Policy Report 2020-02

Fiscal Sustainability of the South Korean Welfare State

- Projections Concerning Inter-Korean Integration

People
with People
in Mind

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Fiscal Sustainability of the South Korean Welfare State: Projections Concerning Inter-Korean Integration

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ISBN: 978-89-6827-683-5 93330

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Introduction

I Introduction

The purpose of this study is to determine, empirically, the fiscal capability of the South Korean welfare state to withstand the inevitable increase in welfare spending that would be incurred as part of the cost of unification with North Korea. Notwithstanding the wide consensus on the necessity of both welfare spending and unification, we cannot overlook the fiscal implications involved, particularly as we set our eyes on the specific goals that are to be accomplished with the expected increased spending. The amount of fiscal resources that the South Korean welfare can afford to expend in this regard, however, is limited. Estimating the scale of the available resources is therefore a vital task, along with the identification of other issues involved, in the journey toward inter-Korean integration. This study therefore seeks to identify, through an empirical analysis, how much the South Korean welfare state could afford to spend on increased welfare spending and the cost of unification in the future.

Especially germane to this study is the growing worry regarding the likely deterioration of fiscal soundness in South Korea. Many continue to point out that, should South Korea extend its welfare state into the North, the amount of national debt it would incur as a result might be unsustainable. Some experts have been arguing for years that the South Korean debt associated with welfare spending already exceeds the internationally recommended level. Inter-Korean relations are often swayed by a variety of factors that lie outside Seoul's control, and it has been impossible to gain a realistic and objective understanding of the true state of affairs in North Korea. The amount of fiscal resources that South Korea would require post-unification could well exceed the most conservative of projections. This study therefore focuses on identifying the extent of the fiscal shock that the South Korean welfare state could withstand, assuming hypothetical fiscal deterioration in the years following unification.

Since the German unification, Korean scholars have been extensively researching and estimating the cost of Korean unification. Much of the literature is concerned with estimating the cost of unification by projecting the costs of social inter-Korean integration by category and adding them up. This approach is helpful in that it enables us to estimate the amount of fiscal resources that would be required after integration. However, it does not tell us whether the projected amount of required fiscal resources would be something that South Korean society could afford. The objective of this study is not to estimate the cost of social integration per se, but to determine whether South Korea would be able to afford that cost.

The magnitude of the cost alone is not enough for Koreans to decide whether to continue exchange and cooperation with North Korea or to attempt greater integration and unification. But it is important to estimate that amount in order to consider what issues should be proactively considered as Koreans head toward unification.

This study compares and reviews the various methods that have been applied so far to measure the fiscal sustainability of welfare states and develops a method that reflects the particularities of North Korea and inter-Korean welfare integration. It then applies that method to analyze, empirically, the fiscal analysis of the integrated Korean welfare state. This study also examines fiscal sustainability in light of North Korea's demographic structure and unemployment factors and identifies the limits on the amounts of resources South Korea could afford to spend on inter-Korean social integration and welfare. By exploring how the fiscal situation would evolve from South Korea's current status and in the presumed state of integration with North Korea, this study projects the extent to which South Korean welfare spending should be increased and what challenges the country would face in finding the resources necessary to ensure successful integration.

Ⅱ

Literature Review: Shortcomings and Departure

II Literature Review: Shortcomings and Departure

The discourse on the cost of post-unification social security in Korea reflects the desire to prepare as best as possible for eventual unification. In reality, however, the total estimated costs tend to be higher than expected and end up disinclining Koreans from unification. This is unfortunate because the estimated cost of unification can vary quite widely depending on how it is defined, what scenarios are used, and what methods are used to produce projections (Cho, 2011, pp. 39-51). It is impossible to estimate the exact cost of unification because inter-Korean affairs are subject to a variety of factors beyond South Korea's control, including changing relations involving other neighboring countries. It is therefore illogical to conclude that the two Koreas should unite, or remain separate, on the basis of the costs and benefits of unification (Lee, 2012, p. 28). Inter-Korean social integration, moreover, will be a complex phenomenon with implications so far-reaching for all aspects of society and politics that it cannot be reduced to a single fiscal problem.

We need to discuss the cost of unification not in the hopes of basing our decision regarding unification on a cost-benefit analysis, but with a view to proactively identifying foreseeable issues and questions, and thereby allowing ourselves to better prepare for a lasting and successful integration. To this end, we need to explore not just how the necessary expenditures should be financed, but also what kinds of new welfare needs would arise in the process and aftermath of integration. This study, however, focuses more on the financing aspects of integration because that is a relatively less addressed topic in the discourse. Although the existing literature provides estimates for the amounts of fiscal resources would be needed for unification, there is little in the literature to help us determine whether the estimated costs are indeed affordable for South Korea. Like other studies, this study, too, focuses on the economic cost of inter-Korean integration for South Koreans, not necessarily to produce an estimate for its own sake, but rather to assess whether the South Korean welfare state is capable of affording it.

Ⅲ

Research Structure and Method

III Research Structure and Method

This study focuses on two central topics. The first is assessing the fiscal sustainability of the South Korean welfare state against the backdrop of an international comparison. Such assessment is necessary to identify the baseline against which we can project and analyze changes in fiscal sustainability under inter-Korean integration. The second is projecting and measuring changes in the fiscal stability of the South Korean welfare state under integration, with a view to determining the extent to which the South Korean welfare state can afford the cost of integration. A single model is used to address both topics.

While the bulk of this study concerns an empirical analysis, it also reviews the established literature and discusses issues raised in interviews with experts in search of an appropriate model for assessing the fiscal sustainability of the South Korean welfare state. Based on the literature survey and expert interviews, this study adopts a fiscal space model, as proposed by Ostry et al. (2010) and Ghosh et al. (2013). The model is centered on the Bohn test, holding that even if a state fails to achieve a fiscal balance in the short term, it can still achieve long-term fiscal sustainability insofar as it meets the basic balance sufficient for repaying its national debt. The fiscal space model, however, goes a step further than the Bohn test, as it includes the endogenous relationship between the scale of the national debt, on the one hand, and the interest rate on national bonds, on the other. In other words, the model considers the realistic possibility that excessive and accumulated national debt could increase the risk of national bankruptcy and thereby lead the interest rate on national bonds to spike.

In an affluent state like South Korea, fiscal space is understood as a measure of whether the state possesses sufficient fiscal capability to manage the growing welfare needs of the population amid rapid population aging and continued low growth (Heller, 2005, p. 5; Schick, 2009, p. 3). The fiscal space model therefore caters to the main objective of this study, which is to assess the fiscal sustainability of the Korean welfare state. Moreover, the model can be made to account for the managerial capabilities necessary for fiscal sustainability, i.e., political and institutional factors. Contrary to conventional fiscal studies, which focus on the dynamics of macroeconomic factors, studies on the fiscal sustainability of the welfare state have assigned almost equal importance to the national capability to manage and adjust welfare spending in accordance with changes in the national context. An increase in fiscal spending does not automatically lead the state into a crisis; what matters more is the context in which the state implements such increase, and how the state manages it.

The fiscal space model also gives us the added benefit of taking into account North Korea-related fiscal threats and mitigating factors that the South Korean welfare state could face in integration. The model can be used to include major fiscal issues and variables involved in inter-Korean social integration, allowing us to project how South Korea's fiscal sustainability would change. This study assumes that inter-Korean integration would mean the integration of the demographic and unemployment variables, and proceeds to assess the South Korean welfare state's fiscal sustainability accordingly. Demographic change and rising unemployment rates have been the two factors cited in the literature as the main potential drivers of the rising fiscal burden. This study relies on the International Labour Organization (ILO)'s estimates of the North Korean demographic structure and unemployment rate (based on the data of the United Nations), and additionally considers a high-unemployment scenario, given the possibility that the ILO might have underestimated North Korea's unemployment rate.

The fiscal space model also enables us to draw the limit line for the national debt, often touted as the likely main source of finance for unification. Realistically, it would be difficult for the South Korean government to either raise taxes or resort to a contractionary fiscal policy in the face of growing demand for fiscal resources after unification, particularly due to South

Koreans' resistance to such moves. It is a well-known fact that Berlin, too, had to resort to national bonds to finance a substantial part of the German unification process, contrary to the pre-unification belief that the unification fund would be able to finance it. Using the fiscal space model, we can identify the specific maximum amount of national bonds that the South Korean government could afford to issue, assuming that it stayed on course with its current fiscal policy mode. In other words, the model can help us figure out the extent to which the available fiscal resources could be increased by issuing national bonds.

Another related benefit of the fiscal space model is that it allows us to analyze likely changes in fiscal sustainability in response to a variety of hypothetical situations that may arise due to the rising national debt in integration. Trying to finance integration and development in North Korea with national bonds would increase the interest burden on the South Korean government due to the heightened credit risks. Assuming that the South Korean government's fiscal balance could worsen in the future, we need to consider how the rise in the interest rate on national bonds and increase in national debt would affect South Korea's fiscal sustainability. This study looks to the average interest rate for German national bonds for the three years following unification for a comparable national bond interest rate, and applies it to a hypothetical foreign exchange crisis that the South Korean economy could face after integration. This study also references the German experience to examine how the increase in South Korea's national debt to 140 percent of what it is now (10 years after German unification) and to 190 percent of what it is now (20 years after German unification) would affect the country's fiscal sustainability.

〈Table 1〉 Fiscal Sustainability Analysis: Scenarios

Scenario		Description
Baseline		Measures fiscal sustainability on the basis of South Korea's demographic structure, unemployment rate, and national debt data from 1991 to 2015.
Inter-Korean integration	Integration 1	Combines data on North Korean demographics and unemployment, available from international organizations, with South Korean counterparts to measure fiscal sustainability in light of the integrated demographic structure (total cost of care, future aging rate, etc.) and unemployment rate.
	Integration 2	Combines North Korean demographic data available from international organizations and the minimum estimate for the unemployment rate among North Koreans aged 25 to 59 (25%, cited in Lee (2015 and 2016)) with South Korean counterparts to measure fiscal sustainability.
	Integration 3	Combines North Korean demographic data available from international organizations and the maximum estimate for the unemployment rate among North Koreans aged 25 to 59 (56%, cited in Lee (2015 and 2016)) with South Korean counterparts to measure fiscal sustainability.
	National Debt 1	Measures fiscal sustainability for each of Integration Scenarios 1 to 3 in a hypothetical situation where the national debt level rises to 140 percent of the 2015 level (which is what Germany experienced 10 years after unification).
	National Debt 2	Measures fiscal sustainability for each of Integration Scenarios 1 to 3 in a hypothetical situation where the national debt level rises to 190 percent of the 2015 level (which is what Germany experienced 20 years after unification).

Ⅳ

Results of Analysis

1. Fiscal Sustainability of the South Korean Welfare State
2. Integrated Korean Debt Limit and Fiscal Space
3. Fiscal Sustainability, With or Without Integration

Ⅳ Results of Analysis

1. Fiscal Sustainability of the South Korean Welfare State

This study employs the fiscal sustainability model to estimate the limits of each nation's debt and fiscal space and thereby determine the fiscal sustainability of the South Korean welfare state in a comparative light. A debt limit should be understood as the maximum amount of debt that a country can incur, assuming that it maintains its current fiscal policy mode. Specifically, it is estimated based on the point of intersection between the response curve of each country's basic fiscal balance (a function of the existing fiscal balance and national debt) and national debt. It is designed to reflect the fact that, should a country fail to sufficiently improve its fiscal balance in response to increases in its national debt, it would likely face growing pressure to repay its debt. The fiscal space here is measured as the difference between the debt limit so estimated and the actual debt level. The larger the fiscal space, the greater the fiscal sustainability.

The analysis shows that the South Korean welfare state is capable of maintaining its fiscal sustainability even if it were to maintain its current fiscal stance. This is mainly thanks to the

South Korean government's success in keeping its national debt low relative to the national debt levels of other member states of the Organisation for Economic Cooperation and Development (OECD). As Table 2 shows, while South Korea's debt limit is at around the average level, the country is ranked highly in terms of fiscal space.

〈Table 2〉 Debt Limits and Fiscal Spaces by Country

(Unit: percentage of each country's GDP)

Country	Debt limit		Fiscal space	
	Percentage of current GDP	Rank	Percentage of current GDP	Rank
South Korea	393.2	18	355.3	8
Greece	40.2	29	-136.7	29
Netherlands	399.5	8	334.4	13
Norway	392.6	21	364.6	3
New Zealand	393.2	19	363.2	5
Denmark	398.8	9	353.3	9
Germany	398.2	11	327.2	15
Latvia	398.4	10	363.4	4
USA	397.8	12	308.8	20
Belgium	400.5	7	294.5	24
Sweden	406.2	6	362.8	6
Switzerland	397.4	13	351.8	11
Spain	409.5	4	310.3	19
Slovakia	408.3	5	355.4	7
Slovenia	396.2	15	313.0	18
Iceland	380.7	27	313.1	17
Ireland	534.3	1	455.7	1
UK	395.2	16	306.2	22
Austria	394.2	17	308.0	21
Italy	378.3	28	245.6	27
Japan	411.2	2	163.2	28
Czech Republic	410.2	3	369.8	2
Canada	383.3	25	291.8	25
Portugal	383.0	26	254.0	26
Poland	397.2	14	345.9	12

Country	Debt limit		Fiscal space	
	Percentage of current GDP	Rank	Percentage of current GDP	Rank
France	392.9	20	296.8	23
Finland	389.9	24	327.4	14
Hungary	391.6	22	316.3	16
Australia	390.4	23	352.8	10
Average	388.4	·	309.2	·
Average excluding Greece	400.8		325.2	

Notes: 1) The observed interest rate on national bonds has been applied.
2) The higher the rank, the higher the national debt OR the greater the fiscal limit.

The analysis shows that all the countries analyzed, with the exception of Greece, are capable of managing their fiscal sustainability. These include the countries that have undergone transition and may shed light on future implications of inter-Korean integration, such as Slovakia, the Czech Republic, Poland, Hungary, Latvia, and Slovenia. All these transition welfare states are capable of ensuring their fiscal sustainability, albeit to varying degrees. Of course, the fact that these countries are able to manage their fiscal affairs is not sufficient grounds on which to conclude that the integrated Korean state would be able to do so as well. These countries did undergo some tumultuous macroeconomic changes in the aftermath of their transition (Dăian 2013, pp. 63-65). Nevertheless, the fact that these countries have been maintaining relatively decent fiscal balances for a quarter century since their transition also reminds us, Koreans, of the importance of not overestimating the risks involved in unification.

With a debt limit of just 18 percent of its current gross domestic product (GDP), Greece falls significantly behind all the other countries. The already excessive nature of the country's debt also affords it very little fiscal space. Without transforming its fiscal policy mode (as of 2015), Greece will struggle greatly to ensure its future fiscal sustainability. Other studies that analyzed the same set of countries over a shorter span of time concluded that the financial crisis in southern Europe in 2008 rendered the fiscal prospects of other southern European countries, such as Italy, Spain, and Portugal, in addition to Greece, all uncertain (Goh, 2016; Ostry et al., 2010; Ghosh et al., 2013; Fournier and Fall, 2015). This study's finding therefore indicates that all other southern European states have managed to overcome that crisis and give themselves greater fiscal space, while Greece is still facing the mounting need to alter its fiscal policy radically.

The debt limit on Greece itself warrants some attention. The Greek debt limit falls short of 60 percent of GDP, as required by the Stability and Growth Pact (SGP), even though the SGP requires a national debt level below 60 percent of the given country's GDP as a measure of fiscal stability. This fact reminds us of the importance of carefully examining and assessing each country's fiscal sustainability in light of the given country's particular conditions, rather than applying a monolithic standard across the board (Croce and Juan-Ramón, 2003; Stubelj and

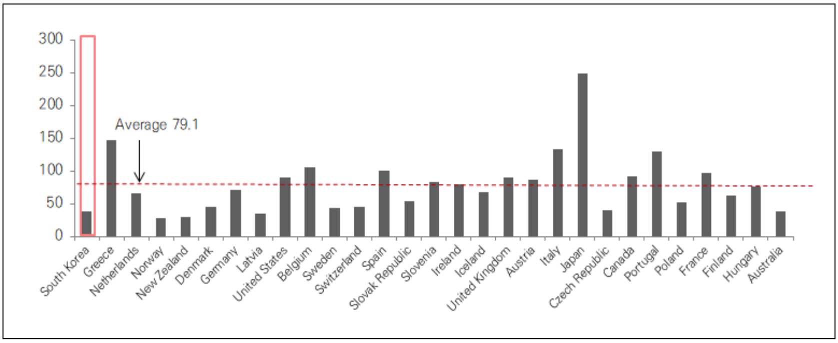
Dolenc, 2010). This further illustrates the need to consider and weigh all the specific issues involved in inter-Korean integration, including the particularities of North Korea.

Japan provides another pertinent lesson. Like South Korea, Japan, too, has quite a high debt limit. Yet the country comes up short in terms of fiscal space because it already has quite a substantial national debt. Table 2 shows that Japan is the country with the second lowest level of fiscal sustainability, after Greece. This is not to say that Japan is fiscally unsustainable, as having a relatively small fiscal space does not mean that a country is facing an imminent financial crisis. However, countries like Japan cannot be optimistic about their fiscal prospects insofar as they fail to manage and downsize their debt.

With a considerably small national debt, South Korea boasts a relatively large fiscal space. In fact, South Korea's national debt was only 37.9 percent of its GDP as of 2015, which is in stark contrast to the average of 79.1 percent of GDP among the analyzed countries. Although the country's national debt has been rising in recent years, its overall debt level still pales in comparison to those of other welfare states. As a result, although South Korea's debt limit stands at around the average level among the analyzed countries, the country is ranked higher in terms of fiscal space.

[Figure 1] National Debt Levels by Country (2015)

(Unit: percentage of each country's GDP)



Source: International Monetary Fund (IMF), "International Financial Statistics," retrieved from https://data.imf.org on November 2, 2019.

Figure 1 indeed shows that South Korea has a noticeably lower national debt than the majority of other OECD member states. Yet the accelerating pace of population aging in Korea presents a driver of significant spending increases in the future, along with unification or integration with North Korea. The German experience has taught us that unification has the effect of radically increasing fiscal demand, and Korean experts like to point out the likelihood of unification raising Korea's national debt burden substantially. These two factors may therefore induce the Korean welfare state to issue more national bonds. In the following section, we shall review how inter-Korean integration would increase the national debt of the South Korean welfare state and how raising the interest rate on national bonds would alter the country's fiscal sustainability.

2. Integrated Korean Debt Limit and Fiscal Space

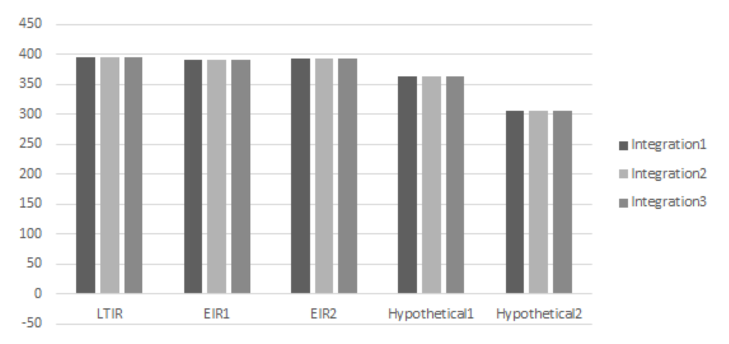
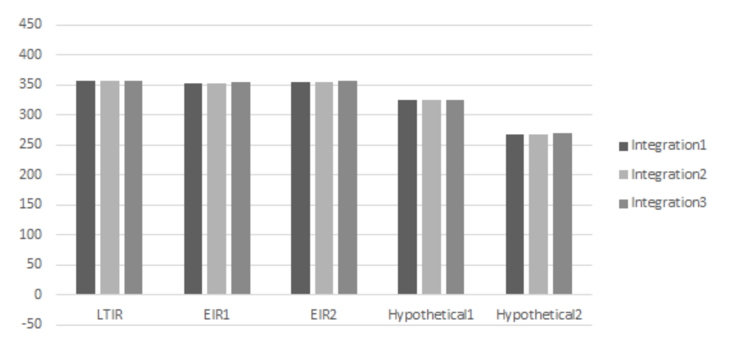
Figures 2, 3, and 4 illustrate the debt limits and fiscal spaces of integrated Korea under different scenarios. Integration Scenario 1 combines the South and North Korean demographics (total care cost and future population aging rate) and the ILO's statistics on unemployment. Integration Scenario 2 applies the combined inter-Korean demographic data, along with the minimum unemployment rate of 25 percent among the population aged 25 to 59, as estimated in Lee (2015 and 2016). Meanwhile, Integration Scenario 3 applies the combined inter-Korean demographic data, along with the maximum unemployment rate of 56 percent among the population aged 25 to 59, as estimated in Lee (2015 and 2016).

Each figure also applies five different interest rates. The "LTIR" (long-term interest rate) graph shows the debt limit and fiscal space based on a planned amortization curve that is based on the going interest rate on South Korea's national bonds as of 2015. "EIR" (estimated interest rate) graphs 1 and 2 show the debt limits and fiscal spaces based on a different planned amortization curve estimated using a vector autoregression model designed to capture the endogenous correlation between the national debt and the interest rate on national bonds. "EIR 1" accounts for other fiscal factors in addition to the national debt and the interest rate on national bonds. "EIR

2" reflects the national debt and the interest rate on national bonds only. The "Hypothetical" graphs show the hypothetical business cycle downturn that the integrated Korean economy could face. Specifically, "Hypothetical 1" applies the average interest rate on national bonds and the economic growth rate that Germany experienced in the three years following its unification, while "Hypothetical 2" applies the interest rate on South Korea's national bonds and South Korea's economic growth rate during the Asian Financial Crisis of the late 1990s.

[Figure 2] Debt Limits and Fiscal Spaces of Integrated Korea: South Korea's National Debt Level of 2015

(Unit: percentage of South Korea's GDP)

Debt limits	
Fiscal spaces	

Notes: 1) The LTIRs are based on interest rates reported by the IMF in "International Financial Statistics" (https://data.imf.org), retrieved on November 2, 2019.

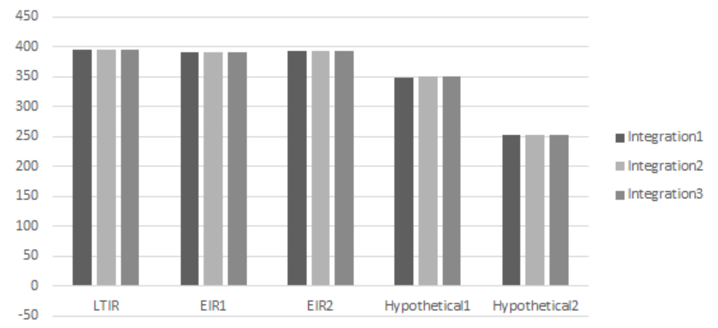
2) EIR 1 represents the long-term interest rate estimated using a first vector autoregression model that includes South Korea's national debt, fiscal revenue and expenditure, output gap, inflation rate, and long- and short-term interest rates. EIR 2 represents the long-term interest rate estimated using a first vector autoregression model that includes South Korea's national debt only.

3) Hypothetical 1 applies the three-year average interest rate on German national bonds and Germany's economic growth rate after German unification. Hypothetical 2 applies the interest rate on South Korea's national bonds as well as the country's economic growth rate during the Asian Financial Crisis.

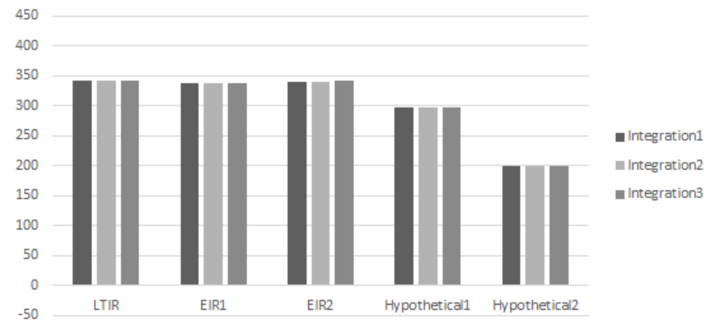
〔Figure 3〕 Debt Limits and Fiscal Spaces of Integrated Korea: 140% of South Korea's Current Debt

(Unit: percentage of South Korea's GDP)

Debt limits



Fiscal spaces



Notes: 1) The LTIRs are based on interest rates reported by the IMF in "International Financial Statistics" (https://data.imf.org), retrieved on November 2, 2019.

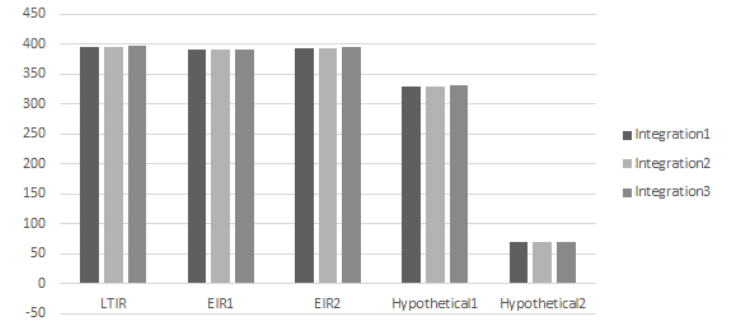
2) EIR 1 represents the long-term interest rate estimated using a first vector autoregression model that includes South Korea's national debt, fiscal revenue and expenditure, output gap, inflation rate, and long- and short-term interest rates. EIR 2 represents the long-term interest rate estimated using a first vector autoregression model that includes South Korea's national debt only.

3) Hypothetical 1 applies the three-year average interest rate on German national bonds and Germany's economic growth rate after German unification. Hypothetical 2 applies the interest rate on South Korea's national bonds as well as the country's economic growth rate during the Asian Financial Crisis.

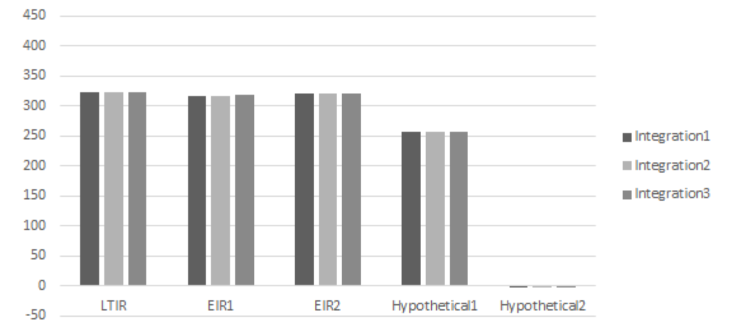
[Figure 4] Debt Limits and Fiscal Spaces of Integrated Korea: 190% of South Korea's Current Debt

(Unit: percentage of South Korea's GDP)

Debt limits



Fiscal spaces



Notes: 1) The LTIRs are based on interest rates reported by the IMF in "International Financial Statistics" (https://data.imf.org), retrieved on November 2, 2019.

2) EIR 1 represents the long-term interest rate estimated using a first vector autoregression model that includes South Korea's national debt, fiscal revenue and expenditure, output gap, inflation rate, and long- and short-term interest rates. EIR 2 represents the long-term interest rate estimated using a first vector autoregression model that includes South Korea's national debt only.

3) Hypothetical 1 applies the three-year average interest rate on German national bonds and Germany's economic growth rate after German unification. Hypothetical 2 applies the interest rate on South Korea's national bonds as well as the country's economic growth rate during the Asian Financial Crisis.

Figures 2, 3, and 4 also show how South Korea's debt limit and fiscal space would change as the country's national debt level changes in relation to its GDP. Specifically, Figure 2 shows the country's debt limit and fiscal space when its national debt amounts to 37.9 percent of its GDP, as it did in 2015. Figure 3 shows how increasing South Korea's national debt to 52.7 percent of its GDP by 140 percent from the 2015 level, as was the case with Germany 10 years after its unification, would affect the Korean debt limit and fiscal space. Finally, Figure 4 shows the Korean debt limit and fiscal space when the country's national debt amounts to 72.6 percent of its GDP, which is 190 percent higher than was the case with Germany 20 years after its unification.

As Figure 2 shows, insofar as South Korea maintains its debt steady at its 2015 level, the fiscal sustainability of the Korean welfare state would be ensured under any and all scenarios, irrespective of the unemployment rates. Although applying the highest unemployment rate, as estimated by Lee (2015 and 2016), would reduce Korea's debt limit and fiscal space somewhat, the difference between that scenario and others would not be so significant.

In the hypothetical event of a financial crisis akin to the one that occurred in the late 1990s, where the interest rate on South Korea's national bonds soars to over 10 percent and the Korean economy records a negative growth rate, the debt limit would decline considerably compared to other scenarios, shrinking the country's fiscal space along with it. Even so, the Korean welfare state would remain fiscally sustainable. Specifically, even in such a hypothetical situation, Korea could withstand a national debt level of up to 300 percent of its GDP, while retaining a fiscal space comparable to those of present-day Portugal and Canada.

When the two Koreas are integrated, the national debt level would likely show increases of significant magnitude. It is therefore worthwhile to explore and project how such pressure would affect the South Korean welfare state's fiscal sustainability, as shown in Figures 3 and 4. Figure 3 shows that, even if Korea's national debt as a percentage of its GDP increased by 140 percent, the fiscal sustainability of its welfare state would remain intact, even under the pessimistic scenario of a hypothetical financial crisis. Of course, such an increase in the national debt would lower Korea's debt limit and contract its fiscal space. Nevertheless, even so reduced, Korea's fiscal space would remain larger than Japan's, which is under mounting pressure from the country's already excessive national debt.

Figure 2, on the other hand, shows what would happen to Korea's fiscal sustainability when the national debt rises to 190 percent of its 2015 level. This would further reduce Korea's debt limit from the previous case, whose effect would be more acutely felt in both the hypothetical situation of three years' elapse from unification and a hypothetical financial crisis, but especially more so in the latter case. Interestingly, however, Korea's debt limit would be higher than Greece's even if its national debt nearly doubled from the 2015 level and a drastic situation like another financial crisis were to occur. This attests to the strength of South Korea's fiscal system today.

It is important to note that the South Korean welfare state would remain fiscally sustainable even if its national debt level grew to almost double what it was in 2015, particularly in light of the German experience with unification. The kind of absorptive unification that West Germany underwent would exert a significantly greater fiscal pressure than the more gradual approaches, such as the formation of a federation or confederation. Even the relatively more abrupt model of unification, such as the German one, however, would not seriously threaten the fiscal sustainability of the Korean welfare state. A drastic rise of Korea's risk premium, however, such as the one assumed in Hypothetical Scenario 2 (Figure 4), could threaten the country's fiscal sustainability as its fiscal space would, in effect, shrink to zero in such a situation. The compromise of fiscal sustainability would not mean an immediate crisis, but such a scenario warrants caution regarding the unlikely, but possible, situation of exhausting the fiscal resources required to sustain the welfare state. Although South Korea has so far kept its national debt level quite low, North Korea's unemployment and poverty levels could be worse than expected, posing a much greater demand on the South Korean fiscal system than estimated. With South Korea's national debt higher than its 2015 level, the country's fiscal sustainability could well face a serious challenge in such a situation.

3. Fiscal Sustainability, With or Without Integration

Inter-Korean integration would likely cause a contraction of South Korea's fiscal space compared to the absence of integration under all scenarios. This, however, does not mean that inter-Korean integration would undermine the fiscal sustainability of the South Korean welfare state, as Figure 5 illustrates. Figure 5 shows how South Korea's fiscal space would contract when EIR 1 is applied. (No significant differences were made to the country's fiscal space when all the interest rates were applied. Here, we limit our focus to EIR 1 because that is the interest rate that would likely lead to the most drastic, comparatively speaking, decrease in Korea's fiscal space.)

The findings of this analysis suggest that the concern over the fiscal sustainability of the post-integration Korean welfare state should be revisited. As it stands now, the South Korean welfare state appears to be capable of handling the growing fiscal pressure of integration to some extent. The fact that the German-level of fiscal constraints in the three years following German unification would not undermine Korea's long-term fiscal health, even after the country's national debt level rises to 140 percent or even 190 percent of what it is now, speaks to the fundamental soundness of the Korean fiscal system. Our analysis reveals that the Korean welfare state is capable of managing the increasing fiscal demand posed by integration under all scenarios.

Of course, unlimited growth of the national debt would make it difficult for Korea to afford inter-Korean exchange, cooperation, and integration. In an extreme hypothetical situation, as shown in Figure 5, a post-integration financial crisis where the national debt is 190-percent greater than it is now would cause a radical contraction of South Korea's fiscal space, making its welfare state no longer sustainable.

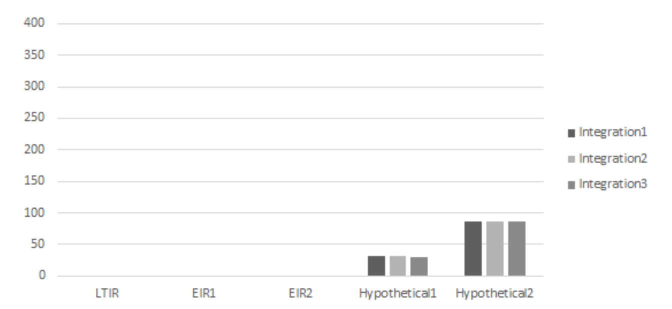
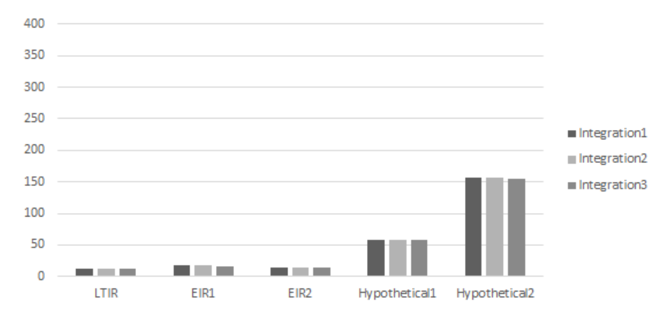
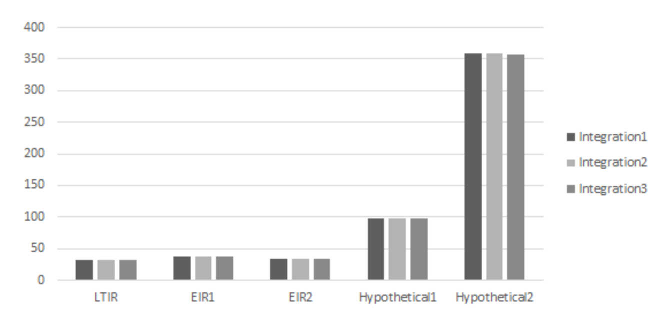
Inter-Korean relations are also subject to a variety of factors that are out of either country's control. The main question we should ask in debates on the fiscal sustainability and stability of the post-unification Korean welfare state is therefore how we could reduce the uncertainty surrounding integration or unification. The best and foremost way to do this is to lower fiscal risks of integration is to raise the standard of living among North Koreans because it would help control the growth of fiscal demand while also lowering the macroeconomic risks associated with low credit ratings and purchasing power.

In spite of years of stifling international sanctions, Pyongyang has turned the North Korean economy around and made some improvements to the quality of life of locals. The nutritional and health conditions of North Koreans have indeed significantly improved since the late 2000s (Central Bureau of Statistics and UNICEF, 2018; Noble, 2019, p. 1). Nevertheless, infants and preschoolers, mothers, the elderly, and rural residents are still more prone to poverty, illness, and malnutrition. A wide range of public services still remains inaccessible, requiring urgent intervention (UN, 2014, p. 10; UNWFP, 2019).

There still remains a number of pressing tasks that must be handled in order to improve the quality of life of North Koreans. Improving the living conditions of North Koreans carries humanitarian significance. South Korean and other governments worldwide engage in development cooperation projects around the world to alleviate poverty and inequality and thereby accord better protection of human rights for all peoples around the world. Improved quality of life for North Koreans would also be beneficial for the South Korean welfare state, as it would minimize the risks of unpredictable and abrupt increases in the demand for fiscal spending. Recently, there have been some studies demonstrating that consistent efforts to enhance the living conditions of North Koreans could help stem the immense cost of unification from rising further (NABO, 2019, pp. 211-224). Inter-Korean exchange and cooperation should therefore continue in order to improve the quality of life of North Koreans prior to unification.

[Figure 5] Inter-Korean Integration and Contraction of Fiscal Space

(Unit: percentage of South Korea's GDP)

<table>
<tr><td>Debt level of 2015</td><td>
</td></tr>
<tr><td>140% of debt level of 2015</td><td>
</td></tr>
<tr><td>190% of debt level of 2015</td><td>
</td></tr>
</table>

Notes: 1) Showing the difference between South Korea's fiscal space as summarized in Table 1, on the one hand, and its fiscal space under various post-integration scenarios, on the other.

2) The LTIRs are based on interest rates reported by the IMF in "International Financial Statistics" (https://data.imf.org), retrieved on November 2, 2019.

3) EIR 1 represents the long-term interest rate estimated using a first vector autoregression model that includes South Korea's national debt, fiscal

revenue and expenditure, output gap, inflation rate, and long- and short-term interest rates. EIR 2 represents the long-term interest rate estimated using a first vector autoregression model that includes South Korea's national debt only.

4) Hypothetical 1 applies the three-year average interest rate on German national bonds and Germany's economic growth rate after German unification. Hypothetical 2 applies the interest rate on South Korea's national bonds as well as the country's economic growth rate during the Asian Financial Crisis.

V

Conclusion

V Conclusion

The two distinct factors that are expected to increase the fiscal demand on the South Korean welfare, but are absent among the factors influencing the welfare states of other countries, are the continued and significant increase in welfare spending, on the one hand, and the cost of unification with North Korea, on the other. These factors have given rise to those voicing concerns over the possible fiscal pressure on the growth of the South Korean welfare state. Welfare spending and the cost of unification, moreover, have also been used to countervail each other in the debates on why South Korea should be careful in maintaining its fiscal balance. Some say the current level of welfare spending should be lowered in preparation for unification, while others counter that the aid to North Korea should stop and be redirected to increasing welfare benefits for South Koreans. This study weighs both factors and empirically analyzes South Korea's fiscal sustainability in relation to both the rise in welfare spending and the cost of unification.

This study specifically projects, assesses, and compares South Korea's fiscal sustainability both under integration with North Korea and in the absence of integration, with the likely changes in the demographic structure and unemployment rates taken into account. It then examines how South Korea's fiscal sustainability would be affected under the worst imaginable macroeconomic circumstances that could arise after inter-Korean integration. As issuing national bonds has been touted as a likely means of financing unification, this study analyzes how South Korea would fare when its national debt increases to certain levels, and the interest rate on its national bonds rises accordingly. The goal is to explore and confirm changes in South Korea's fiscal sustainability under extreme economic situations so as to determine the maximum fiscal pressure that the Korean welfare state could withstand.

The IMF's fiscal space model was used in the analysis, on the basis of interviews with post-unification social security and fiscal experts as well as a survey of the relevant literature. The fiscal space model was chosen, in particular, for the following benefits. First, as a method of analysis, it allows us to model the uncertainty in the fluctuations of the interest rate on national bonds and account for a broad array of institutional and political factors in assessing the given country's fiscal capability, a crucial factor of the fiscal sustainability of its welfare regime. Second, the model also allows us to identify an objective baseline scenario, through international comparison, upon which we can compare the effects of integration and non-integration on South Korea's fiscal sustainability. This way, we can envision not only how integration itself would affect South Korea fiscally, but also how it would affect South Korea's national debt, interest rate on national bonds, and related risks.

The analysis reveals that the South Korean welfare state is fiscally robust. Insofar as the Korean government maintains its current fiscal stance (effective as of 2015), it would most likely ensure the fiscal sustainability of its welfare programs. All other member states of the OECD, except for Greece, would also likely maintain the fiscal sustainability of their welfare regimes insofar as they maintain their fiscal stances effective as of 2015. More important to note is the fact that the OECD member states that have undergone transition before Korea continue to manage their finances with relative stability. Although these transition countries experienced some macroeconomic uncertainty in the early phase of their transition, they boasted sound prospects for fiscal sustainability as of 2015. While it is essential for the South Korean government to seek and implement proactive measures to minimize the uncontrolled growth of fiscal demand from inter-Korean integration, it should also not give in to excessive worry about a possible fiscal crisis.

Remarkably, the South Korean welfare state has been keeping its national debt level quite low, in comparison to other comparable states, thereby earning itself sufficient fiscal space. Considering the example of Japan, whose fiscal space is relatively small due to its already significant debt level, notwithstanding the country's high debt limit, one might be tempted to cite South Korea as an example illustrating the importance of keeping the debt level low. We should not jump to such a conclusion, though. Compared to other similar states, South Korea's national debt level is exceptionally low, which contributes significantly to the country's relatively large fiscal space. As the analysis is limited to the years up to and including 2015, it does not reflect the recent significant growth of South Korea's welfare spending and debt. Nevertheless, the Korean national debt is nowhere near the level that would warrant much worry over the fiscal sustainability of the South Korean welfare state. Even if its fiscal balance were to deteriorate significantly from the 2015 state, the country possesses enough fiscal space to handle such change. The concern about the increase in South Korea's national debt level therefore seems rather exaggerated.

Even when North Korea's demographic structure and labor market situation are taken into account, South Korea could competently manage its fiscal sustainability. South Korea's fiscal space is so robust that we cannot conclude that the country would be unable to handle the mounting fiscal pressure exerted by unification. Assuming South Korea would increase its national debt and interest rate on national bonds to levels similar to those actually experienced by Germany, the analysis still shows that the fiscal sustainability of the South Korean welfare state would remain intact. Therefore, based on the analysis, the more proper conclusion is that South Korea would capably manage the fiscal demand on its welfare state even if its fiscal spending and national debt were to increase significantly from the 2015 levels.

In sum, we ought to take care not to blow the fiscal risks of inter-Korean integration out of proportion. South Korea has a fundamentally sound fiscal structure with which to respond to welfare demands. Of course, there could be unexpected events that radically increase the fiscal demand the country faces beyond what we would expect. In such an extreme case, where the country's national debt level is double the 2015 level, and the country faces a sudden economic crisis like the Asian Financial Crisis of the 1990s, its fiscal sustainability could well be compromised. In reality, however, the chances of such an abrupt and unforeseen deterioration in a country's economic status are slim. We should therefore take caution not to exaggerate the likelihood of such scenarios, even as we prepare for the possible risks of the worst-case fiscal scenario.

We should not base concrete policy measures on the results of this study alone. This study is significant in that it points to the general direction in which the uncertainty surrounding inter-Korean integration, particularly with respect to fiscal implications, can be reduced. One source of the increase in the fiscal burden generated by integration is the glaring disparity in the standard of living between South Koreans and North

Koreans that has emerged while the North Korean economy has been stalled for decades. The continuation of sanctions will likely make the North Korean economy worse. The lack of transparent information on the true state of affairs in North Korea and the variety of factors that are beyond the control of either Korea and shape inter-Korean relations further complicate the task of identifying and predicting issues that may arise in integration.

The best way to reduce uncertainty as much as possible is to establish and strengthen mutually beneficial relations between the two Koreas. We should also focus on what we can do here and now, and not on the factors that we cannot control, such as the rapidly evolving state of international affairs and sanctions against North Korea. Keeping dialogue with Pyongyang open will improve mutual understanding between the two Koreas and help both sides better predict and avoid the potential problems that could emerge during the integration process. An improved mutual understanding may not help South Korea avoid the growth of its fiscal burden, but it will surely enable the country to prepare better for it. The strengthening of the rapport between the two Koreas is also essential to sustain inter-Korean exchange and cooperation with respect to issues that concern both parties. As Ahn (2011), National Assembly Budget Office (NABO, 2019), and others have pointed out, continued inter-Korean relations and steady improvements of the

South Korean social security system are the fundamental steps of the strategy for minimizing the increase in the cost of social security once Korea is integrated.

Another important point that sets this study apart is that it highlights the implications for mobilizing the necessary resources to support inter-Korean integration. Much of the literature on the cost of unification has thus far focused on estimating the financial cost that South Korea would have to bear. This is primarily because Koreans have seen the immense cost that West Germany has had to pay for German unification, which is referenced very often by Korean researchers. It is undoubtedly essential to predict and estimate, as part of preparing for unification, the potential issues that could arise in the inter-Korean integration process and what they would cost financially. Even as we acknowledge the necessity and urgency of such task, however, we ought to approach the question of financing with a balanced view that takes into account the availability of resources that could be mobilized. This study empirically assesses the capability of the South Korean welfare state to mobilize the additional resources it would need, thereby expanding the discourse on the cost of unification in Korea.

This study is also methodologically distinct in that it introduces a model that expressly takes into account inter-Korean integration in projecting the fiscal sustainability of the South Korean welfare state. Conclusions regarding the fiscal sustainability of a welfare state can vary depending on the metrics used, factors taken into account, and method or model applied. An emerging trend in the recent literature is to probe how diverse potential risk factors would affect fiscal sustainability in hypothetical situations. It is also important to find a quantitative model that can produce objective findings, even as it considers the particular conditions and circumstances of individual states. Although this study analyzes relatively simple scenarios, it is nonetheless significant because it seeks to analyze, empirically, the fiscal sustainability of the South Korean welfare state particularly in relation to the likelihood of eventual integration with North Korea. In the future, the breadth of literature on South Korea's fiscal sustainability can be expanded considerably as subsequent studies assess fiscal sustainability under various scenarios of integration with North Korea.

Notwithstanding the significance of this study, there are a number of limitations, stemming from the very model used, that need to be addressed. The fiscal space model essentially relies on retrospective data. Using data from the past only may result in failure to produce reliable predictions of the future. Should the two Koreas indeed unify and undergo social integration at some point in the future, it is impossible to know, using models like this only, what would happen fiscally. Another related problem is that the fiscal space model is in-capable of predicting potential changes in fiscal sustainability. It is therefore not a sufficient tool for projecting the extent to which inter-Korean integration would increase the fiscal pressure on South Korea.

The fiscal space model, being fiscal, also fails to capture the interaction among variables that will continue to change after Korean integration. As noted repeatedly, the post-integration state of affairs on the Korean Peninsula will be subject to a variety of factors that is beyond the control of either country. New developments in certain variables could very well alter the course of fiscal sustainability projections entirely. We thus need a more sophisticated model that considers post-integration interaction among diverse macroeconomic, political, and social factors in order to project, with greater reliability, how the prospects for South Korea's fiscal sustainability would change.

Furthermore, another important shortcoming of the model is that it utilizes time series data on the years up to and including 2015 only. South Korea's welfare spending has been rising steeply over the last several years, undoubtedly since 2015 as well. This has also been raising the national debt level. The fiscal space model chosen for this study, however, can rely only on available country-by-country panel data and is therefore inadequate at reflecting the significant increases in welfare spending and the national debt since 2015. Accordingly, our conclusion about the fiscal sustainability of the South Korean welfare state may be rather too generous.

Finally, the enduring and critical shortcoming faced by all studies on inter-Korean integration and unification stems from the lack of up-to-date and transparent data on North Korea. Although this study cites data from authoritative international sources, the conclusion it reaches could change radically depending on the true state of affairs in North Korea. There is a possibility that the labor market situation in North Korea is worse than estimated by outsiders, which could act as a potential source of significantly greater fiscal burden than expected. Numerous other studies have thus sought to analyze how the timing and model of unification would exert different fiscal impacts on South Korea. This study, unfortunately, stops short of providing that kind of analysis.

It is the task of future studies to develop more refined models of prediction and trace with greater finesse how inter-Korean integration would affect South Korea's fiscal sustainability. Future studies should also strive to capture possible interaction among various variables under scenarios like the ones used in this study. Moreover, it is also crucial to keep track of how the projections of fiscal sustainability change under different scenarios introduced in the existing literature in an effort to compensate for the lack of reliability of the data on North Korea and the fundamental uncertainty surrounding the aftermath of inter-Korean integration that the fiscal space model fails to reflect. Only with such new studies will we be able to make further progress toward gaining a more comprehensive picture of the fiscal state of the post-integration South Korean welfare state.

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