

Markets, Bribery, and Regime Stability in North Korea

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Abstract

This paper uses data from surveys of North Korean refugees to investigate the relationships between markets, bribery, and regime stability in North Korea. More specifically, it tests four hypotheses about the characteristics, trend and extent of North Korean bribery and the extent as well as trend of bribery. We find that bribery in North Korea is characterized as “bad” corruption because, unlike other socialist countries, it is tied mostly to informal markets rather than to the formal sector, and fails to increase the supply of goods and services in any substantial way. It is found that bribery is widespread and household expenditure on bribes is exceedingly high. The average share of spending on bribes as a proportion of total household expenditures from 1996 to 2007 was 8.95 percent, which translates to 6-7 percent of annual North Korean GDP. Despite this high level, however, the share of bribes in household expenditures has not significantly increased from 1996 to 2007, implying that the authorities are still able to deter it from expanding even though they might have difficulty in reducing it substantially. This paper suggests that the current situation relative to the informal economy and bribery may be characterized as one of equilibrium among the dictator, government officials, and market participants, in that the three actors do not intend to change their behavior regarding bribes significantly for the time being. However, the equilibrium is fragile. Increasing bribe-taking from participants in market activities can cause the interests of the police machinery to become misaligned with the interests of the dictator, which may further destabilize the regime to the point of collapse when the dictator is perceived to be weak and the fear factor is reduced.



Introduction

One of the striking features of the current North Korean economy is the prevalence of bribery. According to the 2008 Worldwide Governance Indicators compiled by the World Bank, North Korea is one of the most corrupt countries in the world: Somalia is the worst country, followed by North Korea. This status is in line with numerous testimonies from North Korean refugees. They report that bribes are necessary whenever they take one small step, providing anecdotal evidence on bribes in connection with market activities, travel, college admissions, and even with escaping from North Korea.

Corruption is defined as the abuse of entrusted powers for private gains (Bardhan 1997). Shleifer and Vishny (1993) define government corruption as the sale of government property by government officials for private gains. Corruption can be classified into various categories in terms of its type (Andvig and Fjeldstad 2000). Bribery, which is an illegitimate transfer of resources from one body to another one, is a part of corruption. Embezzlement refers to the theft of resources by those who are responsible for administering them. Fraud involves trickery, swindling, and deceit for private benefit at the cost of others. In addition, corruption may take forms such as extortion, which denotes receiving money, favors, or resources extracted by use of coercion, violence, and threats. Favoritism can be included as a part of corruption as it involves the abuse of power.

Some scholars classify corruption in terms of degree. Grand corruption, which typically involves high-ranking bureaucrats and politicians, refers to large-scale corruption, and the value of corrupt transfers is high and often tied to one-time exchanges. In contrast, petty corruption takes place at lower levels of the administrative hierarchy and is more pervasive, involving transfers of smaller value. Petty corruption is closely related to people's day-to-day daily life experiences, such as the "street-level extortion" of policemen and "speed-money" at lower administrative levels involving bribes to facilitate bureaucratic action such as the speedy processing of an application. Rose-Ackerman (1978) denotes grand corruption as legislative corruption and petty corruption as bureaucratic corruption.

There are two contrasting arguments on the effect of corruption on a society. One group of scholars argues that corruption negatively affects the economic performance of a country by preventing businesses from starting and growing and by distorting the allocation of talent (Murphy, Shleifer, and Vishny 1991; Mauro 1995; Rock and Bonnett 2004).¹ Furthermore, corruption endangers the stability of a society in both market and socialist economies by causing the deterioration of credibility in formal and informal institutions. Treml and Alexeev (1994) and Grossman (1998) maintain that cor-



ruption related to the informal economy caused the disintegration of the Soviet economy. According to these authors, the expansion of the informal economy, which increased corruption and rent-seeking activities, distorted the information required for efficient planning and undermines the ideological foundations of the society. Socialist countries are also arguably more vulnerable to corruption because it weakens the fundamentals of socialism, based on equity and institutional control over society (Grossman 1998).

In contrast, many other studies suggest that corruption can be regarded as “greasing the wheels” of an economy that suffers from hold-ups by bureaucrats and the grabbing hand of the government (Leff 1964; Huntington 1968; Rock and Bonnett 2004). According to this perspective, corruption, which can act as the second-best option in helping economic agents to bypass such institutional deficits, contributes to improving efficiency in the economy. In the context of the Soviet economy, some form of corruption was used to increase output as the tight requirements of plans “forced” the managers to break rules in order to achieve plan-fulfillment goals (Heinzen 2007). More specifically, the managers of firms used secret money to purchase raw materials and spare parts that were not always delivered in accordance with the plan (Harrison and Kim 2006).

The above discussion suggests that the relationship between corruption and the stability of a socialist regime is not clear-cut. Corruption appears to be a double-edged sword for the stability of a socialist regime. Corruption may contribute to the stability of a socialist regime by allowing the purchase of much needed inputs of production to fulfill the planned output target. However, members of the public, who believe that the socialist system is neither credible nor fair, are likely to mistrust it all the more. In addition, information needed for planning is distorted if firm managers rely not on the plan but on other ways of production, which may lead to a weakening of control for the firms’ central planners. Moreover, corruption is likely to destabilize a socialist regime if it is tied to informal market activities rather than fulfilling the planned output target.

What are the relationships among bribery, markets, and regime stability in North Korea? This analysis first presents several hypotheses on the characteristics of bribery, and the behavioral patterns of the dictator, officials, and market participants in connection with bribery, markets, and regime stability. In more detail, the following questions will be asked: Does bribery in North Korea contribute to the stability of the regime? Is there any possible equilibrium among the three actors, namely, the dictator, officials, and market participants, in North Korea currently? What does this equilibrium tell us about the extent and trend of bribery? These questions are important not only to evaluate the current situation faced by the North Korean authorities but also to comprehend the future of the North Korean regime. Following the presentation of the hypotheses, they will be tested



empirically using data from surveys of North Korean refugees.

In order to conduct empirical exercises, data are needed that enable the measurement of the extent of bribery in North Korea. Obviously, data on bribery are hard to come by because the revelation of bribe-giving or bribe-taking is likely to present difficulties in most countries. In this regard, data from surveys of North Korean refugees who have settled in South Korea offer a unique opportunity to understand the nature and the extent of bribery in North Korea. The refugees are relatively free to reveal details about their bribe-giving while they were living in North Korea. Although it must be remembered that the samples of North Korean refugees are not drawn randomly from the North Korean population, the increasing number of refugees from various strata of society indicates that the survey data can provide useful information on the extent and nature of bribery in North Korea. In addition, multivariate regressions can mitigate the problems arising from non-random samples.

This paper is laid out as follows. Section 2 focuses on state policies toward markets, and provides a brief history of the North Korean economy and its current situation. Section 3 presents hypotheses in connection with markets, bribery, and the stability of the regime based on the analysis of objectives and capacity of the dictator, government officials, and market participants. Section 4 presents the data used in this paper and provides some statistics on the North Korean informal economy. Using data from surveys of North Korean refugees, Section 5 evaluates the hypotheses presented in Section 3. In Section 6, we discuss the implications of prevalent bribery for the North Korean regime and present our conclusions in Section 7.

The North Korean Economy and Policies toward Markets

It is undeniable that the North Korean economy is on the verge of collapse. The socialist economic regime has suffered from a very low productivity level since its founding. Kim, Kim, and Lee (2006) suggest that the North Korean economy is less efficient than the Soviet economy by about 30 percent, even controlling for the stage of economic development. The economy was able to grow relatively quickly immediately after the end of the Korean War, because of reconstruction aided mainly by the Soviet Union and China. However, this high growth period was short-lived. A reduction in aid from the Soviet bloc and China from the late 1950s on, partially affected by North Korea's "equal distance poli-



cy” toward the Soviet Union and China during the Sino-Soviet conflict, had a large negative impact on the North Korean economy. Reflecting this situation, the “Juche” ideology, which can be translated into “the spirit of self-reliance”, began to be emphasized more strongly in the next decade and beyond.

Realizing the slim possibility of developing their economy in accordance to the tenets of a sophisticated centrally planned economy as in the Soviet Union, the North Korean authorities relied on the mobilization of internal resources that used campaigns and propaganda without proper planning or coordination. Economic tools involving idolizing the leader, such as “spot guide” and the “Jooseok fond” (leader’s fund), made this socialist economy a largely unplanned and highly repressive one. This situation led to a further decline in the country’s rate of growth. New estimates of growth rates of the North Korean GNP by Kim, Kim, and Lee (2006) suggest that in contrast to conventional belief, the South Korean economy surpassed the North Korean in terms of income per capita by the late 1960s rather than the 1970s.

The collapse of the Soviet Union and the Soviet bloc had a devastating impact on the already fragile and badly functioning North Korean economy. The loss of trade with former socialist countries meant a shortage of energy in North Korea, which further aggravated the economic conditions of the country leading to the “Arduous March” in the mid- and late 1990s. During this period, the Public Distribution System, through which food was rationed to the population in accordance with some predetermined rules, nearly collapsed. In reaction, the authorities were forced to accept the reality that households needed to participate in informal market activities in order to survive. Substantial informal market activities developed at this time, mainly in the form of trading consumer goods in the streets, cultivating private plots, and cattle breeding (Kim and Song 2008).

The North Korean authorities appeared to ratify the process of grassroots marketization through some institutional and policy changes, notably in 2002. The Measures of Improvement in Economic Management that was introduced on July 1, 2002, provided some form of material incentives for firms and workers and overhauled administered prices and wages. Universal markets were introduced in 2003 to facilitate market transactions; concurrently, authorities levied taxes on markets in the form of market usage fees paid by traders in the market and taxes paid by firms that were involved in market transactions.

However, beginning in 2005 the state began to reverse earlier reforms by repressing market activities and abolishing universal markets. There were reports that the North Korean authorities in particular tried to forbid market trading conducted by women under a certain age. This policy appeared to target relatively young women who were most active in street vending or sales in markets. In 2009, the authorities launched “the 150 day battle



campaign,” which mobilized labor to collective farms and construction sites and focused in particular on participants in market activities. The objective of the currency reform announced in November 2009, which forced the population to convert their old currency to the new currency at a 100:1 conversion ratio in limited quantities, was in line with the purposes of a series of such policies; namely, reducing market activities and reasserting control over the ruined socialist economy.²

The North Korean economy from the 1990s on can be described as the coexistence of a socialist system and grassroots marketization. The authorities attempted to control the direction of the economy but without much success. At times, they appeared to worry that seemingly unfettered market activities went too far. Market transactions were allowed for households to survive but the heavy reliance of the economy on markets was believed to be dangerous to the stability of the regime. The attitude of the authorities toward markets accounts for the inconsistent (or oscillating) state policies.

To control the process of marketization, the North Korean authorities developed the penal system that began to play an important role in repressing market activities (Haggard and Noland 2009). During the famine, the state established low-level disciplinary facilities called *rodongdanryeondae*, which can be translated literally as labor training camps. The legal reform in 2004 regularized these facilities and stated that individuals who committed various crimes, including participation in illegal market activities, would be detained in these facilities for up to two years (Han 2006). Police officers called *Anjeonwon* are responsible for dealing with the day-to-day life of the people, including controlling and repressing market activities.³ However, some crimes related to markets are treated as more serious and thus are dealt with by the National Security Agency (NSA, *Bowibu*). For example, the NSA has reportedly established a special task force to identify “criminals” who trade in illegal items such as state property and goods made in South Korea.⁴ The involvement of the NSA in controlling market activities is considered to be evidence that the authorities regard informal markets as an important threat to the stability of the regime.

Analysis and Hypotheses

Two groups of hypotheses will be tested here. The first group concerns the characteristics of bribery in North Korea. There are potentially two types of bribery in this group that



contrast with each other in terms of their effect on the stability of the regime. One criterion to distinguish “good” from “bad” bribery is related to its domain, namely, the planned formal sector or the informal market sector. In a socialist economic system, bribery relative to economic activities is normally tied to the planning mechanism (Kim 2002; Harrison and Kim 2006; Heinzen 2007). Understanding that there is a bonus mechanism based on the difference between planned output and actual output, the manager of a firm has an incentive to reduce the planned target even if he has to pay bribes. One of the necessary steps is to bribe an input supplier. For this, the firm manager needs secret money to purchase raw materials and spare parts that are not always delivered in accordance with the plan. In theory, the central planners should guarantee the delivery of inputs needed by firms, but it fails to do so partly because the plan is imperfect and contains many flaws. In this case, the manager is left without the necessary inputs but is still required to achieve the output target. The manager will not be able to meet the target without the secret fund, which could negatively impact the welfare of the managers and workers in the firm. Hence, a secret fund is necessary and the manager may rely on several tactics to generate such a fund. For example, the manager may transfer passive money in the enterprise account to active money that can be used to purchase goods and services. In other words, according to the socialist planning system, the income received by a supplying firm cannot be spent at the manager’s discretion as cash but should be deposited in the monobank. Yet firms find ways to channel this money into cash. In addition, firms may sell scarce goods and services they produce at higher prices. In order for this to happen, the manager needs to bribe the monitoring organization so that it will turn a blind eye to these illegal activities. This form of bribery is interpreted as an “economic crime in the interest of the enterprise” or “greasing the wheels.” It does not cause an incentive misalignment between the dictator and the managers, because both of them have incentives to keep operating the socialist system; in other words, neither of them wants to destroy the wheels.

Corruption related to market activities is harmful for the socialist system because markets, as a new wheel, are able to replace the old wheel of socialism. Bureaucrats receiving bribes from market participants are less likely to follow the rules dictated by the socialist system. More specifically, participants in market-related activities bribe officials who are responsible for monitoring, controlling, and cracking down on such activities. In return for bribes, officials impose less severe penalties and sometimes turn a blind eye to illegal activities. The effect of this form of corruption on the welfare of the public is likely to be positive, while such an effect on the total volume of production is ambiguous (Wellisz and Findlay 1986).⁵ However, officials are incentivized to deviate from the interests of



the dictator, who wants to keep the planned system. Thus an incentive misalignment between the dictator and officials may arise when market-related bribery is widespread, and corruption that reinforces market activities rather than formal activities is more dangerous to the stability of the socialist regime. Therefore, an important question to look at is whether bribes are related to the formal socialist sector or the informal market one.

Hypothesis 1. Bribery in North Korea is related mainly to informal markets rather than to the formal sector.

Another criterion to distinguish “good” corruption from “bad” concerns the effect of corruption on production. Grossman (1977) maintains that corruption involving the diversion of state property for private businesses reduced shortages of consumer goods and thus decreases the disincentive effects of shortages. Harrison and Kim (2006) focus on a change in the quality of corruption in reaction to a reduction in plan tautness, and suggest that the partial liberalization of the Soviet economy was accompanied by a change in the quality of corruption from “good” to “bad”; in other words, from “production-oriented” corruption to the corruption of simply “lining one’s pocket.” Similarly, good corruption may contribute to the stability of the regime because it adds to the aggregate supply of goods and services, while bad corruption does not.

Hypothesis 2. Bribery in North Korea does not facilitate production.

The second group of hypotheses refers to the possibility of equilibrium among the three actors in the North Korean economy, that is, the dictator, government officials, and market participants, and the stability of such equilibrium. The three actors have their own objectives and ability to pursue their preferences. We approach the analysis of bribery using a game framework involving three actors.

The objective of the dictator is to maintain power. The prevalence of bribery is dangerous to the dictator, especially if bribes are received in return for forgiving illegal market activities. Thus, the dictator prefers to order the abolition of such activities in order to strengthen his power. The question of why the dictator tolerates bribe-taking by officials then arises. Given well-developed information-gathering and repressive police machinery, it is difficult to believe that the dictator is unaware of the prevalence of bribe-taking activities by the representatives of the state. He is also capable of punishing government officials if he wishes. At the same time, however, he understands that the loyalty of government officials is a key variable in maintaining his power. If he orders government officials



to abolish markets, officials are unlikely to implement his order as precisely as he would like because the abolition of markets will pose a severe difficulty for the official's lifestyle. Given that the dictator does not possess sufficient resources for compensating officials for the loss of their bribes, he compromises by tolerating the bribe-taking practices of his officials and implicitly allows them to live on bribes. If he believes the markets are becoming big enough to challenge his power, then he can order the repression of market activities. This order works, but only to a limited degree, because officials are only partially loyal to him. This may not be ideal for the dictator but optimal given the constraints he is under.

The objectives of a government official are to survive and to enrich himself. To accomplish his goals, he can decide whether he will take bribes from market participants or whether he will remain loyal to the dictator. A strong form of disloyalty by the official is to strike against the dictator with a view to maximizing his bribes from market participants. However, this possibility is limited partly because this is currently too risky and the end of the dictatorship may mean the end of the official's power as well. Weak forms of disloyalty range from sabotage to slow implementation of the dictator's orders and softer treatment of rule-breakers. Complete loyalty means punishing participants in market activities in accordance with laws and orders from above. Hence, an official decides whether he will refrain from punishing market participants by receiving bribes, or will punish them according to the law. An optimal response given the North Korean political and economic circumstances is to be partially loyal to the dictator but at the same time to receive bribes. The former is necessary to survive politically while the latter is necessary to survive economically. Is it possible to choose both of them simultaneously? Probably yes, as long as the dictator decides to tolerate the corrupt practices of his officials. In other words, unless a certain official is too greedy or betrays the dictator, he can assume he is fairly safe though corrupt. Being partially loyal but corrupt becomes the norm for typical officials.

Market participants have the same objectives as government officials, that is, survival and enriching themselves. They need to make decisions on whether they bribe officials to avoid punishment or whether they strike against officials. It is theoretically possible that market participants might directly challenge the dictator. However, this possibility can be ruled out at present, because it is difficult to believe it could happen in the current North Korean regime. We assume that challenging officials is possible, but it too poses a high risk. Hence, an optimal response of market participants is to bribe government officials in order to continue to participate in market activities. Figure 1 shows the choice variables of the three actors as explained above.

Given the objectives and the preferences of the three actors, equilibrium can take place. The dictator condones the actions of bribe-taking officials if they remain loyal to

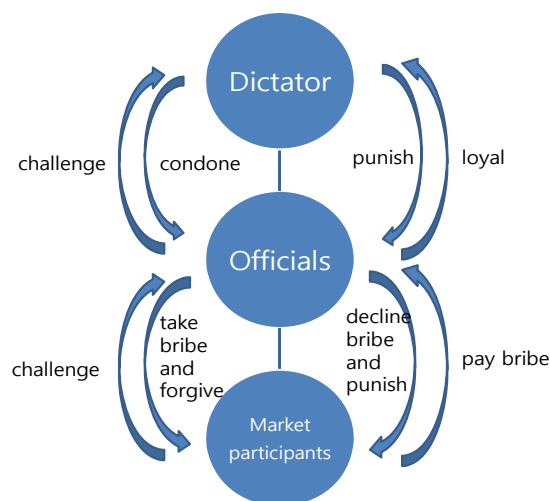


him. He is not able to control the economy fully because officials are only partially loyal, and his preference that the markets be abolished is not realized. He compromises on this because this is currently the only possibility to stay in power. Government officials choose to be corrupt but still partially loyal to the dictator. Lastly, market participants, who are incapable of striking against government officials, pay bribes to officials and keep working in markets. Optimal responses of the three actors suggest a possibility of equilibrium in which a high degree of bribery is observed. An increase in bribery, however, is unlikely over the short and medium term, because the three actors do not want to change their behavior significantly. Here we limit the time span to the short- or medium-term, because the nature of markets and bribery may affect the behavior of the three actors in the long run. Hence, the following hypotheses can be presented.

Hypothesis 3. The extent of bribery is high in North Korea.

Hypothesis 4. The trend of bribery in North Korea is not likely to show an increase for the past decade.

Figure 1: Bribery in a Three-Party Game





Descriptive Statistics on Informal Market Activities

This study uses survey data collected from 225 North Korean refugees who escaped from North Korea mainly in 2007-2009. This survey was carried out from April to July 2009. The survey focuses on income, expenditure, labor, and informal economic activities while the respondents were living in North Korea, more specifically during the year before they left North Korea.⁶ The survey represents the largest face-to-face interview survey of refugees who have settled in South Korea in recent years. The survey questionnaire is designed to cross-check the consistency in the replies of the interviewees using a multiple number of questions on a similar issue. This 2009 survey data was also compared with data from a survey of about 700 North Korean refugees conducted in 2004-2005. The results from both surveys are used when trends over time are examined.

Table 1 presents the descriptive statistics of all respondents and whether they work only in the formal or in the informal economy, participate in both economies, or work in neither economy. A key difference in demographic characteristics in terms of such labor supply status is that females are more actively involved in informal activities compared with males. In addition, party members are more likely than nonparty members to work in the formal economy.⁷ Furthermore, a substantial difference in the median annual family income is found between those who work in the formal economy and those who participate in the informal economy. The median household income of participants only in the formal and in the informal economy is 1,000,000 won and 1,765,000 won, respectively.⁸ The median household income of all respondents is reported to be 1,265,000 won, which is equivalent to US\$421 when the black market exchange rate in 2008 is applied.⁹ As regards to participation in the formal economy and the informal one, 68.4 percent of the total respondents participated in the informal economy while only 50.2 percent of the respondents worked in the formal one.

In order to evaluate the magnitude of the informal economy, we compute the share of income from the informal economy as a percentage of total income.¹⁰ The informal income includes the market value of agricultural products produced on private plots, an increase in the market value of cattle, and income from other informal activities such as vending. We find that households earn 74.6 percent of total income from informal economy activities during 2006–2007. The share of informal income in total income in 2006 and 2007 is 73.5 percent and 74.9 percent, respectively. Although these figures look very high, our estimates of the share of informal income are largely consistent with the findings of previous studies such as Kim and Song (2008) and Rhee (2007).¹¹



Table 1: Characteristics of Respondents in the 2009 Survey (in % if not specified)

	Total Survey Respondents	Participants only in formal economy	Participants only in informal economy	Participants in both economies	Participants in neither economy
Gender					
Male	38.8	62.5	17.3	52.1	35.5
Female	61.2	37.5	82.7	47.9	64.5
Demographic Characteristics					
Age (years)	35.0	33.6	35.9	36.8	29.9
Number of family members (persons)	3.36	3.38	3.10	3.70	3.21
Regions					
Pyongyang	0.45	0.00	0.00	1.37	0.00
Pyungahn Do	5.43	7.69	3.75	5.48	7.41
Hamkyung Do	60.2	64.1	63.8	56.2	59.3
Hwanghae Do	4.07	2.56	3.75	6.85	0.00
Kangwon Do	3.17	7.69	0.00	5.48	0.00
Jagang Do	0.00	0.00	0.00	0.00	0.00
Yanggang Do	26.7	18.0	28.8	24.7	33.3
Education					
No education	0.89	0.00	1.27	0.00	3.23
Middle school	3.57	5.00	1.27	1.39	12.9
High school	72.8	75.0	77.2	73.6	54.8
University	22.8	20.0	20.3	25.0	29.0
Party					
Party member	18.3	30.0	5.0	35.0	0.0
Not party member	81.7	70.0	95.0	65.0	100.0
Annual family income (median) (N. Korean won)					
	1,265,000	1,000,000	1,765,000	1,265,000	38,400
Sample size					
Number of people	225	40	81	73	31
Share	100.0	17.8	36.0	32.4	13.8

Notes: The median of family income is reported in order to mitigate problems arising from very high income inequality in the group. Nominal income is reported instead of real income because of the lack of accurate data on price levels in a given year. Hence, the comparison of income between different groups should be treated as indicative only and interpreted with caution. “Do” in regions refers to province.



The extent of informal income as a share of total income in North Korea is much higher compared with other socialist countries. For example, using the Soviet archive material of family budget surveys, Kim (2003) estimates that the average share of informal income in the Soviet Union from 1969 to 1990 was 16.3 percent. This comparison indicates that the extent of “informalization” in North Korea is unprecedented in the history of socialist countries. On the basis of such figures, one can argue that the North Korean economy is not a planned economy to a large extent but has experienced substantial marketization from below (Haggard and Noland 2010).

Empirical Evidence

Bad or Good Corruption?

Hypothesis 1 can be tested by using the survey of North Korean refugees conducted in 2009 and looking at the relationship between bribery and informal markets. The 2009 survey asked the following question: “For what purposes do you believe that people gave bribes?” Respondents were allowed to choose a multiple number of suggested answers. The results from the respondents’ answers are summarized as follows:

Table 2: Reasons for Giving Bribes

Reasons for Giving Bribes	Frequency	Percentage Share (%)
To be promoted	60	12.96
To continue to work as a vendor banned by the authorities	147	31.75
To start a vending business	54	11.66
To avoid punishment	134	28.94
To avoid working in the formal sector	64	13.82
Other reasons	4	0.86
Total cases	463	100.0



Table 2 suggests that a prime reason for bribe-giving is to work as a market vendor. It is notable that 43.4 percent of bribe-giving is related to working in markets as a vendor, followed by avoiding punishment. The answer “avoiding punishment” does not provide further information on whether this is related to markets or other factors. Yet a correlation exercise suggests that most respondents who chose this answer also selected the answer “to continue to work as a vendor banned by the authorities,” suggesting that people paid bribes to avoid punishments because of market-related activities.¹² In 13.8 percent of total cases, respondents reported that a bribe was necessary because people preferred not to work in the formal sector. Instead, a majority of them are believed to have preferred working in markets since income from such activities far exceeded that from the formal sector. These cases appear to be related to the so called “8.3 workers” who paid money to enterprise managers in return for being able to be absent from their official work.¹³

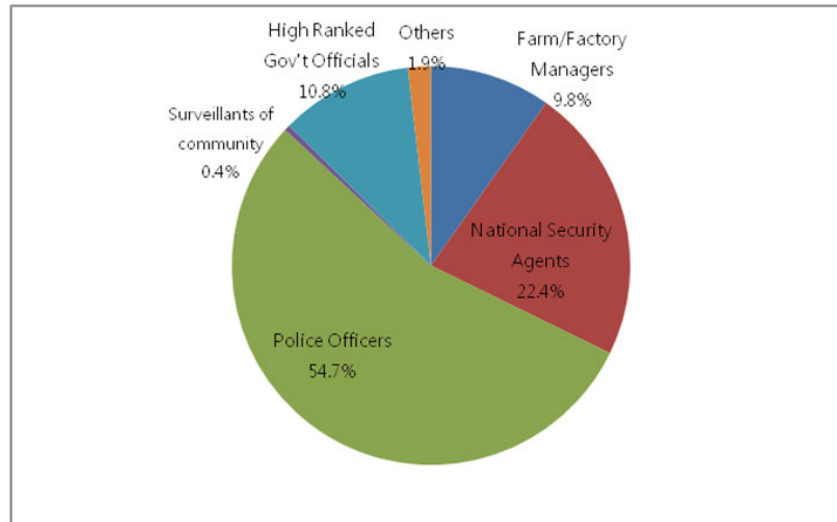
The only answer that is clearly related to the formal sector is “to be promoted,” but the share of this response out of total responses is only 13.0 percent. In contrast, 43.4 percent of total cases are specifically concerned with market activities and 42.8 percent of the cases are likely to be associated with such activities. This suggests that bribe-givers want to derive income from market activities, a portion of which are illegal and subject to punishment. There are also a number of cases in which working in markets requires permission to be absent from the workers’ official workplaces, and thus they are required to pay bribes, perhaps to the manager of the enterprise or to the person responsible for such permission.¹⁴

The survey also includes a question on “who do you believe are main bribe-takers?” Respondents were asked to choose from the following list: firm or collective farm managers, National Security agents, police officers, surveillants of the community, high-ranking government officials, and others. According to the data in Figure 2, the main bribe-takers in North Korea turn out to be police officers. More than half, or 54.7 percent, of the respondents replied that police officers are the main bribe-takers, followed by National Security agents. Police officers and National Security agents are responsible for monitoring and controlling markets. In particular, in everyday life, police officers are the first level of authority to deal with market participants, and their proximity appears to be a prime reason why they are the main bribe-takers. On the other hand, only 10.8 percent and 9.8 percent of the respondents chose high-ranking government officials and firm or collective farm managers as main bribe-takers, respectively. In sum, among various types of officials and firm or farm managers, those who control the informal sector directly were found to be especially active in receiving bribes. The “others” category, which was chosen by 1.9 percent of the respondents, included judges, prosecutors, border guards, university deans,



and soldiers.

Figure 2: Main Bribe-takers



The findings in Figure 2 are corroborated by the response to the question, “What groups of people do you think are the main bribe-givers?” The questionnaire lists four possible choices: official workers or collective farmers; traders in North Korean markets; international traders including shuttle traders; those who engage in home production. The shares of respondents who replied “Yes” to this question for each group are 30.6 percent (official workers or collective farmers), 72.1 percent (traders in North Korean markets), 42.6 percent (international traders including shuttle traders), and 19.4 percent (those who engage in home production). Thus these data indicate that North Koreans believe that those who conduct market-related activities are the primary bribe-givers.¹⁵ The findings from the reasons for bribe-giving and the status of main bribe-givers suggest that North Korean bribery can be categorized as “bad” corruption in terms of the domain of bribery. Such bribery is associated with informal market activities rather than with the formal economy. Bribery and informal markets are likely to reinforce each other, which could lead to the destabilization of the socialist system.

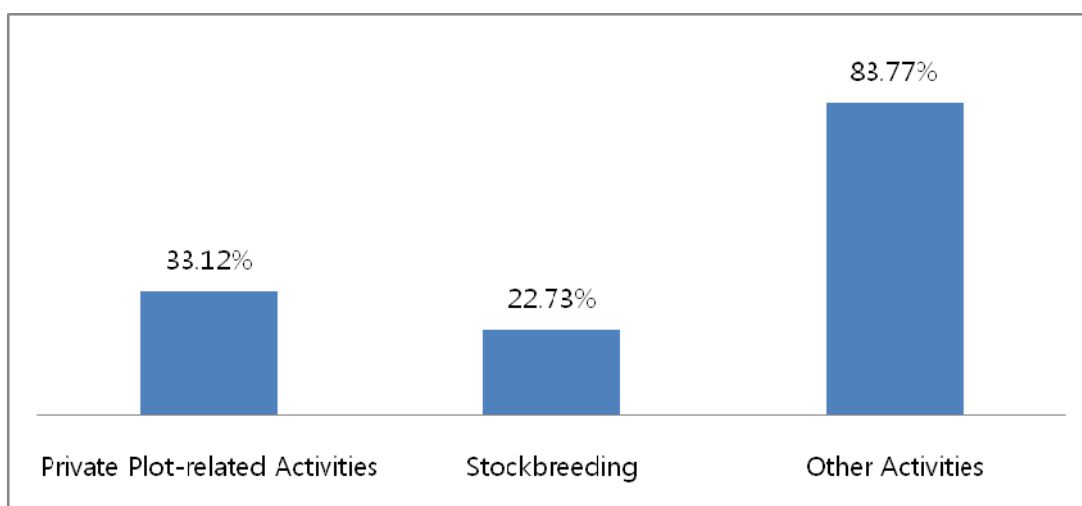
As regards Hypothesis 2 on the relationship between bribery and production, we rely on data on the types of informal economy activities as a main domain of bribery. Figure 3 classifies household informal economy activities (IEA) into three types: private plot-related activities, stockbreeding, and other activities. Among these, private plot-related



activities and stockbreeding can be classified as production-oriented activities. In addition, some part of other activities that is associated with production belongs to production-oriented activities.

A substantial share of participants in IEA engages in different types of IEA simultaneously, for instance, cultivating a private-plot and selling agricultural products from the plot in the market at the same time. In addition, 83.77 percent of IEA participants were involved in activities related to other activities (neither cultivating private plots nor cattle breeding), such as street vending, smuggling, needlework, TV repair, and so on. In other words, a majority of IEA in North Korea involves transactions in markets. Among total respondents, 33.12 percent and 22.73 percent replied that they engaged in cultivating private-plots and stock breeding, respectively.

Figure 3: Types of Informal Economy Activities (percentage of respondents participating in IEA)

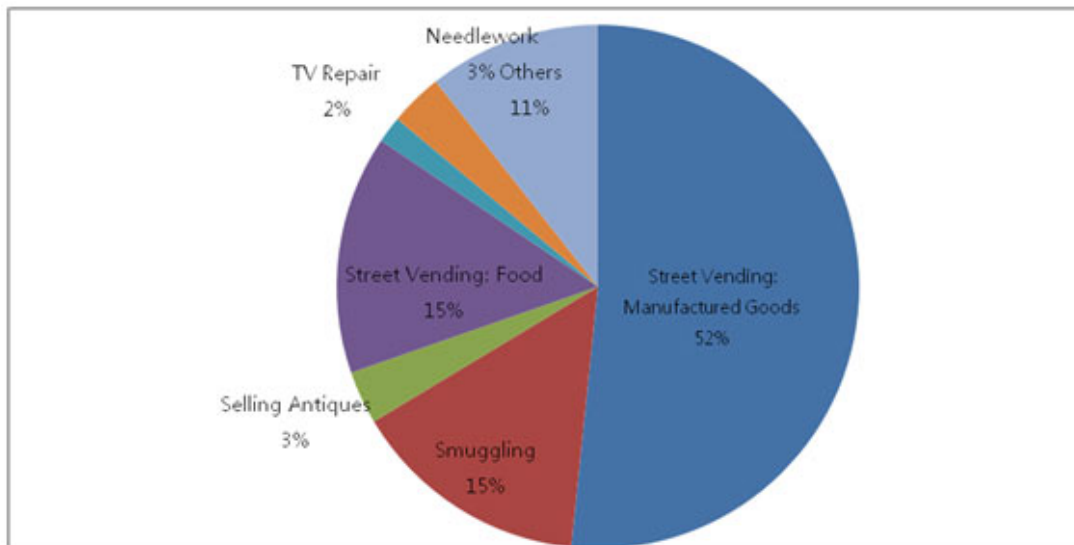


Note: Multiple answers were allowed and thus the sum of each share exceeds 100 percent.

Figure 4 further shows the distribution of different types of other activities. More than half of participants were involved in street vending of manufactured goods, while smuggling and street vending of food also took a considerable share. Manufactured goods such as clothes, shoes, or bicycles sold in markets originated mostly from China. Smuggled items, most of which also came from China, included leather, medicines, and metals. Other miscellaneous activities consisted of helping reunite dispersed families, working as a driver or a hair stylist, and so on.



Figure 4: Distribution of Other Activities in the Informal Economy



There were a small number of cases where refugees sold goods they produced by themselves such as mirrors, nets, clothes and artworks. People also sold eggs, corns, rice, along with ice cream, rice cakes, alcoholic beverages, and candies that they made at home. The share of respondents who produced goods by themselves in order to make a living amounted to only 20 percent of the total respondents who engaged in informal economic activities outside of private-plot cultivation and stock breeding. Most production activities are undertaken on a small scale: 47.2 percent and 41.5 percent of such activities were conducted alone or with at most two other people, respectively.

The above findings suggest that informal trading is a dominant part of the North Korean informal economy. In addition, a relatively small number of households participate in production activities, which tend to be conducted on a small scale. In other words, the informal economy in North Korea in which bribe-giving and bribe-taking take place most frequently concerns mainly value-redistributing activities instead of value-creating ones. This characteristic of bribery is regarded as “bad” corruption in that it fails to increase the supply of goods and services substantially.

Size and Trend of Bribes

Both surveys of North Korean refugees we conducted in 2009 and in 2004-2005 asked



questions on the amount of bribes or the share of bribes in the total expenditure of North Korean households. The surveys include data from North Korean refugees who left North Korea in different years.¹⁶ This allows us to look at the trend of bribes as a percentage of total expenditures from 1996 to 2007 except 2004-2005.

Table 3 shows the trend of the share of household spending on bribes as a proportion of total expenditures. The un-weighted average share of bribes is 8.95 percent. The minimum and the maximum share are 5.2 percent and 10.7 percent, respectively, although we should consider these estimates to be only rough figures. This high share of bribes is surprising even compared with the late Soviet period before the collapse of the Soviet Union. Kim (2003) estimates the share of bribes in the GDP in the late Perestroika period to be about 2 percent. If the share of bribes in household expenditures is converted to bribes' share in the GDP, it is estimated that spending on bribes is about 6-7 percent of North Korean GDP.¹⁷ This suggests that, in terms of the share of bribes in North Korea's GDP, bribes are much more prevalent in North Korea than in the late Soviet period just before that regime's collapse.

Table 3: Trends in the Share of Spending on Bribes as a Proportion of Total Expenditures

Year	1996	1997	1998	1999	2000	2001	2002	2003	2006	2007
Share (%)	8.8	10.7	9.2	7.6	5.2	9.3	8.7	10.0	10.1	9.9

Most of the respondents replied that bribes are widespread in North Korea. To the question, "To what degree are bribes prevalent," 54.7 percent and 43.0 percent of respondents replied "very prevalent" and "prevalent," respectively. In addition, 73 percent of respondents reported that they themselves had paid a bribe at least once. Multiple instances of bribe-giving were frequently found among the respondents: 38 percent replied that they gave bribes multiple times on an irregular basis, and 25 percent multiple times regularly. These findings suggest that the rate of North Korean bribery is high, confirming Hypothesis 3.¹⁸

North Korea has a legal system that calls for bribe-taking officials to be punished. The original law against bribe-taking was made in December 1946. The criminal code, which was drawn up in 1995 and revised in 2004, contains Chapter 7, according to which officials involved in either bribe-taking or bribe-giving are subject to being punished with labor training for up to two years. If they received the bribe by extortion or the amount of



bribe is excessively high, the officials will be punished with reeducation (*kyohwa*) for up to four years. However, the stipulations of the criminal code regarding bribes do not appear to be effective in reducing bribery in North Korea.

As regards to Hypothesis 4, we test whether there is any increase in bribery from 1996 to 2007. During the period under investigation, there were two important changes in policies toward markets or the economy as a whole. First, North Korea implemented a major economic reform in 2002, called “the July 1st Economic Management Improvement Measures.” This reform was based on the principle of a less-centralized decision-making structure, allowing some autonomy to enterprises in planning targets, setting prices, selling goods in markets, and purchasing inputs and spare parts. Second, repression of markets began in 2005. The North Korean authorities applied age restrictions to market traders and the opening hours of markets. Furthermore, they attempted to abolish markets in some cities. We investigated whether these policy changes affected the proportion of bribes significantly. The timing of these two policy changes suggests some possible break in the trend either between pre-2002 and post-2002 or between pre-2005 and post-2005. We use t-tests to check whether there was any significant gap between the mean of the share of the average spending on bribes in total household expenditures during the previous period (pre-2002 or pre-2005) and after the policy change (post-2002 or post-2005). The test results suggest that there was no significant difference in mean of the share of the average spending on bribes in total household expenditures between the two periods.¹⁹ Hence, Hypothesis 4 is confirmed by empirical evidence.

The finding that the share of bribes in household expenditures has not increased for about ten years suggests that political control over bureaucrats and market traders has not weakened despite the economic crisis and the prevalence of the IEA. Two factors may account for the success of this control. First, the police machinery is largely intact in North Korea, unlike in the late Perestroika period in the Soviet Union. Entities within the police machinery such as the NSA and the People’s Security Agency (*Anjeonbu*) are still powerful organizations, and the system of peer monitoring including *Inminbanjang* is well developed and still maintained in North Korea. In addition, the authorities tend to apply tougher measures to economic crimes related to market activities (Haggard and Noland 2009). Such harsh and arbitrary punishment has deterred bureaucrats and market traders from exploiting bribe opportunities more boldly and aggressively. Second, there is some evidence that informal market activities have not increased substantially from 1996 to 2007, suggesting limited possibility in increasing bribes (Kim 2009).



Implications of Bribery for the Stability of the Regime

The fact that the share of spending on bribes in total household expenditures has not changed significantly for the last ten years implies the existence of a stable equilibrium concerning bribery, at least in the short or medium term. This stable equilibrium is formed because the three actors prefer high but nonincreasing bribery as their optimal strategy. The dictator, who is unable to pay government officials wages sufficient for a normal lifestyle, condones their corrupt behavior as long as they remain loyal to him. Haggard and Noland (2009) suggest that the dictator increased the discretion of government officials such as National Security agents and police officers when they deal with informal market activities. They can exercise much discretion regarding whether to arrest, detain, and terrorize those who participate in such activities. This can be interpreted as an intention by the dictator to repress market activities but at the same time allow the National Security agents and police officers find a way to survive. An effective way to achieve these two goals is to increase the discretion of those who are responsible for controlling and repressing, if necessary, market activities. Market traders understand that the police have real power with much discretion and thus are incentivized to bribe the agents to avoid arrest and harsh punishment.

Equilibrium is established between government officials and market participants as bribe-takers and bribe-givers, respectively, and even strong collusion may develop. Especially when a certain bribe-giver repeatedly bribes an official, an acquaintance can be made and a mutual understanding between them can be developed. This may result in ineffectiveness or being less effective in the enforcement of government policy against market activities. Yang (2010) reports the following testimony of a North Korean refugee.

Once I was arrested, I paid some amount of bribe and was released subsequently. Then I was not arrested because I got acquainted with police officers. Those who paid bribes appear in markets without being afraid of police officers, at least for some period. Police officers do not arrest traders who have paid bribes recently and let them keep trading, say, for about 15 days. After about 15 days, police officers demand bribes again.

As regards to the stability of such equilibrium in the long term, we need to understand the nature of bribery in North Korea. Bribery represents a particular type of unofficial exchange between the representatives of the state and of the population. Such interactions illustrate the deficiencies of planning, which fails to operate in an ideal way. Bribe-givers believe that the state is not living up to its promises to the population. The failure of the state to fulfill its basic obligations is sufficient to make the public believe that bribing a



state official is not a crime at all. Furthermore, mere survival is a prime motive for a number of participants in markets. These conditions can easily justify bribe-giving. Similarly, officials may take bribes without feeling guilty because the salaries they receive are much below the level of subsistence, and they regard bribe-taking as their self-help mechanism against government failure. A culture of bribery emerges from justifying both bribe-giving and bribe-taking, and becomes a norm in society. Indeed, bribery is a kind of survival strategy amid economic crisis and state failure. This type of survival-oriented bribery is difficult to crack down on unless there is an alternative provision of income necessary for normal living.

Bribery is epidemic in its nature. If bribery is regarded as both necessary and tolerated, more people want to take part in such practices. Detection and punishment are more difficult because there are too many people involved. Bribery is a form of reciprocity in that both bribe-givers and bribe-takers can gain mutual benefits. This leads to the strong possibility of collusion. Unless bribe-takers are unusually greedy or do not keep promises, they are hard to detect. These arguments imply that the dictator has to exercise harsher rules against market activities to keep the magnitude of such activities in check. The application of softer or even similar rules as before to market activities will result in a significant growth of market activities associated with more bribery. This implies that, from a longer-term perspective, the dictator has to face an uphill battle to protect his power from being shaken by market participants and bribe-taking officials.

The possibility of a negative shock can make such equilibrium fragile. Shleifer and Vishny (1993) suggest that the partial liberalization of dictatorship can make corruption rampant as one man's corruption or a dictator's corruption is transformed into corruption involving a number of agents who have administrative power. These authors illustrate this point by using the example of the collapse of the Soviet Union: Gorbachev's attempt to partially liberalize the economy contributed to a substantial increase in corruption during Perestroika, which helped lead to the eventual collapse of the Soviet system. More recent literature also emphasizes the relaxation of political control over the economy as an important cause of the disintegration of the Soviet Union. Harrison (2002) claims that the Soviet authorities were forced to stop monitoring the activities of firms because the cost of monitoring increased and political control became softer over time. In particular, he argues that the regime of a dictatorship is more stable when dictatorial rule is cruel and secret. According to him, Glasnost and Perestroika contributed to a radical change in the nature of political control in the Soviet Union from random and cruel punishment to expected, more transparent, and less harsh punishment. As a result, the public as well as firms were able to strike against the authorities without fear of overly harsh consequences.



Harrison and Kim (2006)'s argument that the partial liberalization of the Soviet economy was accompanied by a change in the quality of corruption from "good" to "bad" is also in line with the findings of this study.

There are two possible reasons why this equilibrium may break down in the long run. First, both markets and bribes have a tendency to expand. They are based on human nature and encourage the pursuit of both survival and self-enrichment. Unless strong factors such as institutions and policies deter markets and bribes from expanding, they tend to become larger and larger. If a norm of bribery is formed, there develops a path dependency that makes reversal more difficult but moving forward along the path easier. Actors regard the current situation as a norm, and consider what they have to do, taking the current situation as a given. Over time, bureaucrats and traders enriched from bribe-taking or illegal businesses may find that there is no alternative except to strike against the dictator in order to keep their accumulated wealth safe. This implies that government policies should get tougher against informal markets and bribery over time. Otherwise, the expansionary nature of markets and bribery will destabilize up to the point of collapsing the socialist regime. This may explain why the North Korean authorities attempted to repress market activities from 2005 and on. Nevertheless, despite such repression, the share of bribe expenditure as a percentage of total expenditure has not decreased.

Second, external shocks can affect the stability of the equilibrium. A key factor of maintaining the stability of the regime is fear. Officials should fear dismissal and punishment by the dictator. Participants in markets should be afraid of being detected, arrested, and punished by officials. If the extent of societal fear is somehow diminished, the regime is likely to destabilize. When fear drops to a nominal level, the regime may suddenly collapse. The extent of fear is a function of the dictator's character, his choices, the learning curve of officials and market participants, and other political, economic and external conditions. If the dictator's behavior is predictable, officials and market traders will prefer to challenge him up to a certain limit. The cruelty of the dictator can deter other actors from betraying him. Such randomness and cruelty are dependent not only on the dictator's character but also on his choice variables. Yet if he chooses to be random and cruel, he should be able to enforce his choices. Otherwise he loses credibility and other actors are more likely to challenge him. Death of the current dictator may signal both bureaucrats and market participants that they are able to pursue bribery more actively without being concerned about suffering harsh penalties. The learning curve of officials and market participants is also an important consideration. Over time they will learn more clearly what benefits them most. Their exposure to money-making can affect their thinking, preferences, and behavior. Hence, when they regard the dictator as less cruel and more pre-



dictable, they will want to expand the areas in which they can make money. In addition, a further substantial decline in economic conditions can trigger actions of the public against the dictator, particularly when political control over society loosens.

This may be one reason why the North Korean authorities implemented currency reform in November 2009. Repression over markets began in 2005, but relatively moderate forms of repression such as forbidding market trading conducted by women under a certain age were found to be largely ineffective in reversing the trend of marketization. Strong collusion between officials and market participants may have accounted for such policy failure. Although repressive policies were able to check or slow down the speed of marketization, the dictator might have wished to go further and actually reverse the trend. In 2009 he may have wanted to implement policy that would bypass the collusion and instead affect market participants directly. Currency reform, unlike previous measures against markets, seemed to serve the dictator's desires well, because it did not require perfectly loyal officials.

However, the authorities appear to have underestimated the role of markets in feeding both participants and extorters. Due to rising discontent with repression of markets, recent information suggests that the dictator sacked one of the key figures in the design and implementation of currency reform, and reinstalled markets. The experience of the currency reform and the dictator's setback may have led people to reevaluate the robustness of the regime. As a result, both officials and the public may believe that the regime is not as strong as they previously thought. This belief could be a starting point for the derailment of the current North Korean regime. The succession process and the character of North Korea's next leader will become key factors in determining whether the regime destabilizes even further and collapses.

Conclusions

The relationship between markets, bribery, and regime stability in North Korea has been investigated using data from surveys of North Korean refugees. More specifically, four hypotheses about the characteristics of North Korean bribery and the size as well as trend of bribery have been tested. The findings can be summarized as follows. First, bribery in North Korea can be characterized as "bad" corruption because, unlike other socialist countries, it ties mostly to informal markets, not to the formal sector, and does not in-



crease the supply of goods and services substantially. North Korean bribery reinforces informal markets where consumer goods imported or smuggled from China dominate but production is not facilitated. Thus it has potentially negative impacts on the stability of the regime.

In North Korea bribery is widespread and household expenditures on bribes are exceedingly high. The average share of spending on bribes in total household expenditures from 1996 to 2007 was 8.95 percent, which translates into 6-7 percent of GDP. This proportion in North Korea is higher by 200-250 percent than the share of bribes in GDP during the late Perestroika period in the Soviet Union, which is known to have experienced high levels of corruption and rent-seeking activities. In spite of the high level of bribes, however, the share of bribes in household expenditures did not significantly increase from 1996 to 2007. This implies that the authorities were still able to deter the level of bribes from expanding even though they might have difficulty in reducing it substantially.

These findings suggest that the current situation regarding the informal economy and bribery may be characterized as an equilibrium. It is an equilibrium in the sense that all three actors, the dictator, officials, and market participants, do not currently want to change their behavior significantly. Given resource constraints that make it difficult for the dictator to pay his officials with appropriate salaries, he implicitly allows officials to receive money from market participants, unless they betray him. In other words, as long as officials remain loyal and do not cause severe problems among bribe-givers, the dictator condones a certain level of corrupt activities among his officials. Officials prefer to remain partially loyal to the dictator. Challenging him is too dangerous and does not provide much reward even if such a challenge leads to success. A dictator who is too weak or the end of the dictatorship will mean a decline in or a complete loss of officials' power. In contrast, complete loyalty that obeys the dictator's order to abolish markets is likely to make officials' economic survival difficult. Hence officials choose to be corrupt but partially loyal to the dictator. Following suit, informal economy participants, who have found bribery costly but an efficient way to escape arbitrary regulations and harsh punishments, decide to pay bribes.

However, such equilibrium among the three actors is fragile. Increasing bribe-taking from participants in market activities can make the interests of the police machine misaligned with those of the dictator at least partially, suggesting possible damage to the regime's stability. The self-expanding nature of bribes and markets will put high pressure on the will and the ability of officials to follow the dictator's interests. Both market participants and bureaucrats learn about markets and the dictator. Bureaucrats understand that



bribes are a lucrative business, and market participants intensify their belief that money can buy anything. This situation may lead to a stronger collusion of market participants and bureaucrats to facilitate a marketization of the socialist economy against the will of the dictator. A strong dictator can stagnate or even reverse the process of marketization at the cost of being unpopular and even facing possible opposition. However, such action will carry a high risk. However, the possibility of a sudden collapse does not currently appear to be high, because the dictator is still capable of not only controlling government bureaucrats who are afraid of being punished but also avoiding a worsening economic crisis by asking for help from other countries and international organizations, possibly in return for concessions on nuclear armament.

The current equilibrium is unlikely to last for a long period. The above mentioned learning curve together with the pressure from bribery and markets on administrative bodies will eventually destroy the socialist foundations of the society. The dictator may try to hit back, but will realize that the situation is getting worse for him. Instead, his setback will mean more territory occupied by market traders and corrupt officials. The only solution will be a transition toward a market economy. However, to the current dictator and perhaps to his successor, this issue seems impossible to consider.

There is a possibility that the current equilibrium will end abruptly. A change in the character of leadership from being strong to weak would give officials and market participants a signal that there is no need to fear the dictator. This will lead to a rampant increase in bribery. The members of the police machinery may want to increase the amount of the bribes they receive, because they are less concerned about being punished by the dictator. It is also possible that petty corruption could evolve into grand corruption. Realizing that there are large sums of money that might be made, key figures in the regime may be tempted to get involved in corrupt activities. In such a chaotic situation, market participants would be forced to pay higher and more numerous bribes because they would need protection from powerful organizations. This would increase the discontent of the public against the dictator and the state. If the equilibrium were to end in this way, the sudden change could be the starting point of the abrupt collapse of the regime.

An important implication of this discussion is that time is not on the side of the North Korean dictator. Although the probability of collapse is currently very low, political control over society has already weakened due to informal markets and bribery. As long as Kim Jongil continues to play the pivotal role, the system, though weak, will not experience a sudden change. However, his successor is likely to face tough challenges from government officials who have been exposed to markets and bribery. Unless he is perceived as strong, ruthless, and charismatic, he might be contested by bureaucrats who



want to maximize their income from bribes. This implies that any significant changes are likely to take place not during Kim Jong-il's regime but during his successor's. The weaker the successor is, the more likely it is that the regime will collapse.

Some policy suggestions can be made on the basis of the findings here. Policies toward North Korea should differ depending upon who controls North Korea. During Kim Jong-il's control, one has to take a more realistic approach to North Korea without expecting a substantial change in North Korea's position and should not rush to make big deals with North Korea. Instead, policies should focus on risk management and long-term priorities. For example, as a policy for risk management, it is important to contain the development of nuclear weapons and if possible to persuade North Korea to give them up. This can be also regarded as one of a number of long-term priorities. Other policies include the provision of basic humanitarian aid to the population with proper monitoring of distribution, and assistance to schools and universities. These efforts will contribute to the reconstruction and recovery of the North Korean economy when it transforms into a market economy.

Policies during the process of succession and its aftermath should be designed to be contingent on the scenarios that unfold. The situations are likely to be volatile, and uncertainty regarding the future of the regime will be heightened. Hence, policies should be comprehensive enough to deal with the issues of transition toward a market economy, integration with South Korea and East Asia, and changes in North Korea's political governance system. The possibility of a sudden collapse as well as gradual reform to a market economy should be taken into consideration in designing policies. South Korea and the other countries need to try to persuade the successor to open up the economy and to reform it, by giving explicit security guarantees, if necessary, and by promising necessary assistance. If the successor is reluctant to take steps to move the economy toward a market one, South Korea may have to make a strategic decision as to whether economic aid should be provided in order to reduce the probability of an abrupt collapse, and, if aid is decided on, what the optimal level should be.■

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Endnotes

¹ In more detail, corruption is argued to undermine economic performance in three main ways. First, it increases transaction costs and thus reduces value-added created by enterprises. Existing entrepreneurs, knowing that part of their profits will be taken away through corruption, are incentivized not to expand their businesses, and potential entrepreneurs are less likely to start them. Second, corruption hurts allocative efficiency in that more efficient firms that do not bribe corrupt officials may lose out in competition with less efficient firms that do pay bribes. Third, corruption distorts the efficient allocation of entrepreneurial skills. Firms may devote their energy to obtaining licenses and favorable market access instead of improving efficiency in an economy where corruption is widespread and institutionalized. As an extreme case, a potential entrepreneur may stop producing goods and services in order to leave the business sector and become a corrupt bureaucrat. However, this discussion is more relevant to market economies where businesses start freely and people change jobs without severe restrictions.

² It was reported that the initial ceiling was 100,000 North Korean won, which was equivalent to US\$33 when the black market exchange rate in 2008 was applied. However, there were some reports that such a ceiling was somewhat increased due to serious public discontent.

³ *Anjeonwan* is the abbreviation of *Sahwoeanjeonwon* (Society Policy Officers). The name *Anjeonwon* has been changed to *Inminboanwon* (People's Security Officers), but the public still uses *Anjeonwon* more frequently. The police institution in North Korea is called *Inminboanseong* [People's Security Agency].

⁴ A more detailed report can be found at <http://www.dailynk.com/korean/read.php?cataId=nk04500&num=51402>.

⁵ This type of corruption may facilitate the supply of consumer goods in shortages either by informal production or by importing them from other countries. However, because of its small scale and lack of legal protection, such informal production may be more inefficient than production in the formal sector.

⁶ The survey data of refugees are likely to suffer from several biases as shown in Table 1. First of all, the samples are not representative of the total population of North Korea. For example, a certain region such as Hamkyung Do, the northeast region of North Korea, is over-represented while Pyongyang is under-represented. Second, the survey is based on retrospective memory, and thus respondents had



to rely on their recollection about their life while they were living in North Korea. Nevertheless, the lack of official data on North Korean households leaves us no choice but to use surveys of North Korean refugees. We believe that these data are still able to reveal some meaningful behavioral patterns of North Korean households if some measures such as multivariate regressions are used properly (Haggard and Noland 2009).

⁷ The number of party members in North Korea is estimated at about 3 million. Assuming that the share of adults in the total population in North Korea is 65 percent and the total population is 23 million, the share of party members in the total population is 20 percent. This estimate is not very different from the share of party members appearing in Table 1.

⁸ The difference in the welfare level between those who participate in the informal economy and those who do not will be smaller than the difference suggested by household income. Participants in the formal economy may be able to receive rationed food and other fringe benefits, such as health care. Furthermore, participants in the informal economy face the risk of detection, arrest, and expropriation.

⁹ The black market exchange rate tends to reflect risk and thus may discount the value of the North Korean won.

¹⁰ Total income is defined as the sum of formal and the informal income. Formal income includes official wages or salaries, pensions, various benefits, and income-in-kind for collective farmers.

¹¹ Rhee (2007) estimates that the share of informal income amounts to about 90 percent of total income while Kim and Song (2008) find that it was 78 percent.

¹² The 64.2 percent of respondents who chose the answer “avoiding punishment” also chose the answer “to continue to work as a vendor banned by the authorities.”

¹³ According to our survey data, the average amount of money 8.3 workers needed to pay was 23,000 North Korean won per year while the average wage of official workers was 2,500 North Korean won. The name of “8.3 workers” is originated from Kim Il-sung’s announcement made on 3rd August 1984 that encouraged to produce consumer goods using by-products and wastes from factories in a self-reliant way.



¹⁴ This type of bribe may be used to strengthen the formal sector, because the boss of the enterprise or organization can use money from “8.3 workers” to pay taxes to the government, wages to official workers, purchase necessary inputs, and so on.

¹⁵ The above results from the tabulation analysis are only indicative, because they fail to control for other variables. For a more rigorous investigation, we employ an econometric analysis to understand whether or not bribery is related to informal market activities. A logit model of binary choice is used as a dependent variable that is coded as 1 when the respondent paid a bribe and as 0 for the other case. Key independent variables include those referring to whether the respondent participates in the formal or in the informal economy. We use two models: the first model uses the samples of all respondents and the second one uses the samples of vendors in the informal market. The results show that the probability of paying a bribe is positively correlated with participation in the informal economy but negatively with participation in the formal economy. In addition, the results suggest that the probability of paying bribes increases when market control is strengthened. These results are available from the author upon the request.

¹⁶ The number of refugees in a given year ranges from 42 to 179.

¹⁷ These estimates are based on the assumption that the share of household expenditures (consumption) in total North Korean GDP is 65-80 percent.

¹⁸ Bribery is found virtually everywhere in North Korea. Using the data from a survey of refugees, Chae, Sohn, and Kim (2006) list a wide variety of kinds of bribery. Among bribes related to noneconomic activities, refugees reported their experience of bribe-giving for the issuing of travel documents or passports, being a member of the labor party, allocation of workplace, admission of their children to university, and so on. In addition, the stealing of state assets and smuggling goods from China are among most frequently reported forms of corruption.

¹⁹ For example, the average share of bribes weighted by the number of respondents for the period of 1996-2002 and 2003-2007 is 8.9 percent and 10.0 percent, respectively. However, this difference is not significant (p-value is 0.247 with the null hypothesis of no difference in the share between the two periods).



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