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Building D, 370 Sicheong-daero, Sejong City 30147 KOREA **Korea Institute for Health & Social Affairs**

Key Issues in Social Security Projections[1)]

Changgil Song
Associate Research Fellow, KIHASA

This study examines the significance and purpose of social security financial projections in the current circumstances where Korea's social security programs, including the public pension schemes, have been evaluated as having very low financial sustainability. While the current projections work well as a means of diagnosing the state of the social security system, they provide little information on which to base the direction in which to take steps for the improvement of the system. Moreover, the method used, one of aggregating the various batches of estimates from different individual agencies involved, makes these projections a source of information scarcely helpful in discussions of such issues involving various social programs as pension reform. To improve the situation, it would be necessary to develop, drawing on the OECD's long-term projection cases, an integrated projection methodology that employs microsimulations and overlapping-generations general equilibrium models.

Introduction

The latest financial projections of the National Pension and other occupational pension schemes have cast doubt on the sustainability of the public pension system. Public pensions are already beset by financial imbalances due to severe birth rate declines, population aging, and their payment structure where pensioners receive substantially more in benefits than they have paid in contributions. The civil servants' pension and the military pension, their funds already

1) This article is a recast of a part of *A Study on Improving Methodology for Social Security Financial Projection* (2022), authored by Changgil Song et al.

depleted, have been running growing deficits despite the financial backing they have been receiving from the government. The National Pension and the private school teachers' pension are on track to see their reserves depleted in 2055 and 2049, respectively.

The National Health Insurance and various social welfare programs implemented in the form of social assistance, having grown in expenditures as over time their target groups have expanded, face concerns over their financial sustainability. According to the Long-Term Financial Outlook for the National Health Insurance 2020~2060 of the Ministry of Economy and Finance, if its contribution rates remain capped at 8 percent and the level of government subsidy is maintained at the current level of 14 percent of the amount of anticipated contribution revenue, the National Health Insurance will see its surpluses accruing now turn in 2029 into deficits, which by 2060 will reach an estimated KRW 5,765 trillion.

The basic pension is also a fiscal concern, as, amid the ongoing discussions about increasing its monthly benefit to KRW 400 thousand, it is expected that, with the rapid aging of the population, the number of its recipients will increase from 6 million in 2021 to 13 million in 2060. Against the background of rising social concerns regarding social security programs, including public pension schemes, and growing social demands for their improvement, this study revisits the current state of social security financial projections and explores options for improvement.

Social security's financial outlook

Paragraph 4 of Article 5 of the Framework Act on Social Security states: "In order to operate a social security system in a secure manner, the State shall biannually calculate estimated financial needs for medium- to long-term social security projects and publicly announce them." Article 2 of the Enforcement Degree of the same Act provides practical guidance. Accordingly, the state and local governments are responsible for conducting, following detailed guidelines, social security financial projections and drawing up improvement plans.

The foregoing law requires the Social Security Committee to conduct financial projections every other year for social security programs in nine policy areas, which are grouped into "social insurance" and "general revenue-financed" and which can be compared across OECD countries. The nine policy areas are as shown in Table 1. The assumptions employed in the financial projections are demographic and macroeconomic variables. The population variables used in the 4th financial projection are drawn from Statistics Korea's 2019 Population Projection for Korea. The macroeconomic variables used are those employed in the 4th projection of the Long-Term Fiscal Projections Committee. The projection method is a component-based model that considers social insurance programs and general-revenue programs separately and then combines them as an aggregate. The financial projections of social insurance programs are conducted by the agency responsible for the long-term financial projection of each program. In the domain of government-

financed programs, projections were undertaken on various policy categories, including those involving long-term benefits such as childcare, disability, and care for the elderly on the one hand and "other social policy areas" on the other. Financial projections on those long-term benefits are based on the cohort factor method. The projections for expenditures on other benefits assume a constant expenditure growth rate, and the basic pension projections are as conducted by the Fourth Long-Term Fiscal Outlook Council. These projections cover a period of 40 to 50 years in the future, as is the case with public pension schemes and national fiscal projections.

[Table 1] OECD social expenditures (SOCX) on nine policy areas

Policy areas	Key components
1. Old age	▸ Expenditures on old-age cash benefits for people retired from the labor market (including early retirement pensions) ▸ Expenditures on day care and rehabilitation services Example) National Pension (old-age pension, lump-sum payments), Civil Servants' Pension, Private School Teachers' Pension, Postal Pension (retirement benefits, retirement allowances, etc.), Military Pension (retirement pension, lump-sum retirement payment, retirement allowances), Basic Pension, elder care services, support for elderly associations, establishment of funeral facilities, elder care organizations, reduced transport fares and telecommunications fees for vulnerable people working with social enterprises, etc.
2. Survivors	▸ Benefits for people whose spouses or supporter have died Example) National Pension (survivor pension, lump-sum death payment), Civil Servants' Pension, Private School Teachers' Pension, Postal Pension (survivor pension, survivor lump-sum pension, death benefit), Military Pension (survivor pension, survivor lump sum, survivor benefit, other benefits, death benefit), veterans' benefits (survivor compensation, allowances), Occupational Accident Insurance (survivor benefits, funeral expenses), etc.
3. Incapacity-related benefits	▸ Benefits paid to people who are unable to fully or partially participate in the labor market due to a disability Example) National Pension (disability pension, lump sum disability payment), public and private pension schemes (disability compensation), Military Pension (disability pension), worker's compensation (leave, disability, care, vocational rehabilitation, compensation pension, pneumoconiosis compensation), disability pension, disability allowances, enhancement of welfare facilities for the disabled, Support for low-income people with disabilities, support for disability organizations, support for medical expenses for people with disabilities, selective welfare for people with disabilities, support for expanding social participation of women with disabilities, support for the education of children with disabilities, veterans' benefits (compensation and allowances paid to former military personnel or policemen retired due to injury on duty), reduced transport fares and telecommunications fees for vulnerable people working with social enterprises, etc.
4. Health	▸ Public health expenditures on and medical care and preventive care Example) National Health Insurance, Long-Term Care Insurance for the elderly, Medical Aid benefits, worker's compensation insurance (nursing benefits), collective health care expenditure, public health care expansion (support for medical expenses and funeral expenses for atomic bomb victims, strengthening of the public aspect of the regional center hospital system), etc.
5. Family	▸ Expenditures on family payments to support childcare and other dependents Example) Support for infants and young children, including maternity care, childcare, subsidized programs, and babysitting; support for educational welfare for vulnerable populations and rural areas; support for children and youth, including adoption, missing persons, after-school activities, sexual protection, and violence and runaway prevention; support for families, including single-parent, multicultural, and low-income families; and support for women, including violence against women.

6. Active Labor Market Programs	▸ Expenditures provided for the purpose of activities that improve the recipient's employment situation or increase his or her employability Example) Employment stability and vocational skills development projects, direct job placement, vocational training, employment services, employment subsidy, start-up support, etc.
7. Unemployment	▸ Income compensation paid to the unemployed; other benefits such as severance pay Example) Employment insurance (unemployment benefits)
8. Housing	▸ Housing benefits from the Basic Social Security System
9. Other social policy areas	▸ Expenditures provided on a temporary basis to people who are excluded from the social security programs for various reasons or whose current benefits do not meet their needs Example) Basic Living Security, emergency welfare, self-sufficiency assistance, homeless welfare assistance, EITC work incentive, military and postal pensions (disaster assistance), support for Koreans living in Sakhalin, rental housing assistance, improvement of old public rental housing, support for North Korean defectors, support for private property damage restoration, cultural vouchers, etc.

Source: Social Security Committee (2020)

The results of the Fourth Financial Projection suggest that while over the years ahead it will become increasingly difficult to finance social security as the country sees its overall competitiveness decline and its economic growth stagnate due to the impact of demographic changes, it is necessary to proactively consider increasing the share of the general revenue budget allocated to social insurance expenditures, which are set to grow rapidly over time.

Korea's public social expenditure as a share of GDP is expected to increase due to the effect of population aging, from 12.5% in 2020 to 20.1% in 2040, which is about the OECD average in 2018, to 27.6% in 2060. As a share of GDP, social expenditure on eight social insurance schemes is projected to increase from 8.0 percent in 2020 to 22.8 percent in 2060. It is expected that social insurance programs will account for the largest share of social expenditure in 2060, followed by public assistance, of which the basic pension is a part.

[Table 2] Public social expenditures as % of GDP

Policy areas		2020	2030	2040	2050	2060
Social Security Financial Projection	1st	12.9%	17.9%	22.6%	26.6%	29.0%
	2nd	12.6%	16.3%	20.1%	23.7%	25.8%
	3rd	12.1%	16.3%	20.8%	25.3%	28.6%
	A. 4th	12.5%	15.8%	20.1%	24.5%	27.6%
B. EU28 average[1)]		24.8%	25.7%	26.8%	26.9%	26.8%
Difference (A-B)		-12.3%p	-9.9%p	-6.7%p	-2.4%p	+0.8%p

Note: 1) EC's 2017 expenditure outlook on pension and health for the period 2016~2070.

Source: 1) EC. (2017). The 2018 Ageing Report: Underlying Assumptions and Projection Methodologies.

2) Results from 1st to 4th projections

[Table 3] Social expenditures as % of GDP, social insurance programs and general-revenue programs

Year		2020	2030	2040	2050	2060
1st projection	General revenues	3.80%	4.60%	5.10%	5.40%	5.70%
	Social insurance	9.10%	13.30%	17.50%	21.20%	23.20%
2nd projection	General revenues	4.30%	4.50%	4.40%	4.20%	4.10%
	Social insurance	8.30%	11.80%	15.70%	19.50%	21.60%
3rd projection	General revenues	3.90%	4.50%	4.70%	4.60%	4.50%
	Social insurance	7.70%	11.40%	15.80%	20.30%	23.80%
4th projection	General revenues	4.50%	4.80%	5.10%	5.10%	4.80%
	Social insurance	8.00%	11.00%	14.90%	19.40%	22.80%

Note: General-revenue programs include social assistance programs (basic living security benefits, Medical Aid benefits, self-sufficiency assistance, disability pension benefits, EITC work incentives, etc.) and social security programs (Sakhalin Korean support, veterans' benefits, support for North Korean defectors, cost-of-living support for "comfort women"), and social services (social services for older persons, children, disabled people, and women); social insurance programs include the four public pension schemes, National Health Insurance, Long-Term Care Insurance, Employment Insurance, and Occupational Accident Insurance.

Source: Results from 1st to 4th projections

Issues in social security projections and strategies for improvement

The current financial projections are regarded as effective in diagnosing and monitoring the current financial state of the social security system. From the first round of projections to the fourth one, which was conducted in 2020, the estimates have remained largely consistent. Many have understood from the projection results that the social security system as it stands is not sufficiently sustainable. In other words, the projections are doing a good job as far as monitoring is concerned as to the current state of the system, or for predicting the system's future trends based on its current state.

However, given the current state of the system, financial projections should not only be used for monitoring purposes but also serve as a source of information with which to take steps in discussing and shaping the directions for the improvement of the system. In fact, the Detailed Guidelines for Social Security Projections specify that the purpose of financial projections is not only to diagnose the current situation but also to provide basic information on additional financial resources required for improving the social security system and suggest, from a long-term perspective, directions for improvement. The current financial projections, however, provide little such information. Consequently, they have hardly been of use in the discussion of to what extent and how the social insurance schemes should be financed after the depletion of their funds. Nor are they useful as a point of reference when the discussion is as encompassing in scope as, for example, the ongoing one about the prospect of systemic reform concerning incorporating public pension schemes, resetting their roles in relationship with the basic pension, and reshaping the role of retirement pension plans. Moreover, the projections provide no guiding information as to what changes should be made first to which of the public pension schemes and the National Health Insurance, both of which are considered financially at risk.

Any discussion of topics with a broad scope requires a comprehensive analysis that encompasses the whole of the social security system, as most social security programs share common financial challenges stemming from aging populations and declining birthrates. For example, discussions on raising the National Pension contribution rate must go beyond the realm of the National Pension and take account of other social insurance contributions and tax burdens. When evaluating the adequacy of pension benefits, it is important to consider not only public pension schemes but also other components of the old-age income protection system, such as basic income, retirement pension, and even social assistance. In addition, pension income should be taken account of when discussing health insurance financing as well as when discussing public pension schemes, as it is subject to National Health Insurance contributions.

The current social security financial projections are based on a method where financial projections for various social security programs, having been conducted by the organizations concerned, are aggregated. Each organization employs its own financial projection methods specific to each social security program, which are not designed to align with one another.

The public pension schemes involve extensively long-term financial projections, as they, aimed at ensuring old-age income protection, have to do with long-term cash flows, which consist of collecting part of workers' working-life income in contributions and paying pensions to beneficiaries until their death. In contrast, the National Health Insurance is a short-term financing system where health insurance benefits for a particular year are funded by contributions collected in the same year. Additionally, public assistance programs, such as the basic pension, are funded by general revenues. These differences suggest that the standards and indicators by which to determine the sustainability of the various social security programs must necessarily be different, as are the objectives, assumptions, and methods that constitute their financial projections. That is why the method of financial projections for the social security system has remained focused on gathering and incorporating projections for the various components of the system, relying mostly on the data accessibility, know-how, and public confidence of the projecting organizations. While the results of financial projections, obtained by simply adding up estimates from different projection methods employed for various programs, may monitor the overall financial state of the system, they offer limited guidance in determining the necessary steps for system improvements. Consider a scenario involving an increase in the income replacement rate. An increased income replacement rate impacts the revenues of the National Health Insurance. Therefore, it is necessary to examine the relationship between the pension programs and the National Health Insurance, specifically regarding an increase in health insurance contribution revenues. However, under the current projection method, changes assumed in some of the eight social insurance programs do not result in corresponding changes in other related programs. Even if it were technically possible to establish the desired scenario, there would be administrative difficulties in consolidating the results of re-projections conducted by the relevant organizations.

To effectively improve the situation, an integrated method is needed that can make simultaneous projections for multiple social security schemes, despite their disparate characteristics, in comprehensive scenarios.[2] Such an integrated projection method should by necessity address key social security schemes, but, apart from financial sustainability, there are many aspects of those schemes that require attention. Of particular importance is "fairness", an indicator by which to assess the government's ability to plan and administer expenditures in a fair way to meeting the financial obligations it has to the current generation without shifting the cost to future generations. Key assumptions are in general made based on their respective legal frameworks and the continuation of current policies. But as it may be difficult to keep some of these policies in place for decades to come, it is necessary to consider the long-term connections between assumption variables. For example, in a scenario where the number of participants in each social insurance scheme is projected by its respective organization, it is important to take account of the relationship between the projected labor force and each of the social insurance

2) The integrated projection methodology described here encompasses various requirements derived from "good practices and leading practices" as outlined in Trever Shaw's 2017 paper "Long-Term Fiscal Sustainability Analysis: Benchmarks for Independent Fiscal Institutions."

schemes, as simply adding up all the projected numbers would result in an irrational assumption where the resultant number might outsize the economically active population or even the whole population.

The factors that need to be considered when analyzing the aggregate projections include periodicity, transparency, and sensitivity, and also the impact of policy changes on distributional characteristics and the feedback effects between macro-level and fiscal variables. It is especially important to conduct an analysis of distributional impacts so as to capture the effect a given alternative policy may have on different socioeconomic groups and assess how equitable the policy may be across these groups, with a view to enhancing its rationale and acceptability. In addition, analysis of the feedback effects that fiscal variables have on macroeconomic variables can help capture how a given alternative policy could affect the economic behavior of households, making up for the weaknesses of baseline projections, which, devoid of feedbacks, only demonstrate simplified relationships between fiscal policies and economic outcomes.

Concluding remarks

Financial projections should be able not only to assess the sustainability of current policies but also to provide information for making improvements on them. The results of financial projections of late point to a need for rigorous reform of the social security system. The four public pension schemes are beset by heavy fiscal imbalances. Most of the other public programs, including the National Health Insurance and social assistance-type schemes, are forecast to see a rising number of beneficiaries due to, among other things, population aging.

The current method of financial projections, which involves aggregating the estimates of each social security program from their respective organizations, does not afford enough information to enable discussions on how to bring comprehensive improvements to the social security system. For example, the ongoing discussion of pension reform is a difficult issue that not only concerns more than one or two social security programs but also requires improvement strategies drawn from all-encompassing analyses of the social security system as a whole.

This study suggests the need to develop an integrated financial projection method capable not only of making projections and analyzing key social security schemes but also of capturing the fairness, along with the sustainability, of the social security system. The results from this integrated model can be used in discussing and planning scenarios to ensure the sustainability of the desired policy directions and to prevent future generations from shouldering an excessive financial burden. Key assumptions and analyses should take account of long-term equilibria and relationships identified in economic models. It is also important to develop a methodology capable of assessing the distributional effects of a given policy action on disparate sociodemographic groups, whose findings can be used to work toward enhancing the rationale and acceptability

of the desired policy change. The impact that a given alternative policy can have on households and private-sector firms should be identified so as to set its direction more precisely than existing baseline projections allow.

Key methodologies in which the aforementioned factors can be incorporated include overlapping-generations general equilibrium modeling and microsimulation modeling. It should be noted, however, that these techniques are more suitable for analysis purposes than for making projections. Therefore, the current financial projection methods should be maintained for now, supplemented with these modeling techniques for analysis purposes. In the medium to long term, the current financial projection methods should evolve into a single model that incorporates all these factors.