Changing Working Conditions for Korean Baby Boomers and Tasks of the Old-Age Income Security System

People
with People
in Mind

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I Introduction

1. Research Background

South Korea offers a multi-tier old-age income security system, in conformity with the recommendations of international organizations, consisting of the Basic Pension (BP), National Pension (NP), and retirement pensions. The system is not flawless, however. It may be multi-tier, but each tier is still in an evolving state, finding its way through trial and error. The NP, for instance, is still burdened with a trifecta of major issues: existence of numerous blind spots (in part due to it having a larger scope and reach than its counterparts in other countries), low income replacement rates of the benefits it offers (due to the program's relatively brief history), and doubt regarding its fiscal sustainability (as it imposes relatively little burden on participants and its payouts are relatively high). The generally marginal amounts of monthly NP benefits are nonetheless still the main subject of criticism. As of the end of 2017, retirees received, on average, KRW 390,000 per month. Although the program promises a theoretical income replacement rate of 40 percent for 40 years of participation, most participants end up participating in the scheme for only 27 years before they reach the eligible (retirement) age. The Fourth National Pension

Long-Term Fiscal Projections forecast that new beneficiaries to receive pension benefits by 2088 will have been contributing to the scheme for an average of 26.8 years, with the effective income replacement rate recording a mere 24.3 percent (NP Fiscal Projections Committee, 2018). But it should be noted that these figures are averages. The actual amounts of benefits pensioners receive vary widely depending on when they joined the NP scheme and what types of pensions they subscribed to (e.g., those who were lucky enough to subscribe to the Special Old Age Pension in the early years of the NP receive far more in benefits than those who came later and missed out on it). The averages, furthermore, gloss over the specific and individual differences that reflect the dualized labor market and the blind spots of public pension schemes' reach.

[Figure 1-1] Old-Age Income Security System in Korea

Tier 3	Private/housing/farmland pension schemes			2.57 million contributors
Tier 2	Retirement benefits/pensions (DB, DC)	IRPs for individuals		8.12 million contributors
Tier 1	NP		Special/ occupational pensions	21.45 million contributors 4.61 million recipients
	BP			5.027 million recipients
Tier 0	NBLSP			1.63 million recipients
Targets	Workers	Self-employed	Other	Civil servants, etc.	Recipients and contributors

Source: MOHW (2018). Fourth National Pension Master Plan (draft).

Despite these difficulties, there is also growing demand for raising the income replacement rates of the NP in light of the relative brevity of the average period for which eligible participants contribute to the scheme. The NP as it is today can impose significant burdens on future generations while also exacerbating income inequality between seniors. Limiting the discussion of appropriate, NP-based, old-age income to the average period of contribution, 25.7 years, over which those born in 1970 would contribute, runs the risk of leading pension reforms to proceed while neglecting the sizable variations in the actual periods of contribution among participants.[1] In addition, the high elderly poverty rate in Korea, despite the BP that was introduced years ago to fight it, should also be addressed, along with the BP's failure to reduce elderly poverty in a meaningful manner.[2]

In the meantime, retirement pensions have yet to establish themselves as an integral part of Korea's old-age income se-

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1) Much of the policy discourse on the appropriate amounts of NP benefits is based on the average period of contribution of all participants. However, estimating the average periods of contribution of different income classes, using the NP database, reveals that this approach contradicts reality. Among participants born in 1970, for example, the difference in the average period of contribution between the bottom 10 percent and top 10 percent of income earners amounts to as much as 14.5 years. High income earners, in other words, are expected to contribute to the scheme for 33.9 years on average, 75 percent longer than low income earners (projected to contribute for 19.4 years).

2) The OECD has been critical of the deficiencies of the current BP in its *Economic Survey* reports on Korea, particularly for the pension scheme's policy of providing the same amount of benefits to both seniors living under the poverty line and the significant number of non-poor seniors.

curity system due to small businesses' reluctance to adopt them and the limited scope of employees for whom such plans are guaranteed required by law. Statistics Korea's data from late 2016 show that, whereas 88.1 percent of businesses with 300 or more full-time employees had adopted retirement pension plans, only 23.5 percent of small businesses with fewer than 30 employees had done so. Moreover, only employees who have worked for at least one year in the given workplace, for 15 hours or more per week, are guaranteed retirement pension plans by law. This excludes a considerable number of part-time workers who have worked in the same place for over a year, but who have not worked for 15 hours or longer per week. Koreans also prefer to collect their retirement benefits in lump-sum payments rather than monthly pension benefits. According to the Financial Supervisory Service (FSS)'s data from late 2017, 98.1 percent of retirement benefit account holders aged 55 or older collected their retirement benefits in lump-sum payments, effectively depriving retirement pension plans of their ability to serve as sources of secure income for retirees.

Much of the assets held by the elderly are concentrated in housing and farmland. In recognition of this Korean particularity, policymakers introduced the Housing and Farmland Pension Schemes to enable elderly people to plan for old age using the assets at their disposal, but these schemes remain

marginal. As of July 2018, only 56,0000 or so Koreans were participating in the Housing Pension. Only 2.2 percent of eligible owners of farmland also participate in the Farmland Pension, with nearly 30 percent of existing participants canceling their policies each year due to the objections of their children.[3]

Leaving the current system unreformed will likely exacerbate the income inequality, the growth of which is adversely affecting much of the Korean workforce today, that seniors would face in retirement. Middle-aged workers who have left their

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[3] In its Report on the Characteristics of Housing Pension Targets, the Housing Finance Institute (HFI), part of the Korea Housing Finance Corporation, pointed out the need for an eligibility threshold for participants that takes into account the elderly poverty problem in Korea. The relative poverty line based on the 2019 Household Finance and Welfare Survey is KRW 13.22 million in income per year (disposable household income levelized by the number of household members), while the elderly poverty rate in Korea, at 40.1 percent, stands well above the OECD average of 14.8 percent. Among Koreans eligible to participate in the standard Housing Pension, "the poor" are those aged 68, owning homes valued at KRW 250 million each, and with disposable annual income of KRW 8.35 million each on average. When these people are actively enlisted to participate in the Housing Pension, they will be able to receive KRW 5.05 million each in annual disposable income, raising their annual disposable income by 60 percent to KRW 13.49 million, which pushes them above the relative poverty line of KRW 13.22 million based on the OECD standard.
The National Pension Research Institute and Korea Institute for Health and Social Affairs (KIHASA) present similar estimates as well. The former's *Pension Issue and Trend Analysis*, for example, suggests that pensions based on elderly households' assets would help reduce the poverty rate (taking both income and assets into account) to 29.3 percent (as of 2016). In other words, the elderly poverty rate based on income alone would be 47 percent, but could drop significantly to 29 percent when their assets are also considered. KIHASA's study, "Multidimensional Elderly Poverty Index" (Yun et al., 2017), also argues that only 21 percent of Korean seniors suffer from multidimensional deprivations when income and assets are both taken into account.

primary or main careers often work in jobs with poor working conditions and are denied the opportunity to continue participating in the NP (OECD, 2018a). There are also a significant number of middle-aged workers who have participated in the NP for too short a time or who have been denied access thereto all their working lives. Raising the income replacement rates of NP benefits while failing to address these problems would only serve to widen the income and wealth gaps between beneficiaries of different income classes and occupations.

2. Research Purpose

The current reality of middle-aged workers and retirees in Korea warrants in-depth investigation into the possibility of changing the working conditions of baby boomers with a view toward establishing a more equal old-age income security system. It is time to revisit the overall system and the outdated assumptions still underlying it, such as the high economic growth rates, high birth rates, short lifespans, and secure employment. Korea's old-age income security system, designed decades ago on the assumption of the full employment of regular workers, is incapable of meeting the challenges of the new social reality in the country today. Among Koreans aged 55 or older, the income of households with irregular workers is falling drastically compared to the income of households with reg-

ular workers. Leaving this critical problem unaddressed would allow the elderly poverty rates to continue rising in the future even if the amounts of basic pension benefits were to be radically increased. The current labor market structure and social security system in Korea, in other words, make it nearly impossible to stem the rise of the Korean elderly poverty rate, which is already almost four times higher than the OECD average. The current situation calls for a new old-age income security system that is more inclusive of the poor and groups at risk of becoming poor, including middle-aged workers.

We analyze the labor market conditions of Korean middle-aged workers from various perspectives, with a particular emphasis on empirical verification using available data and microsimulations. This policy report summarizes some of the major findings and policy implications of our analysis.

Ⅱ

Findings of Analysis

1. Working Conditions and Transition Patterns
   of Korean Baby Boomers
2. Income−Redistributing Function of NP Benefits:
   A Comparison across Income Classes

II Findings of Analysis

1. Working Conditions and Transition Patterns of Korean Baby Boomers

(a) Overview

We used the Korean Labor and Income Panel Survey (KLIPS) data to analyze the labor transition, household income, and public pension participation of Korean baby boomer workers.[4] The main purpose of our analysis was to evaluate the circumstances of baby boomers occupy in the Korean labor market, and their experiences in income and labor market status changes as they reach retirement ages. We were particularly interested in analyzing whether there are differences in their experiences by income levels and employment status, and how they differ. We believe this analysis can help establish a proper rationale for pension-related policy changes, which play a vital role in old-age income.

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4) The reason for using KLIPS data for our analysis is because it requires a long panel with their work history information before reaching age close to retirement. While we considered using the Korean Longitudinal Study on Aging (KLoSA) and Household Finance Panel data, these two surveys come with shorter panels and fewer variables as well as smaller baby boomer-aged samples than the KLIPS data. The KLIPS data also offer the added advantage of comparing Korean baby boomers' working conditions to the working conditions of other generations.

Our analysis specifically draws upon data from KLIPS Waves 4 through 20 and is divided into three parts. First, we examine statistics on the working conditions of baby boomers (whether or not they work, their employment status, wages, household income, job conditions, etc.). Next, we analyze the transition in baby boomers' status in the labor market using Markov matrices. Finally, we evaluate the conditional correlation between the transition on the labor market and the baby boomers' household income and eligibility for public pension schemes.

(b) Labor Transition for Baby Boomers in Korea

Before analyzing transition in the employment status of different age groups in the Korean labor market, we first check how employment status is distributed by age. Table 2-1 shows the distribution of different types of employment status by age. From hereon we refer to those with permanent employment status as "regular workers" and those on non-permanent employment contract as "irregular workers." The percentage of regular workers continues to shrink as Koreans enter their 40s and grow older into their 50s and 60s. The percentage of irregular workers remains more or less unchanged. However, the percentage of irregular workers among men continues to grow steadily in their 40s and afterward, showing the highest rate of increase as men transition from their 40s to 50s.

Tables 2-2 and 2-3 are Markov matrices showing transitions in the employment status and economic activity of Korean men in their 50s and aged 60 to 64, respectively. The older the Korean men, the slimmer the probability of them retaining their regular worker status. Men in their 50s (Table 2-2) have a smaller chance (89.8 percent) of transitioning from a regular job to another regular job than those in their 40s. They also have a higher probability of transitioning from a regular job to an irregular one than men in their 40s (3.3 percent), while their probability of transitioning to self-employment is lower (1.9 percent). Their probability of transitioning to no-income status is higher (five percent) as well. Among Korean men in their 60s (Table 2-3), only few (13.4 percent) are regular workers. Among these few regular male workers in their 60s, the probability of transitioning to other regular jobs is 74.5 percent; to irregular jobs, eight percent; to self-employment, 2.2 percent; and to no-income status, 15.2 percent.

〈Table 2-1〉 Employment Status by Age

(Unit: percentage)

Employment status	40s			50s			60 to 64		
	Overall	Men	Women	Overall	Men	Women	Overall	Men	Women
Regular worker	36.00	49.04	21.76	23.05	33.00	12.00	8.78	13.43	3.65
Irregular worker	16.00	13.51	17.66	16.79	17.00	17.00	15.68	19.71	11.23
Self-employed	20.00	29.38	10.87	23.21	35.00	11.00	21.22	33.14	8.07
Unpaid family business worker	5.22	1.05	9.60	7.29	1.49	13.3	7.73	1.51	14.59
Unemployed	1.00	1.56	1.35	1.21	2.00	1.00	1.06	1.49	0.60
Economically inactive	21.7	5.00	38.76	28.46	11.58	45.99	45.53	30.73	61.86

Source: Raw data of KLIPS Waves 4 through 20.

⟨Table 2-2⟩ Current Employment Status and Probabilities of Transition for
Male Workers Aged 50 to 59[5]

(Unit: percentage)

Future / Present	Regular worker	Irregular worker	Self-employed	Unpaid family business worker	Unemployed	Economically inactive	Frequency (t0)	Weight (t0)
Regular worker	89.79	3.33	1.86	0.09	1.15	3.78	4,360	0.34
Irregular worker	4.43	86.58	2.14	0.1	1.52	5.24	2,101	0.17
Self-employed	1.08	1.43	93.57	0.34	0.72	2.87	4,463	0.35
Unpaid family business worker	1.56	1.56	10.94	81.77	0	4.17	192	0.02
Unemployed	16.83	23.08	6.25	0.48	15.38	37.98	208	0.02
Economically inactive	4.48	9.88	6.08	0.76	3.5	75.3	1,316	0.10

Source: Raw data of KLIPS Waves 4 through 20.

As Korean male workers transition from their 40s to their 50s, the probability of transitioning from an irregular job to another falls abruptly to 4.4 percent, but the probability of retaining regular worker status is higher at 86.6 percent. The probability of transitioning to self-employment is also lower at 2.1 percent, but that of transitioning to no-income status is higher at 6.9 percent. Among men in their 60s, there are more irregular workers than regular workers, while the vast majority of regular workers (81.5 percent) transition to irregular worker status. Only few—2.3 percent—of these irregular workers manage to transition to regular worker status, slightly more so than

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5) This table estimates the probability of transition in economic activity and employment status among Korean men aged 50 to 59, from time t to time t+1. In other words, this table shows the probabilities of conditional transition, assuming s is one of the diverse types of status an individual may have (regular worker, irregular worker, self-employed, unpaid family business worker, unemployed, and economically inactive).

those transitioning to self-employment (1.9 percent). The probability of transitioning from an irregular job to no-income status is 14.3 percent, slightly lower than the same probability for regular workers in their 60s. Contrary to the popular belief that most male workers retire when they reach their 60s, the majority of workers in this age group remain in the labor market[6]

〈Table 2-3〉 Current Employment Status and Probabilities of Transition for Male Workers Aged 60 to 64

(Unit: percentage)

Present \ Future	Regular worker	Irregular worker	Self-employed	Unpaid family business worker	Unemployed	Economically inactive	Frequency (t0)	Weight (t0)
Regular worker	74.52	8.01	2.24	0.32	1.76	13.14	624	0.13
Irregular worker	2.33	81.47	1.86	0.35	2.21	11.77	858	0.20
Self-employed	0.47	1.75	92.34	0.40	0.20	4.84	1,489	0.34
Unpaid family business worker	0.00	5.97	5.97	85.07	0.00	2.99	67	0.02
Unemployed	10	32.86	0	0	8.57	48.57	70	0.02
Economically inactive	2.19	6.65	2.19	0.23	2.27	86.46	1,278	0.29

Source: Raw data of KLIPS Waves 4 through 20.

The probability of the self-employed retaining the same status increases to 93.6 percent as men transition from their 40s to their 50s, while the probabilities of transitioning to regular jobs and irregular jobs are 1.1 percent and 1.4 percent, respectively. The probability of transitioning to no-income status is 3.93 percent, lower than the same probability for irregu-

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6) We performed the same analysis for women workers as well. Due to the word limit imposed on policy reports, we discuss the results of our analysis on male workers only in this report.

lar workers in their 50s. Self-employment is by far the most popular form of employment status among men in their 60s. Nearly 92.3 percent of the self-employed in that age group retains the same status, while 5.44 percent transition to no-income status—a probability far smaller than the probabilities of transitioning to other types of employment status. This may be because the self-employed who manage to retain their businesses in their 60s are able to earn steady income without retiring.

The probability of the unemployed transitioning to economically inactive status rises rapidly as male workers age. Specifically, 21.1 percent, 38 percent, and 48.6 percent of unemployed workers in their 40s, 50s, and 60s transition to economically inactive status, respectively. As workers get older, their motive for finding work declines, leading them to abandon the prospects of finding work.

The probability of the economically inactive remaining in the same status also increases as they age. Among male workers in their 40s, 10 percent of the economically inactive transition to regular jobs; 12.5 percent, to irregular jobs; and 9.7 percent, to self-employment. Among those in their 50s, the probabilities are 4.5 percent, 9.9 percent, and 6.1 percent, respectively. As the economically inactive reach their 60s, the probability of transitioning to income-paying labor decreases even further.

(c) Probability of Exclusion from Public Pension Schemes due to Transition in Working Status

We now turn to the probability of Korean male workers in their 50s of being excluded from public pension schemes due to transition in their employment status and household income (Table 2-4). The probability of exclusion for male workers in their 50s who have maintained regular worker status from the previous term until the current one was 71.6 percentage points lower than the probability of exclusion for those whose regular worker status has changed. Those who held regular status in the preceding term, but whose status changed to irregular in the current one, were 40.8 percentage points more likely to be excluded from public pension schemes than those who maintained regular status. Those who transitioned from regular status to self-employment were 18.3 percentage points more likely to be excluded than those who maintained regular status. Workers who have transitioned to unemployed or economically inactive status were 97.9 percent points more likely to be excluded than others who still held income-paying jobs. The estimates ran large because the vast majority of workers (94 percent of the sample) in the regular worker category maintained their regular worker status, and, as a consequence, retained their public pension status. (i.e., there was a positive selection bias in the sample, as only six percent of workers in the same

category were excluded).

Income generally has little influence on eligibility for public pension schemes. However, it emerged as a significant variable in our estimation formula involving the dummy variable for transition from regular status to unemployed/economically inactive status. For every 10-percent increase in income, the probability of exclusion from the pension schemes dropped by 0.22 percentage points. This result was reaffirmed by our logit model. Under a fixed effects model, too, transition in employment status held a significant correlation to the probability of exclusion from public pension schemes. The fixed effects model also showed that income affects the probability of exclusion with statistical significance under all estimation formulae.

⟨Table 2-4⟩ Income, Transition in Working Status, and Probability of Exclusion from Public Pension Schemes for Male Workers in Their 50s (Regular Workers in Preceding Term)

Joint OLS				
Prob. exclusion	Regular worker	Irregular worker	Self-employed	Unemployed/economically inactive
Status transition	-0.716***	0.408***	0.183***	0.979***
	(0.018)	(0.056)	(0.057)	(0.022)
ln (previous year income)	-0.004	0.012	0.003	-0.022**
	(0.010)	(0.014)	(0.015)	(0.009)
N	1,412	1,412	1,412	1,412
R-squared	0.539	0.071	0.042	0.600
Fixed effect				
Prob. Exclusion	Regular worker	Irregular worker	Self-employed	Unemployed/economically inactive
Status transition	-0.701***	0.257***	0.127**	0.971***
	(0.020)	(0.070)	(0.064)	(0.021)
ln (previous year income)	0.058***	0.108***	0.103***	0.026**
	(0.015)	(0.022)	(0.022)	(0.013)
N	1,412	1,412	1,412	1,412
R-squared	0.569	0.067	0.059	0.693
No. of individuals	356	356	356	356

Note: The dependent variable is the probability of exclusion from public pension schemes for workers who participated in those schemes in the previous year. Results omitted from the estimation due to the problem of either complete prediction or multicollinearity are indicated as "NA."

We now turn to the probability of exclusion from public pension schemes for male workers in their 50s who held irregular jobs in the preceding term (Table 2-5). Among these workers, those who transitioned to regular jobs had a probability of exclusion that was 37.5 percentage points lower than the probability for those who have not made the same transition. This difference, however, lost statistical significance under our fixed effects model. Male workers who transitioned to regular worker status in the current term from irregular status in the preceding term appear to have a strong tendency to maintain their participation in public pension schemes. On the other hand, workers who held irregular jobs in the preceding term, but who lost their working status or earned income in the current term, were 62.8 percentage points more likely to be excluded from pension schemes than men who still held income-paying jobs in the current term. This correlation emerged more strongly under the fixed effects model.

〈Table 2-5〉 Income, Transition in Working Status, and Probability of Exclusion from Public Pension Schemes for Male Workers in Their 50s (Irregular Workers in Preceding Term)

Joint OLS				
Prob. exclusion	Regular worker	Irregular worker	Self-employed	Unemployed/economically inactive
Status transition	-0.375***	0.014	0.117	0.628***
	(0.126)	(0.103)	(0.229)	(0.175)
ln (previous year income)	-0.133	-0.159*	-0.160*	-0.130
	(0.081)	(0.083)	(0.083)	(0.080)
N	163	163	163	163
R-squared	0.432	0.391	0.393	0.449
Fixed effect				
Pension cancellation	Regular worker	Irregular worker	Self-employed	Unemployed/economically inactive
Status transition	-0.133	-0.240**	0.102	0.736***
	(0.173)	(0.108)	(0.320)	(0.159)
ln (previous year income)	-0.176**	-0.144*	-0.177**	-0.068
	(0.086)	(0.085)	(0.087)	(0.080)
N	163	163	163	163
R-squared	0.254	0.294	0.249	0.415
No. of individuals	73	73	73	73
Logit model				
Pension cancellation	Regular worker	Irregular worker	Self-employed	Unemployed/economically inactive
Status transition	NA	0.849	-2.066	NA
		(1.128)	(3.119)	
ln (previous year income)	-1.608	-1.758*	-1.823*	-2.013*
	(1.135)	(0.946)	(0.980)	(1.198)
N	103	134	134	111

Note: The dependent variable is the probability of exclusion from public pension schemes for workers who participated in those schemes in the previous year. Results omitted from the estimation due to the problem of either complete prediction or multicollinearity are indicated as "NA."

We also need to examine the probability of exclusion from public pension schemes for male workers in their 50s who were self-employed in the preceding term (Table 2-6). Among these workers, those who transitioned to irregular worker status saw their probability of exclusion rise by 29.9 percentage points, while those who transitioned to unemployed or economically inactive status saw their probability jump by 73.3 percentage points. On the other hand, those who maintained their self-employed status had a probability of exclusion 50.3 per-

centage points less than the probability for others. The same is confirmed by both our logit and fixed effects models.

Every 10-percent increase in the current income of male self-employed workers in their 50s who held self-employed status in the preceding term lowered the probability of their exclusion from the pension schemes by 0.55 to 0.83 percentage points. In other words, with the transition of their working status controlled, self-employed men in their 50s earning high levels of income had less probability of being excluded from public pension schemes. The same is confirmed by both our logit and fixed effects models. We could not obtain significant results on male workers in their 50s who transitioned from unemployed/economically inactive status in the preceding term to working status in the current term because the sample was too small.

〈Table 2-6〉 Income, Transition in Working Status, and Probability of Exclusion from Public Pension Schemes for Male Workers in Their 50s (Self-Employed in Preceding Term)

Joint OLS Prob. exclusion	Regular worker	Irregular worker	Self-employed	Unemployed/economically inactive
Status transition	-0.150	0.299***	-0.503***	0.733***
	(0.158)	(0.096)	(0.053)	(0.069)
ln (previous year income)	-0.083***	-0.077***	-0.055**	-0.061***
	(0.022)	(0.022)	(0.021)	(0.021)
N	898	898	898	898
R-squared	0.069	0.079	0.157	0.177
Fixed effect Prob. Exclusion	Regular worker	Irregular worker	Self-employed	Unemployed/economically inactive
Status transition	0.088	0.648***	-0.659***	0.767***
	(0.216)	(0.138)	(0.074)	(0.098)
ln (previous year income)	-0.078**	-0.074**	-0.055*	-0.057*
	(0.034)	(0.033)	(0.032)	(0.032)
N	898	898	898	898
R-squared	0.032	0.065	0.140	0.117
No. of individuals	246	246	246	246

Note: The dependent variable is the probability of exclusion from public pension schemes for workers who participated in those schemes in the previous year. Results omitted from the estimation due to the problem of either complete prediction or multicollinearity are indicated as "NA."

(d) Summary

Our analysis on the working conditions and working status transitions of baby boomer workers in Korea can be summarized as follows. First, the percentage of regular workers begins to decline steadily as workers enter their 40s and grow older and accelerate starting at age 56, suggesting the influence of the pre-2016 retirement age in Korea, which was 55 years old. The percentage of workers in irregular jobs, on the other hand, remained steadily under 10 percent regardless of workers' age. The percentage of the self-employed increases gradually for workers in their 40s and 50s, before beginning to decrease

gradually for those in their 60s. In other words, regular workers are more abruptly affected by their age in the Korean labor market than workers of any other category. The percentage of the economically inactive continues to decrease gradually until age 45, when it begins to increase, accelerating around age 56, when regular workers are affected by their retirement age. The retirement age of 55 was applied evenly to Korean workers before 2016, causing them to exit the labor market en masse around that age. Workers with irregular jobs, on the other hand, either increase or remain constant in terms of their percentages regardless of the retirement age.

Second, our analysis of the working status of Korean baby boomers by income level and age shows that the percentage of male baby boomers working in regular jobs is significantly lower among low-income households than among high-income households. The higher the income level, the greater the probability of holding regular worker status, and the lower the probability of holding irregular worker status. Compared to workers in the higher income deciles, male baby boomers in the first decile were more evenly distributed among regular workers, irregular workers, self-employed workers, and economically inactive people. In the first income decile, the incomeless (economically inactive, working without pay in family businesses, and unemployed) made up between 20 percent and 40 percent across all age groups, while the percentage of irreg-

ular employment was also the highest in that income group. The working status of baby boomers, in other words, has a major influence on household income in Korea. The self-employed make up more or less the same percentage across all income groups.

Third, although regular and irregular workers alike work about the same number of hours, regular workers benefit far more than irregular ones in terms of retirement benefits. Regular workers also have a greater probability of being protected by the unemployment and workers' compensation insurances, with significant margins. Regular workers among baby boomers, in particular, had the highest probability of maintaining the same regular worker status over the years than of transitioning to another status. The sizable differences in the non-wage benefits available to different types of workers, particularly with respect to retirement benefits, can therefore serve as a major factor behind the persistent income inequality among seniors as well as baby boomers.

We also estimated, using the same KLIPS data, the probabilities of working status transitions for workers in their 50s and 60s. Our estimates show that the chances were the greatest for workers in these age groups to maintain the same working status over two consecutive terms, with regular workers remaining regular workers; irregular ones, irregular ones; and the self-employed, self-employed. As workers age, however, the

probability of them retaining the same status begins to decline (while still exceeding the probability of status change), and the probability of transitioning to no-income status consistently grow. In particular, the probability of regular workers retaining their status is the one that decreases most rapidly as workers age, with the probability of status change growing the most as workers enter their early 60s. Irregular workers, who are subjected to greater precarity than regular workers, are also most likely to maintain their insecure status from their 40s onward into their early 60s.

The Korean labor market has changed, and continues to change, in such a way that the more workers age, the more insecure their status becomes in the labor market, and the lower their earned income becomes. Workers with precarious working status find it more and more difficult to rise above that status over time, while regular workers who have enjoyed stable job conditions face increasing probabilities of losing their earned income in middle age.

In an effort to determine whether these trends would hold true even after the demographic, human capital, and work history factors of workers are controlled, we performed a more detailed quantitative analysis. First, in terms of employment type composition type in the sample, Korean workers in their 40s and 50s have a larger proportion of regular workers and self-employed people compared to other age groups. The de-

scriptive statistics on that sample also reveal that these two groups of workers have a stronger tendency than irregular workers to retain the same working status for a decade or longer. This may be because, for the self-employed, it might have been infeasible to switch to paid worker status. Between regular and irregular workers, on the other hand, the latter enjoy far less security in employment and earn KRW 26 million or so less than the former in total annual household income.

Among men with the same demographic, human capital, and work history factors, the probability of regular workers earning high levels of income transitioning to irregular workers is relatively slim. The probability of these workers retaining the same working status is so high that it remains independent of the effect of income. On the other hand, even among male regular workers with work histories of the same length, the probability of transitioning to irregular workers grows in inverse correlation to their income. The self-employed are the type of worker whose working status transitions are most motivated by income.

The income of the self-employed varies extremely widely. The higher the income level, the lower the probability of transitioning to another working status. Male workers who had no earned income of their own and who had high household income in the previous term also have a strong tendency to retain the same status, likely because their significant household in-

come reduces their motivation to seek jobs. Low household income, on the other hand, tends to compromise employment security of regular male workers and the financial security of the self-employed. The working status transitions of irregular male workers remain comparatively free of any influence from income levels, suggesting that even high levels of household income do not serve to enhance the employment security of these workers.

Finally, we analyzed whether and how the working status transitions of middle-aged male workers in Korea affect their participation in public pension schemes. The probability of exclusion from these schemes grows noticeably for regular male workers who transition to another working status. The converse is true for irregular male workers who transition to regular workers. However, the probability of irregular male workers transitioning to regular workers is itself quite slim. The probability of exclusion from public pension schemes also declines for irregular and self-employed male workers as their income rises. These differing trends in the probabilities of exclusion from public pension schemes suggest that, for male workers with a high level of employment insecurity, the levels of their household income play a decisive role in whether these men maintain their participation in public pension schemes.

2. Income-Redistributing Function of NP Benefits: A Comparison across Income Classes

(a) Overview and Methodology

By constructing a statistical cost and benefit model using the administrative data of insured and beneficiaries held by the Korean National Pension Service, the income redistribution function of the current system was assessed, and the effects of fiscal stabilization policies such as raising insurance premiums and/or the pensionable age were measured in a micro-simulation model on income redistribution by income class and birth year.

A transitional state model that can reflect changes in the NP system by individual and the time schedule of previous two reforms was selected as the analysis model. Specifically, based on the lifetime approach of Fullerton and Rogers (1993) using the fixed effect regression model, a statistical micro-simulation model was built, and through this, implications for the appropriate cost and benefit levels, which are urgent policy tasks for the NPS system, and the financial stabilization issue derived.

In the analysis process, a model was built around the old-age pension, which is pivotal in the national pension system. Security benefits such as survivors' pension and disability pension were assumed to be actuarially fair with old-age pension. In particular,

since this is the result of using actual data on national pension subscribers and recipients, the analysis contents are very realistic. In addition, even when seeking a direction for reorganization of the pension system, it has the advantage of enabling detailed simulations of the effect of each alternative on the cost and benefit of the insured by birth year and income class.

(b) Findings

From our statistical models on the regularized income and number of contributing years of participants by age, the respective estimates, $\hat{z}_{i,g}$ and $\hat{n}_{i,g}$, for participants aged 18 to 59, are determined according to the equations shown below. The right-side intercepts, $\hat{\alpha}_i$ and $\hat{\gamma}_i$, in the two equations are estimated simultaneously alongside the constant (C) and represent the sums of the fixed effects on individuals stored in the RAM.

$$\widehat{z_{i,g}} = \exp\left(\hat{a}_i + \hat{a}_1 g_{i,t} + \hat{a}_2 g_{i,t}^2 + \hat{a}_3 g_{i,t}^3 + \hat{\beta}_1 g_{i,t} d_i + \hat{\beta}_2 g_{i,t}^2 d_i\right)$$

$$\widehat{n_{i,g}} = \frac{\exp\left(\hat{\gamma}_i + \hat{\gamma}_1 g_{i,t} + \hat{\gamma}_2 g_{i,t}^2 + \hat{\gamma}_3 g_{i,t}^3 + \hat{\delta}_1 g_{i,t} d_i + \hat{\delta}_2 g_{i,t}^2 d_i\right)}{1 + \exp\left(\hat{\gamma}_i + \hat{\gamma}_1 g_{i,t} + \hat{\gamma}_2 g_{i,t}^2 + \hat{\gamma}_3 g_{i,t}^3 + \hat{\delta}_1 g_{i,t} d_i + \hat{\delta}_2 g_{i,t}^2 d_i\right)}$$

Taking Fullerton and Rogers (1993)'s lifetime approach, we divide participants into different income classes after regularizing their average monthly income and the so-called B-value

(standing for the income-corresponding portion of the NP benefits) throughout the period of their participation in the pension scheme. The regularized B-values for individuals can be compared across different age groups. In this case, however, we ranked them in ascending order for participants born in each year to establish an income hierarchy.

$$\hat{b}_i \equiv \frac{\sum_{g=18}^{59} \hat{n}_{i,g} \, \hat{z}_{i,g}}{\sum_{g=18}^{59} \hat{n}_{i,g}}$$

We need also to discuss the averages of the regularized B-value, i.e., b_i, and the n_i cells (representing the number of contributing years) for the participants in our sample for microsimulations by their year of birth and income level. Regularized income for early participants of the NP born before 1944 differs significantly from that of later-born participants. The median and average income levels of the later generations of participants follow a typical pattern. The number of contributing years increases monotonically for the years of birth mainly because the majority of the participants who joined the NP scheme in 1988, when it was first introduced, had already been actively working. Furthermore, the number of contributing years is greater among high-income earners than among low-income earners.

$$\hat{n}_i = \sum_{g=18}^{59} \hat{n}_{i,g}$$

〈Table 3-1〉 Regularized B-Values by Year of Birth and Income Level (IL)

(Unit: multiples)

	IL 1 0~10%	IL 2 10~20%	IL 3 20~30%	IL 4 30~40%	IL 5 40~50%	IL6 50~60%	IL 7 60~70%	IL 8 70~80%	IL 9 80~90%	IL 10 90~100%	Average
1935	0.47	0.56	0.70	0.85	0.89	1.06	1.27	1.49	2.01	2.89	1.22
1940	0.50	0.70	0.80	0.95	1.20	1.44	1.72	2.06	2.26	2.76	1.43
1945	0.46	0.63	0.73	0.88	1.07	1.17	1.35	1.70	2.14	2.67	1.27
1950	0.32	0.44	0.58	0.73	0.89	1.10	1.31	1.55	1.88	2.42	1.12
1955	0.36	0.49	0.57	0.65	0.73	0.86	1.07	1.35	1.73	2.15	1.00
1960	0.39	0.51	0.59	0.68	0.80	0.96	1.17	1.42	1.69	2.02	1.02
1965	0.41	0.54	0.62	0.72	0.83	0.97	1.16	1.38	1.63	1.91	1.02
1970	0.43	0.55	0.64	0.73	0.84	0.97	1.12	1.32	1.57	1.86	1.00
1975	0.46	0.61	0.70	0.78	0.88	0.99	1.11	1.27	1.51	1.88	1.02

〈Table 3-2〉 Numbers of Contributing Years by Year of Birth and Income Level (IL)

	IL 1 0~10 %	IL 2 10~20%	IL 3 20~30%	IL 4 30~40%	IL 5 40~50%	IL6 50~60%	IL 7 60~70%	IL 8 70~80%	IL 9 80~90%	IL 10 90~100%	Average
1935	6.1	6.2	6.0	6.0	5.9	6.3	6.3	6.3	6.5	6.5	6.2
1940	7.7	9.4	9.7	9.5	10.5	10.9	10.0	10.5	9.8	10.4	9.8
1945	11.9	13.6	12.1	15.5	14.0	15.3	13.9	13.6	14.9	14.9	14.0
1950	15.8	15.2	17.0	18.2	19.3	20.4	20.4	20.1	20.8	21.6	18.9
1955	19.1	17.9	18.6	18.9	19.6	20.3	21.8	23.4	24.6	24.8	20.9
1960	21.3	19.3	19.1	20.1	21.7	24.3	25.1	27.4	29.6	29.5	23.7
1965	20.0	19.4	20.0	21.5	23.3	25.4	27.7	29.9	33.7	32.6	25.3
1970	19.4	19.8	22.0	21.9	24.5	25.4	28.1	29.0	33.2	33.9	25.7
1975	18.6	20.9	22.5	23.6	23.2	25.0	27.2	28.0	29.7	31.7	25.0

Table 3-2, showing the estimates of the numbers of contributing years for NP participants of different age groups and income levels, carries significant implications for future NP reforms. For participants born in 1970, for example, the likely number of contributing years would be 19.4 for those in the lowest income class (zero to 10 percent), while it would be 33.9 years for those in the highest (90 to 100 percent). In other words, there is a difference of as much as 14.5 years even for participants born in the same year, indicating that the NP is incapable of stemming the inequality of financial old-age preparedness.

The growing calls these days for raising the income replacement rates of NP benefits, pointing out that the NP was originally designed with a contribution period of 40 years in mind when the majority of actual participants cannot afford to contribute to the pension scheme for that long, warrant concern. If their demands are realized, such calls are likely to impose significant burdens on future generations, while even accelerating the polarization of old-age income through the NP. Discussions on possible reforms ought to be mindful of the fact that the periods of contribution to the pension scheme vary widely among individuals and depart radically from the average contribution period, 25.7 years, quoted for participants born in 1970.

(d) Summary[7)]

Our microsimulations show that the current NP is a low-cost, high-benefit instrument of old-age income security for all income classes. With Koreans paying only nine percent of their income as NP premiums (far lower than the OECD average of 20 percent), the pension scheme ends up benefitting high-income earners more than those earning less. The findings of our microsimulations of various proposed changes aimed at enhancing the sustainability of the NP, such as raising the premium rate and retirement age, point to one conclusion. To ensure the optimal reform of the NP, it is important to shift the plane of the social discourse altogether, from the interests of the class or group or people already exerting significant influence on social and political issues to the need for more even income redistribution among generations and classes.

What is the chief policy implication of our microsimulations? It is that raising the premium rate is inevitable, to a certain extent, in order to stem the distorting effect the NP has on income redistribution (and its tendency to benefit the wealthy more than the poor), which contradicts the original mission with which it was founded. Furthermore, in discussing how best

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7) We must acknowledge that, due to the word limit on this report, we discuss only Tables 3-1 and 3-2 in this section, despite there being more to our analysis. Please refer to the original report (Yun, S. et al, 2019c, in Korean) for detailed analysis.

to enhance the fiscal sustainability of the NP, we need to broaden our focus beyond the NP to include the possible re-structuring of all public pension schemes, including the Basic Pension.

Our microsimulations indeed show that raising the premium rate is capable of immediately eliminating the tendency of the NP to benefit the affluent more than the poor with its low-cost, high-benefit structure which has an inter-household income-redistributing effect that overwhelms its intra-household income-redistributing effect. In other words, an appropriate increase in the premium rate can help us not only enhance the NP's long-term sustainability, but also correct its distortion of income redistribution.

Contrary to the findings of our microsimulations, the Gini-coefficients, net benefits of regularization, and other such conventional indicators of income redistribution show the income-redistributing effect of the NP to be progressive. In other words, these indicators show that the NP is faithful to its founding mission of helping redistribute income across classes. Further research is needed to reveal and demonstrate how these conventional indicators fail to capture the reality of the NP and its tendency to benefit high-income earners more than middle- and low-income earners in terms of the net amount of benefits per capita.

Ⅲ

Policy Recommendations

Ⅲ   Policy Recommendations

1. Direction of Reforms for the National Pension and Basic Pension

First, we need to clarify the policy objectives of the National Pension and Basic Pension, particularly with respect to income redistribution, before designing their long-term evolution. The governments of other advanced societies have opted to separate their pension policy from their social policy, and the Korean government should consider the same approach. The Basic Pension, which claims a significant portion of Korea's social spending budget, but has failed to lower the elderly poverty rate in the country, should be downsized over time to cater to vulnerable and poor seniors only, while the amounts of benefits it provides for individuals should be increased to enable recipients to at least rise above the absolute poverty line (OECD, 2016, 2018a, and 2018b). What does it mean to limit the Basic Pension benefits to only the most vulnerable seniors over time? This entails narrowing the eligibility of those who newly reach the age of 65 over time, while existing recipients (lower 70 percent of the income hierarchy) continue receiving their Basic Pension benefits, in light of the increased old-age income many of these new seniors could enjoy from other sources un-

der Korea's more advanced multi-tier income system, including the National Pension and retirement pension benefits. We need to understand that, even if we successfully reduced the number of Basic Pension recipients in the intermediate to long run, the absolute number of recipients would nonetheless increase rapidly due to the accelerated rate at which the Korean population is aging.

The rapid increases in the amounts of Basic Pension benefits, funded entirely by public finance and not at all with contributions from individuals, might serve to disincentivize National Pension participants earning less than the median income and self-employed people with low income from continuing to participate in the National Pension. Therefore, future Basic Pension benefits should be provided in a mixed form, combining cash and in-kind (e.g., housing) benefits. A national baseline should also be established for the amounts of public pension benefits to be provided, and diverse policy resources combined accordingly, with a plan established without further delay.

The NP system, too, should be reformed promptly with a view to enabling participants to plan their retirement based on the amount they have contributed to the scheme and ensuring intergenerational equity, without disproportionately disadvantaging any generation. The current discourse on pension reform in Korea stands in the way of enhancing the long-term

sustainability of the pension system. We need to move beyond these exhausting debates by referencing the automatic stabilization devices for pension finances that have been adopted by a number of other nations worldwide, including Sweden, Norway, Finland, Germany, and Japan. Elections—particularly presidential elections—have been fueling the popular and populist demand for unsustainable fiscal pledges, with candidates and parties vying to win as many votes as possible at all possible costs.

Assuming that Korea adopts an automatic stabilization device for pension finances similar to the ones found in the Nordic states, Koreans should abolish the income-redistributive element (A-value) and convert the NP into a completely earnings-related pension scheme because the income-redistributive element, due to the premium rate being too low relative to the income replacement rate, has actually failed to meet its original purpose and is actually making the income redistribution problem worse. Raising the pension-applied income threshold to a more realistic level would help middle- to high-income earners who paid into the pension scheme long enough receive pension benefits sufficient to support stable old-age living.[8]

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8) The disparity between actual income and the income that the NP recognizes, for the purpose of determining eligibility and amounts of pension benefits, is so significant, particularly for higher-income earners, that the income replacement rate of the NP benefits actually provided remains staggeringly low. Half of the amount of NP benefits to which an individual is entitled is

On the other hand, other proposals for the long-term stability of NP finances, such as raising the eligible age to 70 years, require more caution. The eligible age may be raised to 70 if and when it becomes a norm for people to work in old age. Simply raising the eligible age because the average life expectancy is rising and measures are needed to stabilize pension fi-

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determined on the basis of the average income of all contributors (A-value), while the remaining half is determined on the basis of the individual's own income (B-value). Compared to other OECD member states, Korea has a higher percentage of self-employed workers, whose income is difficult to ascertain with accuracy, varies widely, and tends to run low in many cases. Furthermore, the NP recognizes up to only KRW 5,000,000 of the monthly income that each contributor earns, thereby further distorting the amounts of pension benefits that high-income earners can receive. Although these are formal features intended to ensure the income-redistributing effect of the NP, they effectively ensure that high-income earners receive far less in pension benefits than the recipients, such as government employees, of other occupation-based public pensions that pay in proportion to contributors' actual and effective incomes. The Government Employee Pension, for example, already promises a higher income replacement rate than the NP, while paying benefits that are determined on the basis of a much greater portion of contributors' actual income recognized. Hence the considerable and persistent gap in the amounts of benefits provided under different public pension schemes.

The NP refuses to recognize a greater portion of high-income earners' actual income mainly because it is so low-cost and high-benefit in structure that, by recognizing contributors' income more without raising the premium (cost), it runs the risks of reducing its financial sustainability and supposedly exacerbating the income redistribution problem. One way to overcome these risks is to convert the NP into an income-proportional scheme, like the Government Employees Pension, and raising the premium rate simultaneously. The premium rate of the NP has been fixed to nine percent for over two decades, mainly due to the objection of employers, who are required to pay half the premium for their employees, to raising the premium rate. Without making these changes first, raising the income replacement rate of the NP benefits at any cost would be an extremely irresponsible act. Reform will necessarily involve pain, but reform is necessary. It is critical to start a serious public discourse on the series of issues that pertain to the amounts of pension benefits and start reforming the pension structure so as to ensure its future sustainability.

nances, however, would not serve the most important purpose of the NP, i.e., safeguarding old-age income, now that the vast majority of working Koreans retire from their pension-paying careers in their mid-50s. Raising the pension-eligible age without any additional measures to address the already severe income crevasse would only further intensify the elderly poverty problem in Korea.

The discussions, held in 2018, surrounding the Fourth National Pension Fiscal Projections and related pension reforms were so lopsidedly focused on raising the eligible age (even though there were no official plans to address that topic) that they eclipsed other more pressing and important ideas for reform. As of 2019, the eligible age for receiving NP benefits was 62, which will be raised to 63 by 2023. Given the fact that the law requires contributors to make mandatory contributions to the scheme until they reach the age of 60, raising the eligible age for receiving benefits would simply serve to extend the income crevasse, exacerbating the elderly poverty problem and causing the demand for more government welfare spending to explode.

The change we propose, based on this study, is to eliminate the crevasse between the legal age limit on mandatory contributions to the NP (59 as of 2019 through 2033) and the legal age at which contributors can start to receive their pension benefits (65 by 2033), while encouraging Koreans to continue
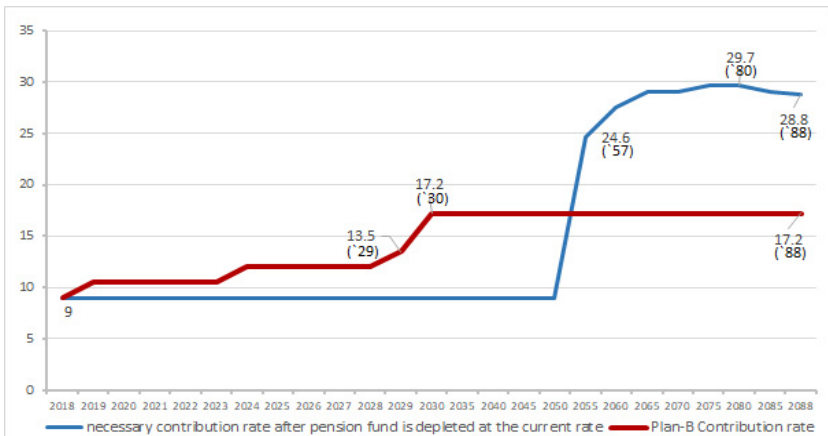
working in old age. Instead of simply raising the eligible age for receiving pension benefits, a life expectancy coefficient may be adopted to allow part of the annual pension payout to change in relation to increases in life expectancy. Life expectancy co-efficients are part of the automatic stabilization devices that the Nordic states, including Finland, have adopted to stabilize pension finances.

As the OECD's report on the Korean economy repeatedly points out, it is critical to ensure that the general public under-stands that, the more we delay taking action to ensure the fi-nancial sustainability of the National Pension by raising the premium rate, the more the premium rate would have to be in-creased in the future in order to achieve the same desired level of financial sustainability (OECD, 2018a). In the meantime, em-ployers are already required to pay 4.5 percent of the NP pre-mium and 8.3 percent of the retirement pension premiums on behalf of their employees. It is therefore necessary to start looking for a policy alternative capable of raising the pension premium rates as little as necessary and in a timely manner.

Combining the premium increase and a life expectancy co-efficient would help Korean policymakers minimize the neces-sary increases in premium rates, while better ensuring the long-term fiscal sustainability of public pension schemes (Yun, 2018; NPDC 2018 ["Plan-B"]). For example, the NP premium rate may be increased by 4.5 percentage points to 13.5 percent

step by step over the next decade. This increase would be made gradually over the span of a decade in light of the need to ensure social and economic adaptation. After 2030, additional measures may be adopted in the form of two-stage adjustments to the payout of benefits. A life expectancy coefficient similar to the one currently used in Finland could be introduced to adjust the payouts so that the total amount of pension benefits that individuals are to receive remains the same, while the annual amount of pension benefits is reduced in relation to increases in life expectancy.

[Figure 3-1] NP Premium Rate Adjustment Schedule

Note: 1. The premium rate is to be raised by 4.5 percentage points, incrementally, to 13.5 percent over a decade. After 2030, the remaining portion of the necessary spike in the premium rate, i.e., 3.7 percentage points, for fiscal stabilization purposes should be met by adjusting the amounts of pension benefits to be paid out using a life expectancy coefficient
2. Blue curve: necessary contribution rate after pension fund is depleted at the current rate; red curve: Plan-B contribution rate

Source: National Pension Development Committee (NPDC) (2018). 2018 National Pension Fiscal Calculations: Measures to Improve the National Pension.

2. Employment Policy for Baby Boomers

Baby boomers in Korea are the first in Korean history to be a
"leisure class," facing a life expectancy increasing to 80 years
and beyond, having had more education than any of their
predecessors, and capable of enjoying an extended health
span. The first generation of Korean baby boomers, born from
1955 through 1963 and making up 7.2 million of the pop-
ulation, exerts social and political influences of unprecedented
scales not only in Korea, but around the entire world.

The first baby boomer generation has few similarities with
the elderly population that preceded it. This is the generation
to experience globalization in full swing, and to enjoy popular
culture and professional sports on a daily basis. They hold high
expectations in terms of policy benefits and quality of life.
Failure to prepare systematic measures for the retirement of
this incredibly powerful demographic segment will likely end
up costing much of the available fiscal resources for the seg-
ment's use. Korean baby boomers are indeed capable of trig-
gering and fueling the chain of welfare populism.

We need an impartial and longer-term perspective society
wide to deal with the welfare demands of Korean baby
boomers. It will not do to leave the current labor practices in-
tact because they will lead to an explosion of demand for wel-
fare benefits and spending, causing the whole nation to spend

much more than it is now without being able to stop the tide of a dark, unsustainable future. Solutions are needed urgently.

The top-priority policy solution is to encourage seniors to work. The first generation of baby boomers are scheduled to exit the labor market en masse. It is therefore critical to create more jobs in the market for these retirees, instead of giving them low-wage and unsustainable public work. The public sector, which creates most of the jobs for seniors today, should limit its role to creating jobs that serve public values, such as social services. In addition, policy resources should be focused on fostering various senior employment programs in the market, including active employment and entrepreneurial support and gradual retirement, instead of social service or livelihood-support jobs.

As the absolute size of the Korean population has begun to shrink, reemployment after retirement is becoming essential. Youth unemployment is another critical social issue. As the employment of young people is another pressing priority, the most realistic option for extending the working status of baby boomers is to ensure their reemployment after retirement from their main careers. However, policy support to this end should be designed with utmost emphasis on paying the reemployed workers a decent wage, as the multiplication of such jobs carries the risk of multiplying the number of very poorly paid elderly workers.

It is particularly important to direct national resources to fostering an environment in which these types of gradual retirement, recent proposed by the government itself, can flourish. Active policy support and strong political will are crucial to help establish programs for employing retirees. The Korean government should present diverse examples of gradual retirement applicable to different types and conditions of businesses, and employ both the carrot and the stick to ensure that these models actually work.

In the remainder of this report, we would like to propose some of the more viable, albeit equally painful, measures for gradual retirement. As it will be impossible to enforce gradual retirement legally, it is crucial to find a model that involves both carrot and stick measures. In doing so, our focus should be, first, aligning the eligible age for receiving NP benefits and the retirement age and, second, finding alternatives from which labor and management can choose and which they both can embrace.

For example, in an effort to align the pension-eligible age and retirement age, workers who wish to retire at age 61 (before 2023), 62 (2023 to 2027), or 63 (2028 and later) may be allowed to choose and accept a wage scheme that would reduce, in increments, their monthly wages around the time they reach the age of 55 until their final retirement. It would be important to keep older workers in continued employment. Also,

as is practiced in Japan, some of these retirees may need to be reemployed in the same workplaces. The decreasing pre-retirement wage scale is meant to induce near-retirement workers to cut their working hours so that more young people can be employed, and thereby promote intergenerational cooperation in the labor market.

Meanwhile, workers who do not wish to accept the gradual wage reduction may still be allowed to work for the same wage and retire at age 60. The key is to provide both employers and near-retirement employees with diverse policy incentives that encourage them to favor gradual retirement. Businesses that employ seniors at a certain percentage of their personnel, for example, should be given subsidies for both the wages and the four major social insurance premiums of the seniors they employ. For example, Durunuri Social Insurance Program was originally introduced as a way to help cover middle-aged and older people who had been left outside the NP. But it is now used as an active labor market policy for people of any age. Such programs should be refocused and expanded to support gradual retirement of middle-aged and older workers.

We are emphasizing that the Durunuri Program, in particular, needs to be scaled up in order to ensure social security and continued employment for struggling baby boomers. Subsidies for social insurance premiums can help realize two policy objectives: strengthening the social security of the work-

ing poor and effectively motivating the continued and partial employment of near-retirement or retired workers.

3. Summary

The amounts of BP benefits paid out to Koreans—financed entirely by tax revenue, without individual recipients' contributions—have been rising steeply. Such abrupt increases, making the amounts of BP benefits similar to those of NP benefits, will likely discourage contributors to the NP who earn income below the median income level from participating further. The current policy of offsetting the amounts of BP benefits individuals are entitled to receive when they contribute to the NP for 10 years or longer would further serve to alienate eligible individuals from the NP. One way to stem the rapid increases in BP benefit amounts is to provide benefits in mixed forms, combining cash and in-kind (e.g., housing) benefits. Our analysis, moreover, suggests that the equalization measure of NP benefits (A-value) should be gradually reduced and ultimately eliminated to convert the NP into a completely income-proportional pension scheme, because the equalization measure has failed to ensure the original purpose of income redistribution.

In summary, the following policy mix is needed: (1) transforming the NP into an income-proportional pension scheme

so that, the more one contributes, the more one receives; (2) restructuring the BP with a selective recipient base and differentiated scale of pension amounts paid out; and (3) paying housing allowances in amounts differentiated by old-age income levels. Universal income security is more effectively achieved not by making every single welfare program applicable to all, but by combining existing policy programs to help ensure the national minimum standard of living for all. In this respect, Korea has a significant lesson to learn from the Finnish old-age income security system (Yun, 2019a).

It is also important to remind the public that the relatively short period of time for which Koreans have been contributing to the NP on average has less to do with the pension scheme's design (i.e., the income replacement rate it set out to achieve) and more to do with the problems of the labor market itself. Caution is needed before we accept the Fourth National Pension Fiscal Projections of 2018, which estimated that, after 2050, Koreans would have contributed to the NP for barely 27 years on average. Those who propose that the income replacement rate of the NP be raised cite these projections, arguing that, the 27-year contribution would effectively lower the NP's promised income replacement rate of 40 percent to 27 percent for the majority of Koreans.

Our analysis of the KLIPS and NP database data shows that there can be as much as a 14-year difference in the periods of

time for which Koreans contribute to the NP, depending on their income levels and job security. This dramatic difference will likely feed the growing income inequality into old age. Simply raising the stated income replacement rate of the NP without taking these complexities into account will lead to the neglect of the necessary measures for fiscal stability. As a consequence, the future generation will be overburdened, and the benefits will disproportionately favor high-income earners who can afford to contribute to the NP longer thanks to the security of their employment. We should move beyond such short-sighted proposals for pension reform. What we truly need to do is foster the gradual retirement of Korean baby boomers so that they can continue contributing to the NP longer while also allowing the new and younger generation of workers to enter the labor force. We need models of gradual retirement that enable middle-aged workers to accept gradual decreases in their wages and working hours, while subsidizing their social insurance premiums so that employers, too, are encouraged to retain these workers longer in their jobs. The earned income tax credit for low-income, middle-aged workers should be increased and expanded, as should the Durunuri Program, which subsidizes workers' social insurance premiums. The simultaneous implementation of these two measures can help motivate the poor working class to contribute to the NP, while also facilitating the development of infrastructure for better monitoring

their income.

We need to rethink what it would and should mean to strengthen the public pension schemes for Koreans. Diverse policy instruments should be employed to extend the reach of these schemes to the poorest and the most neglected, while fostering gradual retirement, so that more Koreans can receive larger amounts of pension benefits even with the current income replacement rate remaining intact. Furthermore, the ceiling on the recognized amount of wages should be raised so as to increase the amounts of pension benefits high-income earners receive and support stable old-age income for all concerned.

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