

Public Opinions on Inter-Korean Economic Cooperation: A Survey Analysis[†]

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This research attempts to provide an in-depth analysis of the public perceptions of inter-Korean economic cooperation. KDI survey data with a sample size of 1,000 were subjected to empirical analyses. By means of ordered logit estimations, we derive the following results. First, there is a significant effect of age on economic cooperation perceptions, where younger generations tend to be more negative. Second, the group who has positive view on the economic cooperation tends to prefer large-scale, domestic-entity-funded cooperation projects, whereas the group who has negative view tends to prefer small-scale projects and projects funded by international organizations. According to these results, prioritizing trade with the involvement of international organizations is likely to be an effective measure to alleviate potential political constraints and to achieve sustainable long-run economic cooperation systems when pursuing the economic cooperation.

Key Word: Inter-Korean Economic Cooperation, Public Support,
Policy on North Korea, Financing
JEL Code: H77, F55

I. Introduction

This research aims to examine public opinions as they pertain to inter-Korean economic cooperation using novel data from surveys conducted by the Korea Development Institute (KDI) in 2019. The KDI survey intends to discover public opinion, which is critical when designing long-term policy directions of national agendas, such as policy measures on aging populations, jobs and education. The survey questionnaire also includes extensive questions about inter-Korean economic

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* Received: 2021. 7. 30

* Referee Process Started: 2021. 8. 6

* Referee Reports Completed: 2021. 10. 19

[†] We would like to convey our gratitude to the anonymous referees for their helpful comments and discussions.

cooperation, which is the focus of our research.

Inter-Korean economic cooperation is among the most important policy instruments with regard to South Korea's policy on North Korea. It is in the interest of not only scholars and policymakers but also the general public. According to the '2020 Unification Perceptions Survey' conducted by the Institute for Peace and Unification Studies at Seoul National University, the respondents evaluated inter-Korean economic cooperation to be the most effective tool for both denuclearization and reforming and for the opening up of the North Korean economy among the policy measures of social and cultural interactions, economic aid, and economic sanctions (or military deterrence) (Kim *et al.*, 2021).

Despite the perceived effectiveness of the inter-Korean economic cooperation as a policy tool, public support for such cooperation is relatively low. The KDI survey suggests that negative opinions appear to be high. Only 33.2% of respondents approve of economic cooperation, whereas 41.2% disapprove and 25.6% have neutral opinions. When asked how urgent economic cooperation is, 46% of respondents evaluated it to be urgent, whereas 54% did not (Jung, 2021).

Similarly, the survey data compiled by the Korea Institute for National Unification (KINU) in 2020 also support this view. The survey polled the opinions of respondents in a scale of 0 (most strongly disagree) to 11 (most strongly agree) with regard to the argument "Economic interactions and cooperation with North Korea should continue even in the times of political and military confrontation." When converted to a Likert-type five-point scale for comparison with the KDI survey data, 34.8% of the respondents 'agree' with the argument, 18.1% 'disagree' and 47.2% are 'neutral'. Both the KDI and KINU survey data show that only around 30% of people have positive opinions about economic cooperation with North Korea, while the majority of people have negative or neutral sentiments.

Considering the importance of public support when initiating inter-Korean economic cooperation consistently, in-depth analyses to search for the reasons behind the negative sentiment over this cooperation are crucial. A number of studies address issues of inter-Korean economic cooperation from various perspectives.

In particular, several studies dealing with strategies for economic cooperation were conducted in the wake of a series of South-North and U.S.-North Korea summits in 2018 which, at the time, raised optimism about the revitalization of the South-North relationship. Lim (2018) reorganizes multi- and unilateral sanctions on North Korea and offers possible economic cooperation projects in accordance with possible steps toward the lifting of sanctions. Lim and Kim (2018) argue that in order to resume previous economic projects such as the Kaesong Industrial Complex project with sanctions remaining in effect, it is essential for the Korean government to cooperate and consult with the UN National Security Council and the U.S. so as to minimize conflicts associated with the sanctions by means of the cooperation projects being pursued.

There are also studies that criticize the framework of existing economic cooperation projects from perspectives of the initiating party (public or private sector), required resources, and project contents. First, Lee (2012) argues that the party initiating economic cooperation should be in the private sector rather than the government. According to the study, this change can alleviate political constraints by evading the criticism over using public funds to finance economic cooperation

with North Korea, which remains a controversial issue in society. Lee *et al.* (2019) proposes that inter-Korean economic cooperation should look beyond the previous form of South-North specific transactions and should be pursued under international cooperation that includes international financial organizations, which could eventually induce North Korea to participate in the global economy. Regarding the required resources for economic cooperation, Lee (2020) offers a few means of funding these, such as utilizing the South-North Cooperation Fund or by means of a package type of funding involving the right to develop mineral resources in North Korea. Jung (2021) reports that there exists significant public opposition to large-scale public financing for cooperation apart from the approval or disapproval of cooperation. Furthermore, he argues that human resource development types of cooperation are much more preferable than infrastructure development types.

In addition, a few studies evaluate the economic benefit of inter-Korean economic cooperation. According to this line of research, the economic benefits from cooperation do not stem significant from the substantial difference in the sizes of the economies between the two states. Kim (2015) estimates the benefit for South Korea from the economic cooperation to be between 0.012% and 0.043% of its GNI. He adds with regard to this estimated amount that even if more than ten KIC-sized economic special zones were to be created, it would only increase the South Korean GNI by 0.1% to 0.5%. Shin and Kim (2018) similarly estimate that economic cooperation would only increase the South Korean GDP by 0.02%. However, the benefit of South-North economic integration is expected to be substantial, especially for North Korea. Kim (2014) estimates that the North Korean economy is expected to grow by 13.2% on average per annum from 2014 to 2050 if the country decides to make an economic transition and to reform its institutions overall. Choi and Kim (2017) estimate that the value-added of seven economic cooperation projects would reach a total of 150 billion US dollars over the next 30 years. This result, however, includes the benefit of South-North economic integration rather than the exclusive benefit of economic cooperation.

As covered thus far, much of the recent literature focuses on strategies for and economic benefits of inter-Korean economic cooperation. However, to the best of our knowledge, this study is distinctive in that it is the first rigorous empirical analysis of public perceptions on economic cooperation between the two Koreas. The lack of attention toward public perceptions on this particular issue can be attributed to the fact that most studies conducted thus far in this area find constraints from external sources such as sanctions and the low institutionalization level of North Korea. However, if public support is not secured, such internal constraints can be as much of a stubborn obstacle to economic cooperation as external constraints are. The main contribution of this research lies in how it can provide an in-depth analysis of public perceptions, and by doing so, to provoke discussions on the issue.

This research employs the Inter-Korean Economic Cooperation section of the KDI survey data, conducted in 2019 and involving 1,000 South Koreans. We construct ordered logit estimation models setting a four-scale economic cooperation urgency variable and a five-scale approval variable of the survey data as the main dependent variables to investigate factors affecting public sentiment. As explanatory variables, we choose preferred type and preferred source for funding variables. In addition, we control for the respondents' opinions on labor market flexibility, easing corporate

regulations, government spending on national security, and government spending cuts. According to the analysis, we aim to identify the main concerns held by the public about economic cooperation and the preferences of the relatively negative sentiment group among the public. Through these characterizations of public perceptions, practical policy directions for the economic cooperation can be derived to secure general support.

The rest of the paper is organized as the following. Section 2 provides summary statistics of the key variables and outlines the correlations between the key variables. Section 3 covers the construction of the empirical models and reports the results. Section 4 concludes the paper and offers some policy implications.

II. Data and Statistics

A. Data

Thus far, there has been nearly no in-depth statistics suitable for an analysis on South Korean perceptions towards inter-Korean economic cooperation. In this research, we employ a dataset constructed by KDI based on a survey conducted at the end of 2019 (Dec. 13 to Dec. 15). The total number of the respondents is 1,000, 49.6% of which are males and 50.4% females. The regional, age, and level of education compositions of the respondents are similar to those in national statistics and thus suitably represent the overall population.

The survey questionnaire is consisted of ten sections, with each of which asking for respondents' opinions on various social and economic issues, namely, 'Measures on the Aging Population', 'Jobs', 'Education', 'Cultural Life', 'Public Expenditures', 'Government Regulations', 'Local Government Policies', 'Foreign Trade', 'Public Policy Directions and Evaluations', and most importantly 'Inter-Korean Economic Cooperation'. As the focus of this research is perceptions on economic cooperation, we mainly utilize the questions under the section 'Inter-Korean Economic Cooperation'. However, we also employ several questions from other sections as our control variables for the empirical analysis, which will be covered in detail in the next section. Although this survey includes comprehensive questions pertaining to inter-Korean cooperation, the dataset bears limitations similar to those in ordinary cross-section data in that it only reflects public opinions at the specific time of the survey. In particular, at the end of 2019 when the survey was conducted, one can argue that public sentiment with regard to this issue was likely to be more skeptical towards the economic cooperation due to the depressing result of the Hanoi summit of February of 2019 and that this time-specific factor may have resulted in some degree of negative-sentiment-leaning bias in the data. However, it is reasonable to believe that the overall positive sentiment on North Korea-related issues held by the public in 2018 was exceptional, as the number and the intensity of the interactions between the two Koreas and between the US and North Korea as observed by the public reached levels for which comparable precedents are difficult to find since the division of the peninsula. Given that the negative shift in public sentiment about economic cooperation in 2019 after the Hanoi summit arose during such exceptional times, we consider that the

TABLE 1—DATA COMPARISON

	KDI Survey Data		Official Statistics (2019)	
	Frequency	Proportions (%)	Proportions (%)	
Region	Seoul	193	19.3	18.8
	Busan	68	6.8	6.6
	Daegu	48	4.8	4.7
	Incheon	57	5.7	5.7
	Gwangju	28	2.8	2.8
	Daejeon	28	2.8	2.8
	Ulsan	22	2.2	2.2
	Gyeonggi	250	25.0	25.5
	Sejong	6	0.6	0.7
	Gangwon	31	3.1	3.0
	Chungbuk	30	3.0	3.1
	Chungnam	42	4.2	4.1
	Jeonbuk	34	3.4	3.5
	Jeonnam	36	3.6	3.6
	Gyeongbuk	52	5.2	5.1
	Gyeongnam	64	6.4	6.5
	Jeju	11	1.1	1.3
Gender	Male	496	49.6	49.9
	Female	504	50.4	50.1
Age	20s	161	16.1	15.9
	30s	164	16.4	16.6
	40s	197	19.7	19.6
	50s	202	20.2	20.3
	60+	276	27.6	27.6

Source: Statistics Korea (<http://kostat.go.kr/portal/eng/index.action>, Search Date: 2021. 7. 16).

aforementioned concerns over negative-sentiment-bias in the data are not overly severe and therefore reasonably appropriate for the empirical analysis here. A survey conducted in February of 2019 during the Hanoi Summit by *Realmeter*, a Korean public opinions research firm, shows that 68.9% of the respondents agreed that the Kaesong Industrial Complex (KIC) project or Mt. Kumgang tourism should resume; this outcome was 19.5% higher than the finding of an identical survey conducted in 2017 (49.4%). However, public opinion reverted to its ordinary level after the Hanoi summit in 2020, where 43.6% of the respondents signaled their support for the reimplementation of the previous cooperation projects, thus confirming our earlier conjecture.

B. Descriptive Statistics

In this subsection, we investigate overall perceptions held by South Koreans towards inter-Korean economic cooperation. We introduce the general statistics of the questions in the ‘Inter-Korean Economic Cooperation’ section of the KDI survey dataset. The main questions are, ‘Do you approve or disapprove of Inter-Korean Economic Cooperation?’, ‘How urgent do you feel about Inter-Korean Economic Cooperation?’, ‘Which of the following types of the economic cooperation do you

think should be prioritized?”, “Which of the following types of funding do you prefer for economic cooperation?”, “Which of the following states do you think the final goal of the economic cooperation should aspire to?” The questionnaire also includes subsample questions that ask about specific reasons for approval or disapproval and about the urgency of economic cooperation. Summary statistics for all of the questions in the section can be found in the Table 2.

The first factor to highlight would be the approval rating. The proportion of the respondents who selected ‘very much disapprove’ or ‘disapprove’ stands at 33.2%, while 41.2% selected ‘approve’ or ‘very much approve’, suitably representing the divided view. Approximately a quarter (25.6%) of the respondents reported that they are neutral. The ‘approve’ group appears to consider economic cooperation as an opportunity for the South Korean economy to thrive. It was also found that 67% of respondents selected either ‘it could be a breakthrough for the Korean economy’ or ‘to secure the growth of the Korean economy’ as their reason for approving of cooperation. These proportions initially may appear to be inconsistent with the opinions of experts who estimate the expected economic benefit of cooperation to be limited. However, it must be noted that the above question is only presented to the subsample of the group who approve of economic cooperation. Therefore, it does not represent the opinions of the general public. It is reasonable to believe that the approval group evaluates the economic benefit of the cooperation as substantial.

Several different characteristics related to gender are also evident in Table 2. First, the findings show that female respondents are more cautious in general. More female respondents expressed relatively moderate options, as exemplified by their choices of ‘disapprove’, ‘neutral’, and ‘approve’ for the approval question (20.6%, 26.2% and 28.0%, respectively) compared to the selections by the male respondents. Moreover, male respondents displayed stronger hostility towards the North. The proportion of male respondents who reported ‘North Korea is an enemy state to the South’ (21.7%) in response to the question asking about their disapproval of economic cooperation is significantly higher than that of the female respondents (6.9%).

The main concerns held by the ‘disapprove’ group toward pursuing economic cooperation are either political or economic. Nearly half of the ‘disapprove’ group (45.8%) expressed concerns about the profits from the economic cooperation leaking into North Korea’s nuclear and missile development programs, while 36.4% of the group doubted the benefit of economic cooperation relative to its cost. Meanwhile, a significant proportion of the ‘disapprove’ group (13.9%) shares negative sentiment towards the North, choosing ‘North Korea is an enemy state of the South’. With regard to the urgency of economic cooperation, 46% of the respondents in total consider it to be urgent, whereas 54% selected either ‘not at all urgent’ or ‘not urgent’.

The results of the survey incorporate some important facts about the overall sentiment of South Koreans towards inter-Korean economic cooperation. As shown in Table 3, respondents who approve of economic cooperation tend to think that it is urgent while respondents who disapprove of economic cooperation tend to think that it is not urgent. This pattern is also statistically verified in that the correlation

TABLE 2—SUMMARY STATISTICS

Questions	Obs.	Options		Proportion (%)		Gender (%)		Mean	SD
				Male	Female	Male	Female		
How much do you approve or disapprove of inter-Korean economic cooperation?	1,000	1) Very much disapprove		15.7	14.1	17.3	14.1		
		2) Disapprove		17.5	20.6	14.3	20.6		
		3) Neutral		25.6	26.2	25.0	26.2	3.068	1.283
		4) Approve		26.7	28.0	25.4	28.0		
		5) Very much approve		14.5	11.1	17.9	11.1		
If you approve, what is the reason? (This question is only presented to respondents who selected either 'very much approve' or 'approve' for the approval question above.)	412	1) It could be a breakthrough for the Korean economy		13.8	11.7	15.8	11.7		
		2) To secure the growth of the Korean economy		53.2	56.9	49.8	56.9		
		3) To induce the denuclearization of the North		7.0	7.1	7.0	7.1	2.475	1.074
		4) To incentivize the North to open and reform their economy		24.0	21.3	26.5	21.3		
		5) To improve the quality of living of the North Korean people		1.5	2.0	0.9	2.0		
		6) Others		0.5	1.0	0.0	1.0		
If you disapprove, what is the reason? (This question is only presented to the respondents who selected either 'very much disapprove' or 'disapprove' for the approval question above.)	332	1) The cost of the cooperation is too high compared to the economic benefit		36.4	48.0	23.6	48.0		
		2) There are concerns over nuclear and missile program development using the economic benefit of the cooperation		45.8	41.7	50.3	41.7	2.000	1.074
		3) Poor business environment		1.5	0.0	3.2	0.0		
		4) North Korea is an enemy state of the South		13.9	6.9	21.7	6.9		
		5) Others		2.4	3.4	1.3	3.4		
How urgent do you feel about inter-Korean economic cooperation?	1,000	1) Not at all urgent		16.8	12.7	21.0	12.7		
		2) Not urgent		37.2	42.1	32.3	42.1	2.447	0.945
		3) Slightly urgent		30.5	32.7	28.2	32.7		
		4) Very urgent		15.5	12.5	18.6	12.5		
Which of the following types of economic cooperation do you think should be prioritized?	1,000	1) Expand trade		23.8	24.8	22.8	24.8		
		2) Tourism sector cooperation (i.e., Mt. Kumgang)		10.8	11.1	10.5	11.1	2.935	1.285
		3) Firm sector cooperation (i.e., KIC)		17.3	15.9	18.8	15.9		
		4) Large-scale infrastructure development (i.e., roads, rails, power grid)		44.3	45.4	43.2	45.4		
		5) Others		3.8	2.8	4.8	2.8		
Which of the following types of funding do you prefer for economic cooperation?	1,000	1) Public funding (i.e., government finance)		23.2	22.8	23.6	22.8		
		2) Private funding (i.e., firms, banks)		25.7	23.0	28.4	23.0	2.557	1.149
		3) Foreign private funding (i.e., foreign firms and banks)		26.0	27.0	25.0	27.0		
		4) Funding from international organizations (i.e., the UN)		22.4	24.2	20.6	24.2		
		5) Others		2.7	3.0	2.42	3.0		
Which of the following states do you think the final goal of the economic cooperation should aspire to?	1,000	1) Political and economic complete unification		29.8	29.0	30.7	29.0		
		2) Economic integration each state maintaining respective political systems		33.7	34.9	32.5	34.9	2.154	0.991
		3) High level of economic interaction		22.0	20.2	23.8	20.2		
		4) Re-implementing previous economic cooperation projects (i.e., Mt. Kumgang tourism and KIC) under the current situation		11.4	13.7	9.1	13.7		
		5) Others		3.1	2.2	4.0	2.2		

TABLE 3—CROSS TABLE OF THE APPROVAL AND URGENCY VARIABLES

		(Unit: %)				
		Urgency				
		Not Urgent at All	Not Urgent	Urgent	Very Urgent	Total
Approval	Strongly Disapprove	75	7.26	0.98	0.65	15.7
	Disapprove	17.86	34.41	4.92	1.29	17.5
	Neutral	6.55	45.97	23.61	1.29	25.6
	Approve	0.6	12.37	60	23.87	26.7
	Strongly Approve	0	0	10.49	72.9	14.5
Total		100	100	100	100	100

Note: The correlation coefficient of the two variables is 0.8204 and statistically significant at the 1% level.

coefficient of the two variables is 0.82 and is statistically significant at the 1% level. The close tie between the two variables implies that public opinion about economic cooperation is strongly polarized, motivating further analysis.

The polarizing view of inter-Korean economic cooperation is also evident in the questions that follow. First, more than 40% of the respondents (44.3%) support a high cost of economic cooperation, as represented by ‘large-scale infrastructure development’, whereas nearly half (51.9%) of the respondents prefer forms of economic cooperation that can be had a lower cost, such as trade (23.8%), tourism (10.8%) and firm-sector cooperation (17.3%).

Similarly, nearly half of the respondents prefer domestic sources of funding, such as government spending (23.2%) and investments by domestic private firms (25.7%). The other half prefers foreign source funding such as foreign private investments (26.0%) and hosting funding from international organizations (22.4%) such as the U.N.

The distribution of the respondents with regard to the answers regarding their preferred ultimate goal of economic cooperation is relatively even. The highest degree of integration represented by the option ‘political and economic complete unification’ was indicated by 23.2% of the respondents, whereas the second highest degree of integration, represented by the option ‘economic integration maintaining respective political systems’ earned the most votes by the respondents (33.7%). The two lower degrees of integration, represented by the option ‘high degree of economic interactions’ and ‘re-implementing previous economic cooperation projects under the current condition’ were selected by 22.0% and 11.4% of the respondents, respectively.

C. Inter-Variable Correlations

There could be multiple dimensions by which these perceptions on inter-Korean economic cooperation can be interpreted. In order to investigate the characteristics of the positive and negative perception groups further, we attempt to explain the approval variable and the urgency variable by age groups, along with variables which incorporate details about the economic cooperation, such as the preferred types and preferred sources of funding.

First, due to the rapid economic growth and social changes that the Korean society

has experienced since the Korean War, there exists noticeable generational segregation in overall values and perceptions on many social, political and economic issues in South Korea. These divisions are also observed in the perception toward economic cooperation with North Korea. Figure 1 presents the relationship between the age groups and the approval variable. Respondents who approve of economic cooperation are least frequent in the group in their 20s, and from then on, the ‘approve’ group increases with age, reaching a peak at around 50s, after which it declines for those who are 60+. Conversely, the proportion of the ‘disapprove’ group decreases up to those in their 40s and then climbs back up until the oldest group. The proportion of the ‘neutral’ group continuously decreases until the oldest group. These patterns suggest that the youngest and the oldest age groups share similar negative perceptions toward economic cooperation, whereas those in their 40s and 50s have relatively positive perceptions.

In terms of preferred cooperation projects, large-scale projects of ‘infrastructure development’ are most preferred by those in their 40s, in line with the observed positive perception tendencies expressed by those in their 40s and 50s. In contrast, relatively small-scale projects such as ‘trade’ and ‘tourism’ are most preferred by those in their 60s and in their 20s, respectively; recall that these are the groups

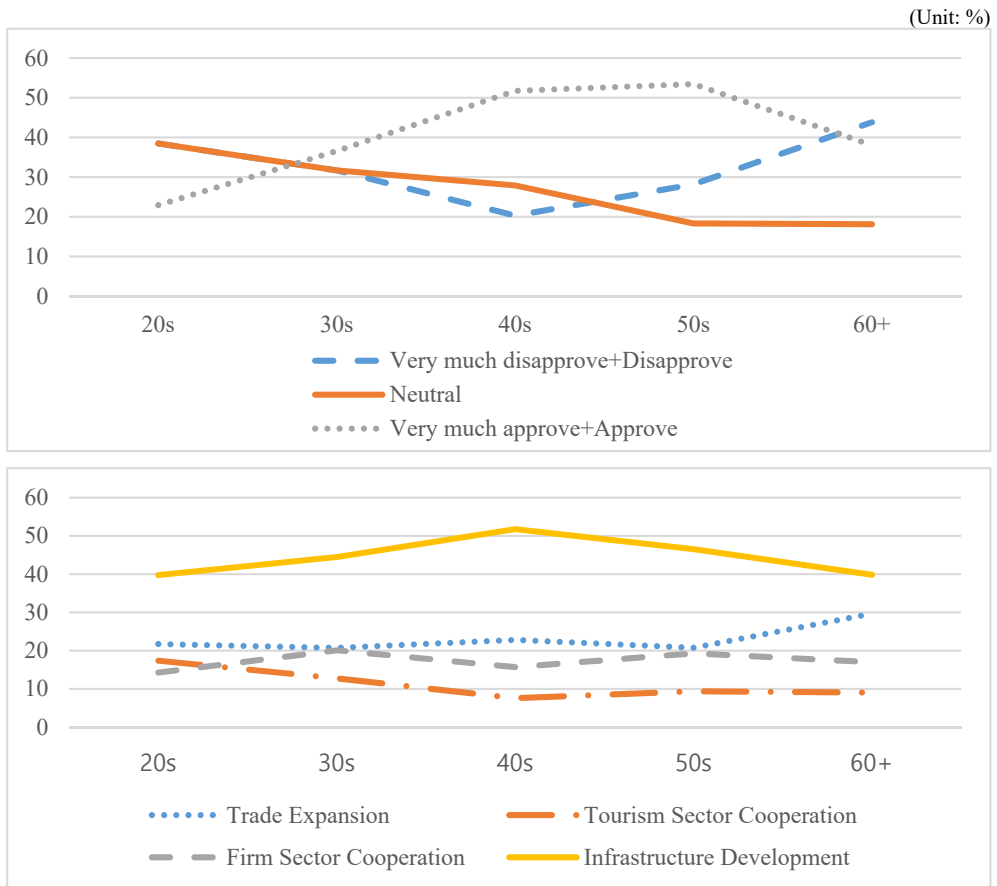


FIGURE 1. APPROVAL/DISAPPROVAL PROPORTIONS AND PREFERRED TYPE BY AGE GROUP

expressing negative sentiment towards economic cooperation. This pattern of preferred type by age alludes to the fact that groups with positive perceptions are more likely to support large-scale projects, whereas those with negative perceptions are more likely to support small-scale projects.

Nonetheless, older and younger generations do have similar concerns when it comes to the reasons for approving or disapproving of economic cooperation. As the Figure 2 shows, all age groups selected ‘to secure the future growth of the South Korean economy’ most frequently as the reason for approving of economic cooperation. However, the proportion of respondents who selected such options decreases with age, whereas the proportion of the respondents who are mainly concerned about the North (option ‘to incentivize the North to open and reform’) increases with age. As a result, the proportional gap between the two groups narrows significantly for those who are 60+ relative to those in their 20s.

The ‘reason for disapproval’ pattern also shows age dependency, although it is weaker than in the ‘reason for approval’ case. The proportion of the respondents who selected ‘high cost of the economic cooperation’ as the main reason for their

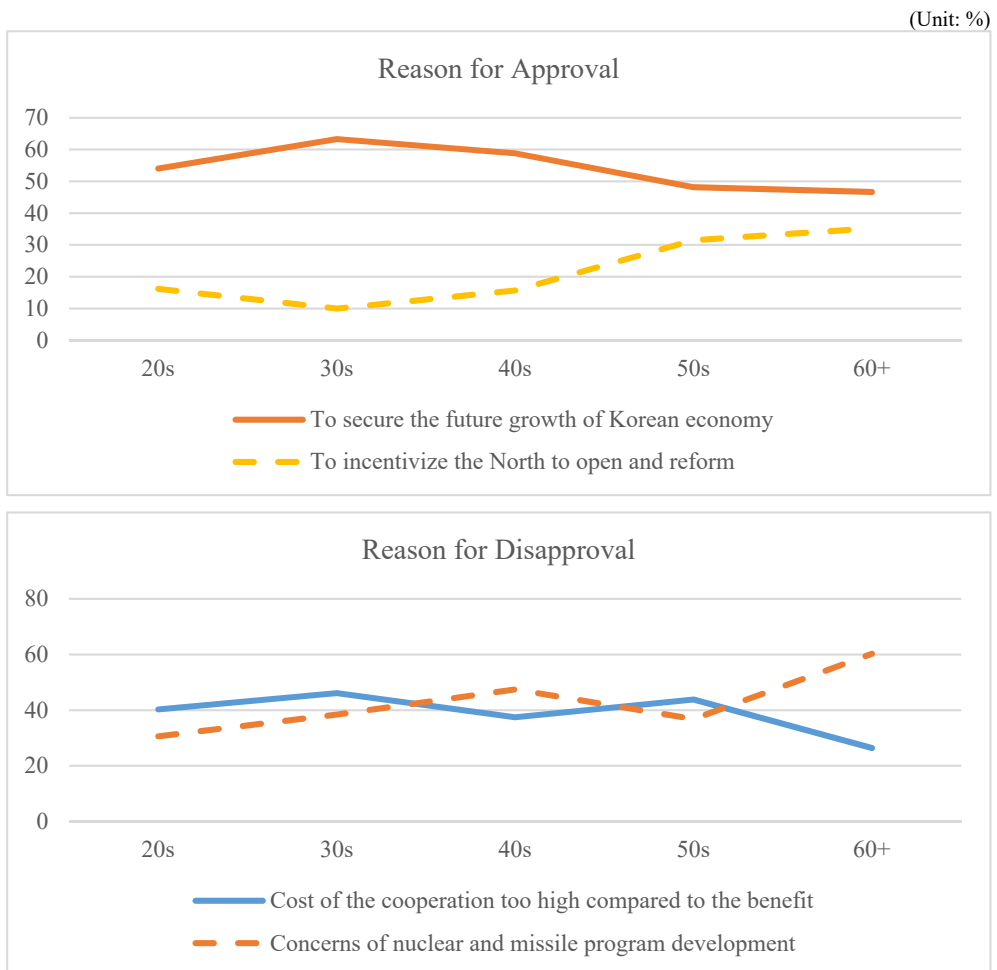


FIGURE 2. REASONS FOR APPROVAL/DISAPPROVAL BY AGE GROUP

disapproval is higher than the proportion of the respondents who are concerned with the nuclear and missile development programs of the North for those in their 20s as opposed to those who are 60+. The 60+ age group is mostly concerned about the nuclear and missile development programs much more than the cost of economic cooperation. Both patterns of reasons for approving and disapproving of economic cooperation imply that there are growing trends of economic concerns regarding this type of cooperation, more so among the younger generations.

Secondly, we analyze the tendencies of the positive and negative groups according to their preferred types and sources of funding. The options that these survey questions offer can largely be divided into three types in terms of the scale of investment required. More specifically, they can be divided into large-scale investments represented by the option ‘infrastructure development’, mid-scale investments represented by the two options that offer the reimplementa-tion of tourism and firm-sector cooperation, and lastly relatively small-scale investments as represented by ‘promoting trade’.

As shown in the Figure 3, the respondents who prefer relatively large-scale investments for cooperation tend to reveal positive perceptions about economic cooperation, while the respondents who prefer relatively small-scale investments for cooperation tend to have negative perceptions. The statistics indicated that 40.3% of the respondents who prefer trade are most likely to choose ‘Very much disapprove’ or ‘Disapprove’, while over half of the respondents (51.5%) who prefer infrastructure development are most likely to choose ‘Very much approve’ or ‘Approve’. Neutral respondents appear to prefer reimplementa-tion of previous economic cooperation projects, such as tourism and firm-sector projects (i.e., Mt. Kumgang tourism and the Kaesong Industrial Complex). One pattern in Figure 3 that stands out is that tourism is the most favored type of economic cooperation among the neutral group, as economic cooperation is likely to involve large-scale projects which affect not only the prospects of the South-North relationship in the future but also the prospects of the national economy in the long run. From this perspective, the approval and disapproval groups are likely to evaluate economic cooperation based on future political and economic benefits. The neutral group however, is presumably evaluating economic cooperation based on individual

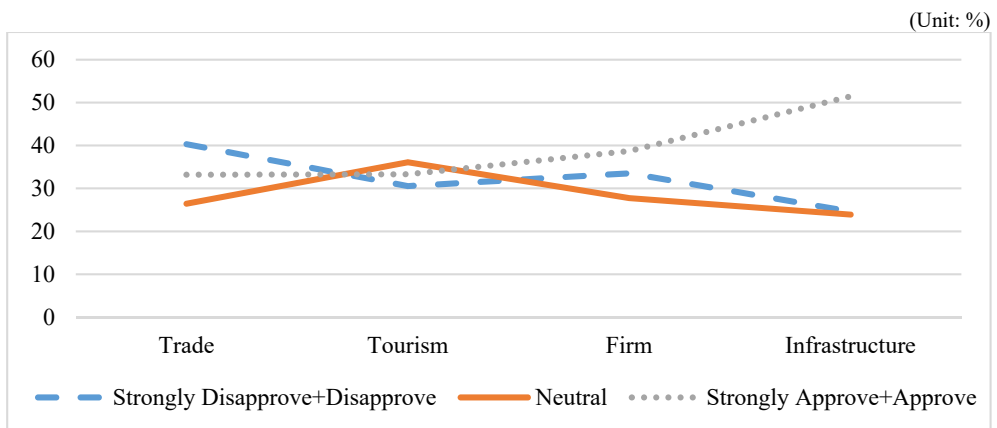


FIGURE 3. APPROVAL/DISAPPROVAL VS. PREFERRED TYPE OF ECONOMIC COOPERATION

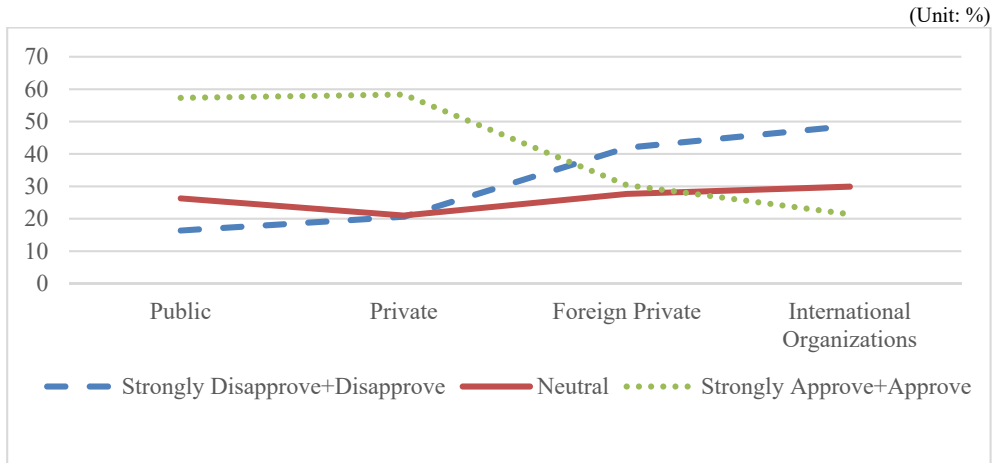


FIGURE 4. APPROVAL/DISAPPROVAL VS. PREFERRED SOURCE OF FUNDING

preferences, as they are likely to have either no interest or have not given serious thought to the consequences of economic cooperation on a national level. As a result, we suspect that there are two possible reasons for the neutral group's choice of tourism as their preferred type. First, it may provide them with a chance to visit North Korea, which is directly related to a possible consumption opportunity for this group. A second possible reason is because tourism is simply the most probable and easily implementable type of economic cooperation. Because the options offered for the question, which asks about their preferred type, do not include 'none of the above', it is likely that the neutral group selected the most probable and most easily implementable previously implemented project, i.e., tourism.

The approval variable can also be explained with the preferred source of funding variable. As the Figure 4 displays, the respondents who prefer domestic sources of funding (i.e., government finance or private-sector investment) tend to approve of economic cooperation ('Very much approve' or 'Approve'). Specifically, 57.3% and 58.4% of the respondents who selected public (government) investment and private-sector investment, respectively, signaled their approval of economic cooperation. On the other hand, the respondents who prefer foreign sources of funding tended to disapprove of economic cooperation ('Very much disapprove' or 'Disapprove').

The observed differences in perceptions of inter-Korean economic cooperation depending on age, preferred types and preferred sources of funding offer policy implications for pursuing economic cooperation, although a more rigorous analysis is required. This is covered in the next section.

III. Empirical Analysis

A. Model Construction

In this section, we construct an empirical model for a more in-depth investigation of the characteristics of the groups expressing positive and negative perceptions of

inter-Korean economic cooperation. Through the empirical model, we aim to discover which variables affect the positive and negative perceptions under a controlled statistical environment. The specifications of the models are expressed as shown below.

$$y_i = \alpha + \beta_1 type_i + \beta_2 funding_i + \gamma pol_i + \theta X_i + \mu_i + \varepsilon_i$$

In this equation, y_i represents the two dependent variables of approval and urgency with regard to economic cooperation. The approval variable scales from 1) Strongly Disapprove to 5) Strong approve, and the urgency variable scales from 1) Not at all urgent to 4) Very urgent. In addition, $type_i$ represents the preferred type of economic cooperation, which is composed of the three binary variables of ‘infrastructure development’ and ‘trade’, each taking a value of 1 if the respective type of cooperation project is preferred by the respondents and 0 otherwise, along with ‘reimplementation of existing cooperation projects’ as the reference group. $funding_i$ involves four binary variables, each representing the options offered in the corresponding survey question. The options are ‘domestic public funding’, ‘domestic private funding’, ‘investments by foreign private firms’, and ‘funding from an international organization’. Each of the four binary variables takes a value of 1 if the respondent has chosen a particular option, and 0 otherwise. pol_i represents a set of control variables reflecting the underlying political view of the respondent. X_i represents a set of demographic characteristic variables, in this case age, level of education, level of income, and marital status. μ_i represents a region fixed effect (see Table A1 for details).

Although the approval variable and the urgency variable both attempt to distinguish between positive and negative perceptions in general, the resulting compositions of the distinguished groups show different characteristics. The approval variable captures relatively radical respondents within the resulting positive or negative perception group who have stronger positive or negative opinions compared to those from the urgency variable. There are two main reasons behind this measurement difference. The first is ascribed to the fact that there exists the option ‘neutral’ for the approval question, which those holding mild opinions can choose, leaving only the polarized proportion of the respondents for both the positive and negative perception groups. Secondly, the approval question requires the respondents to make a categorical decision. Evidently, the majority (59.7%) of the disapproval group selected the options ‘nuclear and missile development program concerns’ or ‘North Korea is an enemy state’ to explain their disapproval; these issues are difficult to resolve given that they involve the need to build up trust between the two states. Consequentially, the characteristics of the respondents expressing disapproval to the approval question would differ from those of the ‘not urgent’ respondents when they replied to the urgency question.

We do not utilize the survey questions that ask the respondents to explain their approval and urgency selections for the following two reasons. First, the design of the survey is such that each question requiring such a reason is only applicable to a subsample of respondents. For example, the questions that require a reason for approval are only applicable to respondents who approve of the cooperation, for

instance. This substantially reduces the number of samples for the empirical analysis, which in turn undermines the accuracy of the results. Secondly, as mentioned previously, the aim of this research is to explore the characteristics of those who belong to positive and negative perception groups to derive policy implications for future directions regarding economic cooperation, which is difficult to achieve by analyzing the reasons for their respective perceptions.

B. Results

In this subsection, we report the empirical results. For each of the dependent variables, we estimate three specifications (Columns 1 through 6 in Tables 4 and 5) with an identical set of control variables. The first specifications for each dependent variable regress the three cooperation types of variables, the second set applies to the four funding source variables, and third is for all types and sources of funding variables inclusively. As presented in Tables 4 and 5, the results for the two dependent variables are nearly analogous, except for the differences in the significance levels and sizes of a few of the coefficients. Therefore, we explain the results of the regressions of the two dependent variables simultaneously.

First, there are two demographic variables that are statistically significant. For both of these, the coefficients of the age variable are positive and statistically significant, with the coefficient of the age-squared variable being negative and statistically significant. This implies that the age effect on the perception of inter-Korean economic cooperation forms an inversed U-shape, where the positive perception increases with age but at a decreasing rate (its peak is found to arrive at age 50.9 on average for the urgency variable and at age 50.6 on average for the approval variable). This pattern is consistent with the age effect on the perception of unification addressed in the previous literature, in which younger age groups have more negative perceptions compared to the older age groups (Kim, 2019). According to the ‘Unification Perception Survey’ conducted by the Institute for Peace and Unification Studies (IPUS) at Seoul National University, the average proportions of the respondents who think that unification is necessary by age group for those in their 20s, 30s, 40s, 50s, and 60s are 43.5%, 44.7%, 57.2%, 64.8% and 63.1%, respectively, from 2018 to 2020, with the most positive group found to be those in their 50s. This discrepancy in unification perception among the age groups certainly requires further research. Here, we offer some possible reasons for this. First, those currently in their 50s were the main forces behind the democratization movement of the 1980s; this group is also politically known to be pro-unification. Secondly, the group has the most positive experiences and memories of flourishing inter-Korean interactions after the ‘6.15 Communal Declaration’ of 2000, which may have induced the positive unification and economic cooperation perceptions in this group. The younger generations on the other hand do not share the same experiences compared to those in their 50s. In contrast, they have ample memories of political and military friction between the two states likely to have caused relatively negative perceptions about unification and economic cooperation. Moreover, the result of the Column (1) specification showing the approval variable regression (Table 4) suggests that male respondents have more positive perceptions of economic cooperation than female respondents.

TABLE 4—COOPERATION APPROVAL ORDERED LOGIT ESTIMATION RESULTS

	Dependent Variable: Inter-Korean Economic Cooperation Approval		
	(1)	(2)	(3)
<i>Demographic Variables</i>			
Age	0.152*** (0.0330)	0.146*** (0.0320)	0.141*** (0.0331)
Age Squared	-0.00151*** (0.0003)	-0.00145*** (0.0003)	-0.00138*** (0.0003)
Gender	-0.262** (0.1210)	-0.146 (0.1210)	-0.175 (0.1230)
Marital Status	-0.0648 (0.1640)	-0.0168 (0.1580)	-0.0091 (0.1600)
Level of Income	0.0666** (0.0337)	0.0422 (0.0330)	0.0488 (0.0334)
Level of Education	-0.0465 (0.0642)	-0.0629 (0.0638)	-0.0438 (0.0645)
<i>Variables of Interest (Preferred Cooperation Type)</i>			
Infrastructure Development	0.334** (0.1440)		0.378** (0.1470)
Expanding Trade	-0.262 (0.1640)		-0.279* (0.1670)
Re-implementing Existing Cooperation Projects		(Reference Group)	
<i>Variables of Interest (Preferred Source of Funding)</i>			
Domestic Public Funding		1.012*** (0.1840)	0.976*** (0.1880)
Domestic Private Funding		0.937*** (0.1740)	0.944*** (0.1770)
International Organization Funding		-0.315* (0.1700)	-0.296* (0.1740)
Foreign Corporate Funding		(Reference Group)	
<i>Control Variables</i>			
Ultimate Goal of Economic Cooperation	0.246*** (0.0614)	0.161** (0.0638)	0.169*** (0.0637)
Labor Market Flexibility	-0.154** (0.0683)	-0.134** (0.0666)	-0.127* (0.0678)
National Security	0.0914 (0.0734)	0.0682 (0.0706)	0.107 (0.0726)
Government Spending	-0.476*** (0.0754)	-0.457*** (0.0754)	-0.433*** (0.0756)
Easing Corporate Regulations	-0.183** (0.0841)	-0.159* (0.0824)	-0.166** (0.0839)
Observations	949	957	941
Pseudo R ²	0.0660	0.0861	0.0933
Region FE	YES	YES	YES

Note: Robust standard errors are in parentheses (***) $p < 0.01$, (**) $p < 0.05$, (*) $p < 0.1$.

TABLE 5—COOPERATION URGENCY ORDERED LOGIT ESTIMATION RESULTS

Dependent Variable: Inter-Korean Economic Cooperation Urgency			
	(4)	(5)	(6)
<i>Demographic Variables</i>			
Age	0.181*** (0.0334)	0.176*** (0.0336)	0.171*** (0.0348)
Age Squared	-0.00178*** (0.0004)	-0.00174*** (0.0004)	-0.00167*** (0.0004)
Gender	-0.037 (0.1270)	0.0515 (0.1260)	0.0464 (0.1280)
Marital Status	0.000879 (0.1730)	0.0741 (0.1720)	0.0744 (0.1760)
Level of Income	0.0464 (0.0343)	0.0235 (0.0337)	0.0274 (0.0348)
Level of Education	-0.0454 (0.0659)	-0.0675 (0.0645)	-0.0457 (0.0652)
<i>Variables of Interest (Preferred Cooperation Type)</i>			
Infrastructure Development	0.280* (0.1470)		0.319** (0.1500)
Expanding Trade	-0.490*** (0.1710)		-0.527*** (0.1750)
Re-implementing Existing Cooperation Projects		(Reference Group)	
<i>Variables of Interest (Preferred Source of Funding)</i>			
Domestic Public Funding		1.013*** (0.1810)	0.995*** (0.1850)
Domestic Private Funding		0.941*** (0.1810)	0.959*** (0.1840)
International Organization Funding		-0.586*** (0.1810)	-0.561*** (0.1830)
Foreign Corporate Funding		(Reference Group)	
<i>Control Variables</i>			
Ultimate Goal of Economic Cooperation	0.200*** (0.0640)	0.108* (0.0658)	0.117* (0.0665)
Labor Market Flexibility	-0.157** (0.0712)	-0.125* (0.0699)	-0.128* (0.0717)
National Security	0.0693 (0.0701)	0.048 (0.0675)	0.0802 (0.0702)
Government Spending	-0.446*** (0.0775)	-0.423*** (0.0777)	-0.391*** (0.0784)
Easing Corporate Regulations	-0.245*** (0.0827)	-0.221*** (0.0854)	-0.230*** (0.0860)
Observations	949	957	941
Pseudo R ²	0.0773	0.107	0.118
Region FE	YES	YES	YES

Note: Robust standard errors are in parentheses (***) $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Secondly, the preferred type of economic cooperation also has an effect on perceptions. The coefficient of the 'infrastructure development' variable is positive and statistically significant on both of the dependent variables, implying that the respondents who prefer infrastructure development over the reference reply 're-implementing existing cooperation projects' are more likely to approve of economic cooperation and consider it to be highly urgent. In contrast, the respondents who selected 'promoting trade' as their preferred type of economic cooperation tend to disapprove and feel that economic cooperation is not an urgent issue. The empirical results thus far suggest that the South Korean public tends to perceive infrastructure development projects as a type of economic assistance (or long-term investments) which incurs a short-term financial burden but with the possibility of long-term economic benefits. On the other hand, the public seems to consider trade with the North as a project that involves commercial transactions which may be mutually beneficial. In sum, willingness to tolerate a short-term burden appears to be the decisive factor in forming these perceptions.

With regard to the preferred source funding for economic cooperation, there exist two main narratives according to the results. First, the preference for domestic sources of funding, such as domestic government spending and domestic firm investments, over the foreign private firm investments (the reference group) is likely to result in positive perceptions toward economic cooperation. Moreover, the preference for domestic public funding induces a stronger positive perception than the preference for domestic private funding, as suggested by the coefficients of each explanatory variable. On the other hand, the preference for funding from international organizations such as the UN over foreign private firm investments is likely to result in negative perceptions with regard to economic cooperation. This result is in line with the previous results pertaining to the preferred type variables, as types of economic cooperation that incur high short-term costs are most likely to require domestic and public financing. Those in the negative perception group, on the other hand, are intolerant towards large-scale economic cooperation projects which are, in their opinion, not very beneficial. They therefore oppose the use of domestic sources of funding, especially the government financing or, in other words, the taxpayers' money. These results provoke discussions about preferred initiating entities of economic cooperation. Those who actively support cooperation are likely to prefer cooperation mainly led by the government or domestic entities, which historically have been conventional types of entities. However, the group of people expressing skepticism prefers cooperation models that instead involve international entities.

In addition, the respondents who consider complete unification as the ultimate goal of economic cooperation tend to be those expressing positive perceptions. This result is intuitive, as economic cooperation is widely conceived as a necessary process for unification.

There are several interesting findings that incorporate the effects of political views on economic cooperation perception. Most of the control variables which reflect the political views of the respondent, such as 'lay-off of low-performing employee', 'government spending cuts' and 'easing corporate regulations', are statistically significant with regard to both dependent variables. The negative signs of the coefficients of these variables suggest that the more progressive the respondent is,

the more likely they will express positive perceptions toward economic cooperation. More specifically, the respondents who oppose the ideas that firms should be able to lay-off low-performing employees easily, who oppose small government measures (as opposed to government spending cuts), and who oppose the overall easing of corporate regulations are likely to have positive perceptions toward economic cooperation, while the respondents who agree with the above arguments are likely to have negative perceptions. This result provides evidence of the fact that the inter-Korean economic cooperation perceptions are sensitive to the political views of people despite the fact that economic cooperation, in essence, is an economic issue. It also suggests that building up positive perceptions about this issue will not be easy, as one's political views are often difficult to change.

Overall, the following characteristics of South Korean public opinions about inter-Korean economic cooperation could be inferred. On average, the group of people who are younger, who prefer lower short-term cost cooperative projects, who prefer foreign sources of funding, and who hold relatively conservative political views tend to have negative perceptions toward economic cooperation, while the group of people who are older, prefer higher short-term cost cooperative projects, prefer domestic sources of funding, and who have relatively progressive political views tend to have positive perceptions toward economic cooperation. As the statistical results and the underlying implications reveal, pursuing economic cooperation with the North is a polarizing issue in South Korea.

Considering the facts that public perceptions toward economic cooperation are inevitably tied to unification perceptions and that the political views of people affect their perceptions on economic cooperation, it is reasonable to conclude that the polarizing perceptions toward this issue are rigid in its nature. Consequentially, some degree of controversy in policy discussions as to which cooperation project and which source of funding should be prioritized could arise, meaning that the issue has to be approached delicately so that cooperation can be ensured without much social friction. According to the results of our analysis, cooperative projects should be pursued on a lower scale (or cost) and under international norms for the facilitation of foreign investments to persuade those with negative perceptions, which in turn will broaden the base of support for this type of cooperation.

IV. Conclusion

Inter-Korean economic cooperation is acknowledged to be an important tool when dealing with political and national security contentions as they pertain to North Korea. However, both external and internal constraints exist, such as public support. Despite the importance of this issue, studies of public perceptions toward cooperation remain scant. Hence, this research attempts to characterize positive and negative perception groups with regard to inter-Korean economic cooperation. KDI survey data were utilized as the main source to construct ordered logit estimation models.

First, age is an important factor that affects both the sense of urgency and the approval of economic cooperation. The age effect on cooperation sentiments forms

an inversed U-shape with a peak around the early 50s. The negative perception tendencies of the younger generations are suspected to stem from the growing economic concerns that they have regarding economic cooperation with the North.

Secondly, respondents who prefer domestic sources of funding (public or private) over foreign private firm investments tend to be part of the positive perception group; this group approves of this cooperation and considers it to be urgent. In contrast, respondents who prefer funding by the international organizations over investments by foreign private firms tend to be in the negative perception group, who disapproves of cooperation, not considering it to be urgent.

Thirdly, the respondents who prefer infrastructure development as their preferred type of cooperation are more likely to be among the positive perception group compared to the respondents who prefer the reimplementation of existing cooperation projects, whereas the respondents who prefer to promote trade tend to be members of the negative perception group.

Lastly, the respondents who have more progressive political views, such as disagreeing with labor market flexibility, opposing the easing of corporate regulations, and opposing government spending cuts, are more likely to be part of the positive perception group, whereas the respondents who hold positive views with regard to these positions are more likely to be in the negative perception group.

These results however, should be interpreted with caution because the possibility of reverse causality cannot be ruled out. It is difficult to find a way to control for possible endogeneity because the variables we employed are limited to the survey questionnaire. Therefore, the relationship between public opinion with regard to cooperation and the independent variables should be interpreted in terms of a correlation rather than causality.

Our findings suggest the need to change the inter-Korean economic cooperation strategy in order to widen the base of public support in order to alleviate the political constraints on economic cooperation. The primary concern held by those in the negative perception group about this type of cooperation seems to be the economic cost stemming from large-scale cooperative projects. Consequently, the negative group prefers small-scale projects such as trade and projects led by international organizations. Therefore, in order to restore public support, the South Korean government perhaps should employ a step-by-step approach to invigorate trade with the North prior to initiating large-scale projects such as infrastructure development. Such prioritization would lower the concerns over the exploitation of taxpayer funds and induce stronger expectations about mutual economic benefits. In addition, the involvement of international organizations can be not only instrumental with regard to diversifying the financing resources required for cooperation projects, but can also mitigate public concerns about costs. Improvements in the institutionalization levels of the North Korean economy can also be expected.

APPENDIX

TABLE A1—SUMMARY STATISTICS FOR THE CONTROL VARIABLES

Questions	Obs.	Options	Proportions (%)	Mean	SD
How old are you?	1,000	-	-	46.98	14.00
Which of the following is your highest level of education completed?	1,000	1) Below Middle School	1.5	3.512	0.9741
		2) High School	19.9		
		3) College	15		
		4) University	53.1		
		5) Beyond Graduate School	10.5		
What is your marital status?	1,000	1) Not married	31.0	4.268	1.430
		2) Married	66.2		
		3) Others	2.8		
What is your household income? (Korean Won)	1,000	1) Below 1 M	2.8	4.889	1.992
		2) 1 M ~ 1.99 M	8.3		
		3) 2 M ~ 2.99 M	18.0		
		4) 3 M ~ 3.99 M	17.1		
		5) 4 M ~ 4.99 M	15.0		
		6) 5 M ~ 5.99 M	15.6		
		7) 6 M ~ 6.99 M	7.1		
		8) 7 M +	16.1		
How much do you agree with the argument 'creating an environment that could allow firms easily to lay off low-performing employees should lower the burden for the firms to hire new employees?'	1,000	1) Strongly Disagree	7.0	3.098	1.058
		2) Somewhat Disagree	22.7		
		3) Neutral	31.6		
		4) Somewhat Agree	30.9		
		5) Strongly Agree	7.8		
How much do you agree or disagree with regard to the economic policy of easing corporate regulations?	1,000	1) Strongly Disagree	2.8	3.483	0.9458
		2) Somewhat Disagree	10.5		
		3) Neutral	35.6		
		4) Somewhat Agree	37.8		
		5) Strongly Agree	13.3		
How much do you agree or disagree with regard to cutting government spending?	1,000	1) Strongly Disagree	2.3	3.404	0.9657
		2) Somewhat Disagree	13.3		
		3) Neutral	39.9		
		4) Somewhat Agree	30.2		
		5) Strongly Agree	14.3		
How much do you agree or disagree on government financing for national security?	1,000	1) Strongly Disagree	2.1	3.991	0.9827
		2) Somewhat Disagree	5.1		
		3) Neutral	20.8		
		4) Somewhat Agree	35.6		
		5) Strongly Agree	36.4		

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