The local computer industry appears to have the capacity to manufacture keyboard detachable laptops and stick-type PCs as well as standard laptops. Newly-built science and technology dissemination rooms in enterprises or school computer rooms are often equipped with laptops instead of desktop PCs. Also, some PCs or monitors have MacBook-like metal exteriors.

Latest IT Devices in North Korea

In 2017, a variety of the latest devices and programs went on display in the DRPK National Exhibition on Informatization Achievement, a state event. One of the exhibits called *Bulyagyong* was a nationwide integrated control system for utility production. It was developed by the Electric Power Information Institute, a subsidiary of the Ministry of Electric Power Industry of the DPRK. Following an instruction from the top that ICT technology should be used not only in industrial production but also in education, various types of teaching equipment were submitted to the Exhibition. Electronic teaching boards, beam projectors, and 3-dimensional projectors were on display. The exhibition also introduced various online shopping malls operated on the North Korean intranet, including Naenara and Apnal. Other exhibits included electronic payment, electronic cards, 24-hour order and delivery services.

Another development took place around 2015: the launch of Manbang, North Korea's first IPTV service. Manbang has made it possible for North Koreans to watch TV channels real time or buy on-demand videos of past TV shows.

Blockchain and AI technologies are two of the cutting-edge ICT technologies at the moment. Notably, the 2017 National Exhibition on Informatization Achievement also presented the DPRK's AI technology. A step forward from character and voice recognition, North Korea presented its face recognition technology at the event. While it is challenging to assess its current level, the domestic ICT industry has made meaningful achievements in several areas, according to Pyeongyang's state media and propaganda.

<Photo> National Exhibition on Informatization Achievement



Source: Yonhap News

Note: Some PCs or monitors on display had MacBook-like metal exterior.

<Photo> North Korean LED TVs



Data: <<https://www.flickr.com/photos/arirangmeari/36431817523>>

Note: LED TVs produced by Rakwon Technological Exchange Company. The manufacturer claimed that the TVs were made out of self-designed circuits and imported parts.

<Photo> North Korea's IPTV services



Source: Yonhap News

Note: The start screen of Manbang, North Korea's first IPTV service. Available even at ordinary, regional homes, this service offers a replay of five TV channels and a searching function. Its network is fast enough to play videos without delay.

Notably, there seems to be a significant gap between the DPRK's hardware and software technology; the latter estimated to be at a relatively higher level. Therefore, North Korea's competitive edge in a stage of active inter-Korean technological cooperation, if realized, may be in software.

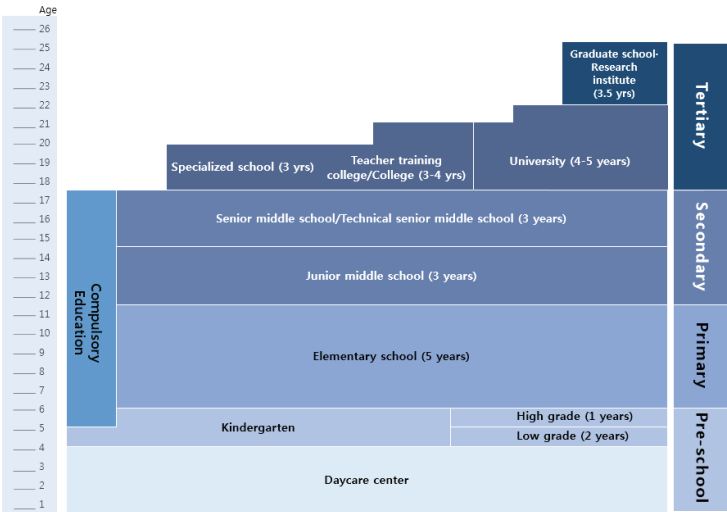
6. Education: Education Reform and Widening Educational Gap

Policy Direction and Institutional Reform: Seeking to “Make All People Well-versed in Science and Technology” and Reach the Global Standard

In the education policy, the Kim Jong Un regime demonstrated early on its commitment and direction for reform. Under the new leader, education has been stressed, seen as a critical means to “the building of a powerful socialist civilized state.” Key features of the new education policy under the young Kim include adopting “global standards,” strengthening science and technology education and introducing IT technology in education.

The year 2012 saw the first visible actions made under the new leader: the reform of the compulsory school system and the extension of the compulsory education period from 11 to 12 years. The new system includes 5 years in elementary school, 3 years in junior middle school, and 3 years in senior middle school. The compulsory period was extended by one year across the entire school system.

<Figure> North Korean School System



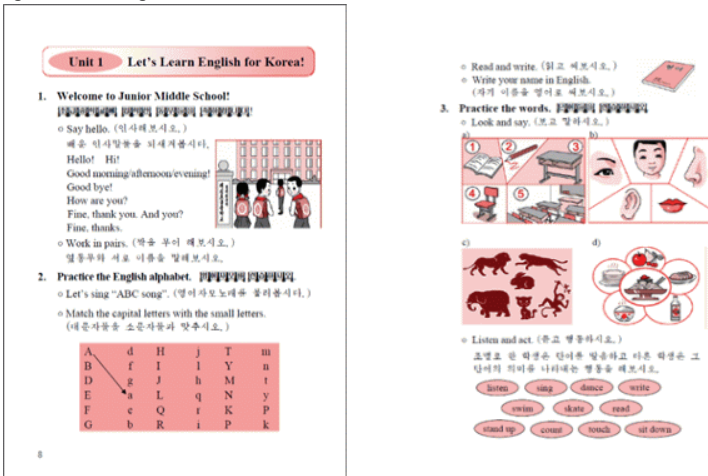
Data: Based on author's research

In the 7th Congress of the Korean Workers' Party in May 2016, an initiative of "making all people well-versed in science and technology" was announced as a goal to transform the country into a science and technology powerhouse. Subsequently, a series of institutional reforms took place, ranging from establishing new universities; merging and creating academic majors; modifying education courses; improving the college admission system; reforming college accreditation system; improving graduate school system; and promoting distance education. It is noteworthy that Kim Jong Un's reform of high education system is similar in many aspects to China's high education reform, a part of China's Reform and Opening Policy.

Reform of Primary and Secondary Education and Textbooks

The 2012 school system reform was followed by the reform of education courses and textbooks. The curricula of every level of school were modified to add the political ideology of Kim Jong Un. Natural science, technology, and language education were also emphasized.

<Figure> New English textbooks



Data: English textbook for first-grade junior middle school students

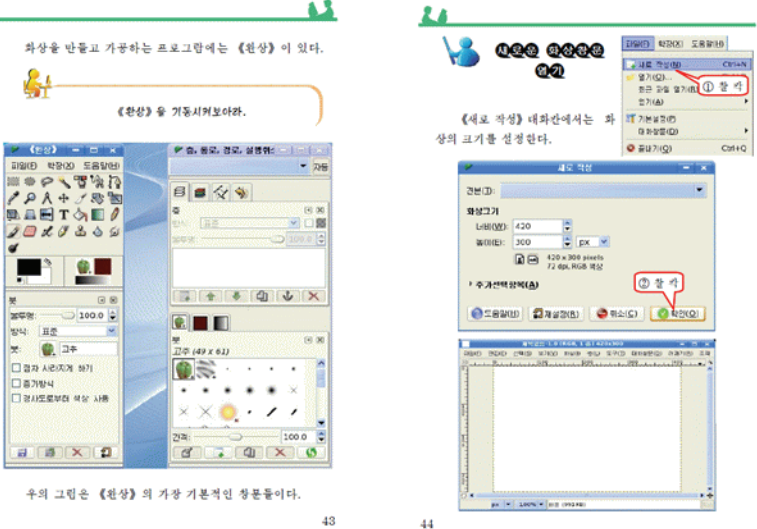
As for the distribution of lesson hours, English saw a surge in both lesson hours and its proportion in total. Also, IT classes now take up more class hours in middle school curricula. The revised education plan in part reflects recent international trends in education, such as a spiral curriculum and integrated subjects. Such changes indicate the direction that the North Korean education authority has taken in its efforts for globalization and informatization of education.

In fact, changes are more visible in new textbooks. The books are redesigned to enhance readability and attract the student's attention. One-sided cramming and rote learning are no longer recommended. New textbooks encourage active student participation by suggesting various activities. As for contents and system, efforts have been made to bring the latest teaching methods to domestic schools, such as the introduction of international trends and an emphasis on learner-centered activities.

Strengthened Science and Technology Education and Introduction of IT in Education

Under the young leader's guidance, Pyongyang sees that the level of science and technology development can determine a country's power in the era of information industry and knowledge economy. In this context, North Korea endeavors to foster science and technology talents with a view to transforming itself into a "powerful socialist civilized state" and "economic powerhouse." Following the strategy, science and technology education, such as basic science course and computer training, has been strengthened across the education curricula, especially at the secondary school level.

<Figure> New science and technology textbooks



Data: Reformed science and technology textbook for first-grade junior middle school students

Pyeongyang also declared an initiative of “making all people well-versed in science and technology” as a goal of its “education revolution of the new century.” To this end, it promotes IT-based education and distance learning. As part of this vision, Pyeongyang has encouraged multimedia-based teaching, which basically uses multimedia sources including photos and videos as teaching materials. Also, more schools now have multi-functional classrooms. These rooms are equipped with computers, computer networks, a virtual computing environment, and LCD TVs.

Distance learning is also promoted. The DPRK’s first distance learning university was established in Kim Chaek University of Technology in 2010. Leading colleges in other areas followed suit,

enabling distance education for technicians working at state enterprises.

<Photo> Distance learning at Gumcup Comprehensive Meals Factory for Athletes



Source: Yonhap News

Growing Education Cost and Subsequent Widening Educational Gap

The DPRK claims to have a free education system in place. However, in reality, parents have to bear some cost to send their children to school especially since the 90s economic crisis. For general schools, which receive limited financial aid from the government, the biggest financial source is parents' contribution, often dubbed as "tax share" or "management fees." Students are also forced to engage in "tasks," through which they are required to pay a certain quota of materials such as rabbit skins, gloves, scrap iron, firewood, and compost or corresponding cash to the authority. This is to make up for the lack of budgets needed for school facility

maintenance and its operation.

Such financial burdens put a strain on students from economically challenged families, undermining their school attendance. Students whose parents cannot afford education costs or have to engage in economic activities sometimes end up missing extended periods of time or dropping out of school. In short, a worsening financial burden on parents undermines access to education for economically vulnerable children.

The marketization that followed the 90s economic crisis has widened the educational gap between economic classes or regions. There appears to be a significant gap in terms of facility, environment, and teachers' quality between general schools and schools for gifted children, or urban and rural general schools.

Limited Spread of Private Education

The Kim Jong Un regime has striven to reform education and strengthen primary and secondary education. However, such efforts seem to fall short of preventing the rise of private education in the form of tutor lessons, which are popular among wealthy citizens in large cities. The spread of private education varies by region. In large urban areas, tutors are quite common. In early days, students and parents would have one for music, math, and physics, all of which are key subjects in North Korea's university entrance exams. Today, lesson subjects have become more diversified. Tutors now teach foreign languages, computer, calligraphy, singing, and

dancing. Some tutors now increasingly make a living solely out of those lessons, another departure from the past.

It might be premature to say that private education is widespread or plays a central role in North Korea. There are no large, South Korean-style private education institutes in the North. Nevertheless, the birth and spread of private education in the DPRK is certainly worthy of attention. It indicates that education is no longer seen as a duty of the State. North Koreans have begun to see it as personal investment for their children's future.

Eight Changes in North Korean Economy
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7. Class, Region, and Generations: Lifestyle Transformed by Social Changes

Income Gap Visible on Dinner Table

Until the 1990s, North Korea's centralized food distribution system managed to provide "average level of meals" to virtually the entire population, with the exception of a few privileged families. Back then, most North Koreans could lead their life without starvation or a sense of food deprivation. Over the course of the Arduous March, however, the old rationing system grew incapacitated. Today, workers can no longer afford the cost of living with their official income, and most of them do not receive even the nominal wages. Food rations are now only reserved for those who work for special fields. Even for them, the daily ration has dwindled from 700 to 450g per person after Kim Jong Un's succession of power.

As a result, North Koreans now rely on marketplaces, instead of state food distribution centers, to feed themselves. The emergence of marketplaces and informal economic activities have boosted income for most North Koreans, significantly improving their dietary life compared to the rationed days. In a survey, more than 86% of North Korean defectors said that they could eat meals three times a day after 2015, when Kim Jong Un's grip on the country stabilized. More than half of the surveyed recipients also answered that they consumed meat "almost on a daily basis" or "once or twice a week."

The income divide, however, has intensified the gap at the dinner table. Wealthy families now have white rice as the staple food. They have access to a variety of other foods including meat and fruit, and enjoy preferred food products such as ice cream and coffee. In Pyongyang, they may dine out in luxury restaurants

specializing in foreign delicacies such as pizza, pasta, hamburgers or soft drinks. By contrast, poor families live on steamed rice and corn, and barely eat meat.

<Photo> Wealth gap on dinner table



*Most customers of this Italian restaurant in Pyeongyang are well off.



*Among the poor, many live on steamed rice and corn like this one.

Source: Yonhap News

Stark as the gap may be, it is notable that most North Koreans do not wish a return to the old system.

Real Estate Boom: Housings Becoming Private Property

In principle, all dwellings are owned and distributed by the state in the DPRK, under the regime's house lending system. In reality, however, housing could not escape the force of marketization, which has turned North Korea into a consumption society. Today, houses are effectively key assets that can be bought and sold.

In this country, living in a flat is a symbol of wealth, something that fuels the desire to succeed. The Kim Jong Un regime has promoted spacious and fancy high-rise apartment complexes that it

had newly built on Mirae Scientist Street and Ryomyong Street. These magnificent buildings stimulate the desire to climb up the social ladder and show off, inducing “voluntary compliance” to the regime and its policy direction.

<Photo> Mirae Scientist Street and Ryomyong Street



*Completed in Oct 2015, Mirae Street is located by the Taedong river. The tallest building is 53-stories high.



*Located in Ryongnamsan district of Pyeongyang, Ryomyong Street is home to 2800 households and 40 public facilities. Construction was completed in April 2017.

Source: Yonhap News

<Table> Households by dwelling type

Year	Row House	Single Detached House	Apartment
2008	43.8	33.8	21.4
2014	41.7	32.8	25.0

Data: Central Bureau of Statistics of the DPR Korea and UNPF, *Democratic People's Republic of Korea: Socio-economic, Demographic and Health Survey 2014* (Pyeongyang: Central Bureau of Statistics, 2015), p. 13.

While an increasing number of North Koreans now live in apartment buildings, the overall quality of residential infrastructure remains flat. A particularly large gap lies in between urban and rural homes. Only 55.6% of North Korean households have drinking water pipes connected to their home, according to the 2017 multiple indicator cluster survey (MICS) report jointly

conducted by North Korea’s State Central Bureau of Statistics and UNICEF. The UNFPA 2014 Socio-Economic, Demographic and Health Survey (SDHS) reported that flush lavatories are available in 63.2% of North Korean homes (private and shared toilets combined). The rest, 36.8% rely on pit latrines (private and shared toilets combined). This figure comes with a significant urban-rural gap. In urban areas, the distribution rate of flush toilets is 71.1%; in rural areas, the share is a mere 48.9%.

<Table> Dwellings by toilet types

Toilet Type	Urban Residence	Rural Residence	Total
Flush Toilet, Private	71.1	48.7	62.5
Flush Toilet, Shared	1.1	0.2	0.7
Pit Latrine, Private	20.6	49.0	31.5
Pit Latrine, Shared	7.3	2.1	5.3

Data: Central Bureau of Statistics of the DPR Korea and UNICEF, *DPR Korea Multiple Indicator Cluster Survey 2017, Survey Findings Report*, p. 19.

Redistribution of Wealth: Regional Divide in Acceleration

Divides between the haves and have-nots are increasingly entrenched across the Northern half of the Korean Peninsula. There are wealth divides between individuals, households and further, regions. The leading forces of the wealth redistribution are capital, product movements, and the size and accessibility of marketplaces. The wealth index, a part of the 2017 North Korea-UNICEF MICS, indicates that 60% of urban dwellers belong to the top 40% of the wealth percentile, while only 8.8% of rural residents fall under the same group. On the contrary, only 6.4% of urban citizens are at the bottom 20% in wealth, the percentile, at which 41.2% of rural dwellers belong to.

<Table> Wealth distribution by region

(Unit: %)

Region	Lowest 20%	Middle 40%	Top 40%	Total
Total	20.0	40.0	40.0	100.0
Urban Areas	6.4	33.5	60.0	100.0
Rural Areas	41.2	50.0	8.8	100.0
Ryangang	63.2	18.9	17.8	100.0
N. Hamgyong	17.3	41.3	41.4	100.0
S. Hamgyong	28.9	39.4	31.7	100.0
Kangwon	21.8	39.1	39.1	100.0
Jagang	32.0	37.9	30.1	100.0
N. Pyongan	15.6	44.0	40.4	100.0
S. Pyongan	9.7	55.7	34.6	100.0
N. Hwanghae	9.3	58.9	31.8	100.0
S. Hwanghae	47.7	31.1	21.2	100.0
Pyeongyang	0.4	13.4	86.2	100.0

Data: Central Bureau of Statistics of the DPR Korea and UNICEF, *DPR Korea Multiple Indicator Cluster Survey 2017, Survey Findings Report*, p. 19.

In 2016, North Korean defectors were asked about their subjective opinion on which cities are the wealthiest in North Korea other than Pyongyang for a survey by the Institute of Peace and Unification Studies, a subsidiary of Seoul National University. Rason ranked first (36.3%), followed by Shinuiju (28.5%) and Pyongsong (13.1%). Rason and Shinuiju are key border cities where the movement of goods and capital are frequent. Pyongsong, a gateway town to Pyongyang, is home to a large wholesale market. Rural towns, which heavily depend on agriculture, are deemed the poorest and most backward.

Uneven development between regions is noticeable in a survey on the possession of durable consumer goods and ICT equipment.

According to the 2017 MCIS report, rural dwellers fall behind urbanites in the possession of almost all durable consumer goods except TVs. In cities, 22.6% of households own a washing machine; in rural towns, only 3.9% do. The penetration rate of wired phones is 61.9% in cities; in rural towns, it is 18.1%. The mobile phone subscription rate also showed a gap, 80.4% (cities) versus 50.6% (rural towns).

<Table> Household and personal assets per region

(Unit: %)

Category	Total	Urban Area	Rural Area	Ryang-gang	N. Ham-gyong	S. Ham-gyong	Kang-won	Jag ang	N. Pyon-gan	S. Pyon-gan	N. Hwa-nghae	S. Hwa-nghae	Pyeong-yang
TV	98.2	98.7	97.3	97.8	98.3	98.4	97.4	96.4	98.7	98.2	96.8	97.9	100
Refrige-rator	30.3	37.7	18.4	20.0	27.9	25.5	30.1	27.9	23.1	32.5	21.3	19.1	59.3
Freezer	21.6	26.8	13.2	12.4	19.3	14.5	17.8	17.7	17.1	21.5	15.0	12.5	52.1
Electric rice cooker	62.6	69.7	51.1	70.3	64.3	63.6	63.6	69.5	62.5	52.5	54.2	44.7	88.0
Washing machine	15.5	22.6	3.9	11.2	12.3	10.7	14.2	16.6	7.1	17.9	7.4	4.3	42.6
CD player	75.5	79.9	68.4	72.7	72.6	68.5	82.1	79.8	78.3	77.6	65.4	63.9	91.0
Agricultural land	53.7	29.7	92.5	54.8	48.1	64.8	54.4	59.7	62.5	53.4	62.6	68.5	18.8
Farm animals/Live stock	53.9	33.1	87.6	50.6	52.6	61.9	57.5	62.3	52.4	54.3	68.7	73.0	17.8
Wristwatch	66.1	70.4	59.1	80.1	65.8	72.0	68.9	71.8	63.9	53.0	54.2	58.6	87.0
Bicycle	83.1	81.4	85.7	72.6	81.9	88.8	89.4	77.7	83.1	87.5	87.4	86.3	68.4
Motor-cycle	5.2	6.0	3.9	2.3	5.3	3.6	4.0	8.6	5.0	6.7	3.7	8.2	3.8
Animal-drawn cart	1.0	0.8	1.3	2.9	1.4	0.9	0.6	3.8	0.6	1.4	0.1	0.2	0.4
Computer	18.7	25.2	8.3	15.9	19.1	15.9	17.0	21.2	12.4	19.1	13.3	9.5	37.7
Mobile phone	66.4	77.7	48.1	59.3	71.8	67.4	69.7	64.8	63.2	64.4	51.2	52.2	89.7

Data: Central Bureau of Statistics of the DPR Korea and UNICEF, DPR Korea Multiple Indicator Cluster Survey 2017, Survey Findings Report, p. 18.

Growing Class Hierarchy in Consumption

Social classes can be defined as a set of hierarchical groups divided by an uneven distribution of economic, political, and social resources such as property, power, and reputation. As markets have replaced the state distribution system, North Korea has seen a gradual rise of a new class system. The income gap has led to the classification of consumption. Today, different social classes show widely different consumption patterns in many areas ranging from their clothes, food, and housing to the use of South Korean products.

<Photo>



*Pyeongyang citizens shopping at Pyeongyang Department Store No.1



*Shoppers checking out in Kwangbok Area Shopping Center



*Vegetable stand at a general market, a popular place for grocery shopping for the working class

Data: Department store and big supermarket photographs credited to Yonhap news; the picture of a general market credited to KBS <<http://d.kbs.co.kr/news/view.do?ncd=3453993>>

Interestingly, middle class families spend the most in child education in relative terms. It implies that mid-income households are the most enthusiastic about education of their children, seeing it as a ladder for social mobility. The 2017 MICS report revealed that almost all households, regardless of wealth, own a radio and TV. Income level, however, did have a substantial impact on the

ownership of telephones, both wired and wireless. Notably, access to intranet is mostly out of reach for consumers of all income levels.

<Table> Household ownership of ICT equipment and access to intranet

(Unit: %)

Wealth Index	Radio	TV	Fixed line	Mobile phone	Computer	Access to intranet at home
Lowest 20%	86.4	95.8	11.7	36.4	4.6	0.5
Middle 40%	94.3	97.8	32.3	66.1	11.0	0.8
Highest 40%	98.1	99.4	77.3	91.2	35.0	2.7
Total	94.1	98.2	45.2	69.0	18.7	1.4

Data: Central Bureau of Statistics of the DPR Korea and UNICEF, *DPR Korea Multiple Indicator Cluster Survey 2017*, Survey Findings Report, p. 31.

Sweeping Desire of New Generation

Coinciding with Kim Jong Un’s power succession in September 2012, the North Korean government made a public announcement about the introduction of a 12-year compulsory education system. Aiming to foster “the new generation” who will shape the future of North Korea and become the guard of the Kim Jong Un regime, the new education system stresses two subjects, English and science and technology. The new system aims to nurture talents suited to the era of knowledge economy and information industry.

<Photo> Daily life of North Korean college students



*Kim Il Sung University students going to school with a backpack on their back



*College students using computers at a digital library

Source: Yonhap News

This new generation of North Korea acknowledges the power of the state and keeps their political ambition to be a member of the ruling party. Highly aware of the latest modern technologies such as the ICT, they are exposed to South Korean popular culture by consuming cultural contents from South Korea. The 2017 MICS report found that teens are the age group most likely to use computers and the intranet, a result of the new education system. This implies the birth of a new generation distinguished by their familiarity with new technology.

<Table> Use of ICT by age

(Unit: %)

Age	Used a computer during the last 3 months		Used a computer at least once a week during the last 3 months		Used a mobile phone during the last 3 months		Used a mobile phone at least once a week during the last 3 months		Used the intranet during the last 3 months		Used the intranet at least once a week during the last three months	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
15-19	63.9	70.7	43.9	51.6	73.6	79.0	50.1	50.2	8.9	13.6	6.2	8.9
20-24	46.6	52.3	32.9	42.8	88.5	91.0	69.7	69.2	9.9	18.9	7.7	12.8
25-29	34.9	52.4	24.3	39.0	85.2	94.7	68.9	77.3	6.7	15.3	4.8	10.2
30-34	30.5	44.5	18.3	34.4	85.0	91.8	68.6	74.8	3.5	12.5	2.4	8.3
35-39	23.4	37.7	14.9	28.3	80.9	89.5	66.1	73.4	4.2	9.1	3.0	6.2
40-44	20.2	33.6	11.3	24.6	81.3	87.8	63.8	69.9	2.6	9.1	1.6	6.3
45-49	13.6	29.4	7.2	20.0	82.4	87.5	63.1	71.0	1.0	6.7	0.7	4.8

Data: Central Bureau of Statistics of the DPR Korea and UNICEF, DPR Korea Multiple Indicator Cluster Survey 2017, Survey Findings Report, pp. 32~33.

The rise of new generation equipped with new technology, however, does not mean that the generation has a sense of strong resistant to the regime. In fact, multiple surveys conducted after the young Kim's succession as the country's leader show that the younger a North Korean is, the more likely he or she approves the new leader. This suggests that the young Leader's bond with the new generation is stronger in comparison with the older generations.

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8. Gender and Reproduction: Shifting Social Concept on Gender and Sex

Women's Changing Perception and Dilemma of Maternity Policy

The Kim Jong Un regime's push for a maternity policy has coincided with marketization and digitalization of the country from the bottom up. As a result, lifestyles and the ways of thinking are changing among both men and women. Changes are more visible among women, who lead the sphere of daily life in North Korea. The biggest drivers of change include national policy, family, and desire for self-development. Shifts in government policy and social environment have changed the mindset and behavior of ordinary North Koreans. That change is visible in almost all stages of the life cycle, such as dating, marriage, childbirth, and divorce.

The emergence of the military-first (*Songun*) politics had given clear distinctions to the respective roles of men and women. Men are regarded as "soldiers at the front," who safeguard national security. Women are deemed "soldiers at the rear," who protect the family and further, the society. Over the last three decades, however, no war broke out in North Korea, despite the regime's incessant preparation for one. Men, the guard of the front lines, were rendered powerless. Many struggled to find their role back in home after being discharged from the mandatory military services. Women, in charge of the home economy and caring for the vulnerable, became active. Their mindset and behavior have changed accordingly.

Two factors would help explain why men are falling behind in catching up to the social transformation. First, it is difficult to give up old lifestyles or privileges of a relatively vested group. Second,

the Kim regime, patriarchal by nature, continues to support the unproductive military-first social system, led by the Worker's Party and the military.

Appeal of Money

It is little wonder that changes are taking place faster among women than men. In charge of their family and, by extension, the entire population's survival, they engage in productive labor. Following a market economy's formation in the country, women have managed to pick up and fine-horn skills for survival through their own struggle to make ends meet for the family. Today, they even pursue self-development beyond the frame of country and family, dreaming of a better future.

The biggest turning point for women was the power and appeal of money. As the rationing-dependent lifestyle of the past shattered, North Korean women experienced how money could improve themselves and their family's life. They are now convinced that money is the path to success.

Meanwhile, the DPRK remains a patriarchal society, and many male members of the society resist change. This has made some women leave the country to pursue a better life. Indeed, women are the driving force of the change that is taking place in the socialist state. They also make up for more than 70% of defectors.

Marketization and Women's Role in Family

From the earliest times to today, Pyeongyang's official ideology on women has been a "dual role as mother and worker," which has added social and economic roles to the concept of traditional motherhood. As a market economy sprouted in the country in the aftermath of an economic crisis, the regime demanded women to play another role: a "tough and perseverant mother" who would safeguard the home front.

Under the Kim Jong Un's leadership, the DPRK government held "Mothers' Rally" multiple times in a bid to impose on women the role and responsibilities of being a selfless mother. It also enacted Mothers' Day, which conceptualizes and celebrates the concept of "tough and perseverant mother." Even for married women who are highly active in economic activities, housekeeping and childcare are forced on them, seen as decidedly feminine obligations.

In many North Korean families, fathers are rarely involved in child rearing and housework, lacking a clear role at home. As many defectors witnessed, husbands who are employed at enterprises but have little to do at work because of the difficult management situation often end up being described as a "housedog" or "furniture."

<Photo> North Korean woman and childcare



Source: Yonhap News

Economic Power Translated to Having a Voice and Further to Taking the Lead

With three decades passed, North Korean women now try to break out of this traditional way of lifestyle. Thanks to their economic power as breadwinners, many women now have a stronger voice at home and in local communities. Their growing clout strengthens their presence in the family. As a result, marital relationships have become somewhat more equal. More men now agree to an idea that housework should be shared between men and women, or, if

the situation requires, be done by whoever comes home first, because “the wife holds the key to the rice chest.” As women have become breadwinners and raised their voice, men have been increasingly open to sharing house chores. Childcare, however, remains to be considered the mother’s duty.

Change in Dating and Marriage

The scene of Kim Jong Un and his wife Ri Sol Ju being together in official events, displayed spontaneously and sophisticatedly, has influenced the dating styles of young North Koreans. Open dating, something new in North Korea, has become increasingly popular.

Development in commerce and service industries has offered new ideas of dating for young lovers in the DPRK. They may hang out at swimming pools, karaoke rooms, saunas, billiard halls, bowling alleys or ice rinks. As more women meet men younger than them, women with deep pocket may pay for dates. Also, respect for women is slowly spreading, thanks to the concepts of human rights and globalization introduced to the country in the midst of digitalization.

<Photo> Young North Koreans dating at a roller link



Source: Yonhap News

All these changes, however, have been observed mostly among young urban dwellers from middle and higher class families, especially in and around Pyeongyang. The mindset of rural or low-class citizens is shifting more slowly. With less money in pocket and lagging in IT infrastructure, they have little access to newly burgeoning consumer services. Thus, many young North Koreans in rural towns yearn for going to cities or abroad and getting a boyfriend or girlfriend.

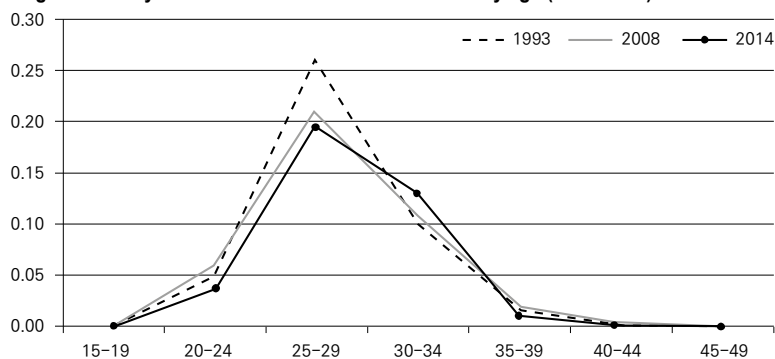
In terms of criteria for potential spouses, single men and women in the DPRK typically look at the other's financial ability, social class, and family and individual potential. In the past, people emphasized personality, family background (*songbun*), and academic background in the search for the future spouse. Today, their focus has shifted to financial conditions. Popular jobs in the dating market are

usually associated with money-making occupations, including managers at foreign currency-earning agencies, employees in commerce or other service industries, high-rank officers at the prosecutors' office, financially stable merchants, and drivers.

Fertility Rate and Declining Will for Childbearing

The birth rate is an objective indicator of how women and the society at large are changing in North Korea. In 2014, the total fertility rate (age 15-49) stood at 1.89 per person, down from 2.01 in 2008 and 2.13 in 1993. As women have been increasingly discouraged to have babies, the low birth rate have continued over three decades to this date.

<Figure> Fertility rate of married North Korean women by age (1993-2014)

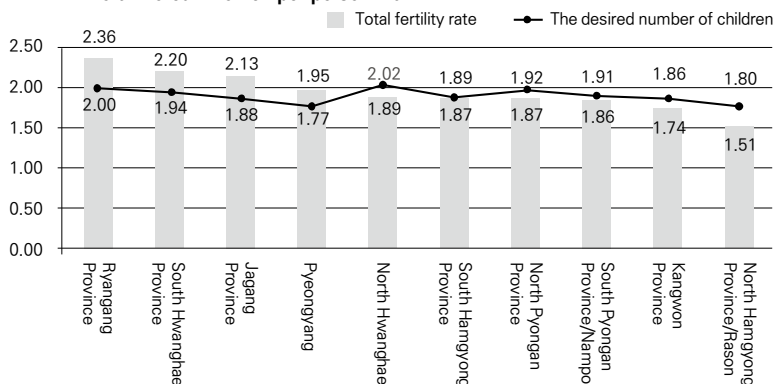


Data: Central Bureau of Statistics of DPRK and UNFPA, *DPR Korea Socio-Economic Demographic and Health Survey 2014* (Pyeongyang: UNFPA DPRK, 2015), p. 52.

As late as the 2000s, overcoming economic hardship was the biggest factor for the low birth rate. After Kim Jong Un's rise to

power, North Koreans have increasingly refused to have more children in favor of pursuing a better life. Now, many prefer to have only one child or two and support them as best as possible. This belief is especially popular among well-educated, married urban women from wealthy families. In the 2014 survey, the average number of children was lowest among well-educated, rich married women residing in Pyeongyang.

<Figure> Gap between the desired number of children and actual fertility rate of married North Korean women per person: 2014



Data: Central Bureau of Statistics of DPRK and UNFPA, *DPR Korea Socio-Economic Demographic and Health Survey 2014* (Pyeongyang: UNFPA DPRK, 2015), p. 60.

Also, there has been a growing preference for daughters over sons, especially among women. In a highly patriarchal society where many women are the breadwinner, daughters are seen as a better companion of a mother than sons.

Calculation in Love and Marriage: Unregistered Marriage and Divorce

In North Korea, love and marriage often come with complicated calculations. Reportedly, many young people do not submit marriage registration until a child is born in an attempt to avoid numerous state controls imposed on married couples. Women are more likely to choose a late marriage, putting off the formal registration, and opting for co-living. It is because married women become subject to endure more burdens such as frequent state mobilization programs in addition to the financial duties at home, housework, and child rearing. Moreover, divorce is difficult, requiring a trial at court.

In spite of all that, divorce has still surged. Many of the divorce cases can be interpreted as a declaration by North Korean women that they will no longer put up with the unfavorable conditions. In few cases, financial strains were the cause. On far more occasions, a divorce is the implosion of a patriarchal marriage that survives on the patience and tolerance of women. Wives' long-pressed outcry has now been translated into action making it clear that they could no longer accept the husband's violence and adultery when they work hard to feed the family.

The public attitude has also become tolerant on divorce. There is a growing social consensus that wives should not live with a violent and abusive man. If one spouse makes a good living, the other would not take the loss by choosing a divorce. They often weigh pros and cons and decide to live with the well-earning partner instead. In short, North Koreans are becoming familiar with making calculation between love and money.

Eight Changes in North Korean Economy
and Society under the Kim Jong Un Regime

**9. Culture and Trends: Path
to Building Civilized State
and Individual Desire
Burgeoning**

<Photo> *The Glorious Country*, a mass gymnastics performance



Source: Yonhap News

Note: A scene from *The Glorious Country*, mass gymnastics performed on September 9, 2018 in commemoration of the 70th anniversary of the establishment of the North Korean regime

Building of Socialist Civilized State

In a new year's speech announced on January 1, 2012, a year Kim Jong Un took power, he declared "the establishment of a socialist civilized state," as part of new state development goals. The declaration defined a socialist civilization as "a society replete with sound practice of lifestyles," in which members have "an enhanced understanding of culture, a healthy stamina, and refined sense of morality."

To build the "socialist civilized state," Kim suggested two priorities: developing science and technology and nurturing talents through education. In terms of culture, the regime focuses on building

cultural infrastructure such as amusement parks and convenience facilities along with launching sports projects. At the same time, North Koreans have increasingly pursued individual happiness and desire.

Moranbong Band's Creative Spirit and Exemplary Work Ethics

The Moranbong band was founded in July 2012. Since its “pilot performance” took place in the Mansudae Art Theater in July 2012, the band has become an icon symbolizing innovation and change of the Kim Jong Un era. Kim has utilized the band to deliver his message of “innovation” and “change.”

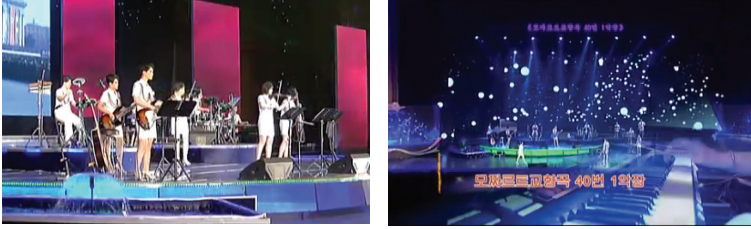
<Photo> Disney characters appeared at a pilot performance to celebrate the Moranbong band's debut



Data: Screenshots from the Korean Central News Agency

He demanded North Koreans to drive innovation and change by taking inspiration from the exemplar of the Moranbong band. The regime’s propaganda urged people to “learn from the Band’s creative spirit that fits the new era and extraordinary work ethics.”

<Photo> The Moranbong band's celebratory performance for the participants of the 9th National Assembly of Artists



Data: Screenshots from the Korean Central News Agency

Change in Live Performance Culture

In February 2018, the Samjiyon Orchestra held a special performance to wish a success of the PyeongChang Winter Olympics and Paralympics. During the show, North Korean performers sang *Let's Run toward the Future*, a North Korean popular song, in tight black short pants and a red sleeveless top. A look at recent performances by North Korean musicians indicates that the Orchestra's such change was far from temporary. Performances have become bolder and more colorful.

<Photo> Samjiyon Orchestra's performance in South Korea



Data: A moment from the Samjiyon Orchestra's *Let's Run toward the Future* performance in Gangneung, South Korea ©Jeon, Youngsun

In July 2017, the Wangjaesan art troupe also demonstrated cheerful and energetic moves in their performance of *Let's Run toward the Future*. The performance included tap dance and modern dance through hula hoop. Wangjaesan's female dancers, in a black tank top and micromini skirt, showed unconventional and provocative dance moves.

<Photo> *Let's Run toward the Future* performed by the Wangjaesan art troupe



Data: Screenshots from the Korean Central News Agency.

<Photo> the Wangjaesan troupe's tap dancing



Data: Screenshots from the Korean Central News Agency

<Photo> Hoop dance by the Wangjaesan art troupe



Data: Screenshots from the Korean Central News Agency

Building of Amusement Park and Recreational Facilities

It would hardly be an exaggeration that the Kim Jong Un regime began its era with the repair of amusement parks. The construction of new recreational facilities has also increased in number. Pyeongyang has built, improved, and repaired leisure facilities on popular and easily accessible sites across the country.

Started in Pyeongyang, the construction of new amusement parks are spreading across the nation. Following Kim's order to provide a civilized lifestyle befitting a new era by building more "contemporary cultural recreational facilities, parks and amusement parks," new recreational facilities have been under construction in all corners of the country. North Korean state media propagates such movements as "pivot to people," "respect for people" and "politics with a focus on affection for the people."

<Photo> A North Korean animated film against the background of roller skating link



Data: <http://anitown.net/bestofbest/1101534>

Aspiring to Be a Soccer Power

After Kim Jong Un's coming to power, Pyongyang's culture policy took a major turn to concentrate on sports. While Kim is known as an avid basketball fan, his choice for national projects is soccer. In April 2013, the Pyongyang International Soccer Academy was inaugurated with a view to fostering world-class professional players. The Rodong Sinmun publishes international soccer news. Several films and TV shows were created to encourage people's interest in the sports, including *Our Girls' Soccer Team*, a TV drama, and *The Small Playground of Elementary School*, a teen movie.

<Photo> *Our Girls' Soccer Team*, a TV drama about DPRK female soccer players



Source: Yonhap News

<Photo> *The Small Playground of Elementary School*, a North Korean film on soccer



Source: Yonhap News

In 2016, the Norwegian Jorn Andersen was appointed as the head coach of the national men's soccer team of North Korea, in an effort to take the country's elite soccer to a globally competent level. Also, young talents were sent to soccer academies in Spain and Italy. At home, the Pyongyang Academy is the incubator for the next star players.

Urban Reconstruction and Making of Kim Jong Un Myth

Another major turn under Kim Jong Un's leadership is urban construction initiatives. An architecture enthusiast, the North

Korean ruler elevated Pyeongyang University of Construction and Building Materials to a university level on the occasion of its 60th anniversary in January 2012. In November 2013, he visited the renamed Pyeongyang University of Architecture and became its honorary president.

From 2012 to 2017, every year had seen a new apartment construction project in a style and location always different from the previous year. Architecture in Kim Jong Un's era pursues magnificence and luxury in style, seemingly in an attempt to embody the new leader's vision. The new residential buildings, conspicuous and diverse in style, have changed the skyline of central Pyeongyang. The new buildings and streets have inspired many fiction writers as well.

Individual Desire Burgeoning

A more candid expression of individual desires is another characteristic of the Kim Jong Un era. With a strong emphasis on equality, individuality has typically been condemned in the DPRK, seen as a threat to the community. Under the new leader, however, the regime now builds physical spaces designed for fun while creating an environment where personal desires can be fulfilled, as demonstrated in its support for the beauty industry.

While Pyeongyang's basic approach to social customs is to control, today "construction" and "enjoyment" have emerged as new policy themes. The regime has built amusement parks, sport facilities, and

other recreational or welfare facilities. Some of the results, Masikryong Ski Resort, Mirim Horseback Riding Club, and Haedanghwa building, became a symbol of changes in daily life under the young Kim.

<Photo> Book: *Taedonggang Beer in Popularity*



Data: *Taedonggang Beer in Popularity* (Pyeongyang: Pyeongyang Publishing House, 2016)

Note: The book, *Taedonggang Beer in Popularity*, was published in 2016 by Pyeongyang Publishing House.

The rise of individualism, preferred over collectivism, is also reflected in changing consumer preference. Product makers have designed and launched new products that reflect this new individual desire to become beautiful and express their own style. Also, self-centered perception is replacing worries over what others might think.

<Photo> North Korean publications on beauty treatment



Data: *Anyone Can Be Beautiful* (Chosun Publication Export-Import Company, 2017)

<Photo> North Korean cosmetics advertisement



Such developments in culture and trends, however, fail to spread beyond Pyeongyang and other big cities. Rural towns, in particular, are mostly left out in enjoying culture and trends, except for a slightly improved access to art performances.

10. Conclusion: Policy Implications

As shown above, marketization and informatization have fueled economic and social changes in the Kim Jong Un regime. These changes, in fact, are in line with Kim Jong Il's partial reforms in the 2000s. After his father's death, the young Kim has absorbed those changes into his policy. Under the so-called visions of "people-first" and "youth-first," the regime has taken a number of measures to address the public's demand for change. As a result, social changes have become more visible than economic ones.

Inside the economy, marketization led by service industries is yet to stimulate significant development in manufacturing. It is largely due to the Kim regime's focus on the arms industry including nuclear weapons and missiles until 2017. With resources poured at arms production, civilian manufacturing was deprived of concentrated investment by the state, a precondition for its development. On top of that, the 32-year-old ruler has also prioritized the stabilization of his leadership over the last 6 years. He has concentrated on establishing a new ruling ideology named after his late father and grandfather, Kim Il Sung-Kim Jong Il-ism, and fostering their personality cult. As a result, the level of change in economic policy and institutions in the DPRK fails to surpass the progress in nuclear weapon and missile development or the conditions of a controlled economy.

By contrast, bottom-up social changes are prominent. It is in part because North Korea's market economy was born in the unofficial part of the country. Spurred by marketization, the use of IT has also made progress in the informal areas of the society. Therefore, rather than policy and institutions, it is North Korean people's

mind and actions that reflect various kinds of changes, which the regime calls “non-socialist phenomena.” Following is some key policy implications based on the analysis of such situation.

A. Policy Implications of Economic Changes

Marketization, the biggest driver of the DPRK’s economic recovery, is occurring in and around the service sector. In other words, it has yet to reach the manufacturing sector, the true engine of economic development. Thus, the South Korean government needs a new inter-Korean economic cooperation policy in order to fulfill its policy goal, achieving co-prosperity through inter-Korean economic cooperation. For the policy’s success, it should start with an objective understanding of the nature, conditions, potential, and limits of the current North Korean economic recovery.

The South Korean government plans to start inter-Korean economic cooperation once there is significant progress in Pyongyang’s denuclearization. As discussed earlier, the Kim regime has guaranteed greater autonomy for domestic enterprises in trade, joint operation, joint venture, and the utilization of market. Seoul will need to take advantage of those positive factors.

Another major change is diversified cooperation channels. In the past, South Korean companies participating in inter-Korean economic cooperation had a sole window for communication, the Korean People’s Economic Cooperation Commission of North Korea. Today, Pyongyang’s reform of the relevant institutional framework

is making it increasingly possible for a direct contact between South Korean enterprises and their counterparts in the North. Keeping up with Pyongyang's move, it will be crucial for Seoul to create an environment that ensures close direct contact between enterprises of the two Koreas. To this end, in its discussion with Pyongyang, Seoul needs to ask for a more autonomous engagement with DPRK enterprises in future inter-Korean economic cooperation projects.

Looking back, inter-Korean economic cooperation could affect the North only so much, largely due to the heavy restrictions on direct communication between the South and the North. Today, inter-Korean economic cooperation is likely to resume. If more diverse enterprises from varied regions of the DPRK come to contact with their Southern counterparts, the cooperation will not just stimulate economic growth in the DPRK, but also contribute to its substantial changes.

What is happening in finance and currency shows how complicated economic and social changes in North Korea are. According to the BOK estimates, the DPRK's per-capita GNI stood at 1.46 million South Korean won in 2016 (around USD 1,304 in 2018 exchange rates). This figure indicates that the country fails to break away from the world's poorest country group under the World Bank criteria. Over the decade, however, new arguments and indicators have emerged in support of North Korea's economic recovery. Defectors report that they hardly saw people die of hunger. Also, there are a wide range of areas showing change, including taxis and buses, domestically-produced products, mobile phone penetration,

increase of souvenirs, and more recreational facilities such as pools and gyms.

Most notably, the North Korean authority recently included texts in statutes including “Do not ask the source of the fund” or “The authority will build a house by mobilizing money sleeping in people’s pockets.” In addition, there are policy shifts toward marketization in finance such as e-payment card (check card) and interest payment, influencing North Korean people’s perception on finance. It would be a mistake to overlook changes in the financial sector, which have a potential to drive economic and social development.

Another key engine for growth is science, technology, and digitalization. The DPRK government has focused on CNC technology, a base technology for the production of cutting-edge weapons. This is no longer a priority for the young Kim, who tries to convert arms technologies into civilian ones under the new economy-first policy. In fact, Pyongyang is now pursuing a leap forward in production capacity by adopting its science and technology abilities across all industries.

To this end, North Korea first needs an atmosphere that reduces the current level of arms production. It will also need cooperation and support from outside to adapt military technology to civilian industries. Inter-Korean economic cooperation in science, technology, and ICT may enhance significantly if it involves technology transfer building on military-civilian technology conversion.

Concerning the level of the DPRK IT sector, the gap between

hardware and software technology is noteworthy. While North Korean hardware makers lag behind their international or South Korean competitors, software developers are estimated to be at a relatively higher level. Preparing for an inter-Korean technological cooperation, Seoul may want to focus on the DPRK's more-competitive software industry.

B. Policy Implications of Social Changes

Education is where Kim Jong Un's commitment to globalization and country normalization is best reflected. Taking this into account, the resumed inter-Korean exchange and cooperation needs to break away from the 2000s-style efforts centered on material aid. A possible alternative is political and military exchange, which bears too huge a risk of conflict. An ideal starting point for the resumed inter-Korean exchange and cooperation would be an area that is distant from the politics and a priority of Pyongyang.

Science and technology, computer, and English education at the secondary level might fit the description. Other strong candidates include university restructuring and institutional reform; digitalization of education and education administration; and teaching methods and educational assessment. Once invigorated, inter-Korean exchange and cooperation on education may expand to exchanges and cooperation between teachers and education researchers as well as teacher training programs.

As for the daily life of North Koreans, it is notable how changes

vary by class, generation, region, and sex. A simplified view on North Koreans as “impoverished subjects of a dictatorship” would limit the diversity of policy options at hand. Many of the shifts in North Korean people’s daily life are comprehensive, multi-layered, and long-term. Marketization and informatization have complicated social relationships and division of labor, creating new kinds of participants in the society. These indicate a need to diversify the fields and participants of inter-Korean exchange and cooperation.

As the quality of life has progressed society-wide, social inequality has deepened. This situation calls for realistic humanitarian assistance programs and adjustment of their goals and target groups. Declaring visions such as “the relief of the poor” will no longer work in today’s North Korea. ICT-based development and cooperation would be more realistic.

Lastly, the Kim regime seeks to promote inter-Korean exchange and cooperation with a soft agenda led by culture and art. As a response, South Korea will need to develop new contents in these areas that would encourage active people-to-people exchanges beyond the performance-based activities at the moment.

Covering a host of fields, inter-Korean exchange and cooperation needs to be conducted with two principles in mind. First, Seoul should have a correct understanding on the current status of each area and find the center of linkage driving serial changes. This means that stakeholders of each field will need to constantly track North Korea’s changes and explore topics that may fuel further change and development. Second is to connect inter-Korean

exchange and cooperation programs with capacity-building programs, which will encourage North Koreans to develop and transform themselves. One option is to introduce empowerment programs, which are increasingly popular among underdeveloped country support programs or development aid programs.

