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Article

A Policy Proposal to Strengthen the Income Redistribution Function of the National Pension Scheme in South Korea: An Analysis of South Korea's 5th National Pension Comprehensive Plan (Draft)

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Abstract: In this study, we elucidate the income redistribution effects of the proposal to incorporate the Bend Points mechanism of the U.S. OASDI into the Korean National Pension Scheme (BP-KNPS Proposal) through a micro-simulation analysis using individual data from the Korean Labor and Income Panel Study (KLIPS). In addition to examining the effects of introducing the BP-KNPS Proposal into the current National Pension Scheme (NPS), we also consider the impact of this scheme being combined with the 5th National Pension Comprehensive Plan (Draft), announced by Korea's Ministry of Health and Welfare on 30 October 2023. When the BP-KNPS Proposal is introduced into the current NPS, the Mean Log Deviation (MLD) of the net transfer amount (lifetime pension benefits minus lifetime pension contributions) for regular employees decreases from 0.2022863 to 0.1929960. Similarly, the MLD for self-employed and irregular workers decreases from 0.2046127 to 0.1721433, indicating a reduction in income inequality. Furthermore, when the BP-KNPS Proposal is combined with the 5th National Pension Comprehensive Plan (Draft), the effects are mixed. The proposals to increase the pension contribution rate and adjust the rate increase speed via generation lead to a reduction in income inequality compared to the current NPS when combined with the BP-KNPS Proposal. However, the proposals to raise the pensionable age result in increased income inequality, similar to the outcomes under the current system. This finding suggests that the triple burden identified by literature review—the reduction in benefits due to disparities in contribution periods and life expectancy, and the raised pensionable age—has a greater impact on low-income participants than the inequality-reducing effects of the BP-KNPS Proposal.

Keywords: bend points; 5th National Pension Comprehensive Plan (draft); income redistribution; intragenerational income redistribution; mean log deviation (MLD); South Korea



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1. Introduction

The environment surrounding the public pension system of South Korea (hereinafter, Korea) can be described as extremely challenging. The underlying factors include the rapidly increasing elderly dependency ratio (Korea's old-age dependency ratio is projected to reach 72.4% by 2050 (OECD 2018)), severely low birth rate (Korea's total fertility rate for 2023 was recorded at 0.72 (Statistics Korea 2024b)), and high elderly poverty rate (Korea recorded a rate of 31.4% (age: 66–75) and 52% (age: over 75), the highest among OECD member countries, significantly exceeding the OECD averages of 12.5% for those aged 66–75 and 16.6% for those aged over 75 (OECD 2023)). Amid these conditions, discussions focused on reforming the National Pension Scheme (NPS), the core of Korea's public pension system, began in earnest in August 2022. On 30 October 2023, the government announced the 5th National Pension Comprehensive Plan (Draft) (hereinafter, 5NPCPD), and the proposed reforms were submitted to the National Assembly.

However, the 5NPCPD is based on the financial projections of the 5th National Pension Financial Estimate Results (Ministry of Health and Welfare 2023b), which made strong

assumptions about individual contributors without considering detailed income distributions among individuals. This proposal reflects the Yoon Suk-yeol administration's strong focus on "stabilizing pension finances." At the same time, the high elderly poverty rate in Korea underscores the growing importance of the "income redistribution function" of the NPS, given that pension income constitutes a significant portion of elderly incomes. However, the 5NPCPD, aimed primarily at pension financial stabilization, offers limited income redistribution effects. In fact, some proposals, such as raising the pension eligibility age, have been shown to widen pension income disparities in net transfers (the difference between lifetime pension benefits and lifetime contributions) among pension participants (J. Park 2024). The purpose of this study is to clarify the effects of the proposal to incorporate the Bend Points mechanism of the U.S. OASDI into the Korean NPS (BP-KNPS Proposal) as a policy recommendation to strengthen the income redistribution function of the Current National Pension Scheme (CNPS) and the 5NPCPD.

The 5NPCPD, similar to the reforms in 1998 and 2007, remains within the scope of parametric pension reform, such as adjusting contribution rates and pensionable ages. Recently, however, numerous studies have pointed out the limitations of parametric pension reform and emphasized the necessity of structural pension reform. This study proposes a BP-KNPS Proposal to enhance the income redistribution function of the NPS as part of a structural pension reform. The main objective of this study is to assess the impact of introducing the BP-KNPS Proposal on intergenerational and intragenerational income redistribution, reflecting the heterogeneity of individual contributors across different genders, employment types, and income levels.

The rest of the paper is structured as follows. In the next section, we present an overview of the CNPS and the 5NPCPD, followed by a review of the related literature. In Section 3, we explain the structure of the NPS and the structure of the BP-KNPS Proposal proposed in this paper. In Section 4, we introduce the income redistribution indicator used in this paper and explain the measures taken to reflect the disparities in pension participation periods and life expectancy across income groups. In Section 5, we explain the data and the estimation methods using the BP-KNPS Proposal. In Section 6, we analyze the simulation results of the BP-KNPS Proposal's income redistribution effects. In Section 7, we provide conclusions and policy recommendations for advancing the 5NPCPD.

2. Background

2.1. The CNPS and the 5NPCPD

Korea's public pension system comprises four components—the National Pension and Occupational Pensions for civil servants, private school teachers, and military personnel—as depicted in Table 1. The National Pension, Private Pension, Retirement Pension, and Basic Pension were introduced in 1988, 1994, 2005, and 2014, respectively, ostensibly creating a multi-layered old-age income security system (see Figure 1). The Basic Pension and National Pension, both public pensions, along with the National Basic Livelihood Security System, which is a form of public assistance, primarily serve the function of old-age income security. At present, while the Basic Pension, Retirement Pension, and Private Pension (including housing and farmland pensions) are developing, there is a need for role allocation and the enhancement of each system (Ryu 2022).

Amid these developments, the NPS entered a serious reform trajectory following the establishment of the 5th Financial Calculation Committee under the Ministry of Health and Welfare in August 2022. This was followed by the announcement of the 5th National Pension Financial Estimate Results in March 2023 and the formulation and submission of the 5NPCPD to the National Assembly in October 2023. Public interest in NPS reform has been notably high. Over the past few years, the NPS has become a significant social issue, with widespread public distrust. Extreme views, such as calls for the abolition of the NPS, have also surfaced, resonating with certain population segments. These sentiments are driven by concerns over the financial sustainability and adequacy of benefits due to

the rapidly increasing elderly dependency ratio, severely low birth rate, and high elderly poverty rate.

Table 1. Overview of the Korean public pension system.

	National Pension	Special Occupational Pension		
		Government Employees Pension	Private School Teachers Pension	Military Pension
Year of introduction	1988	1960	1975	1963
Basis	NATIONAL PENSION ACT	PUBLIC OFFICIALS PENSION ACT	TEACHERS PENSION ACT	MILITARY PENSION ACT
Applicable subjects	Citizens aged 18 to 59	Civil servants, judges, police officers	Private school teachers (including hospital staff)	Career soldiers
System management	Ministry of Health and Welfare (National Pension Service)	Ministry of the Interior and Safety (Public Officers Pension Service)	Ministry of Education (Teachers Pension Service)	Ministry of National Defense (Welfare Division Military Pension Department)

Data source: compiled by the author, referencing [M. Kim \(2018\)](#).

	Self-employed	Earned income workers	Civil servants, etc.
3rd tier	Private Pension (2.35 million people, 7.6%) ※ '21.12		
2nd tier		Retirement Pension (6.84 million people, 22.3%) ※ '21.12	Occupational Pension (1.81 million people, 5.9%)
1st tier	National Pension (22.5 million people, 73.3%)		
0th tier	Basic Pension (6.24 million people)		

Figure 1. Korea's multi-tier old-age income security system. Note: The figures in parentheses indicate the number of beneficiaries and the ratio of subscribers to the population aged 18 to 59, with the Basic Pension representing the number of beneficiaries only (as of December 2022). The green color indicates that it is within the scope of analysis in this study. Data source: compiled by the author using ([Ministry of Health and Welfare 2023a](#), p. 3).

The National Pension Act was revised in 1998 and 2007 to achieve financial stability. The 1998 revision reduced the income replacement rate for a 40-year contribution period from 70% to 60% and raised the pensionable age from 61 in 2013, with annual increments, to 65 by 2033. The 2007 revision further lowered the income replacement rate for a 40-year contribution period from 60% to 50% in 2008, and this has been decreasing by 0.5% annually to reach 40% by 2028. These past reforms focused on reducing benefit expenditures by lowering the income replacement rate and delaying the pensionable age without increasing the contribution rate (see [Figure 2](#)).

Year		1988	1993	1998	1999	2000	2005	2008	2009	2013	2018	2023	2025	2028	2033	2038
Contribution Rate (%)	Workplace-based Insured Person	3	6	9									5th National Pension Comprehensive Plan (Draft)			
	Individually Insured Person	3			4	9										
Income Replacement Rate (%)		70			60			50	49.5	47.5	45	42.5	40			
Pensionable Age		60									61	62	63	64	65	5NPCPD
Monthly Pension Amount (10,000 won)		140			120			100	99	95	90	85	80			

Figure 2. The history of reforms in Korea’s NPS and 5NPCPD. Note: The monthly pension amount assumes 40 years of participation with an average monthly income of KRW 2 million. Contribution rate: for Workplace-based Insured Persons, the rate was 9% at the enactment of the National Pension Act in 1988, 3% for the first 5 years of implementation, and 6% for the next 5 years. For Individually Insured Persons, the rate was initially 3% and increased by 1% each year starting in 2000, reaching 9% by 2005. Income replacement rate: based on 40 years of participation. As of 2018, the average participation period was 23.8 years, with an effective income replacement rate of 23.9%. The green color indicates that it is within the scope of analysis in this study. Data source: compiled by the author using (Ryu 2022, pp. 35–49).

The NPS comprises three types of participants: Workplace-based Insured Persons, Individually Insured Persons, and Voluntarily Insured Persons. Workplace-based Insured Persons include all employers and employees aged 18 to 60 working in companies with at least one employee. This group primarily consists of regular employees, but some irregular employees are also included. The contribution rate is shared equally between employers and employees, with each paying 4.5%. Individually Insured Persons include self-employed individuals, agricultural and fishery workers, and irregular employees residing in Korea, aged 18 to 60, with an income. They are responsible for the full contribution themselves, with a rate of 9%. Lastly, Voluntarily Insured Persons include individuals aged 18 to 60 who do not fall under the categories of workplace or regional participants but choose to join the system, such as homemakers and students (see Table 2). This study focuses on Workplace-based Insured Persons and Individually Insured Persons.

Table 2. The types of NPS enrollment.

Enrollment Type	Eligible Participants	Contribution Rate (9%)	Method of Contribution Payment	Examples
Workplace-based Insured Person	Workplaces (companies) employing one or more employees are required to participate in the National Pension Scheme. Employers and employees aged 18 to 59 working at these workplaces are classified as workplace-based enrollees.	Employer: 4.5% Employee: 4.5%	Employee pension contributions are deducted from monthly salary.	Regular employees, * Non-regular employees
Individually Insured Person	Citizens aged 18 to 59 residing in Korea who have income from individual businesses. This includes all individuals with income except for those classified as workplace-based enrollees.	9%	Individuals must report their standard monthly income to the National Pension Service (NPS), which will determine the contribution amount based on this income.	Self-employed individuals, Agricultural and fisheries workers, Non-regular employees

Table 2. Cont.

Enrollment Type	Eligible Participants	Contribution Rate (9%)	Method of Contribution Payment	Examples
Voluntarily Insured Person (Voluntarily Insured/Voluntarily and Continuously Insured Person)	Individuals aged 18 to 59 who do not fall under workplace-based or region-based categories and choose to enroll voluntarily by applying.	9%	Contributions are determined each year based on the standard monthly income as of December 31 of the previous year for all region-based enrollees, using the median standard monthly income as the reference point (“Median Standard Monthly Income”).	Full-time homemakers, Students

* Note: Since most non-regular employees are enrolled in Individually Insured Persons, with only a small portion enrolled in Workplace-based Insured Persons, this study assumes that non-regular employees are Individually Insured Persons for the purpose of the analysis. the monthly pension. The green color indicates that it is within the scope of analysis in this study. Data source: created by the author using the homepage of the National Pension Service ([National Pension Service 2024](#)).

The 5NPCPD, announced on 30 October 2023, focuses on financial stabilization. Indeed, during the deliberation stage of the National Pension Financial Calculation Committee, it was proposed that the sustainability goal for the NPS finances should be to ensure that the reserve fund does not deplete within the financial calculation period (2023 to 2093). For the first time, the draft explicitly includes the fiscal objective of “adjusting to maintain long-term financial balance.” Considering the criticisms over the years regarding the vague financial goals of the pension system, especially in comparison to major overseas countries, this represents a significant step forward (see Table 3). This reform plan aligns with the financial stabilization priority of the Yoon Suk-yeol administration.

Table 3. A comparison of financial goals in public pension systems in Korea and major overseas countries.

	Fiscal Objectives	Estimation Period	Explicit Statement
Korea (NPS)	· Adjustments are made to ensure the long-term financial balance of the National Pension system.	70 years	○
Germany (National Pension System)	· Contribution Rate: Capped at 20% until 2020 and 22% until 2030. · Income Replacement Rate: Minimum of 46% until 2020 and 43% until 2030. · If contribution rates exceed the cap or income levels fall short of projections, the government will implement supplementary measures.	15 years (5-year medium-term outlook)	○
Canada (CPP)	· Applies the minimum contribution rate necessary to maintain a steady level of the funding ratio for up to 60 years from the valuation date.	75 years	○

Table 3. Cont.

		Fiscal Objectives	Estimation Period	Explicit Statement
Japan (National Pension System, Employees' Pension Insurance)	·	Financial Objective: Maintain a funding ratio of 1.0 over 100 years. Specifies a minimum income replacement rate.	100 years	×
United States (OASDI)	·	Short-term Financial Objective: Balance income and expenditures over 10 years. Long-term Financial Objective: Balance income and expenditures over 75 years.	75 years (10-year short-term outlook)	×
Sweden	·	Equilibrium Ratio: 1.0	75 years	×

Note: 'Explicit Statement' refers to whether the fiscal objectives are explicitly stated in the statutory laws governing public pension systems in each country. A circle (○) indicates that it is explicitly stated, while a cross (×) signifies that it is not. Data source: created by the author using (Ryu 2022, p. 106).

The content of the 5NPCPD includes 18 scenarios combining measures to achieve the newly set financial goals, such as raising the pension contribution rate (to 12%, 15%, and 18%), increasing the pensionable age (from the current 65 to 68), and improving the fund investment return rate (by 0.5%p–1%p above the 5th National Pension Financial Estimate Results). Additionally, it proposes generational equity adjustments to the speed of contribution rate increases (in 2025, the contribution rate for those born after 1986 (in their 20 s and 30 s) will rise by 0.6% annually, while for those born in the years up to 1985 (in their 40 s and 50 s), it will rise by 1% annually).

In this analysis, the National Pension income is assumed to consist solely of pension contributions, excluding other operational revenues and government subsidies. Therefore, excluding the scenarios improving fund investment returns, the analysis focuses on six reform proposals comprising scenarios of raising the pension contribution rate, increasing the pensionable age, and adjusting the generational increase rate, as restructured in Figure 3.

Main Contents of the 5th National Pension Comprehensive Plan (Draft)					
Types of Reforms	(1) Increase in the contribution rate (currently 9%)		(2) Differences in the rate of increase by age group	(3) Raising the pensionable age (currently 65)	
Proposal 1	12%	Increase by 0.6% annually for 5 years starting from 2025	×	×	
Proposal 2	15%	Increase by 0.6% annually for 10 years starting from 2025	×	×	
Proposal 3	18%	Increase by 0.6% annually for 15 years starting from 2025	×	×	
Proposal 4	18%	Increase by 0.6% annually for 15 years starting from 2025	For the generation born in or after 1986 (those in their 20s and 30s as of 2025): Proposal 1 For the generation born up to 1985 (those in their 40s and 50s as of 2025): Increase by 1% annually for 9 years starting from 2025	×	
Proposal 5	18%	Increase by 0.6% annually for 15 years starting from 2025	×	68	Raise the pensionable age by 1 year every 5 years starting from 2038
Proposal 6	18%	Increase by 0.6% annually for 15 years starting from 2025	For the generation born in or after 1986 (those in their 20s and 30s as of 2025): Proposal 1 For the generation born up to 1985 (those in their 40s and 50s as of 2025): Increase by 1% annually for 9 years starting from 2025	68	Raise the pensionable age by 1 year every 5 years starting from 2038

Figure 3. The content of the 5NPCPD used in this paper. Data source: created by the author referencing (Ministry of Health and Welfare 2023a, pp. 48–49).

2.2. The Significance of Income Redistribution in Pension Reform

The significance of considering income redistribution in pension reform, including in this paper, can be understood from two primary perspectives: (i) ensuring social equity and (ii) preventing poverty and promoting social stability. Public pension systems are a form of social insurance that constitutes a crucial element of social security, where “income redistribution” is one of the key functions (Barr and Diamond 2008). The BP-KNPS Proposal adheres to this principle by incorporating an income redistribution mechanism within its framework. This paper examines the current income redistribution function of the system and evaluates the impact of the BP-KNPS Proposal to provide insights that may contribute to achieving objective (i).

Moreover, as highlighted at the beginning of this paper, Korea faces an exceptionally high elderly poverty rate. Considering that pension income constitutes a significant portion of the elderly’s income structure in Korea, it is essential to assess the income redistribution function of the BP-KNPS Proposal from the perspective of (ii). Indeed, numerous previous studies have analyzed the income redistribution effects of the NPS (S. H. Kim 2004, 2019; Kim and Kang 2005; Lee 2006; Kang et al. 2008; Korea Development Institute 2008; Yuh and Yang 2011; Lee et al. 2016; Choi 2016; Choi and Han 2017). However, these studies primarily focus on evaluating the redistribution effects of the NPS and past reform proposals, without extending to policy recommendations. While some studies have proposed policy measures to mitigate pension income disparities among pensioners through other systems, such as the Basic Pension, Retirement Pension, and Private Pension, there has been no prior research that advocates for strengthening the income redistribution function within the NPS itself. This paper uniquely proposes such an approach by enhancing the income redistribution function embedded within the NPS framework.

This paper proposes the BP-KNPS Proposal as part of a strategy to strengthen the essential “income redistribution function” of social security, considering the significance of the NPS as social insurance and the current high elderly poverty rate in Korea. The BP-KNPS Proposal offers two primary advantages: (1) As a reform implemented through the NPS, which has the longest history and is now entering a mature phase compared to other public pension systems, such as the Basic Pension and Retirement Pension, it allows a large majority of the population to benefit from the reform’s effects. (2) Instead of introducing an entirely new system, it enhances the existing income redistribution mechanisms already embedded within the NPS, thereby reducing the administrative burden on the relevant authorities. However, there are potential drawbacks, such as the risk of excessive redistribution dampening labor incentives and the possibility of increased information asymmetry and decision-making costs among participants due to system complexity. Nevertheless, these issues can be addressed through the government’s continuous accountability and efforts to build a social consensus.

2.3. Literature Review

Recent studies on the reform of Korea’s public pension system, including the NPS, highlight the limitations of parametric pension reforms and emphasize the necessity of structural pension reforms. Specifically, these studies can be categorized into three types.

First, some studies advocate for reforms that focus on financial stabilization while maintaining the current income replacement rate of the National Pension (T. Kim 2015; Choi and Kim 2016; Lee and Shim 2018; Seok 2018; Chun 2020).

Secondly, research focusing on increasing the current income replacement rate to strengthen income security through National Pension reforms includes that performed by (Joo 2022). Joo proposes simultaneously enhancing the National Pension and Basic Pension, along with introducing a Guaranteed Income Supplement (GIS).

Lastly, there is also research advocating for expanding the role of the Basic Pension, reducing the income replacement rate of the National Pension, and ensuring financial stability. These studies either propose expanding the current Basic Pension (Kim et al. 2016;

[Tchoe and Kang 2019](#); [Tchoe and Kang 2023](#)) or transitioning the Basic Pension into a new system ([Ryu and Kim 2019](#); [Oh 2021](#); [S. Kim 2021](#)).

However, while these previous studies suggest various reform directions, they often do not evaluate the policy effects of the proposed reforms while considering the heterogeneity of actual NPS contributors, such as income distribution, employment types, and disparities in contribution periods and life expectancy across income groups.

In contrast, this study proposes the BP-KNPS Proposal, modeled after the Old Age, Survivors, and Disability Insurance (OASDI) bend points in the U.S, to enhance the income redistribution function of the NPS while maintaining the current income replacement rate and focus on financial stabilization. This paper puts forth a novel reform proposal aimed at enhancing the income redistribution function within the NPS, differentiating itself from prior studies that have adopted an external approach—emphasizing supplemental systems such as the Basic Pension, Retirement Pension, and Private Pension. However, as discussed earlier, these external systems, including housing and farmland pensions, are still in their developmental stages and require further refinement in terms of role definition and integration. In this context, relying on external systems alone to enhance the income redistribution function within the pension system appears impractical. Consequently, this paper proposes the BP-KNPS Proposal as a mechanism to reinforce the income redistribution function within the relatively well-established NPS framework.

The research question of this study is whether, given the current high elderly poverty rate, introducing the BP-KNPS Proposal into the CNPS and the 5NPCPD can simultaneously achieve the government’s goal of pension financial stabilization and strengthen the income redistribution function of pension income. To address this question, this study tests the following three hypotheses:

1. Introducing the BP-KNPS Proposal into the CNPS is expected to reduce disparities in old-age pension income among pension participants.
2. Introducing the BP-KNPS Proposal into the 5NPCPD is expected to reduce disparities in old-age pension income among pension participants.
3. Compared to the CNPS, the 5NPCPD, with the introduction of the BP-KNPS Proposal, is expected to further reduce disparities in old-age pension income among pension participants.

The similarity between the pension systems of the two countries and the superior income redistribution function of the OASDI motivate this proposal. The NPS was designed with advice from the U.S. Social Security Administration, leading to the establishment of the “National Welfare Pension Act” in 1973 and the “National Pension Act” in 1986 ([National Pension Service 2008](#)). Choi compares the income redistribution functions embedded in the pension benefit formulas of NPS and the OASDI, finding that the OASDI is much more progressive and effective in terms of income redistribution ([Choi 2018](#)).

This study evaluates the income redistribution effect of the BP-KNPS Proposal using the lifetime income of individual contributors. The redistribution effects of social security and tax systems should be evaluated based on lifetime income rather than annual income, as current tax and social insurance contributions offset a significant portion of the redistribution ([Haider and Solon 2006](#); [Oshio 2010](#)). Numerous studies have used panel data to estimate lifetime income and analyze the income redistribution effects of their respective pension systems ([J. Park 2024](#); [Coronado et al. 2000, 2011](#); [Liebman 2002](#); [Leimer 2004](#); [Levell et al. 2015](#); [Bengtsson et al. 2016](#); [Haan et al. 2017](#); [Xing 2021](#)).

The distinct features of this study compared to previous research include the following:

- When estimating each contributor’s lifetime income, this study individually projects the number of future children and future employment status, incorporating the heterogeneity of contributors. The methodology follows that of [J. Park \(2024\)](#).
- Instead of assuming that all contributors participate in the same period, this study reflects disparities in pension participation periods and life expectancy across income groups, conducting a realistic analysis.

- The analysis distinguishes between employment types (regular employees, self-employed, and irregular employees) among NPS contributors, providing detailed insights.
- This study evaluates the income redistribution effect of the BP-KNPS Proposal alongside the CNPS and the 5NCPD.

3. Pension Schemes

3.1. The CNPS

3.1.1. Lifetime Pension Benefits

The National Pension's benefit structure follows a defined benefit model, similar to traditional public pension systems. The pension benefit amount for each participant is determined by the formula in Equation (1), which includes components such as the A value (the flat-rate portion), B value (the earnings-related portion), an actuarial adjustment coefficient, and the contribution period.

To understand the NPS, it is essential to grasp the concept of standard monthly income (SMI). This SMI refers to the amount reported by participants for pension benefit and contribution calculations, rounded down to the nearest thousand Korean won (KRW). The upper and lower limits of the SMI are adjusted annually, reflecting the average income changes of each Workplace-based Insured Person and Individually Insured Person (excluding exempted payers) over the past three years. These adjustments are announced by the Minister of Health and Welfare by the end of March each year and applied, starting in July, for one year. The actual and assumed future values of the SMI used in this study are detailed in Table A2.

The A value (flat-rate portion) in Equation (1) represents the average SMI of all participants over the three years preceding the pension receipt. For instance, the A value, applied from April 2020, is the average of the SMI of all participants from 2017 to 2019, adjusted to 2020 values using the national consumer price index by Statistics Korea (2021). Therefore, the A value reflects both inflation and income growth rates. The predicted values of A used in this study incorporate the assumed real interest rates and real wage growth rates used in the lifetime income estimations.

The B value (earnings-related portion) represents the average annual SMI of each participant during their contribution period, adjusted to the present value. Consequently, the B value is proportional to each participant's previous labor income. This structure indicates that the NPS includes income redistribution features by calculating the pension benefit amount based on both the average income of all participants (A value) and the participant's average income during the contribution period (B value).

As seen in Equation (1), the 1998 pension reform adjusted the weights of the A and B values, changing them from a 4:3 ratio to a 1:1 ratio, which reduced the income redistribution function of the pension benefits. The actuarial adjustment coefficient reflects the income replacement rate set by the National Pension Act. Initially, the NPS, introduced in 1988, was designed to guarantee 70% of the lifetime average income for an average-income participant with 40 years of contributions (coefficient of 2.4). However, the 1998 reform reduced the replacement rate to 60% (coefficient of 1.8), and the 2007 reform further reduced it to 50% (coefficient of 1.5) in 2008, with an annual decrease of 0.5 percentage points starting in 2009, to reach 40% (coefficient of 1.2) by 2028.

The contribution period also affects the pension benefit level. As indicated in Equation (1), participants with a 20-year contribution period can receive the full pension benefit amount. Those with contribution periods between 10 and 20 years receive incrementally increasing benefits, starting at 50% for 10 years and increasing by 5% for each additional year beyond 10 years. Participants with contribution periods exceeding 20 years receive more than the full benefit amount.

The pension benefit amount at the start of pension receipt for each participant, calculated from Equation (1), incorporates the aforementioned factors. This amount is then adjusted by reflecting the gender- and cohort-specific average life expectancy derived from

the future life tables in the “2021 Life Table” published by [Statistics Korea \(2022\)](#). Using Equation (2), we estimate the lifetime pension amount converted to the present value for each participant. Similar to the approach taken by the National Pension Research Institute, this study excludes survivor benefits from the analysis and focuses solely on the individual’s old-age pension. In this study, the inflation rate (p_j) is used to re-evaluate the pension benefit amounts. However, it is important to note that the pension benefit amounts in Korea do not perfectly align with inflation, which requires careful consideration. Apart from this paper, previous studies that have utilized the inflation rate as an index for re-evaluating future pension benefits include ([S. H. Kim 2004, 2019](#); [Kim and Kang 2005](#)).

$$P_{i,PBB} = \frac{[2.4 \cdot p_1(A + 0.75B) + 1.8 \cdot p_2(A + B) + 1.5 \cdot p_3(A + B) + \alpha \cdot p_4(A + B)]}{P} \cdot \left(1 + \frac{0.05n}{12}\right) \quad (1)$$

$P_{i,PBB}$ is the pension benefits (monthly) for participant i at the commencement of pension receipt (Pension Benefits Begin: PBB); P is the total contribution period (months); A is the average standard monthly income of all participants for the three years prior to pension receipt (fixed portion); B is the average standard monthly income of participant i during the contribution period (earnings-related portion); p_1 is the contribution period from 1988 to December 31, 1998 (months); p_2 is the contribution period from 1999 to 2007 (months); p_3 is the contribution period in 2008 (months); p_4 is the contribution period from 2009 onwards (months); α is the actuarial proportional constant (income replacement rate coefficient); n is the years exceeding 20 years of contributions.

$$P_i = \sum_{t=R}^{D_i} P_{i,PBB} \cdot \frac{\prod_{j=R}^t (1 + p_j)}{\prod_{j=h+1}^t (1 + r_j)} \quad (2)$$

P_i is the lifetime pension benefits (monthly) for participant i ; p_j is the inflation rate for year j (variables employed in revaluation); r_j is the real interest rate (the discount rate) for year j ; D_i is the year of death for participant i .

3.1.2. Lifetime Pension Contributions

The formula for calculating each participant’s lifetime contributions involves multiplying the SMI for each year by the contribution rate and discounting it to the base year of 2020. For convenience, the formula is structured to discount contributions from the first year of pension enrollment (k) to 2020 (h) and from 2021 ($h + 1$) to the year before retirement ($R - 1$). As shown in Table 2, regular employees, classified as workplace participants, share the contribution equally with their employers, whereas self-employed and irregular workers, classified as regional participants, bear the entire contribution themselves. Therefore, the formulas are divided into Equation (3) for regular employees and Equation (4) for self-employed and irregular workers.

$$C_i = \left[\sum_{t=k}^h c_t \cdot SMI_{i,t} \cdot \prod_{j=t}^h (1 + r_j) + \sum_{t=h+1}^{R-1} c_t \cdot SMI_{i,t} \cdot ES_i \cdot \prod_{j=h+1}^t \frac{(1 + \pi_j)}{(1 + r_j)} \right] \cdot \frac{1}{2} \quad (3)$$

$$C_i = \sum_{t=k}^h c_t \cdot SMI_{i,t} \cdot \prod_{j=t}^h (1 + r_j) + \sum_{t=h+1}^{R-1} c_t \cdot SMI_{i,t} \cdot ES_i \cdot \prod_{j=h+1}^t \frac{(1 + \pi_j)}{(1 + r_j)} \quad (4)$$

C_i is the lifetime contributions (monthly) for participant i ; c_t is the NPS contribution rate for year t ; is the employment status of participant i (employed = 1, not employed = 0); $SMI_{i,t}$ is the standard monthly income of participant i for year t .

3.2. The BP-KNPS Proposal

This study proposes introducing the BP-KNPS Proposal, inspired by the OASDI bend points, to the earnings-related portion (B value) of the pension benefit formula in Equation (1). This proposal is based on the study by ([Oshio and Urakawa 2008](#)), which examined the

income redistribution effects of introducing the OASDI bend points to Japan's Employees' Pension Insurance. In the U.S., the pension amount is calculated using the Average Indexed Monthly Earnings (AIME) converted into the Primary Insurance Amount (PIA) through bend points, with different benefit percentages applied to different AIME ranges. For 2020, the bend points are 90% for AIME up to KRW 960 (first bend point), 32% for AIME between KRW 960 and KRW 5785 (second bend point), and 15% for AIME above KRW 5785 (third bend point) (Social Security Administration (SSA) (2024a), 2024b). This system reduces pension increases for high-income earners, enhancing the income redistribution among participants.

The BP-KNPS Proposal aims to improve income redistribution by setting bend points based on the ratio of Korea's SMI to the U.S. AIME using 2020 values from the U.S. Social Security Administration and converting the currency at an average exchange rate of KRW 1200 per U.S. dollar (USD) in 2020.

This study excludes survivor pensions and focuses solely on calculating the old-age pension for the individual, following the National Pension Research Institute's approach.

$$\text{Bend Points (Korean version)} = \text{Average SMI (Korea)} \times \frac{\text{Bend Points (U.S.)}}{\text{Average AIME (U.S.)}} \quad (5)$$

$$557,226 \text{ KRW (As of 2020)} = 2,690,775 \text{ KRW (As of 2020)} \times \frac{960 \text{ USD (As of 2020)}}{4635 \text{ USD (As of 2020)}}$$

$$3,357,870 \text{ KRW (As of 2020)} = 2,690,775 \text{ KRW (As of 2020)} \times \frac{5785 \text{ USD (As of 2020)}}{4635 \text{ USD (As of 2020)}}$$

Next, using the Korean version of Bend Points calculated from Equation (5), each participant's SMI is divided into three segments, and the new earnings-related portion, the B^{BP} value, is calculated using Equation (6). Then, replacing the B value in the pension benefit formula (Equation (1)) with the new earnings-related portion B^{BP} value, the initial pension amount at the commencement of pension receipt is calculated using Equation (7). Finally, reflecting the gender- and cohort-specific life expectancies derived from the future life tables in the "2021 Life Table" published by Statistics Korea (2022), the lifetime pension amount converted to the present value for each participant is estimated using Equation (8).

$$B^{BP} = 0.9 \times BP1 + 0.32 \times BP2 + 0.15 \times BP3 \quad (6)$$

B^{BP} is the new earnings-related portion; BP1 is the portion of the SMI below KRW 557,226; BP2 is the portion of the SMI between KRW 557,226 and KRW 3,357,870; BP3 is the portion of the SMI above KRW 3,357,870.

$$P_{iR}^{BP} = \frac{[2.4 \times p_1(A + 0.75B^{BP}) + 1.8 \times p_2(A + B^{BP}) + 1.5 \times p_3(A + B^{BP}) + \alpha \times p_4(A + B^{BP})]}{P} \cdot \left(1 + \frac{0.05n}{12}\right) \quad (7)$$

$$P_i^{BP} = \sum_{t=R}^{D_i} P_{iR}^{BP} \times \frac{\prod_{j=R}^t (1 + p_j)}{\prod_{j=h+1}^t (1 + r_j)} \quad (8)$$

P_i^{BP} is the lifetime pension benefits (monthly) for participant i under the BP-KNPS Proposal.

4. Income Redistribution Measures

4.1. Income Redistribution Index

To assess the income redistribution effects of the BP-KNPS Proposal, this study uses the Mean Log Deviation (MLD). The MLD reflects the characteristic of household income, generally following a log-normal distribution, and is defined as the average deviation of the natural logarithm of income. The MLD reaches a minimum value of 0 when the income distribution is perfectly equal. As a linear measure, it is well-suited for decomposing in-

equality into contributing factors and is more sensitive to the distribution of low-income groups than other inequality measures.

This study aims to categorize participants into income brackets based on their lifetime earnings and measure pension income disparities among these income groups. In doing so, this research not only focuses on the overall impact of National Pension reforms on income inequality but also investigates the underlying causes of these changes. Since the Gini coefficient, which is commonly used as a measure of income inequality, does not effectively allow for the decomposition of inequality by income group, this study employs the “Mean Log Deviation” (MLD) measure. The MLD enables the identification of each group’s contribution to overall income inequality, making it a suitable metric for this analysis.

Following J. Park (2024), this study examines the income redistribution effects by decomposing the MLD into contributions from changes in intergenerational income disparity (intergenerational redistribution effect) in the first term and changes in intragenerational income disparity (intragenerational redistribution effect) in the second term, as shown in Equation (9). For intragenerational redistribution effects, the MLD is further decomposed within each generational group to assess the effect by income tier. Specifically, intragenerational redistribution effects are decomposed into contributions from changes in the income disparity between income tiers (inter-tier redistribution effect) in the first term and within income tiers (intra-tier redistribution effect) in the second term, as shown in Equation (10). The final expression of the overall income redistribution effect, combining Equations (9) and (10), is given in Equation (11). In this study, generational groups are categorized into four cohorts—those born in the 1960s, 1970s, 1980s, and 1990s—while income classes are divided into quintiles.

$$\begin{aligned} MLD &= \frac{1}{N} \sum_{i=1}^m \sum_{j=1}^{N_i} \ln \left(\frac{\bar{y}}{y_{ij}} \right) \\ &= \sum_{i=1}^m \frac{N_i}{N} \ln \left(\frac{\bar{y}}{y_i} \right) + \sum_{i=1}^m \frac{N_i}{N} \left[\frac{1}{N_i} \sum_{j=1}^{N_i} \ln \left(\frac{y_i}{y_{ij}} \right) \right] \\ &= \sum_{i=1}^m \frac{N_i}{N} \ln \left(\frac{\bar{y}}{y_i} \right) + \sum_{i=1}^m \frac{N_i}{N} MLD_i \end{aligned} \quad (9)$$

$$\begin{aligned} MLD_i &= \frac{1}{N_i} \sum_{k=1}^n \sum_{l=1}^{N_{ik}} \ln \left(\frac{\bar{y}_i}{y_{ikl}} \right) \\ &= \sum_{k=1}^n \frac{N_{ik}}{N_i} \ln \left(\frac{\bar{y}_i}{y_{ik}} \right) + \sum_{k=1}^n \frac{N_{ik}}{N_i} \left[\frac{1}{N_{ik}} \sum_{l=1}^{N_{ik}} \ln \left(\frac{y_{ik}}{y_{ikl}} \right) \right] \\ &= \sum_{k=1}^n \frac{N_{ik}}{N_i} \ln \left(\frac{\bar{y}_i}{y_{ik}} \right) + \sum_{k=1}^n \frac{N_{ik}}{N_i} MLD_{ik} \end{aligned} \quad (10)$$

$$MLD = \sum_{i=1}^m \frac{N_i}{N} \ln \left(\frac{\bar{y}}{y_i} \right) + \sum_{i=1}^m \frac{N_i}{N} \left\{ \sum_{k=1}^n \frac{N_{ik}}{N_i} \ln \left(\frac{\bar{y}_i}{y_{ik}} \right) + \sum_{k=1}^n \frac{N_{ik}}{N_i} MLD_{ik} \right\} \quad (11)$$

The variables used in each equation are explained as follows.

n is the number of income quintile groups ($n = 5$; first quintile group, second quintile group, third quintile group, fourth quintile group, and fifth quintile group). In this study, income quintiles are classified based on each participant’s lifetime income. N_{ik} is the number of participants belonging to income quintile group k ($1 =$ first quintile group, $2 =$ second quintile group, $3 =$ third quintile group, $4 =$ fourth quintile group, $5 =$ fifth quintile group) in generation group i ($1 =$ born in the 1960s, $2 =$ born in the 1970s, $3 =$ born in the 1980s, $4 =$ born in the 1990s). N_i is the total number of participants in generation group i . y_{ikl} is the net transfer amount for participant l belonging to income quintile group k in generation group i . y_{ik} is the average net transfer amount for income quintile group k in generation group i . \bar{y}_i is the average net transfer amount for the entire sample of generation group i .

Additionally, when assessing the income redistribution effects of the current NPS and various reform proposals, the MLD is calculated based on the net transfer amount for each

participant. The net transfer amount, as used in this study, is defined in Equation (12) as the difference between each participant's lifetime pension benefits calculated from Equation (8) and their lifetime contributions calculated from Equations (3) and (4).

$$\text{Net transfer amount} = P_i - C_i \quad (12)$$

4.2. Reflecting Disparities in Contribution Periods and Life Expectancy across Income Groups

In this study, to incorporate the heterogeneity of National Pension participants, future predictions of the number of children and employment status were made separately for each participant. Furthermore, this study also reflects disparities in contribution periods and life expectancy across income tiers for each participant.

Firstly, this study utilizes the data on the “Average Contribution Period (months) of National Pension Participation Cases” from the final report of the “In-Depth Analysis of Multi-Layered Old Age Income Security System Using Administrative Data” submitted by the Seoul National University Industry—Academic Cooperation Foundation to the Ministry of Health and Welfare in November 2021 (Ku et al. 2021). These data are used to reflect different contribution periods across income tiers (see Table 4). Specifically, it was assumed that participants in the first income quintile contribute for 10 years, those in the second quintile contribute for 12 years, those in the third quintile contribute for 14 years, those in the fourth quintile contribute for 16 years, and those in the fifth quintile contribute for 20 years.

Table 4. The average contribution period (months) for cases with an NPS participation history.

Age	Overall	Gender		Income Quintile Group				
		Male	Female	1st	2nd	3rd	4th	5th
15–24	13.51	11.34	15.67	6.48	10.55	15.53	16.34	13.87
25–29	33.95	28.64	40.03	17.79	24.24	33.84	38.91	37.97
30–34	67.66	63.42	73.47	37.05	49.47	65.91	73.87	78.4
35–39	105.16	106.53	103.05	56.6	78.03	103.7	117.72	125.23
40–44	134.63	144.38	120.74	74.8	99.87	130.63	151.48	167.55
45–49	158.07	181.61	127.43	91.33	121.88	151.15	175.36	201.48
50–54	170.9	212.21	123.11	107.36	134.02	158.21	182.82	220.87
55–59	175.68	228.41	116	122.86	143.53	162.61	186.6	233.56

Data source: compiled by the author based on Table III-18, “Average Contribution Period (months) for Cases with National Pension Participation History”, from Ku et al. (2021, p. 48).

Additionally, this study incorporates different life expectancies across income tiers using the average life expectancy data using the income quintile for 2017 presented by Khang et al. (2019). Khang et al. utilized the National Health Insurance Service's National Health Information Database (NHID), which includes comprehensive data from 2004 to 2017, to present annual average life expectancies by income quintile (at age 0). To calculate annual pension benefits and contributions, this study uses rounded values from Khang et al.'s “Average Life Expectancy by Income Tier” for analytical convenience (see Table 5).

Table 5. Life expectancy disparities by income tier: actual values for 2017.

Income Quintile Group		Average Life Expectancy by Income Quintile (Khang et al. 2019)	Assumed Values in This Paper
Male	1st	75.31	75
	2nd	79.81	80
	3rd	80.81	81
	4th	81.81	82
	5th	83.22	83
Female	1st	83.38	83
	2nd	86.12	86
	3rd	86.22	86
	4th	86.71	87
	5th	87.72	88

Data source: compiled by the author based on Figure 3, “Trends in life expectancy by income in (A) women and (B) men in Korea and projections to 2030”, from (Khang et al. 2019).

5. Data and Methods

5.1. Data and Assumptions in Statistical Analysis

This study uses data from the Korean Labor & Income Panel Study (KLIPS) to understand the National Pension participation history and estimate lifetime income, lifetime pension benefits, and lifetime contributions. The use of KLIPS data is justified by the need to track long-term changes and transitions at the household and individual levels in a dynamic context. Additionally, the availability of various survey items as explanatory variables in the income estimation model makes KLIPS an ideal choice. This study uses data from the first to the twenty-fourth wave of KLIPS.

The sample selection follows the methodology outlined by [J. Park \(2024\)](#) and is based on the following criteria:

- The analysis targets Workplace-based Insured Persons and Individually Insured Persons, excluding those with histories of Occupational Pension.
- The sample includes participants enrolled in the NPS between 2018 and 2020 and aged 25 to 57 as of 2020. The age of 25, the starting age for pension enrollment, follows [S. H. Kim \(2019\)](#), while the age of 57 reflects the scenario of an individual aged 25 in 1988 (the start year of the NPS), who would be 57 in 2020. Therefore, it is assumed that all participants enrolled in the NPS at age 25.
- Participants with a history of receiving National Pension benefits are excluded.
- Foreign workers are excluded due to employment instability and differing employment patterns.
- Participants who changed their employment status during the survey period (e.g., from regular to self-employment or irregular employment) are excluded.

Table 6 summarizes the representativeness analysis of the KLIPS data and the selected sample based on the above criteria. When comparing the number of participants and the sex ratio by participation type with the 2020 data from the [National Pension Service \(2020\)](#) and the KLIPS data, using KLIPS data poses no issues regarding representativeness. Additionally, differences in the ratio of Workplace-based Insured Persons to Individually Insured Persons were not deemed to affect the analysis, as it was conducted separately by participation type.

Table 6. The number of participants and sex ratio by NPS enrollment type (1997–2020).

		National Pension Service	KLIPS	Sample Used in This Study (KLIPS)
Workplace-based Insured Persons	Male	8,307,000 (58)	8113 (56.9)	5792 (58.5)
	Female	6,012,000 (42)	6150 (43.1)	4117 (41.5)
Individually Insured Persons	Male	1,858,000 (48.9)	6807 (50.7)	3073 (51.6)
	Female	1,941,000 (51.1)	6622 (49.3)	2885 (48.4)

Note: The unit is the number of participants, with the percentage of the gender ratio indicated in parentheses. The public data from the National Pension Service represent the number of participants as of 2020. The data from the KLIPS represent the total number from the 1997 to 2020 surveys (1st to 24th waves). Data source: the number of workplace-based insured persons and individually insured persons by gender and age (fiscal year 2020) ([National Pension Service 2020](#)).

Furthermore, this study adopts several assumptions for statistical analysis, following research by [J. Park \(2024\)](#):

- To discount lifetime pension benefits and contributions to the present value, future values of real wage growth, real interest rates, and inflation rates are based on the basic assumptions for population and economy used in the 5th National Pension Financial Estimate Results (see Table A1). Historical real interest rates from 1988 to 2019 are derived by subtracting the consumer price index (CPI) from the nominal interest rates of deposit bank interest rates.

- Individual life expectancy is based on the gender- and cohort-specific life expectancies from the “2021 Life Table” published by [Statistics Korea \(2022\)](#) and is used to estimate lifetime pension benefits.
- The income range analyzed only includes labor income, excluding financial income, secondary job income, and inheritance income.
- The retirement age for regular employees is assumed to be 60, in line with the Elderly Employment Promotion Act, Article 19, Paragraph 1. Self-employed and irregular workers are assumed to work until the year before they start receiving pensions, based on the “Effective Retirement Age” ([J. H. Park 2022](#)).
- Residence is assumed to remain unchanged from the last survey response of the household or household member.
- For individuals over 40, the number of children is assumed to remain unchanged, with those above 40 having no additional children. For individuals without data over 40, the number of children is set as of age 39. This study estimates the number of children using KLIPS data instead of assuming that this remains constant from the last survey response, given the importance of the number of children in projecting future individual income. However, following research by [H. S. Kim \(2007\)](#), due to differences in the determinants of the number of children between married women over 40 and those under 40, this assumption is made for analytical convenience.
- Employment type is assumed to remain unchanged during the employment period.
- For the years mentioned in this study, income is considered for the year it was earned (the previous year of the survey), as KLIPS collects income data from the prior year.
- The base year for discounting to the present value is 2020, the latest year for which KLIPS data are available (survey year 2021).

These assumptions are critical for ensuring the accuracy and reliability of the statistical analysis and reflecting the real-world conditions and variations among different income groups in studying the BP-KNPS Proposal and its impact on income redistribution.

5.2. Methodology

To assess the income redistribution effects of the BP-KNPS Proposal, the following estimations were made. First, using Ordinary Least Squares (OLS), the determinants of the number of children each participant will have in the future are estimated, and these estimates are used to predict the future number of children. Next, a Logit Model is employed to estimate the determinants of whether each participant will be employed in the future, and these estimates are used to predict the future employment status. For those predicted to be employed, the Mincer earnings function is utilized to elucidate the relationship between age, tenure, and wage income, segmented by gender and employment type (regular employees, self-employed, and irregular employees). This allows for the prediction of annual wage income from employment to retirement for each participant. These wage predictions are then adjusted for wage growth and discount rates to determine the annual wage levels. Subsequently, the future pension benefits under both the CNPS and the BP-KNPS Proposal, as well as the annual insurance premiums under the CNPS, will be calculated.

The above estimates for future projections follow the methodology outlined in [J. Park \(2024\)](#). The lifetime pension benefits and contributions estimated in this study are theoretical values calculated based on the National Pension benefit and contribution formulas published by the Ministry of Health and Welfare, assuming participants earn the predicted lifetime income. Finally, the Mean Log Deviation (MLD) index is derived to assess income redistribution effects based on the net transfer amount (lifetime pension benefits minus lifetime pension contributions) by gender, employment type, and income group. A summary of this estimation process is illustrated in Figure 4. In summary, in step 4 of Figure 4, the lifetime pension amounts under the CNPS and with the implementation of the BP-KNPS Proposal are estimated. Then, in step 6, the three hypotheses set out in this paper are tested.

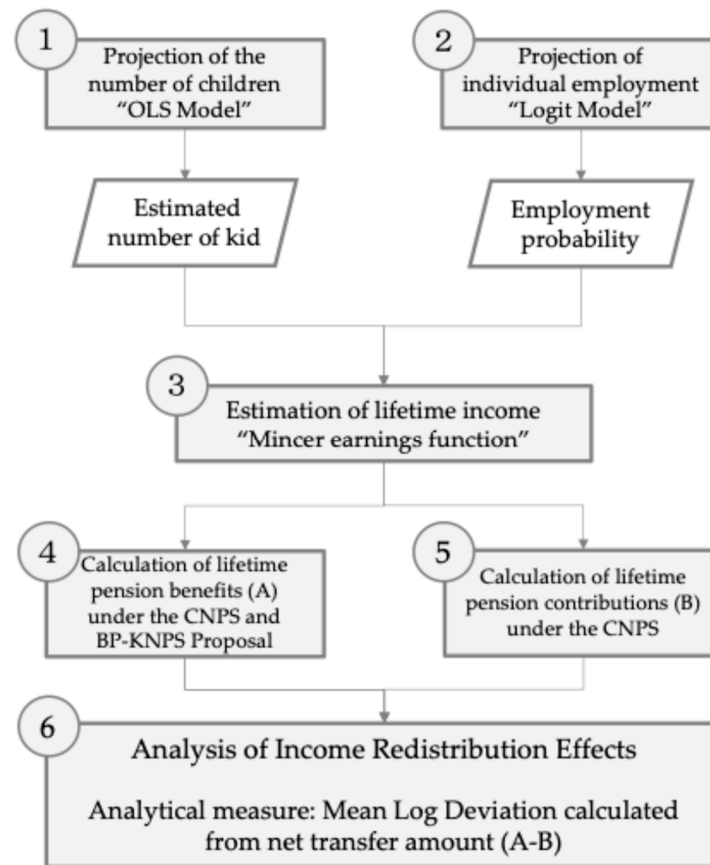


Figure 4. The analysis flow.

Lifetime Income

In this study, the Mincer earnings function is used to predict future income beyond the survey period of the KLIPS, thereby estimating individual lifetime income. Additionally, future predictions for the number of children and employment status are incorporated into the lifetime income estimations.

First, the number of children for married women is estimated. The number of children for husbands in the same household follows the number estimated for their wives. As mentioned in the assumptions made for statistical analysis, it is assumed that no births occur after age 40. For participants over 40 without data, the number of children is set based on their status at age 39. The KLIPS data used in this analysis are detailed when capturing households' economic situations, as noted by Song (2012), overcoming the limitations of previous studies that relied on the "National Fertility and Family Health and Welfare Survey" by the Korea Institute for Health and Social Affairs (KIHASA), which excluded variables on household economic conditions.

Using OLS, the determinants of the number of children for married women under 39 are modeled, as shown in Equation (13). The number of children for each married woman is determined by variables such as age, employment status, previous year's labor income (wage or business income), previous year's household income, and individual attributes (education level, residence in a metropolitan area, and homeownership). The rationale for using the previous year's labor and household income is that the economic situation immediately before childbirth is a key decision factor, and this study uses the predicted number of children for future income estimations. This allows the use of the predicted values of the previous year's labor and household income to estimate the future number of children.

$$kid_{MW,t} = \alpha_0 + \alpha_1 A_{MW,t} + \alpha_2 ES_{MW,t} + \alpha_3 \ln wage_{MW,t-1} + \alpha_4 \ln hwage_{MW,t-1} + \lambda X_{MW,t} + e_{MW,t} \quad (13)$$

$kid_{MW,t}$ is the number of children for married women for year t ; $A_{MW,t}$ is the age of married women for year t ; $ES_{MW,t}$ is the employment status of married women for year t ; $lnwage_{MW,t-1}$ is the labor income (salary income or business income) of married women for year $t-1$; $lnhwage_{MW,t-1}$ is the household income for year $t-1$ (the total labor income of household members, excluding married women); $X_{MW,t}$ is the attributes of married women (education level, residence in a metropolitan area, and homeownership); $e_{MW,t}$ is the error term.

Based on the parameters estimated from Equation (13), Equation (14) is derived to estimate the future number of children ($\hat{kid}_{MW,t}$) for married women under 39 years old.

$$\hat{kid}_{MW,t} = \hat{\alpha}_0 + \hat{\alpha}_1 A_{MW,t} + \hat{\alpha}_2 ES_{MW,t} + \hat{\alpha}_3 lnwage_{MW,t-1} + \hat{\alpha}_4 lnhwage_{MW,t-1} + \hat{\lambda} X_{MW,t} \quad (14)$$

$\hat{kid}_{MW,t}$ is the predicted number of children for married women for year t .

Next, to analyze workers who make pension contributions, it is necessary to predict whether individuals will continue to be employed after the survey period. Specifically, using a Logit Model, the probability of each participant being employed is estimated from Equation (15). The employment status of each participant is determined by variables, including age and its square, the number of children and its square, household income (the sum of the labor income of household members other than the individual), the population of the city/province of residence, and individual attributes (education level, metropolitan area residence, homeownership, health status, and marital status). In the logit model used in this study, a value of 1 signifies ‘currently employed’, while a value of 0 denotes ‘not currently employed’.

$$\begin{aligned} \Pr(PE_i = 1) &= F\left(\beta_0 + \beta_1 A_i + \beta_2 A_i^2 + \beta_3 kid_i + \beta_4 kid_i^2 + \beta_5 lnhwage_{i,t} + \beta_6 PCP_i + \lambda X_i + u_{i,t}\right) \\ &= \frac{\exp(\beta_0 + \beta_1 A_i + \beta_2 A_i^2 + \beta_3 kid_i + \beta_4 kid_i^2 + \beta_5 lnhwage_{i,t} + \beta_6 PCP_i + \lambda X_i + u_{i,t})}{(1 + \exp(\beta_0 + \beta_1 A_i + \beta_2 A_i^2 + \beta_3 kid_i + \beta_4 kid_i^2 + \beta_5 lnhwage_{i,t} + \beta_6 PCP_i + \lambda X_i + u_{i,t}))} \end{aligned} \quad (15)$$

$\Pr(PE_i)$ is the employment probability of participant i ; A_i is the age of participant i ; A_i^2 is the square of the age of participant i ; kid_i is the number of children of participant i ; kid_i^2 is the square of the number of children of participant i ; $lnhwage_{i,t}$ is the household income of participant i for year t (the sum of the labor income of household members); PCP_i is the population of the city/province where participant i resides; X_i is the attributes of participant i (education level, residence in a metropolitan area, homeownership, health status, and marital status); $u_{i,t}$ is the error term.

Based on the estimated employment probability $\Pr(PE_i)$ from Equation (15), the future employment status ES_i of participant i is determined as follows:

$$ES_i = \begin{cases} 1 & \text{if } \Pr(PE_i = 1) \geq 0.5 \\ 0 & \text{if } \Pr(PE_i = 1) < 0.5 \end{cases}$$

Finally, using the values of the number of children and employment status, obtained from Equations (14) and (15), the future income is estimated. This study utilizes the Mincer earnings function, which effectively leverages the variables that capture the attributes of workers in the KLIPS data (Kawaguchi 2011). Specifically, Equation (16) is used to estimate the income of each participant after the survey period. For regular employees, income is determined by variables such as age and its square, tenure and its square, the number of children, individual attributes (education level, metropolitan area residence, health status, marital status, firm size, and occupation), and unobservable individual-specific residuals. For self-employed and irregular workers, the firm size and occupation variables are excluded from Equation (16).

$$lnw_{i,t} = \theta_0 + \theta_1 A_{i,t} + \theta_2 A_{i,t}^2 + \theta_3 CE_{i,t} + \theta_4 CE_{i,t}^2 + \theta_5 kid_{i,t} + \lambda X_{i,t} + v_i + \varepsilon_{i,t} \quad (16)$$

$lnw_{i,t}$ is the natural logarithm of participant i 's annual income for year t ; $CE_{i,t}$ is the participant i 's years of tenure for year t (continuous years of employment: CE); $CE_{i,t}^2$ is the square of participant i 's years of tenure for year t ; $X_{i,t}$ is the attributes of participant i (educa-

tion level, metropolitan area residence, health status, marital status, firm size, and occupation); v_i is the unobservable individual effects (unobservable individual-specific residual); $\varepsilon_{i,t}$ is the error term.

The calculation of lifetime income is represented by Equation (17), with 2020 as the base year. This includes the portion of labor income (wage or business income) self-reported by household members and the predicted values from Equation (16). For household members excluded from the sample in certain years, the predicted annual income is used similarly to the method for estimating future income. The first term in Equation (17) represents the annual income from the initial enrollment in the NPS to the current time (2020), adjusted to 2020 values. The second term represents the annual income from the current time to just before retirement, adjusted to 2020 values, considering the future employment probability derived from Equation (15). The present value of each participant's annual income is determined by the real interest rate (r_j) and the real wage growth rate (π_j). The decision to use real interest rates instead of nominal interest rates in this paper is driven by the aim of adopting the macroeconomic indicators (real economic growth rate, real wage growth rate, real interest rate, and inflation rate) used in the 5th National Pension Financial Estimate Results (Ministry of Health and Welfare 2023b) to ensure consistency across these indicators (a similar approach was employed by S. H. Kim (2019)). Additionally, to ensure consistency between sample and actual values, an adjustment coefficient α_h , which is the 10-year average ratio (2011–2020) of the median income estimated from KLIPS data to the actual monthly average wages by gender and employment type reported in the “Survey on Employment Conditions by Employment Type: Wages and Working Hours by Employment Type” by the Ministry of Employment and Labor (2021), is applied to Equation (17).

$$W_i = \left[\sum_{t=k}^h w_{i,t} \cdot \prod_{j=t}^h (1 + r_j) + \sum_{t=h+1}^{R-1} \hat{w}_{i,t} \cdot ES_i \cdot \prod_{j=h+1}^{R-1} \frac{(1 + \pi_j)}{(1 + r_j)} \right] \cdot \alpha_h \quad (17)$$

$w_{i,t}$ is the reported annual income of participant i for year t ; $\hat{w}_{i,t}$ is the predicted annual income of participant i for year t ; k is the initial year of National Pension enrollment; h is 2020 (the reference year); R is the year of retirement; r_j is the real interest rate (the discount rate) for year j ; π_j is the real wage growth rate for year j ; ES_i is the employment status of participant i (employed = 1, not employed = 0); α_h is the adjustment coefficient; W_i is the lifetime income of participant i (evaluated as of 2020).

6. Results

6.1. Income Redistribution Effects of the BP-KNPS Proposal

In this study, we measured the income redistribution effects of the BP-KNPS Proposal by comparing the MLD of income redistribution through the CNPS with the MLD through the BP-KNPS Proposal (6.1.1), comparing the MLD through the 5NPCPD with the MLD through the BP-KNPS Proposal (6.1.2), and comparing the MLD through the CNPS with the MLD through the BP-KNPS Proposal, implemented through the 5NPCPD (6.1.3). Table 7 provides an overview of the results measuring the income redistribution effects of the BP-KNPS Proposal across different types of NPS participation using the MLD indicator.

Figures A1–A3 illustrate the income redistribution effects of the BP-KNPS Proposal, decomposing these effects into intergenerational and intragenerational effects, with respective values presented for each. As described in Equation (15), the intragenerational effect (the income redistribution within a generation) is further decomposed into inter-tier and intra-tier effects. Additionally, Figures A2 and A3 show the “After the Introduction of the BP-KNPS Proposal” section, indicating the extent to which income disparity has decreased (shown by a decrease in MLD) or increased (shown by an increase in MLD) compared to the CNPS, reflecting the effects of the BP-KNPS Proposal.

Table 7. Income redistribution effects of the BP-KNPS Proposal from the perspective of MLD.

Workplace-Based Insured Persons	CNPS	5NPCPD					
		(1) Increase in the Contribution Rate			(2) Differences in the Rate of Increase by Age Group	(3) Raising the Pensionable Age	
		Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6
Before the introduction of the BP-KNPS Proposal	0.2022863	0.2018175	0.2009814	0.2008875	0.2015882	0.2218906	0.2229137
After the introduction of the BP-KNPS Proposal	0.1929960	0.1933260	0.1921718	0.1920445	0.1944095	0.2217297	0.2247273
Individually Insured Persons	CNPS	5NPCPD					
		(1) Increase in the contribution rate			(2) Differences in the rate of increase by age group	(3) Raising the pensionable age	
		Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6
Before the introduction of the BP-KNPS Proposal	0.2046127	0.2006878	0.1987771	0.1985977	0.1980808	0.2115630	0.2110299
After the introduction of the BP-KNPS Proposal	0.1721433	0.1677115	0.1654873	0.1652860	0.1658908	0.1735735	0.1760280

Data source: created by the author referencing KLIPS.

6.1.1. Effect of Introducing the BP-KNPS Proposal to the CNPS

Upon testing Hypothesis 1 defined in this study, it was confirmed that implementing the BP-KNPS Proposal in the CNPS resulted in a reduction in income disparity among pensioners' old-age pension incomes. Figure A1 summarizes the income redistribution effects of the BP-KNPS Proposal, analyzed using the MLD, while reflecting the disparities in contribution periods and average life expectancy across different income tiers, as introduced in Tables 4 and 5.

Firstly, as shown in Figure A1, introducing the BP-KNPS Proposal into the CNPS resulted in a reduction in income inequality, regardless of employment type. Specifically, the MLD for Workplace-based Insured Persons, including regular employees, decreased by 0.0092903 (with intragenerational income redistribution contributing 0.0086962). Similarly, the MLD for Individually Insured Persons, including self-employed and irregular workers, decreased by 0.0324695 (with intragenerational income redistribution contributing 0.0324623). These results indicate that the reduction in intragenerational income inequality significantly contributed to the overall decrease in income inequality, highlighting the greater impact of the BP-KNPS Proposal on self-employed and irregular workers compared to regular employees.

6.1.2. Effect of Introducing the BP-KNPS Proposal to the 5NPCPD

Upon testing Hypothesis 2 defined in this study, it was confirmed that implementing the BP-KNPS Proposal in the 5NPCPD also led to a reduction in the income disparity among pensioners' old-age pension incomes. As shown in Figure A2, the income redistribution effects of introducing the BP-KNPS Proposal into all reform proposals of the 5NPCPD (from Proposal 1 to Proposal 6) varied by employment type. For Workplace-based Insured Persons (regular employees), the proposals involving an increase in contribution rates (Proposals 1, 2, and 3) and the proposal for adjusting the rate of increase in contribution rates (Proposal 4) led to a reduction in income inequality. In contrast, proposals to raise the pensionable age (Proposals 5 and 6) were found to increase income inequality. Specifically, the MLD of the net transfer amount (lifetime pension benefits minus lifetime pension contributions) after introducing the BP-KNPS Proposal under the contri-

bution rate increase proposals (Proposals 1, 2, and 3) by 0.0071787. Conversely, the MLD under the proposals to raise the pensionable decreased by 0.0084915 to 0.0088430, indicating a reduction in income inequality. Similarly, the MLD under the proposal for adjusting the increase in contribution rates (Proposal 4) decreased age (Proposals 5 and 6) increased by 0.0018136 for Proposal 6 (and decreased by 0.0001609 for Proposal 5), indicating an increase in income inequality.

For Individually Insured Persons (self-employed and irregular workers), all reform proposals (from Proposal 1 to Proposal 6) showed reduced income inequality. Specifically, the MLD of the net transfer amount after introducing the BP-KNPS Proposal under the contribution rate increase proposals (Proposals 1, 2, and 3) decreased by 0.0329763 to 0.0333116, indicating a reduction in income inequality. The MLD under the proposal for adjusting the increase in contribution rates (Proposal 4) decreased by 0.0321900. Additionally, the MLD under the proposals to raise the pensionable age (Proposals 5 and 6) decreased by 0.0350019 to 0.0379896.

These findings confirm that the income redistribution effects of the BP-KNPS Proposal are more pronounced for self-employed and irregular workers compared to regular employees, both under the CNPS and the 5NPCPD.

6.1.3. Comparison between the CNPS and the 5NPCPD after Implementing the BP-KNPS Proposal

Upon testing Hypothesis 3 defined in this study, it was confirmed that, compared to the CNPS, the 5NPCPD with the implementation of the BP-KNPS Proposal led to a reduction in income disparity among pensioners' old-age pension incomes. In Figures A1 and A2, we analyze the income redistribution effects of the BP-KNPS Proposal. Figure A3 examines the changes in income redistribution effects between the CNPS and various proposals in the 5NPCPD when combined with the BP-KNPS Proposal. Compared to the CNPS, the income redistribution effects of each reform proposal (Proposals 1 to 6) after introducing the BP-KNPS Proposal varied by employment type, as shown in Figure A3.

For Workplace-based Insured Persons, which include regular employees, the proposals to increase contribution rates (Proposals 1, 2, and 3) and to adjust the rate of increase in contribution rates (Proposal 4) demonstrated a reduction in income inequality. In contrast, the proposals to raise the pensionable age (Proposals 5 and 6) resulted in increased income inequality. Specifically, the MLD of the net transfer amount (lifetime pension benefits minus lifetime pension contributions) decreased by 0.0089603 to 0.0102418 under the contribution rate increase proposals, indicating a reduction in income inequality. Similarly, the MLD under the proposal to adjust the rate of increase in contribution rates (Proposal 4) decreased by 0.0078768. However, under the proposals to raise the pensionable age (Proposals 5 and 6), the MLD increased by 0.0194434 to 0.0224410, indicating increased income inequality.

For Individually Insured Persons, which include self-employed and irregular workers, all reform proposals (Proposals 1 to 6) demonstrated a reduction in income inequality. Specifically, the MLD of the net transfer amount decreased by 0.0369012 to 0.0393267 under the contribution rate increase proposals and by 0.0387219 under the proposal to adjust the rate of increase in contribution rates. The proposals to raise the pensionable age (Proposals 5 and 6) also resulted in a decrease in the MLD from 0.0285848 to 0.0310393. These results confirm that the income redistribution effects of the BP-KNPS Proposal are greater for self-employed and irregular workers compared to regular employees.

Further analysis by gender (refer to Figure A3) shows that, for male regular employees, the proposals to raise the pensionable age (Proposals 5 and 6) and increase the contribution rates (Proposals 1, 2, and 3), as well as the proposal to adjust the rate of increase in contribution rates (Proposal 4), increased income inequality compared to the current system. This was primarily due to the increased intragenerational income disparity among middle-aged cohorts (those born in the 1960s and 1970s). However, the increase in MLD was relatively minor, ranging from 0.0057124 to 0.0091438. For male regional participants,

all reform proposals showed a reduction in income inequality, consistent with the overall results for regional participants. Specifically, the MLD of the net transfer amount decreased by 0.0170429 to 0.0487713. For female regular employees and female Individually Insured Persons, all reform proposals showed a reduction in income inequality, with the proposals to raise the pensionable age (Proposals 5 and 6) having a more significant effect. The MLD for regular employees decreased by 0.0351855 to 0.0370221, and for Individually Insured Persons, it decreased by 0.0507533 to 0.0583112.

7. Discussion

This study examines the income redistribution effects of the BP-KNPS Proposal based on a simulation analysis using microdata from the KLIPS. It compares the income redistribution situation under the CNPS benefit calculation formula with the changes that would occur if the BP-KNPS Proposal were introduced, both for the CNPS and for each reform proposal of the 5NPCPD. Lifetime income was used to estimate the income redistribution index, and the MLD was utilized as the income redistribution measure.

One of the primary functions of social security administered by the state is income redistribution, and public pension systems serve as a form of social insurance that supports this objective. Analyzing income redistribution from the perspective of public systems is significant for ensuring social equity, preventing poverty, and promoting social stability. This is particularly critical in Korea, where the challenges of a rapidly aging population, a declining birth rate, a rising elderly dependency ratio, and a high level of elderly poverty further emphasize the importance of the public system's role. The BP-KNPS Proposal is part of this initiative.

Upon comparing the results of this paper with those of [J. Park \(2024\)](#), who analyzed the income redistribution effects of the 5NPCPD without the BP-KNPS Proposal, several differences emerge:

- According to [J. Park \(2024\)](#), the effect of reducing income inequality through the proposals to increase contribution rates (Proposals 1, 2, and 3) before introducing the BP-KNPS Proposal was minimal (the reduction in MLD was 0.0004688 to 0.0013988 for Workplace-based Insured Persons and 0.0039249 to 0.0060151 for Individually Insured Persons). However, after introducing the BP-KNPS Proposal, the reduction in MLD increased from 0.0089603 to 0.0102418 for Workplace-based Insured Persons and 0.0369012 to 0.0393267 for Individually Insured Persons.
- The author of [J. Park \(2024\)](#) found that the effect of reducing income inequality through the proposal to adjust the rate of the increase in contribution rates (Proposal 4) before introducing the BP-KNPS Proposal was also minimal (the reduction in MLD was 0.0006981 for Workplace-based Insured Persons and 0.0065319 for Individually Insured Persons). After introducing the BP-KNPS Proposal, the reduction in MLD increased to 0.0078768 for Workplace-based Insured Persons and 0.0387219 for Individually Insured Persons.
- The author of [J. Park \(2024\)](#) found that the proposals to raise the pensionable age (Proposals 5 and 6) increased income inequality for all employment types (the increase in MLD was 0.0196043 to 0.0206274 for Workplace-based Insured Persons and 0.0064172 to 0.0069503 for Individually Insured Persons). However, after introducing the BP-KNPS Proposal, these proposals showed a reduction in income inequality for Individually Insured Persons (the reduction in MLD was 0.0285848 to 0.0310393).
- The author of [J. Park \(2024\)](#) identified that income inequality in the absence of the NPS and under the CNPS and the 5NPCPD was primarily due to intragenerational income disparities. In contrast, after introducing the BP-KNPS Proposal, the reduction in MLD indicated that intragenerational income redistribution reduced overall income inequality under the CNPS and the proposals to increase contribution rates (Proposals 1, 2, and 3) and adjust the rate of increases in contribution rates (Proposal 4).
- The author of [J. Park \(2024\)](#) found that all reform proposals (Proposals 1 to 6) increased intragenerational income inequality for middle-aged cohorts (born in the 1960s and

1970s). However, after introducing the BP-KNPS Proposal, self-employed and irregular workers born in the 1970s showed a reduction in intragenerational income inequality under all reform proposals.

These findings suggest that the BP-KNPS Proposal can enhance income redistribution effects under the CNPS and the 5NPCPD. The BP-KNPS Proposal's effect on reducing intragenerational income inequality is particularly notable. While Parametric Pension Reform, such as adjusting contribution rates and the pensionable age, has limited redistribution effects, Structural Pension Reform, like the BP-KNPS Proposal, which introduces bend points into the earnings-related portion of pension benefits, significantly enhances redistribution effects. Additionally, the redistribution benefits of the BP-KNPS Proposal are more substantial for self-employed and irregular workers compared to regular employees.

From the perspective of the MLD indicator, the BP-KNPS Proposal reduces income inequality compared to the CNPS. For regular employees, the MLD decreased from 0.2022863 to 0.1929960, and for self-employed and irregular workers, it decreased from 0.2046127 to 0.1721433, indicating a significant reduction in income inequality. The effect was more pronounced for self-employed and irregular workers. Additionally, it is confirmed in Figures A1–A3 that Structural Pension Reform, such as the BP-KNPS Proposal, has superior income redistribution effects compared to Parametric Pension Reform measures like adjustments in contribution rates and the pensionable age proposed in the 5NPCPD.

However, regarding the income-inequality-widening effect of the proposals to raise the pensionable age (Proposals 5 and 6), as pointed out by J. Park (2024), this study finds that the BP-KNPS Proposal's income redistribution effect could not mitigate such an impact for regular employees. This result highlights that the triple burden on low-income participants—reduced benefits due to disparities in contribution periods, life expectancy disparities, and raised pensionable age—has a more significant impact than the income redistribution effect of the BP-KNPS Proposal identified in this study.

The significance of this study lies in the clarification of two key points.

First, publicly available documents from the Korean government related to the National Pension, such as the “National Pension Financial Estimate” and the “National Pension Comprehensive Plan (Draft),” conduct policy evaluations (such as replacement rates, cost-benefit ratios, and income redistribution) without considering the heterogeneity across income groups (e.g., disparities in pension contribution periods or life expectancy). However, when assessing the current state and considering pension reforms, it is crucial to consider the heterogeneity of individual contributors. In fact, under the CNPS, when reflecting income-group-specific disparities in contribution periods and life expectancy for each participant, it was confirmed that income inequality increased for all employment types.

Second, in light of the “pension financial stability” goal proposed by the Yoon Suk-yeol administration and from the perspective of the NPS's income redistribution function, the proposal to raise contribution rates (including the reform of the generational rate increase speeds) in the 5NPCPD is more favorable. When reflecting on the income-group-specific disparities in contribution periods and the life expectancy for each participant, it was confirmed that the proposal to raise the pension age, regardless of whether the BP-KNPS Proposal was implemented, widened income inequality for all types of employment.

For a more realistic analysis of the income redistribution effect, it is necessary to consider the layers of the population not covered in this analysis. However, due to the limitations in the scope of this study, such an analysis was not conducted and remains a subject for future research. Also, this paper focuses on the income redistribution function, a key feature of the NPS. However, it does not extend its analysis to other critical aspects such as pension fund stability (the long-term sustainability of the pension system) or retirement income security. Both of these issues are vital in discussions of pension reform and are earmarked for future research.

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Informed Consent Statement: This study uses an open database and does not involve this problem.

Data Availability Statement: The original data presented in the study are openly available in FigShare at [<https://doi.org/10.6084/m9.figshare.26391427.v1>, accessed on 23 July 2024]. The code and processed data used in the analysis of this study are openly available in FigShare at [<https://doi.org/10.6084/m9.figshare.26391442.v1>, accessed on 23 July 2024].

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Abbreviations

NPS	National Pension Scheme
CNPS	Current National Pension Scheme
5NPCPD	5th National Pension Comprehensive Plan (Draft)
BP-KNPS	Proposal to incorporate the Bend Points mechanism into the Korean NPS
OASDI	Old Age, Survivors, and Disability Insurance
KLIPS	Korean Labor & Income Panel Study
OLS	Ordinary Least Squares
MLD	Mean Log Deviation
SMI	Standard monthly income
KRW	Korean Won (Korea's Currency Unit)
AIME	Average Indexed Monthly Earnings
PIA	Primary Insurance Amount

Appendix A

Table A1. The assumed values of macroeconomic indicators used in this paper.

Economic Variables	Year					
	2023–2030	2031–2040	2041–2050	2051–2060	2061–2070	2071–2080
Real economic growth rate	1.9	1.3	0.7	0.4	0.2	0.2
Real wage growth rate	1.9	1.9	1.8	1.7	1.6	1.6
Real interest rate	1.4	1.4	1.3	1.2	1.2	1.2
Inflation rate	2.2	2	2	2	2	2

Notes: Population and economic outlook use median values, which are fundamental assumptions. The unit is expressed in percentage (%). Data source: created by the author referencing “Table 5. Assumptions of Economic Variables in Combined Scenarios” in the Ministry of Health and Welfare’s “The 5th National Pension Financial Estimate Results” (Ministry of Health and Welfare 2023b, p. 7).

Table A2. The actual and assumed standard monthly income (SMI).

Upper Limit	Lower Limit	Applicable Period
2,000,000	70,000	1988.11.~1995.3.
3,600,000	220,000	1995.4.~2007.3.
3,600,000	220,000	2007.4.~2008.3. (Employee)
		2007.4.~2008.6. (Employer)
3,600,000	220,000	2008.4.~2009.6. (Employee)
		2008.7.~2009.6. (Employer)
3,600,000	220,000	2009.7.~2010.6.
3,680,000	230,000	2010.7.~2011.6.
3,750,000	230,000	2011.7.~2012.6.
3,890,000	240,000	2012.7.~2013.6.
3,980,000	250,000	2013.7.~2014.6.
4,080,000	260,000	2014.7.~2015.6.
4,210,000	270,000	2015.7.~2016.6.
4,340,000	280,000	2016.7.~2017.6.
4,490,000	290,000	2017.7.~2018.6.
4,680,000	300,000	2018.7.~2019.6.
4,860,000	310,000	2019.7.~2020.6.
5,030,000	320,000	2020.7.~2021.6.

Table A2. *Cont.*

Upper Limit	Lower Limit	Applicable Period
5,240,000	330,000	2021.7.~2022.6.
5,530,000	350,000	2022.7.~2023.6.
5,900,000	370,000	2023.7.~2024.6.
Multiplying the inflation rate (assumed value) of the 5th National Pension Financial Estimate by the value of the previous year.		2024.7.~2081.6.

Notes: The currency unit is KRW. Data source: created by the author referencing the homepage of the [National Pension Service \(2023\)](#).

Table A3. Descriptive statistics for the estimation of the number of children.

Variable	Obs	Mean	Std. Dev.	Min	Max
kid	36,846	1.442219	0.863746	0	5
age	36,868	33.22263	4.178013	16	39
education level (No formal education to middle school graduate = 1, High school graduate = 2, Junior college graduate = 3, University graduate = 4, Graduate school graduate = 5)	36,856	2.741507	0.988337	1	5
employment status	36,868	0.449957	0.497496	0	1
lnwage	36,868	1.979052	2.459094	0	7.600903
lnhwage (total labor income of household members excluding married women)	36,868	6.7881	3.162861	0	28.00957
homeownership	36,868	0.498861	0.500006	0	1
residence in a metropolitan area (Seoul Special City, Gyeonggi Province, Metropolitan Cities (Busan, Daegu, Daejeon, Incheon, Gwangju, Ulsan) = 1, Others = 0)	36,868	0.715037	0.451403	0	1
year	36,868	2008.15	7.075877	1997	2020
region	36,868	6.970082	4.611014	1	19

Data source: created by the author referencing the KLIPS data.

Table A4. The estimation of the number of children using OLS.

Variables	Kid
age	0.0605 *** (0.00105)
education level	−0.0657 *** (0.00466)
employment status	0.00566 (0.0190)
lnwage	−0.0744 *** (0.00423)
lnhwage	0.0362 *** (0.00190)
homeownership	0.133 *** (0.00861)
residence in a metropolitan area	−0.123 (0.0799)
year	YES
region	YES

Table A4. Cont.

Variables	Kid
Constant term	−0.886 *** (0.0892)
Observations	36,834
Sample size	5826
Log likelihood	−43,750.36
Wald chi ² (45)	6797.60
Standard errors in parentheses	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. A high Wald chi² value indicates that at least one of the regression coefficients is significantly different from zero, implying that the explanatory variables collectively have an impact on the dependent variable. The number inside the parentheses of the Wald chi² statistic denotes the ‘degree of freedom.’
Data source: created by the author referencing the KLIPS data.

Table A5. Descriptive statistics for employment probability estimation.

<Male>					
Variable	Obs	Mean	Std. Dev.	Min	Max
employment status	59,193	0.394354	0.488716	0	1
age	59,193	36.63639	7.390114	25	57
age ²	59,193	1396.838	565.5429	625	3249
kid	59,193	0.950873	0.967501	0	5
kid ²	59,193	1.840201	2.447556	0	25
employment experience	59,193	0.891119	0.311493	0	1
residence in a metropolitan area (Seoul Special City, Gyeonggi Province, Metropolitan Cities (Busan, Daegu, Daejeon, Incheon, Gwangju, Ulsan) = 1, Others = 0)	59,193	0.732131	0.442853	0	1
lnhwage (total labor income of household members excluding married women)	59,193	6.309842	3.08751	0	22.40521
homeownership	59,193	0.55167	0.497327	0	1
education level (No formal education to middle school graduate = 1, High school graduate = 2, Junior college graduate = 3, University graduate = 4, Graduate school graduate = 5)	59,191	2.945414	1.034599	1	5
unhealthy condition (Unhealthy = 1, Healthy = 0)	51,963	0.038085	0.191403	0	1
marital status	59,193	0.689085	0.462872	0	1
population by city/province	59,193	229,829.1	166,068.3	3315	585,772
year	59,193	2010.477	6.534704	1997	2020
region	59,193	6.80915	4.593756	1	19
<Female>					
Variable	Obs	Mean	Std. Dev.	Min	Max
employment status	55,806	0.246103	0.430743	0	1
age	55,806	36.47563	7.473477	25	57
age ²	55,806	1386.323	572.4163	625	3249
kid	55,806	1.103	0.971376	0	5
kid ²	55,806	2.160162	2.581674	0	25
employment experience	55,806	0.568201	0.495331	0	1
residence in a metropolitan area (Seoul Special City, Gyeonggi Province, Metropolitan Cities (Busan, Daegu, Daejeon, Incheon, Gwangju, Ulsan) = 1, Others = 0)	55,806	0.735082	0.441293	0	1
lnhwage (total labor income of household members excluding married women)	55,806	5.839738	3.559387	0	22.40521
homeownership	55,806	0.554295	0.497048	0	1

Table A5. Cont.

<Female>					
Variable	Obs	Mean	Std. Dev.	Min	Max
education level (No formal education to middle school graduate = 1, High school graduate = 2, Junior college graduate = 3, University graduate = 4, Graduate school graduate = 5)	55,785	2.690687	0.976857	1	5
unhealthy condition (Unhealthy = 1, Healthy = 0)	48,678	0.045236	0.207824	0	1
marital status	55,806	0.830896	0.374847	0	1
population by city/province	55,806	215160.6	158417.9	3145	541,289
year	55,806	2010.019	6.371594	1997	2020
region	55,806	6.726123	4.606665	1	19

Note: The number '2' listed above the variables 'age' and 'kid' represents the squared values of each variable. Data source: created by the author referencing the KLIPS data. The population data by city and province from 1998 to 2021 are sourced from Statistics Korea's "Future Population Projections (by City and Province): 2022–2052" ([Statistics Korea 2024a](#)).

Table A6. The estimation of employment probability using the Logit Model.

Variables	Male		Female	
	Employment Status		Employment Status	
	Coefficient	Marginal Effect	Coefficient	Marginal Effect
age	0.538 *** (0.0167)	0.092	0.453 *** (0.0190)	0.066
age ²	−0.00913 *** (0.000218)	−0.002	−0.00737 *** (0.000247)	−0.001
kid	0.285 *** (0.0406)	0.049	0.518 *** (0.0451)	0.075
kid ²	−0.0806 *** (0.0138)	−0.014	−0.128 *** (0.0150)	−0.019
employment experience	0.679 *** (0.0474)	0.116	0.837 *** (0.0321)	0.121
residence in a metropolitan area	0.1000 (0.239)	0.017	1.610 *** (0.287)	0.233
lnhwage	0.0191 *** (0.00428)	0.003	0.0601 *** (0.00427)	0.009
homeownership	0.163 *** (0.0222)	0.028	−0.0596 ** (0.0249)	−0.009
education level	0.227 *** (0.0107)	0.039	−0.0502 *** (0.0134)	−0.007
unhealthy condition	−0.270 *** (0.0657)	−0.046	−0.245 *** (0.0706)	−0.035
marital status	0.212 *** (0.0380)	0.036	−0.170 *** (0.0470)	−0.025
population by city/province	3.06×10^{-7} (2.77×10^{-7})	5.23×10^{-8}	-2.95×10^{-6} *** (3.22×10^{-7})	-4.27×10^{-7}
Constant term	−5.172 *** (0.367)	0.428	−4.795 *** (0.429)	0.267
year	YES		YES	
region	YES		YES	
Observations	51,961		48,658	
Pseudo R2	0.2535		0.2264	
Log pseudolikelihood	−26,486.845		−21,844.672	
Wald chi ² (45)	11497.1		9225.56	

Robust standard errors in parentheses

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The number '2' listed above the variables 'age' and 'kid' represents the squared values of each variable. A high Wald chi² value indicates that at least one of the regression coefficients is significantly different from zero, implying that the explanatory variables collectively have an impact on the dependent variable. The number inside the parentheses of the Wald chi² statistic denotes the 'degree of freedom.' Data source: created by the author referencing the KLIPS data.

Table A7. Descriptive statistics for future income estimation.

<Male>						
Variable	Obs	Mean	Std. Dev.	Min	Max	
lnwage	18,282	5.71934	0.435339	1.609438	8.006368	
age	18,282	35.60103	5.929402	25	54	
age ²	18,282	1302.589	439.3385	625	2916	
continuous years of employment	18,249	6.302044	5.577653	0	37	
continuous years of employment ²	18,249	70.82426	115.3605	0	1369	
kid	18,282	1.014495	0.951569	0	5	
marital status	18,282	0.71863	0.44968	0	1	
education level						
(No formal education to middle school graduate = 1, High school graduate = 2, Junior college graduate = 3, University graduate = 4, Graduate school graduate = 5)	18,282	3.364019	0.897408	1	5	
residence in a metropolitan area						
(Seoul Special City, Gyeonggi Province, Metropolitan Cities (Busan, Daegu, Daejeon, Incheon, Gwangju, Ulsan) = 1, Others = 0)	18,282	0.728586	0.444702	0	1	
unhealthy condition						
(Unhealthy = 1, Healthy = 0)	18,282	0.010502	0.101943	0	1	
firm size						
(Large/Medium-sized enterprise = 1, Small/Micro enterprise = 0)	16,586	0.3017	0.45901	0	1	
Occupation	Legislators, Senior Officials, and Managers	18,269	0.012918	0.112924	0	1
	Professionals	18,269	0.210849	0.407923	0	1
	Technicians and Associate Professionals	18,269	0.122393	0.327748	0	1
	Clerical Support Workers	18,269	0.223767	0.416779	0	1
	Service Workers	18,269	0.039794	0.195481	0	1
	Sales Workers	18,269	0.059609	0.236768	0	1
	Skilled Agricultural, Forestry, and Fishery Workers	18,269	0.004981	0.070403	0	1
	Craft and Related Trades Workers	18,269	0.128414	0.33456	0	1
	Plant and Machine Operators and Assemblers	18,269	0.151185	0.358239	0	1
	Elementary Occupations	18,269	0.046089	0.209684	0	1
	year	18,282	2015.871	3.449272	2002	2020
	region	18,282	7.042938	4.555748	1	19
<Female>						
Variable	Obs	Mean	Std. Dev.	Min	Max	
lnwage	6078	5.327467	0.446229	2.302585	7.313221	
age	6078	35.91922	6.915953	25	55	
age ²	6078	1338.013	517.2262	625	3025	
continuous years of employment	6075	5.195226	5.370692	0	33	
continuous years of employment ²	6075	55.82996	111.7608	0	1089	
kid	6078	1.019579	0.964114	0	5	
marital status	6078	0.724087	0.44701	0	1	
education level						
(No formal education to middle school graduate = 1, High school graduate = 2, Junior college graduate = 3, University graduate = 4, Graduate school graduate = 5)	6078	3.086542	0.893035	1	5	
residence in a metropolitan area						
(Seoul Special City, Gyeonggi Province, Metropolitan Cities (Busan, Daegu, Daejeon, Incheon, Gwangju, Ulsan) = 1, Others = 0)	6078	0.721948	0.448076	0	1	
unhealthy condition						
(Unhealthy = 1, Healthy = 0)	6078	0.014149	0.118116	0	1	
firm size						
(Large/Medium-sized enterprise = 1, Small/Micro enterprise = 0)	5394	0.202818	0.402135	0	1	
Occupation	Legislators, Senior Officials, and Managers	6076	0.00181	0.042514	0	1
	Professionals	6076	0.203753	0.40282	0	1
	Technicians and Associate Professionals	6076	0.186801	0.389783	0	1
	Clerical Support Workers	6076	0.359941	0.480022	0	1

Table A7. Cont.

<Female>						
Variable	Obs	Mean	Std. Dev.	Min	Max	
year region	Service Workers	6076	0.085583	0.27977	0	1
	Sales Workers	6076	0.066162	0.248585	0	1
	Skilled Agricultural, Forestry, and Fishery Workers	6076	0.000988	0.031411	0	1
	Craft and Related Trades Workers	6076	0.020902	0.143068	0	1
	Plant and Machine Operators and Assemblers	6076	0.039829	0.195573	0	1
	Elementary Occupations	6076	0.034233	0.181842	0	1
		6078	2017.965	2.11118	2008	2020
		6078	6.853735	4.703885	1	19

Note: The number '2' listed above the variables 'age' and 'continuous years of employment' represents the squared values of each variable. Data source: created by the author referencing the KLIPS data.

Table A8. The estimation of future income using the Mincer earnings function.

Variables	Regular Employees		Self-Employed & Non-Regular Employees	
	Male	Female	Male	Female
	Inwage	Inwage	Inwage	Inwage
age	0.0400 *** (0.00445)	0.0162 ** (0.00771)	0.190 *** (0.0234)	0.0520 * (0.0300)
age ²	−0.000395 *** (5.97 × 10 ^{−5})	−0.000190 * (0.000102)	−0.00247 *** (0.000331)	−0.000678 * (0.000394)
continuous years of employment	0.0105 *** (0.00122)	0.0223 *** (0.00219)	NO	NO
continuous years of employment ²	9.06 × 10 ^{−5} (5.74 × 10 ^{−5})	9.99 × 10 ^{−6} (0.000101)	NO	NO
kid	0.0453 *** (0.00323)	−0.0315 *** (0.00633)	0.0396 ** (0.0164)	−0.0592 ** (0.0247)
marital status	0.0937 *** (0.00711)	0.0231 * (0.0140)	0.400 *** (0.0357)	−0.251 *** (0.0621)
education level	0.0748 *** (0.00301)	0.0932 *** (0.00574)	0.0408 *** (0.0122)	0.0546 *** (0.0179)
residence in a metropolitan area	−0.138 *** (0.0292)	0.0577 (0.0771)	−0.357 (0.315)	−0.0101 (0.215)
unhealthy condition	−0.103 *** (0.0226)	−0.0709 * (0.0411)	−0.213 * (0.111)	−0.148 (0.109)
firm size	0.232 *** (0.00512)	0.191 *** (0.0114)	NO	NO
Occupation	YES	YES	NO	NO
year	YES	YES	YES	YES
region	YES	YES	YES	YES
Constant term	4.318 *** (0.179)	4.651 *** (0.280)	1.871 ** (0.750)	4.261 *** (0.769)
Observations	14,896	4650	2531	1028
Sample size	3552	1893	935	573
Log likelihood	−1745.765	−925.8452	−2042.939	−766.7597
Wald chi ² (52)	15,093.77			
Wald chi ² (46)		3112.14		
Wald chi ² (38)			1034.86	
Wald chi ² (34)				155.85
Standard errors in parentheses				

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The number '2' listed above the variables 'age' and 'continuous years of employment' represents the squared values of each variable. A high Wald chi² value indicates that at least one of the regression coefficients is significantly different from zero, implying that the explanatory variables collectively have an impact on the dependent variable. The number inside the parentheses of the Wald chi² statistic denotes the 'degree of freedom.' Data source: created by the author referencing the KLIPS data.

Appendix B

Overall		Absence of CNPS		CNPS (A)		After the introduction of the BP-KNPS Proposal (B)		Income Redistributive Effects (B-A)		Individually Insured Persons	Overall		Absence of NPS		CNPS (A)		After the introduction of the BP-KNPS Proposal (B)		Income Redistributive Effects (B-A)		
Workplace-based Insured Persons		Intergenerational Effect		0.0047778		0.0025918		0.0019977			▲ 0.0005941		Intergenerational Effect		0.0262300		0.0047898		0.0047826		▲ 0.0000072
Intergenerational Effect		0.1236876		0.1996945		0.1909983		▲ 0.0086962		Intergenerational Effect		0.1818650		0.1998229		0.1673606		▲ 0.0324623			
Born in the 1960s		0.0121290		0.0093989		0.0113422		▲ 0.0019433		Born in the 1960s		0.0018338		0.0081711		0.0089891		▲ 0.0008120			
Intra-Income Class Effect		0.0009842		0.0094492		0.0005750		▲ 0.0009742		Intra-Income Class Effect		0.0016945		0.0053791		0.0007940		▲ 0.0045851			
1st Quintile Group		-0.001306		-0.0000502		0.0013672		▲ 0.001174		1st Quintile Group		0.0001343		0.0027920		0.0081891		▲ 0.0053972			
2nd Quintile Group		-0.0049447		-0.0050042		-0.0104515		▲ 0.0046473		2nd Quintile Group		-0.0016748		-0.0011074		-0.0045667		▲ 0.0034593			
3rd Quintile Group		-0.0041729		-0.0044489		-0.0026738		▲ 0.0017751		3rd Quintile Group		-0.0005496		0.0000506		0.0002008		▲ 0.0001501			
4th Quintile Group		-0.0002526		0.0001354		0.0015897		▲ 0.0014543		4th Quintile Group		0.0001771		0.0002993		0.0002398		▲ 0.0002105			
5th Quintile Group		0.0025481		0.0035707		0.0053061		▲ 0.0017354		5th Quintile Group		0.0002833		-0.0002507		0.0041741		▲ 0.0044248			
Born in the 1970s		0.0081527		0.0064968		0.0075967		▲ 0.0010999		Born in the 1970s		0.0019034		0.0038002		0.0059812		▲ 0.0021810			
Intra-Income Class Effect		0.0706529		0.0809926		0.0487225		▲ 0.0037298		Intra-Income Class Effect		0.0693627		0.0742461		0.0624817		▲ 0.0117644			
1st Quintile Group		-0.0424104		-0.0486811		-0.0906499		▲ 0.0420183		1st Quintile Group		-0.0472828		-0.0544134		-0.0701180		▲ 0.0157047			
2nd Quintile Group		-0.0272460		-0.0421045		-0.0717940		▲ 0.0243105		2nd Quintile Group		-0.0207164		-0.0273774		-0.0153387		▲ 0.0123987			
3rd Quintile Group		-0.0021500		0.0021288		0.0133212		▲ 0.0111924		3rd Quintile Group		0.0029058		0.0040403		0.0111948		▲ 0.0071545			
4th Quintile Group		0.0243160		0.0352921		0.0434668		▲ 0.0071747		4th Quintile Group		0.0240939		0.0292546		0.0264047		▲ 0.0056531			
5th Quintile Group		0.0541599		0.0560454		0.0591883		▲ 0.0031428		5th Quintile Group		0.0516845		0.0531678		0.0506047		▲ 0.0066421			
Born in the 1980s		0.0343111		0.0755609		0.0689155		▲ 0.0086714		Born in the 1980s		0.0238439		0.0378607		0.0272349		▲ 0.0151239			
Intra-Income Class Effect		0.0296761		0.0743012		0.0631017		▲ 0.0109995		Intra-Income Class Effect		0.0711481		0.0830532		0.0626272		▲ 0.0224081			
1st Quintile Group		-0.0037550		0.0032858		0.0056139		▲ 0.0022821		1st Quintile Group		0.0123912		0.0292255		0.0102077		▲ 0.0072823			
2nd Quintile Group		-0.0393102		-0.0665863		-0.0860417		▲ 0.0194553		2nd Quintile Group		-0.0624018		-0.0701447		-0.0882973		▲ 0.0181526			
3rd Quintile Group		-0.0168034		-0.0352644		-0.0160387		▲ 0.0192257		3rd Quintile Group		-0.0241252		-0.0392644		-0.0208335		▲ 0.0184309			
4th Quintile Group		0.0004653		0.0075364		0.0147620		▲ 0.0072256		4th Quintile Group		0.0041428		0.0051134		0.0147541		▲ 0.0096407			
5th Quintile Group		0.0175509		0.0379678		0.0394501		▲ 0.0014823		5th Quintile Group		0.0091291		0.0698938		0.0582047		▲ 0.0116891			
Born in the 1990s		0.0072745		0.0317159		0.0260181		▲ 0.0056978		Born in the 1990s		0.0271291		0.0294450		0.0230669		▲ 0.0063841			
Intra-Income Class Effect		0.0057859		0.0299678		0.0236062		▲ 0.0063616		Intra-Income Class Effect		0.0211232		0.0277368		0.0182985		▲ 0.0094383			
1st Quintile Group		-0.0014886		0.0017481		0.0024119		▲ 0.0006638		1st Quintile Group		0.0060059		0.0071082		0.0047624		▲ 0.0035453			
2nd Quintile Group		-0.0115485		-0.0330481		-0.0329959		▲ 0.0000521		2nd Quintile Group		-0.0710303		-0.0267947		-0.0275056		▲ 0.0007109			
3rd Quintile Group		-0.0051177		-0.0118835		-0.0073131		▲ 0.0045704		3rd Quintile Group		-0.0060894		-0.0091844		-0.0047172		▲ 0.0044671			
4th Quintile Group		-0.0006416		0.0035980		0.0048368		▲ 0.0012388		4th Quintile Group		-0.0009620		-0.0021484		-0.0015415		▲ 0.0006478			
5th Quintile Group		0.0043609		0.0166059		0.0158708		▲ 0.0007351		5th Quintile Group		0.0060099		0.0127714		0.0132591		▲ 0.0004878			
Income Redistribution Effect		0.1284654		0.2022863		0.1929660		▲ 0.0092903		Income Redistribution Effect		0.0210077		0.0229040		0.0182846		▲ 0.0038094			

Overall		Before the introduction of the BP-KNPS Proposal (J. Park, 2024)						After the introduction of the BP-KNPS Proposal: Difference from the values before the introduction					
		Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6	Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6
Workplace-based Insured Persons	Intergenerational Effect	0.0022072	0.0021000	0.0020886	0.0021028	0.0009253	0.0001114	▲ 0.0007153	▲ 0.0007384	▲ 0.0007402	▲ 0.0007414	0.0000939	0.0000940
	Intragenerational Effect	0.1996103	0.1988813	0.1987988	0.1994854	0.2217952	0.2228023	▲ 0.0077762	▲ 0.0080712	▲ 0.0081028	▲ 0.0064372	▲ 0.0002549	0.0017196
	Born in the 1960s	0.0094771	0.0094771	0.0094771	0.0095308	0.0094771	0.0095308	0.0020385	0.0020385	0.0020385	0.0021119	0.0020385	0.0021119
	Inter-Income Class Effect	0.0095212	0.0095212	0.0095212	0.0095698	0.0095212	0.0095698	0.0005710	0.0005710	0.0005710	0.0006020	0.0005710	0.0006020
	Intra-Income Class Effect	-0.000441	-0.000441	-0.000441	-0.0000390	-0.000441	-0.0000390	0.0014676	0.0014676	0.0014676	0.0015099	0.0014676	0.0015099
	1st Quintile Group	-0.0058296	-0.0058296	-0.0058296	-0.0058467	-0.0058296	-0.0058467	▲ 0.0047134	▲ 0.0047134	▲ 0.0047134	▲ 0.0047565	▲ 0.0047134	▲ 0.0047565
	2nd Quintile Group	-0.0044797	-0.0044797	-0.0044797	-0.0045003	-0.0044797	-0.0045003	0.0018255	0.0018255	0.0018255	0.0018615	0.0018255	0.0018615
	3rd Quintile Group	0.0001482	0.0001482	0.0001482	0.0001570	0.0001482	0.0001570	0.0014854	0.0014854	0.0014854	0.0015081	0.0014854	0.0015081
	4th Quintile Group	0.0035959	0.0035959	0.0035959	0.0036131	0.0035959	0.0036131	0.0017514	0.0017514	0.0017514	0.0017639	0.0017514	0.0017639
	5th Quintile Group	0.0065212	0.0065212	0.0065212	0.0065379	0.0065212	0.0065379	0.0011186	0.0011186	0.0011186	0.0011330	0.0011186	0.0011330
	Born in the 1970s	0.0817601	0.0817370	0.0817364	0.0822680	0.0851663	0.0858062	0.0049092	0.0049109	0.0049110	0.0062516	0.0073198	0.0091565
	Inter-Income Class Effect	0.0790950	0.0790780	0.0790775	0.0795978	0.0822203	0.0828162	0.0004109	0.0004013	0.0004011	0.0007306	0.0022537	0.0026782
	Intra-Income Class Effect	0.0026650	0.0026589	0.0026589	0.0026702	0.0029460	0.0029900	0.0044982	0.0045096	0.0045099	0.0055210	0.0050661	0.0064783
	1st Quintile Group	-0.0489274	-0.048915	-0.0489147	-0.0490707	-0.0490413	-0.0492088	▲ 0.0425628	▲ 0.0425500	▲ 0.0425500	▲ 0.0428070	▲ 0.0450707	▲ 0.0453487
	2nd Quintile Group	-0.0424733	-0.0424818	-0.0424817	-0.0427314	-0.042558	-0.0445384	0.0247771	0.0247927	0.0247929	0.0252267	0.0261392	0.0267008
	3rd Quintile Group	0.0021893	0.0021842	0.0021841	0.0022284	0.0016466	0.0017050	0.0114146	0.0114131	0.0114134	0.0116680	0.0122905	0.0126429
	4th Quintile Group	0.0355235	0.0355195	0.0355193	0.0356793	0.0362342	0.0364228	0.0074108	0.0073918	0.0073920	0.0076474	0.0079959	0.0083480
	5th Quintile Group	0.0563530	0.0563520	0.0563519	0.0565647	0.0583623	0.0586093	0.0034586	0.0034620	0.0034616	0.0037859	0.0037112	0.0041352
	Born in the 1980s	0.0722352	0.0769889	0.0769729	0.077041	0.0915810	0.0918945	▲ 0.0086523	▲ 0.0087340	▲ 0.0087395	▲ 0.0084878	▲ 0.0039634	▲ 0.0038990
	Inter-Income Class Effect	0.0741607	0.0739551	0.0739410	0.0740785	0.084785	0.0887785	▲ 0.0111682	▲ 0.0112728	▲ 0.0112797	▲ 0.0112595	▲ 0.0085834	▲ 0.0084186
	Intra-Income Class Effect	0.0030745	0.0030338	0.0030319	0.0029957	0.0031025	0.0031160	0.0025160	0.0025387	0.0025403	0.0027717	0.0046200	0.0045196
	1st Quintile Group	-0.0666262	-0.0665611	-0.0665577	-0.0666886	-0.0731941	-0.0734022	▲ 0.0194160	▲ 0.0193411	▲ 0.0193376	▲ 0.0194035	▲ 0.0279592	▲ 0.0282940
	2nd Quintile Group	-0.0353182	-0.0352751	-0.0352716	-0.0353191	-0.0404847	-0.0405784	0.0194527	0.0195110	0.0195145	0.0196231	0.0270886	0.0272394
	3rd Quintile Group	0.0076130	0.0076345	0.0076378	0.0077105	0.0101043	0.0102341	0.0073253	0.0073390	0.0073426	0.0074758	0.0090023	0.0091198
	4th Quintile Group	0.0380326	0.0380181	0.0380190	0.0381164	0.0422610	0.0424276	0.0015689	0.0015755	0.0015808	0.0016570	0.0026889	0.0027348
	5th Quintile Group	0.0593732	0.0592175	0.0592044	0.0591765	0.0644161	0.0644350	▲ 0.0064149	▲ 0.0065456	▲ 0.0065599	▲ 0.0065808	▲ 0.0062007	▲ 0.0062804
	Born in the 1990s	0.0311379	0.0306784	0.0306124	0.0306124	0.0355708	0.0355708	▲ 0.0060716	▲ 0.0062866	▲ 0.0063129	▲ 0.0063129	▲ 0.0056498	▲ 0.0056498
	Inter-Income Class Effect	0.0294873	0.0290624	0.0290017	0.0290017	0.0340143	0.0340143	▲ 0.0066979	▲ 0.0068876	▲ 0.0069105	▲ 0.0069105	▲ 0.0066960	▲ 0.0066960
	Intra-Income Class Effect	0.0016506	0.0016160	0.0016107	0.0016107	0.0015565	0.0015565	0.0006263	0.0006009	0.0005976	0.0005976	0.0010462	0.0010462
	1st Quintile Group	-0.0328907	-0.0327577	-0.0327438	-0.0327438	-0.0365782	-0.0365782	0.0002263	0.0003440	0.0003584	0.0003584	▲ 0.0010102	▲ 0.0010102
	2nd Quintile Group	-0.0117607	-0.0116350	-0.0116194	-0.0116194	-0.0117974	-0.0117974	0.0047283	0.0048220	0.0048348	0.0048348	0.0059822	0.0059822
	3rd Quintile Group	0.0036525	0.0037223	0.0037372	0.0037372	0.0047366	0.0047366	0.0013321	0.0014019	0.0014152	0.0014152	0.0018736	0.0018736
	4th Quintile Group	0.0165825	0.0165683	0.0165812	0.0165812	0.0180509	0.0180509	▲ 0.0007329	▲ 0.0007169	▲ 0.0007041	▲ 0.0007041	▲ 0.0003041	▲ 0.0003041
	5th Quintile Group	0.0260671	0.0257180	0.0256555	0.0256555	0.0271446	0.0271446	▲ 0.0049275	▲ 0.0052500	▲ 0.0053066	▲ 0.0053066	▲ 0.0054953	▲ 0.0054953
Income Redistribution Effect	0.2018175	0.2009814	0.2008875	0.2015882	0.2218906	0.2229137	▲ 0.0084915	▲ 0.0088096	▲ 0.0088430	▲ 0.0071787	▲ 0.0001609	0.0018136	
Individually Insured Persons	Intergenerational Effect	0.0041940	0.0039940	0.0039764	0.0039544	0.0008540	0.0008045	▲ 0.0001208	▲ 0.0001342	▲ 0.0001327	▲ 0.0002025	0.0002307	0.0001442
	Intragenerational Effect	0.1964938	0.1947831	0.1946213	0.1941264	0.2107091	0.2102254	▲ 0.0328555	▲ 0.0331557	▲ 0.0331790	▲ 0.0319875	▲ 0.0382202	▲ 0.0351462
	Born in the 1960s	0.0083080	0.0083080	0.0083080	0.0084037	0.0083080	0.0084037	0.0009243	0.0009243	0.0009243	0.0010081	0.0009235	0.0010072
	Inter-Income Class Effect	0.0054792	0.0054792	0.0054792	0.0054792	0.0054792	0.0054792	▲ 0.0045911	▲ 0.0045911	▲ 0.0045911	▲ 0.0045934	▲ 0.0045933	▲ 0.0045958
	Intra-Income Class Effect	0.0028288	0.0028288	0.0028288	0.0028558	0.0028288	0.0028558	0.0055154	0.0055154	0.0055154	0.0056015	0.0055168	0.0056030
	1st Quintile Group	-0.0011103	-0.0011103	-0.0011103	-0.0011122	-0.0011103	-0.0011122	▲ 0.0035286	▲ 0.0035286	▲ 0.0035286	▲ 0.0035758	▲ 0.0035250	▲ 0.0035722
	2nd Quintile Group	0.0000339	0.0000339	0.0000339	0.0000225	0.0000339	0.0000225	0.0001771	0.0001771	0.0001771	0.0001971	0.0001771	0.0001971
	3rd Quintile Group	0.0002743	0.0002743	0.0002743	0.0002573	0.0002743	0.0002573	0.0021768	0.0021768	0.0021768	0.0022300	0.0021782	0.0022314
	4th Quintile Group	-0.0002311	-0.0002311	-0.0002311	-0.0002166	-0.0002311	-0.0002166	0.0044523	0.0044523	0.0044523	0.0044713	0.0044487	0.0044774
	5th Quintile Group	0.0038619	0.0038619	0.0038619	0.0039048	0.0038619	0.0039048	0.0022378	0.0022378	0.0022378	0.0022790	0.0022378	0.0022790
	Born in the 1970s	0.0745680	0.0744673	0.0744616	0.0746753	0.0750065	0.0752404	▲ 0.0110798	▲ 0.0110983	▲ 0.0110993	▲ 0.0101537	▲ 0.0128484	▲ 0.0124612
	Inter-Income Class Effect	0.0699737	0.0698645	0.0698585	0.0698283	0.0714847	0.0715029	▲ 0.0164311	▲ 0.0164565	▲ 0.0164572	▲ 0.0165381	▲ 0.0173786	▲ 0.0174620
	Intra-Income Class Effect	0.0045943	0.0046028	0.0046030	0.0048470	0.0053218	0.0053735	0.0053513	0.0053582	0.0053579	0.0063844	0.0045302	0.0050007
	1st Quintile Group	-0.0543352	-0.0542644	-0.0542615	-0.0541622	-0.0539979	-0.0539197	▲ 0.0155835	▲ 0.0155818	▲ 0.0155825	▲ 0.0153958	▲ 0.0165265	▲ 0.0164397
	2nd Quintile Group	-0.0277899	-0.0277747	-0.0277724	-0.0277960	-0.0237202	-0.0237719	0.0127704	0.0128125	0.0128124	0.0131928	0.0084056	0.0086774
	3rd Quintile Group	0.0040995	0.0040909	0.0040913	0.0041353	-0.0018774	-0.0018774	0.0072564	0.0072705	0.0072723	0.0074423	0.0122735	0.0122702
	4th Quintile Group	0.0293069	0.0292597	0.0292553	0.0292806	0.0284247	0.0284379	0.0076227	0.0076588	0.0076655	0.0080005	0.0087070	0.0089878
	5th Quintile Group	0.0533130	0.0532914	0.0532902	0.0533892	0.0546928	0.0548114	▲ 0.0067146	▲ 0.0068017	▲ 0.0068098	▲ 0.0068553	▲ 0.0083294	▲ 0.0084950
	Born in the 1980s	0.0856353	0.0848229	0.0847669	0.0839626	0.0965640	0.0957508	▲ 0.0157433	▲ 0.0158388	▲ 0.0158465	▲ 0.0158644	▲ 0.0193193	▲ 0.0167161
	Inter-Income Class Effect	0.0827612	0.0819512	0.0818920	0.0809440	0.0932275	0.0921575	▲ 0.0230921	▲ 0.0232712	▲ 0.0232886	▲ 0.0235978	▲ 0.0248804	▲ 0.0252164
	Intra-Income Class Effect	0.0028741	0.0028718	0.0028749	0.0030186	0.0033365	0.0035933	0.0073489	0.0074323	0.0074421	0.0079135	0.0055611	0.0085003
	1st Quintile Group	-0.0694017	-0.0691657	-0.0691540	-0.0688348	-0.0710969	-0.0707392	▲ 0.0175261	▲ 0.0173219	▲ 0.0173008	▲ 0.0168970	▲ 0.0267119	▲ 0.0257813
	2nd Quintile Group	-0.0388523	-0.0386673	-0.0386533	-0.0384428	-0.0412599	-0.0410518	0.0191					

		Before the introduction of the BP-KNPS Proposal (J. Park, 2024)						After the introduction of the BP-KNPS Proposal: Difference from the values before the introduction					
		Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6	Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6
Workplace-based Insured Persons	Intergenerational Effect	0.0004012	0.0003713	0.0003695	0.0003457	0.0013511	0.0013818	▲ 0.0000938	▲ 0.0000795	▲ 0.0000761	▲ 0.0000841	0.0016001	0.0016448
	Intragenerational Effect	0.2289055	0.2281359	0.2280479	0.2289413	0.2640185	0.2653950	0.0069097	0.0065613	0.0065240	0.0090938	0.0194330	0.0224722
	Born in the 1960s	0.0117722	0.0117722	0.0117722	0.0118450	0.0117722	0.0118450	0.0029589	0.0029589	0.0029589	0.0030660	0.0029589	0.0030660
	Inter-Income Class Effect	0.0117846	0.0117846	0.0117846	0.0118505	0.0117846	0.0118505	0.0011982	0.0011982	0.0011982	0.0012429	0.0011990	0.0012437
	Intra-Income Class Effect	-0.0000124	-0.0000124	-0.0000124	-0.0000055	-0.0000124	-0.0000055	0.0017607	0.0017607	0.0017607	0.0018232	0.0017599	0.0018224
	1st Quintile Group	-0.0129073	-0.0129073	-0.0129073	-0.0129643	-0.0129073	-0.0129643	0.0002362	0.0002362	0.0002362	0.0002112	0.0002360	0.0002110
	2nd Quintile Group	-0.0029315	-0.0029315	-0.0029315	-0.0029225	-0.0029315	-0.0029225	▲ 0.0000107	▲ 0.0000107	▲ 0.0000107	0.0000067	▲ 0.0000108	0.0000066
	3rd Quintile Group	0.0025145	0.0025145	0.0025145	0.0025330	0.0025145	0.0025330	▲ 0.0004438	▲ 0.0004438	▲ 0.0004438	▲ 0.0004210	▲ 0.0004439	▲ 0.0004210
	4th Quintile Group	0.0059410	0.0059410	0.0059410	0.0059590	0.0059410	0.0059590	0.0005905	0.0005905	0.0005905	0.0006143	0.0005904	0.0006142
	5th Quintile Group	0.0073709	0.0073709	0.0073709	0.0073893	0.0073709	0.0073893	0.0013884	0.0013884	0.0013884	0.0014118	0.0013882	0.0014116
	Born in the 1970s	0.0982078	0.0981956	0.0981956	0.0989273	0.0982078	0.0989273	0.0138045	0.0138076	0.0138076	0.0159124	0.0175180	0.0204105
	Inter-Income Class Effect	0.0952822	0.0952746	0.0952746	0.0959754	0.0952822	0.0959754	0.0074471	0.0074427	0.0074427	0.0079802	0.0104239	0.0111666
	Intra-Income Class Effect	0.0029256	0.0029210	0.0029210	0.0029519	0.0029256	0.0029519	0.0063574	0.0063649	0.0063649	0.0079322	0.0079942	0.0092939
	1st Quintile Group	-0.1104625	-0.1104560	-0.1104560	-0.1109899	-0.1104625	-0.1109899	▲ 0.0021806	▲ 0.0021741	▲ 0.0021741	▲ 0.0022577	▲ 0.0039022	▲ 0.0039687
	2nd Quintile Group	-0.0190996	-0.0191004	-0.0191004	-0.0191024	-0.0190996	-0.0191024	0.0008210	0.0008230	0.0008230	0.0011427	0.0008611	0.0013175
	3rd Quintile Group	0.0185304	0.0185265	0.0185265	0.0186476	0.0185304	0.0186476	▲ 0.0008392	▲ 0.0008401	▲ 0.0008401	▲ 0.0004453	▲ 0.0003762	0.0001713
	4th Quintile Group	0.0492518	0.0492452	0.0492452	0.0494503	0.0492518	0.0494503	0.0017092	0.0017070	0.0017070	0.0021622	0.0025478	0.0031644
	5th Quintile Group	0.0647056	0.0647057	0.0647057	0.0649463	0.0647056	0.0649463	0.0068465	0.0068491	0.0068491	0.0073303	0.0079636	0.0086094
	Born in the 1980s	0.0890971	0.0888099	0.0887942	0.0888833	0.0890971	0.0888833	▲ 0.0055910	▲ 0.0057007	▲ 0.0057004	▲ 0.0053496	0.0021396	0.0021793
	Inter-Income Class Effect	0.0862594	0.0860129	0.0859984	0.0861324	0.0862594	0.0861324	▲ 0.0087473	▲ 0.0088884	▲ 0.0088896	▲ 0.0088594	▲ 0.0041048	▲ 0.0083115
	Intra-Income Class Effect	0.0028377	0.0027971	0.0027958	0.0027509	0.0028377	0.0027509	0.0031563	0.0031877	0.0031902	0.0035098	0.0062444	0.0060108
	1st Quintile Group	-0.1034096	-0.1033212	-0.1033176	-0.1035387	-0.1034096	-0.1035387	0.0031454	0.0032197	0.0032236	0.0031908	▲ 0.0013608	▲ 0.0017289
	2nd Quintile Group	-0.0194443	-0.0193858	-0.0193822	-0.0193553	-0.0194443	-0.0193553	0.0041631	0.0042210	0.0042249	0.0043294	0.0058383	0.0058824
	3rd Quintile Group	0.0149546	0.0149758	0.0149794	0.0151075	0.0149546	0.0151075	0.0027506	0.0027908	0.0027947	0.0029469	0.0048644	0.0049806
	4th Quintile Group	0.0464216	0.0462078	0.0462111	0.0463196	0.0464216	0.0463196	▲ 0.0017448	▲ 0.0017333	▲ 0.0017296	▲ 0.0016073	0.0004294	0.0005116
	5th Quintile Group	0.0645254	0.0643204	0.0643051	0.0642177	0.0645254	0.0642177	▲ 0.0051635	▲ 0.0053105	▲ 0.0053234	▲ 0.0053501	▲ 0.0035269	▲ 0.0036349
	Born in the 1990s	0.0298284	0.0293582	0.0292858	0.0292858	0.0298284	0.0292858	▲ 0.0046321	▲ 0.0046268	▲ 0.0045045	▲ 0.0045351	▲ 0.0031836	▲ 0.0031836
	Inter-Income Class Effect	0.0288213	0.0283791	0.0283117	0.0283117	0.0288213	0.0283117	▲ 0.0050672	▲ 0.0052831	▲ 0.0053097	▲ 0.0053097	▲ 0.0046661	▲ 0.0046661
	Intra-Income Class Effect	0.0010071	0.0009791	0.0009741	0.0009741	0.0010071	0.0009741	0.0008044	0.0007786	0.0007746	0.0007746	0.0014825	0.0014825
	1st Quintile Group	-0.0336106	-0.0334665	-0.0334502	-0.0334502	-0.0336106	-0.0334502	0.0018713	0.0019847	0.0019992	0.0019992	0.0008600	0.0008600
	2nd Quintile Group	-0.0070235	-0.0069038	-0.0068876	-0.0068876	-0.0070235	-0.0068876	0.0017345	0.0018360	0.0018506	0.0018506	0.0024334	0.0024334
	3rd Quintile Group	0.0043625	0.0044294	0.0044454	0.0044454	0.0043625	0.0044454	0.0059162	0.0059162	0.0059162	0.0012645	0.0019614	0.0019614
	4th Quintile Group	0.0149688	0.0149577	0.0149719	0.0149719	0.0149688	0.0149719	▲ 0.0002313	▲ 0.0002171	▲ 0.0002040	▲ 0.0002040	0.0004674	0.0004674
	5th Quintile Group	0.0223099	0.0219623	0.0218947	0.0218947	0.0223099	0.0218947	▲ 0.0037478	▲ 0.0040748	▲ 0.0041357	▲ 0.0041357	▲ 0.0042398	▲ 0.0042398
	Income Redistribution Effect	0.2293067	0.2285072	0.2284174	0.2292870	0.2293067	0.2292870	0.0064818	0.0064818	0.0064479	0.0090097	0.0210330	0.0241170
	Individually Insured Persons	Intergenerational Effect	0.0013706	0.0011965	0.0011807	0.0011201	0.0004882	0.0004953	0.0004044	0.0001477	0.0001683	0.0000211	0.0014785
Intragenerational Effect		0.2373294	0.2352060	0.2346881	0.2346881	0.2674605	0.2672119	▲ 0.0414951	▲ 0.0418428	▲ 0.0418561	▲ 0.0396212	▲ 0.0485325	▲ 0.0428658
Born in the 1960s		0.0070374	0.0070374	0.0070374	0.0071730	0.0070374	0.0071730	▲ 0.0013684	▲ 0.0013684	▲ 0.0013684	▲ 0.0013281	▲ 0.0013674	▲ 0.0013270
Inter-Income Class Effect		0.0063803	0.0063803	0.0063803	0.0064809	0.0063803	0.0064809	▲ 0.0033111	▲ 0.0033111	▲ 0.0033111	▲ 0.0033205	▲ 0.0033382	▲ 0.0033479
Intra-Income Class Effect		0.0006571	0.0006571	0.0006571	0.0006921	0.0006571	0.0006921	0.0019427	0.0019427	0.0019427	0.0019925	0.0019708	0.0020209
1st Quintile Group		-0.0063862	-0.0063862	-0.0063862	-0.0064491	-0.0063862	-0.0064491	0.0023935	0.0023935	0.0023935	0.0023998	0.0023945	0.0024009
2nd Quintile Group		-0.0007343	-0.0007343	-0.0007343	-0.0007296	-0.0007343	-0.0007296	0.0003858	0.0003858	0.0003858	0.0003928	0.0003878	0.0003943
3rd Quintile Group		0.0013075	0.0013075	0.0013075	0.0013410	0.0013075	0.0013410	▲ 0.0000894	▲ 0.0000894	▲ 0.0000894	▲ 0.0000894	▲ 0.0000915	▲ 0.0000826
4th Quintile Group		0.0023036	0.0023036	0.0023036	0.0023287	0.0023036	0.0023287	0.0000385	0.0000385	0.0000385	0.0000541	0.0000437	0.0000594
5th Quintile Group		0.0041665	0.0041665	0.0041665	0.0042010	0.0041665	0.0042010	▲ 0.0007858	▲ 0.0007858	▲ 0.0007858	▲ 0.0007738	▲ 0.0007638	▲ 0.0007515
Born in the 1970s		0.0940396	0.0940087	0.0939587	0.0945575	0.0940396	0.0945575	▲ 0.0137674	▲ 0.0137709	▲ 0.0137709	▲ 0.0119567	▲ 0.0178259	▲ 0.0170703
Inter-Income Class Effect		0.0898069	0.0897694	0.0897694	0.0899325	0.0898069	0.0899325	▲ 0.0225477	▲ 0.0225650	▲ 0.0225650	▲ 0.0226337	▲ 0.0241434	▲ 0.0242339
Intra-Income Class Effect		0.0042327	0.0042394	0.0042394	0.0042500	0.0042327	0.0042500	0.0087802	0.0087940	0.0087940	0.0767360	0.0063175	0.0071637
1st Quintile Group		-0.0975403	-0.0975207	-0.0975207	-0.0975904	-0.0975403	-0.0975904	0.0134698	0.0134698	▲ 0.2007251	0.0138703	0.0135129	0.0137080
2nd Quintile Group		-0.0213672	-0.0213509	0.0399731	-0.0212444	-0.0212503	-0.0213960	0.0066824	0.0066951	▲ 0.0546289	0.0071144	0.0056537	0.0058786
3rd Quintile Group		0.0124690	0.0124601	0.0062080	0.0125035	0.0123061	0.0123028	0.0018631	0.0018639	0.0081160	0.0022236	0.0024935	0.0026382
4th Quintile Group		0.0464085	0.0464053	-0.0275175	0.0466613	0.0479232	0.0482065	▲ 0.0019388	▲ 0.0019368	0.0719860	▲ 0.0015019	▲ 0.0027427	▲ 0.0024970
5th Quintile Group		0.0642626	0.0642456	-0.0456684	0.0642949	0.0659253	0.0659872	▲ 0.0112832	▲ 0.0112979	0.0985160	▲ 0.0110293	▲ 0.0125999	▲ 0.0125640
Born in the 1980s		0.0989544	0.0989325	0.0988579	0.0987874	0.1203698	0.1194130	▲ 0.0159939	▲ 0.0160963	▲ 0.0161046	▲ 0.0157243	▲ 0.0202749	▲ 0.0154042
Inter-Income Class Effect		0.0967569	0.0958303	0.0957492	0.0945900	0.1165564	0.1152349	▲ 0.0258105	▲ 0.0261077	▲ 0.0261403	▲ 0.0266085	▲ 0.0284822	▲ 0.0292062
Intra-Income Class Effect		0.0030976	0.0031022	0.0031086	0.0032875	0.0038134	0.0041781	0.0008165	0.0100114	0.0100356	0.0108843	0.0070717	0.0136165
1st Quintile Group		-0.1127222	-0.1124542	-0.1124318	-0.1120320	-0.1316189	-0.1311715	0.0159594	0.0162049	0.0162312	0.0167161	0.0155778	0.0170330
2nd Quintile Group		-0.0249881	-0.0247262	-0.0247044	-0.0242320	-0.0220388	-0.0214064</						

		Before the introduction of the BP-KNPS Proposal (J. Park, 2024)						After the introduction of the BP-KNPS Proposal: Difference from the values before the introduction					
		Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6	Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6
Workplace-based Insured Persons	Female												
	Intergenerational Effect	0.0048395	0.0047408	0.0047300	0.0048186	0.00414671	0.0015145	▲ 0.0021900	▲ 0.0021654	▲ 0.0021622	▲ 0.0021777	▲ 0.0010014	▲ 0.0010446
	Intragenerational Effect	0.1512599	0.1505981	0.1505248	0.1508699	0.1521078	0.1525050	▲ 0.0319083	▲ 0.0321186	▲ 0.0321410	▲ 0.0319754	▲ 0.0324091	▲ 0.0322004
	Born in the 1960s	0.0056892	0.0056892	0.0056892	0.0057114	0.0056892	0.0057114	▲ 0.0001765	▲ 0.0001765	▲ 0.0001765	▲ 0.0001684	▲ 0.0001765	▲ 0.0001684
	Inter-Income Class Effect	0.0057857	0.0057857	0.0057857	0.0058056	0.0057857	0.0058056	▲ 0.0010502	▲ 0.0010502	▲ 0.0010502	▲ 0.0010471	▲ 0.0010513	▲ 0.0010481
	Intra-Income Class Effect	-0.0000964	-0.0000964	-0.0000964	-0.0000942	-0.0000964	-0.0000942	0.0008737	0.0008737	0.0008737	0.0008787	0.0008748	0.0008798
	1st Quintile Group	-0.0069549	-0.0069549	-0.0069549	-0.0069716	-0.0069549	-0.0069716	0.0004458	0.0004458	0.0004458	0.0004422	0.0004466	0.0004430
	2nd Quintile Group	-0.0023711	-0.0023711	-0.0023711	-0.0023748	-0.0023711	-0.0023748	0.0002999	0.0002999	0.0002999	0.0002994	0.0002997	0.0002992
	3rd Quintile Group	0.0005221	0.0005221	0.0005221	0.0005308	0.0005221	0.0005308	0.0002632	0.0002632	0.0002632	0.0002671	0.0002632	0.0002670
	4th Quintile Group	0.0033551	0.0033551	0.0033551	0.0033617	0.0033551	0.0033617	▲ 0.0001483	▲ 0.0001483	▲ 0.0001483	▲ 0.0001461	▲ 0.0001483	▲ 0.0001461
	5th Quintile Group	0.0053523	0.0053523	0.0053523	0.0053597	0.0053523	0.0053597	0.0000131	0.0000131	0.0000131	0.0000161	0.0000136	0.0000167
	Born in the 1970s	0.0546138	0.0545728	0.0545714	0.0547728	0.0530111	0.0532311	▲ 0.0095457	▲ 0.0095467	▲ 0.0095464	▲ 0.0094684	▲ 0.0093089	▲ 0.0092166
	Inter-Income Class Effect	0.0523788	0.0523464	0.0523452	0.0525674	0.0509812	0.0512078	▲ 0.0109320	▲ 0.0109508	▲ 0.0109512	▲ 0.0109650	▲ 0.0109724	▲ 0.0109907
	Intra-Income Class Effect	0.0022350	0.0022264	0.0022262	0.0022054	0.0020299	0.0020232	0.0013863	0.0014041	0.0014048	0.0014966	0.0016635	0.0017740
	1st Quintile Group	-0.0620880	-0.0620598	-0.0620595	-0.0621521	-0.0610691	-0.0611582	0.0051621	0.0051798	0.0051801	0.0051971	0.0052825	0.0053052
	2nd Quintile Group	-0.0200297	-0.0200223	-0.0200220	-0.0200730	-0.0196351	-0.0196843	0.0031765	0.0031870	0.0031873	0.0032007	0.0033066	0.0033248
	3rd Quintile Group	0.0053137	0.0053021	0.0053024	0.0052460	0.0047522	0.0046924	0.0016219	0.0016239	0.0016243	0.0016231	0.0016894	0.0016899
	4th Quintile Group	0.0315572	0.0315230	0.0315229	0.0315318	0.0310425	0.0310526	▲ 0.0017053	▲ 0.0017179	▲ 0.0017178	▲ 0.0017169	▲ 0.0016574	▲ 0.0016544
	5th Quintile Group	0.0474817	0.0474834	0.0474824	0.0476526	0.0469394	0.0471208	▲ 0.0068696	▲ 0.0068686	▲ 0.0068692	▲ 0.0068074	▲ 0.0069577	▲ 0.0068915
	Born in the 1980s	0.0576578	0.0574789	0.0574623	0.0575838	0.0592582	0.0594133	▲ 0.0131165	▲ 0.0131549	▲ 0.0131585	▲ 0.0130789	▲ 0.0132378	▲ 0.0131294
	Inter-Income Class Effect	0.0541923	0.0540543	0.0540408	0.0541841	0.0559811	0.0561546	▲ 0.0145211	▲ 0.0145211	▲ 0.0145245	▲ 0.0145323	▲ 0.0150057	▲ 0.0150132
	Intra-Income Class Effect	0.0034654	0.0034246	0.0034215	0.0033997	0.0032772	0.0032587	0.0013572	0.0013662	0.0013661	0.0014534	0.0017680	0.0018838
	1st Quintile Group	-0.0724912	-0.0724286	-0.0724252	-0.0725380	-0.0744341	-0.0745702	0.0090921	0.0091333	0.0091359	0.0091439	0.0093137	0.0093230
	2nd Quintile Group	-0.0210682	-0.0210252	-0.0210218	-0.0210809	-0.0206755	-0.0207403	0.0041270	0.0041613	0.0041640	0.0041689	0.0043678	0.0043769
	3rd Quintile Group	0.0091090	0.0090999	0.0091033	0.0091504	0.0092756	0.0093326	0.0013605	0.0013706	0.0013733	0.0014109	0.0015311	0.0015786
	4th Quintile Group	0.0346612	0.0346329	0.0346354	0.0346867	0.0351095	0.0351716	▲ 0.0027430	▲ 0.0027482	▲ 0.0027459	▲ 0.0027159	▲ 0.0026337	▲ 0.0025949
	5th Quintile Group	0.0532545	0.0531457	0.0531298	0.0531816	0.0540016	0.0540650	▲ 0.0104795	▲ 0.0105509	▲ 0.0105613	▲ 0.0105545	▲ 0.0108109	▲ 0.0107998
	Born in the 1990s	0.0332291	0.0328572	0.0328019	0.0328019	0.0341493	0.0341493	▲ 0.0092406	▲ 0.0092597	▲ 0.0092597	▲ 0.0092597	▲ 0.0096860	▲ 0.0096860
	Inter-Income Class Effect	0.0305863	0.0301901	0.0301405	0.0301405	0.0315177	0.0315177	▲ 0.0093666	▲ 0.0095140	▲ 0.0095310	▲ 0.0095310	▲ 0.0096994	▲ 0.0096994
Intra-Income Class Effect	0.0027128	0.0026671	0.0026614	0.0026614	0.0026315	0.0026315	0.0002969	0.0002734	0.0002714	0.0002714	0.0002834	0.0002834	
1st Quintile Group	-0.0394278	-0.0392904	-0.0392776	-0.0392776	-0.0407669	-0.0407669	0.0052675	0.0053697	0.0053813	0.0053813	0.0054757	0.0054757	
2nd Quintile Group	-0.0125569	-0.0124370	-0.0124243	-0.0124243	-0.0121875	-0.0121875	0.0026839	0.0027798	0.0027915	0.0027915	0.0029347	0.0029347	
3rd Quintile Group	0.0031121	0.0031828	0.0031956	0.0031956	0.0034201	0.0034201	0.0009943	0.0010648	0.0010764	0.0010764	0.0011706	0.0011706	
4th Quintile Group	0.0191080	0.0190929	0.0191045	0.0191045	0.0195509	0.0195509	▲ 0.0014962	▲ 0.0014812	▲ 0.0014700	▲ 0.0014700	▲ 0.0014331	▲ 0.0014331	
5th Quintile Group	0.0324774	0.0321187	0.0320632	0.0320632	0.0326149	0.0326149	▲ 0.0071526	▲ 0.0071526	▲ 0.0071526	▲ 0.0071526	▲ 0.0071526	▲ 0.0071526	
Income Redistribution Effect	0.1560994	0.1553389	0.1552548	0.1556885	0.1535749	0.1540195	▲ 0.0340984	▲ 0.0342840	▲ 0.0343032	▲ 0.0341530	▲ 0.0334106	▲ 0.0332450	
Individually Insured Persons	Female												
	Intergenerational Effect	0.0070563	0.0069055	0.0068946	0.0069571	0.0031050	0.0031013	▲ 0.0150506	▲ 0.0149155	▲ 0.0149060	▲ 0.0147310	▲ 0.0106332	▲ 0.0104662
	Intragenerational Effect	0.1488742	0.1476257	0.1475311	0.1467827	0.1452837	0.1445056	▲ 0.0325680	▲ 0.0327910	▲ 0.0328218	▲ 0.0329633	▲ 0.0363889	▲ 0.0363869
	Born in the 1970s	0.0544243	0.0542399	0.0542273	0.0540608	0.0505217	0.0503712	▲ 0.0071806	▲ 0.0072222	▲ 0.0072249	▲ 0.0072553	▲ 0.0064184	▲ 0.0064474
	Inter-Income Class Effect	0.0492671	0.0490717	0.0490587	0.0488040	0.0454277	0.0451997	▲ 0.0089872	▲ 0.0090263	▲ 0.0090280	▲ 0.0091342	▲ 0.0092119	▲ 0.0092954
	Intra-Income Class Effect	0.0051572	0.0051682	0.0051686	0.0052568	0.0050940	0.0051715	0.0018066	0.0018041	0.0018031	0.0018789	0.0027935	0.0028840
	1st Quintile Group	-0.0611947	-0.0611015	-0.0610978	-0.0609361	-0.0580520	-0.0578514	0.0041020	0.0041326	0.0041341	0.0042211	0.0051983	0.0052864
	2nd Quintile Group	-0.0181344	-0.0180677	-0.0180642	-0.0179557	-0.0177157	-0.0176799	0.0018701	0.0018972	0.0018988	0.0019676	0.0021865	0.0022302
	3rd Quintile Group	0.0064908	0.0065002	0.0065037	0.0064767	0.0047928	0.0047419	0.0020149	0.0020272	0.0020287	0.0020603	0.0011451	0.0011532
	4th Quintile Group	0.0315195	0.0314979	0.0315016	0.0314918	0.0309727	0.0309985	▲ 0.0013126	▲ 0.0013139	▲ 0.0013125	▲ 0.0013065	▲ 0.0012970	▲ 0.0012915
	5th Quintile Group	0.0464670	0.0463393	0.0463253	0.0461801	0.0450962	0.0449624	▲ 0.0048678	▲ 0.0049390	▲ 0.0049460	▲ 0.0050636	▲ 0.0044394	▲ 0.0045304
	Born in the 1980s	0.0719106	0.0711992	0.0711629	0.0705367	0.0720909	0.0714181	▲ 0.0174294	▲ 0.0174991	▲ 0.0175050	▲ 0.0175717	▲ 0.0202352	▲ 0.0201589
	Inter-Income Class Effect	0.0692040	0.0685030	0.0684673	0.0677334	0.0690113	0.0682102	▲ 0.0218762	▲ 0.0219141	▲ 0.0219152	▲ 0.0220391	▲ 0.0222819	▲ 0.0223849
	Intra-Income Class Effect	0.0027066	0.0026962	0.0026956	0.0028034	0.0030796	0.0032079	0.0044468	0.0044150	0.0044102	0.0044674	0.0020468	0.0022260
	1st Quintile Group	-0.0897388	-0.0894783	-0.0894681	-0.0890902	-0.0912874	-0.0908723	0.0134253	0.0135250	0.0135297	0.0136967	0.0133516	0.0135445
	2nd Quintile Group	-0.0296570	-0.0294277	-0.0294176	-0.0291652	-0.0276889	-0.0273855	0.0079738	0.0080736	0.0080785	0.0082299	0.0077992	0.0079775
	3rd Quintile Group	0.0081084	0.0082354	0.0082454	0.0083230	0.0074088	0.0074608	0.0027086	0.0027873	0.0027923	0.0028961	0.0021582	0.0022695
	4th Quintile Group	0.0452937	0.0453056	0.0453147	0.0452720	0.0463518	0.0462997	▲ 0.0033091	▲ 0.0032699	▲ 0.0032656	▲ 0.0032158	▲ 0.0038398	▲ 0.0037833
	5th Quintile Group	0.0687005	0.0680612	0.0680212	0.0674638	0.0682952	0.0677052	▲ 0.0163518	▲ 0.0167010	▲ 0.0167246	▲ 0.0171396	▲ 0.0174225	▲ 0.0177822
	Born in the 1990s	0.0191426	0.0187505	0.0187018	0.0187018	0.0191610	0.0191610	▲ 0.0045614	▲ 0.0046336	▲ 0.0046529	▲ 0.0046529	▲ 0.0062252	▲ 0.0062252
	Inter-Income Class Effect	0.0178336	0.0174634	0.0174169	0.0174169	0.0179119	0.0179119	▲ 0.0071193	▲ 0.0071194	▲ 0.0071195	▲ 0.0071195	▲ 0.0075430	▲ 0.0075430
	Intra-Income Class Effect	0.0013090	0.0012871	0.0012849	0.0012849	0.0012491	0.0012491	0.0025579	0.0024858	0.0024666	0.0024666	0.0013177	0.0013177
	1st Quintile Group	-0.0252858	-0.0251422	-0.0251287	-0.0251287	-0.0258534	-0.0258534	0.0053412	0.0053893	0.0053940	0.0053940	0.0054458	0.0054458
	2nd Quintile Group	-0.0067238	-0.0066141	-0.0066006	-0.0066006								

Overall		CNPS	After the introduction of the BP-KNPS Proposal: Difference from the values under the CNPS						Overall		CNPS	After the introduction of the BP-KNPS Proposal: Difference from the values under the CNPS					
			Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6				Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6
Workplace-based Insured Persons	Intergenerational Effect	0.0025918	▲0.0010999	▲0.0012302	▲0.0012434	▲0.0012304	▲0.0024025	▲0.0023844	Individually Insured Persons	Intergenerational Effect	0.0007167	▲0.0009188	▲0.0009461	▲0.0010380	▲0.0037052	▲0.0038411	
	Intra-Intergenerational Effect	0.1996945	▲0.0078604	▲0.0088843	▲0.0089984	▲0.0066643	0.0218459	0.0248374		Intergenerational Effect	0.1998229	▲0.0361845	▲0.0381955	▲0.0383806	▲0.0376839	▲0.0273340	▲0.0247437
	Born in the 1960s	0.0093989	0.0021167	0.0021167	0.0021167	0.0022347	0.0021167	0.0023437		Born in the 1960s	0.0081171	0.0010613	0.0010613	0.0010613	0.0012407	0.0010604	0.0012198
	Inter-Income Class Effect	0.0009492	0.0006430	0.0006430	0.0006430	0.0007226	0.0007226	0.0007226		Inter-Income Class Effect	0.0057911	0.0044910	0.0044910	0.0044910	0.0044246	0.0044270	0.0044270
	Intra-Income Class Effect	-0.0000502	0.0014737	0.0014737	0.0014737	0.0015211	0.0014737	0.0015211		Intra-Income Class Effect	0.0027920	0.0055522	0.0055522	0.0055522	0.0056653	0.0055564	0.0056668
	1st Quintile Group	-0.0058042	▲0.0047388	▲0.0047388	▲0.0047388	▲0.0047990	▲0.0047388	▲0.0047990		1st Quintile Group	-0.0010774	▲0.0035315	▲0.0035315	▲0.0035315	▲0.0035806	▲0.0035279	▲0.0035770
	2nd Quintile Group	-0.0044489	▲0.0017948	▲0.0017948	▲0.0017948	▲0.0017948	▲0.0017948	▲0.0018101		2nd Quintile Group	0.0000506	0.0001604	0.0001604	0.0001604	0.0001689	0.0001604	0.0001689
	3rd Quintile Group	0.0001354	▲0.0014981	▲0.0014981	▲0.0014981	▲0.0015296	▲0.0014981	▲0.0015296		3rd Quintile Group	0.0002993	0.0021518	0.0021518	0.0021518	0.0021880	0.0021518	0.0021894
	4th Quintile Group	0.0035707	▲0.0017766	▲0.0017766	▲0.0017766	▲0.0018063	▲0.0017766	▲0.0018063		4th Quintile Group	-0.0002507	0.0044719	0.0044719	0.0044719	0.0045054	0.0044684	0.0045018
	5th Quintile Group	0.0064968	▲0.0011430	▲0.0011430	▲0.0011430	▲0.0011741	▲0.0011430	▲0.0011741		5th Quintile Group	0.0038002	0.0022996	0.0022996	0.0022996	0.0023836	0.0022996	0.0023870
	Born in the 1970s	0.0089926	0.0056766	0.0056552	0.0056548	0.0057520	0.0011430	0.0139701		Born in the 1970s	0.0742461	▲0.0107579	▲0.0108771	▲0.0108839	▲0.0097244	▲0.0120880	▲0.0114670
	Inter-Income Class Effect	0.0783118	▲0.0011942	▲0.0011675	▲0.0011668	0.0020165	0.0061622	0.0071826		Inter-Income Class Effect	0.0699341	▲0.0163915	▲0.0163921	▲0.0165328	▲0.0166439	▲0.0158281	▲0.0158932
	Intra-Income Class Effect	0.0026808	▲0.0044825	▲0.0044878	▲0.0044880	0.0055104	0.0053313	0.0067875		Intra-Income Class Effect	0.0043120	0.0056336	0.0056491	0.0056490	0.0060915	0.0057401	0.0064262
	1st Quintile Group	-0.0486811	▲0.0428091	▲0.0427839	▲0.0427836	▲0.0431966	▲0.0454309	▲0.0458763		1st Quintile Group	-0.0541341	▲0.0155054	▲0.0154329	▲0.0154306	▲0.0151447	▲0.0161111	▲0.0159460
	2nd Quintile Group	-0.0421045	▲0.0244082	▲0.0244082	▲0.0244082	▲0.0245998	▲0.0239880	▲0.0240980		2nd Quintile Group	-0.0277374	▲0.0127179	▲0.0127179	▲0.0127774	▲0.0131342	▲0.0212428	▲0.0216428
	3rd Quintile Group	0.0021288	▲0.0114751	▲0.0114751	▲0.0114687	▲0.0117675	▲0.0118083	▲0.0122191		3rd Quintile Group	0.0040403	▲0.0073151	▲0.0073211	▲0.0073234	▲0.0075373	▲0.0063558	▲0.0064097
	4th Quintile Group	0.0352921	▲0.0076422	▲0.0076192	▲0.0076192	▲0.0080346	▲0.0089379	▲0.0094786		4th Quintile Group	0.0292546	▲0.0076570	▲0.0076639	▲0.0076662	▲0.0080265	▲0.0078771	▲0.0081712
	5th Quintile Group	0.0560454	▲0.0037661	▲0.0037686	▲0.0037680	▲0.0043051	▲0.0060280	▲0.0066991		5th Quintile Group	0.0531678	▲0.0065695	▲0.0066782	▲0.0066874	▲0.0066639	▲0.0068045	▲0.0068515
	Born in the 1980s	0.0775869	▲0.0090040	▲0.0093121	▲0.0093353	▲0.0090006	0.0100307	0.0104086		Born in the 1980s	0.0879607	▲0.0180687	▲0.0189766	▲0.0190403	▲0.0196825	▲0.0170160	▲0.0098294
	Inter-Income Class Effect	0.0743012	▲0.0113087	▲0.0116189	▲0.0116399	▲0.0114822	0.0055940	0.0060887		Inter-Income Class Effect	0.0850352	▲0.0253662	▲0.0263552	▲0.0264318	▲0.0276891	▲0.0166882	▲0.0140942
	Intra-Income Class Effect	0.0032858	▲0.0023047	▲0.0022868	▲0.0022864	0.0024816	0.0044367	0.0034849		Intra-Income Class Effect	0.0029255	▲0.0072975	▲0.0073786	▲0.0073786	▲0.0080066	▲0.0059721	▲0.0061682
	1st Quintile Group	-0.0665863	▲0.0194558	▲0.0191359	▲0.0191090	▲0.0195057	▲0.0143569	▲0.0151099		1st Quintile Group	-0.0701447	▲0.0167831	▲0.0163429	▲0.0163101	▲0.0155871	▲0.0276641	▲0.0263759
	2nd Quintile Group	-0.0352644	▲0.0193989	▲0.0195003	▲0.0195073	▲0.0195685	0.0218683	0.0212554		2nd Quintile Group	-0.0392644	▲0.0196715	▲0.0200968	▲0.0201295	▲0.0208308	▲0.0228201	▲0.0214762
	3rd Quintile Group	0.0075364	▲0.0074020	▲0.0074371	▲0.0074400	▲0.0076500	0.0115702	0.0118175		3rd Quintile Group	0.0051134	▲0.0101791	▲0.0105024	0.0105553	▲0.0109087	0.0121460	▲0.0129987
	4th Quintile Group	0.0379678	▲0.0016337	▲0.0016238	▲0.0016319	▲0.0018055	0.0069821	0.0071946		4th Quintile Group	0.0373274	▲0.0089386	▲0.0091070	▲0.0091388	▲0.0092579	▲0.0161676	▲0.0179533
	5th Quintile Group	0.0596323	▲0.0066740	▲0.0066740	▲0.0066740	▲0.0070366	▲0.0101419	▲0.0101419		5th Quintile Group	0.0698938	▲0.0147086	▲0.0147086	▲0.0147086	▲0.0151019	▲0.0147407	▲0.0154262
Born in the 1990s	0.0317159	▲0.0064697	▲0.0073242	▲0.0071654	▲0.0071950	0.0017950	0.0079559	Born in the 1990s	0.0294500	▲0.0084192	▲0.0084010	▲0.0095177	▲0.0095177	▲0.0059505	▲0.0059505		
Inter-Income Class Effect	0.0299678	▲0.0071785	▲0.0079730	▲0.0078766	▲0.0078766	▲0.0062495	▲0.0062495	Inter-Income Class Effect	0.0277368	▲0.0126234	▲0.0121553	▲0.0122637	▲0.0122637	▲0.0093406	▲0.0093406		
Intra-Income Class Effect	0.0017481	▲0.0002588	▲0.0004602	▲0.0004602	0.0008546	0.0008546	0.0008546	Intra-Income Class Effect	0.0017082	▲0.0028432	▲0.0027323	▲0.0027460	▲0.0027460	▲0.0037501	▲0.0037501		
1st Quintile Group	-0.0330481	▲0.0003836	0.0006444	0.0006627	▲0.0045404	▲0.0045404	▲0.0045404	1st Quintile Group	-0.0267947	▲0.0001936	0.0006337	0.0006919	0.0006919	▲0.0026548	▲0.0026548		
2nd Quintile Group	-0.0118835	▲0.0048512	0.0050705	0.0050988	0.0050988	0.0060683	0.0060683	2nd Quintile Group	-0.0091844	▲0.0051529	0.0055606	0.0056157	0.0056157	▲0.0071454	▲0.0071454		
3rd Quintile Group	0.0035980	▲0.0013866	0.0015262	0.0015544	0.0015544	0.0030122	0.0030122	3rd Quintile Group	0.0028219	▲0.0029109	0.0032229	0.0032809	0.0032809	▲0.0048849	▲0.0048849		
4th Quintile Group	0.0166059	▲0.0007563	▲0.0007545	▲0.0007288	▲0.0011409	▲0.0011409	▲0.0011409	4th Quintile Group	0.0127714	▲0.0003980	▲0.0004694	0.0005157	0.0005157	▲0.0021320	▲0.0021320		
5th Quintile Group	0.0264758	▲0.0053362	▲0.0060078	▲0.0061269	▲0.0061269	▲0.0048265	▲0.0048265	5th Quintile Group	0.0220940	▲0.0058121	▲0.0071363	▲0.0073583	▲0.0073583	▲0.0075773	▲0.0075773		
Income Redistribution Effect	0.2022863	▲0.0089603	▲0.0101145	▲0.0102148	▲0.0078768	▲0.094434	▲0.0224410	Income Redistribution Effect	0.2046127	▲0.0369012	▲0.0391254	▲0.0393267	▲0.0387219	▲0.0310393	▲0.0285848		

Male		CNPS	After the introduction of the BP-KNPS Proposal: Difference from the values under the CNPS						Female		CNPS	After the introduction of the BP-KNPS Proposal: Difference from the values under the CNPS					
			Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6				Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6
Workplace-based Insured Persons	Intergenerational Effect	0.0005695	▲0.0002622	▲0.0002778	▲0.0002761	▲0.0003080	0.0023816	0.0024570	Individually Insured Persons	Intergenerational Effect	0.0018980	▲0.0005781	▲0.0006448	▲0.0006400	▲0.0008478	▲0.0000224	▲0.0001299
	Intra-Intergenerational Effect	0.2285834	0.0072319	0.0061139	0.0059885	0.0094518	0.0548681	0.0592349		Intra-Intergenerational Effect	0.2412593	▲0.0454249	▲0.0479861	▲0.0481312	▲0.0461924	▲0.0223313	▲0.0169131
	Born in the 1960s	0.0116665	▲0.0036646	▲0.0036646	▲0.0036646	▲0.0032445	▲0.0036646	0.0032445		Born in the 1960s	0.0068441	▲0.0011751	▲0.0011751	▲0.0011751	▲0.0009992	▲0.0011741	▲0.0009982
	Inter-Income Class Effect	0.0116869	▲0.0012960	▲0.0012960	▲0.0012960	▲0.0014065	▲0.0012960	0.0014065		Inter-Income Class Effect	0.0062341	▲0.0013649	▲0.0013649	▲0.0013649	▲0.0030737	▲0.0011920	▲0.0031011
	Intra-Income Class Effect	-0.0000204	0.0017686	0.0017686	0.0017686	0.0018380	0.0017679	0.0018372		Intra-Income Class Effect	0.0061000	▲0.0019897	▲0.0019897	▲0.0019897	▲0.0020745	▲0.0020179	▲0.0021029
	1st Quintile Group	-0.0128223	▲0.0001513	▲0.0001513	▲0.0001513	▲0.0000693	▲0.0001510	0.0000691		1st Quintile Group	-0.0023010	▲0.0023010	▲0.0023010	▲0.0023010	0.0022445	▲0.0020321	▲0.0022455
	2nd Quintile Group	-0.0029442	▲0.0000020	▲0.0000020	▲0.0000020	▲0.0000284	▲0.0000019	0.0000282		2nd Quintile Group	-0.0062937	▲0.0003913	▲0.0003913	▲0.0003913	▲0.0004010	▲0.0003933	▲0.0004050
	3rd Quintile Group	0.0024873	▲0.0004167	▲0.0004167	▲0.0004167	▲0.0003753	▲0.0004167	▲0.0004167		3rd Quintile Group	0.0004167	▲0.0004167	▲0.0004167	▲0.0004167	▲0.0004167	▲0.0004167	▲0.0004167
	4th Quintile Group	0.0059148	▲0.0006167	▲0.0006167	▲0.0006167	▲0.0006585	▲0.0006166	0.0006584		4th Quintile Group	0.0021295	▲0.0000746	▲0.0000746	▲0.0000746	0.0000746	▲0.0001152	▲0.0000798
	5th Quintile Group	0.0071440	▲0.0014153	▲0.0014153	▲0.0014153	▲0.0014571	▲0.0014151	▲0.0014569		5th Quintile Group	0.0041165	▲0.0007359	▲0.0007359	▲0.0007359	▲0.0006983	▲0.0007319	▲0.0006670
	Born in the 1970s	0.0971662	▲0.0148461	▲0.0148370	▲0.0148370	▲0.0176735	0.0250008	0.0287876		Born in the 1970s	0.0933032	▲0.0130310	▲0.0130654	▲0.0130654	▲0.0107024	▲0.0128912	▲0.0115629
	Inter-Income Class Effect	0.0942192	▲0.0084902	▲0.0084781	▲0.0084781	▲0.0097165	▲0.0173326	▲0.0188450		Inter-Income Class Effect	0.0895289	▲0.0222696	▲0.0223245	▲0.0223245	▲0.0223201	▲0.0177495	▲0.0176071
	Intra-Income Class Effect	0.0029270	▲0.0063560	▲0.0063589	▲0.0063589	▲0.0079570	▲0.0076683	0.0099426		Intra-Income Class Effect	0.0037743	▲0.0092328	▲0.0092591	▲0.0092591	▲0.0115277	▲0.0048583	▲0.0060442
	1st Quintile Group	-0.1096563	▲0.0029867	▲0.0029738	▲0.0029738	▲0.0035913	▲0.0078805	▲0.0085527		1st Quintile Group	-0.0973960	▲0.0133124	▲0.0133451	▲0.0133451	▲0.0136760	▲0.0085897	▲0.0068483
	2nd Quintile Group	-0.0190854	▲0.0008071	▲0.0008081	▲0.0008081	▲0.0011257	▲0.0018007	0.0002851		2nd Quintile Group	-0.0214874	▲0.0068026	▲0.0068316	▲0.0068316	▲0.0073574	▲0.0056209	▲0.0056599
	3rd Quintile Group	0.0183580	▲0.0006668	▲0.0006716	▲0.0006716	▲0.0015577	▲0.0016888	0.0008660		3rd Quintile Group	0.0124170	▲0.0019151	▲0.0019070	▲0.0019070	▲0.0023101	▲0.0023826	▲0.0025319
	4th Quintile Group	0.0489521	▲0.0020089	▲0.0020091	▲0.0020091	▲0.0026604	▲0.0043669	0.0052263		4th Quintile Group	0.0460466	▲0.0015770	▲0.0015783	▲0.0015783	▲0.0008		

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