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발 표 1 : 박기성(성신여대)
"안심소득의 비용과 경제적 효과"

발 표 2 : 류명석(서울시복지재단)
"서울안심소득 사업설명 및 기초선조사 결과"

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목 차

| 주제발표 |

발표 1 : 안심소득의 비용과 경제적 효과 ····· 1
박기성(성신여대)

발표 2 : 서울안심소득 사업설명 및 기초선조사 결과 ····· 41
류명석(서울시복지재단)

[발 표 1]

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The Cost and Economic Effects of Safety Income in South Korea

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Safety Income, first proposed by Park (2016), is a welfare system that provides households whose earnings are less than the standard median household income with the support of 50 percent of the difference between the standard median and their current income.

There are two significant features of Safety Income to be emphasized. First, all the welfare benefits are maintained intact except that the livelihood, housing, self-reliance benefits, earned income, and child tax credits are integrated into Safety Income. Second, Safety Income support is determined and provided in advance only based on the income of each household and settled later, just as income tax is withheld monthly and settled at the end of the year. It follows the principle of "Support forward, settle afterward."

We estimate the additional budget for enforcing Safety Income. Using a computable general equilibrium model, we also conduct analyses to evaluate the effects of Safety Income, Universal Basic Income, and the expansion of the current welfare system on income differentials, employment, and GDP with the same budget. Our analyses show that Safety Income is superior to the other two welfare systems in all economic performances.

Keywords: Safety Income, Universal Basic Income, Negative Income Tax, "Support Forward, Settle Afterward"

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I. Introduction

In 2014, Korean society was shocked by the suicides of a mother in her 60s and her two adult daughters in their 30s in Songpa-gu, a district in southern Seoul, who could not afford their livelihood expenses. While the South Korean government has enforced the National Basic Livelihood Security System (NBLSS) since 2000, it has been criticized for creating a large welfare blind zone where many remain unprotected. Suicides of families in extreme economic circumstances have consistently occurred, despite the government's significant effort to expand the NBLSS. What is worse, they have even increased since the burst of the Covid-19 pandemic. In August 2022, Korean society witnessed the suicides of a mother in her 60s and two daughters in their 30's in Suwon city, south of Seoul, a deja-vu of the 2014 tragedy. According to the media, illness and financial difficulties are believed to be the causes of their extreme choices.

Many people are now questioning whether the current NBLSS has accomplished or will ever accomplish its goal of abolishing the welfare blind zone. Reflecting this widespread discontent, some politicians and scholars proposed alternatives that seem more radical and effective. Until now, Universal Basic Income (UBI) and Safety Income (SI) are the most frequently discussed welfare systems in South Korea.

Of the two, while UBI is an older and more widely known alternative to existing welfare systems in South Korea, SI, proposed by Park (2016), is newer but gaining attraction more rapidly. On the one hand, UBI was proposed as one of the top pledges during the 2022 presidential campaign in South Korea by the presidential candidate of the Democratic Party, which has now stepped down to the opposition. On the other hand, a pilot project of SI was one of the uppermost promises of the incumbent Mayor of Seoul, who was elected in April 2021 and reelected in June 2022. Throughout the presidential and mayoral elections that

began in 2021, which welfare system should be chosen among SI, UBI, or the expansion of the current NBLSS, has emerged as one of the hottest political and social policy issues in South Korea.

In this paper, we discuss theoretical backgrounds and policy issues surrounding SI, estimate the cost needed for its enforcement, and compare its economic effects with those of UBI and the expansion of current NBLSS. By setting up the computable general equilibrium model and utilizing it for the comparison of SI, UBI, and NBLSS, we analyze the effects of three alternatives on income differentials, labor market outcomes, and Gross Domestic Product.

II. National Basic Livelihood Security System and Earned Income Tax Credit

The NBLSS in South Korea is the basic support program for low-income households. It comprises seven benefits: livelihood, housing, education, medical, self-reliance, childbirth, and funeral benefits.

The livelihood benefit is a cash transfer for a 4-member household with a recognized income of 18,436,000 wons (₩)[1] or less in 2022. The households used as examples in our paper are all assumed to be 4-member households. The amount of cash transfer is the gap between this amount and the recognized income.[2]

[1] This amount is 30 percent of the standard median income and approximately 16,000 US dollars applying the average exchange rate of ₩1,150 per dollar in 2019. Also, the standard median income is ₩61,453,000 in 2022, which the Ministry of Health and Welfare determined based on the 2020 median income.

[2] The converted income has been 70 percent of labor or business income and 100 percent of other incomes since 2020. Before 2020, it was 100 percent of labor or business income and other incomes. Each property, including the car, has its conversion rate into income. The recognized income of a household is the summation of all converted incomes.

The housing benefit is also a cash transfer for a rental household of a recognized income of ₩28,268,000[3] or less in 2022. The maximum amount goes up to ₩6,072,000 for a household living in Seoul.

The education benefit is also a cash transfer for the household whose recognized income is lower than ₩ 30,726,000[4] in 2022. It includes tuition, textbook expenses, and educational activity support of ₩554,000 for a high school student, for example.

The medical benefit is for a household with a recognized income of ₩24,581,000[5] or less in 2022. The medical benefit covers almost all medical or pharmaceutical expenses of the household members.

The self-reliance benefit is for the household whose recognized income is lower than ₩30,726,000 in 2022. The government provides the household members with public-paying jobs to support themselves.

The childbirth and funeral benefits are for households whose recognized income is lower than ₩28,268,000 in 2022. The childbirth benefit is to give ₩700,000 per newborn baby, and the funeral benefit is to give ₩800,000 per dead person.

While the housing and education benefits are administered by the Ministry of Land, Infrastructure, and Transport and the Ministry of Education, respectively, the other benefits are by the Ministry of Health and Welfare.

The earned income tax credit (EITC) of the National Tax Service is also a cash transfer for a household with a market income of ₩30,000,000 or less (e.g., for the single earner in the household) and a maximum net asset of ₩200,000,000. In detail, the amount of credit is 37.1 percent of the household's labor or business income lower than ₩7,000,000,

[3] This amount is 46 percent of the standard median income.
[4] This amount is 50 percent of the standard median income.
[5] This amount is 40 percent of the standard median income.

₩2,600,000 for the household whose labor or business income is between ₩7,000,000 and ₩14,100,000, and decreases with the household's labor or business income which is between ₩14,100,000 and ₩30,000,000 to zero for the household whose labor or business income exceeds ₩30,000,000. The child tax credit of the National Tax Service is a cash transfer for a household with labor or business income less than ₩40,000,000, with a net asset of less than ₩200,000,000, and with at least one child under 18. The amount of credit is a maximum ₩700,000.

The question is, "Would a household member with no labor or business income receiving a livelihood benefit of ₩18,436,000 from the Ministry of Health and Welfare be willing to work when she is given a job offer that guarantees ₩26,337,000?" The answer may not be a definite "Yes." If she works, she can no longer receive the livelihood benefit of ₩18,436,000 she received before, because 70 percent of her income (₩26,337,000 × 0.70) reaches 30 percent of the standard median income (₩61,453,000 × 0.30 = ₩18,436,000). And the disposable income of the household increases by ₩7,901,000, which is only 30 percent of the earnings. For this reason, there won't be many people willing to work.

Theoretically, approximately 15 percent of all households should be able to receive the livelihood benefit, but, in reality, only 4.6 percent receive it. One major reason for this discrepancy is the government's imposing various strict restrictions on eligibility for support. The restrictions include the beneficiaries' income, assets, automobiles, and family dependents. Owning an automobile is probably the worst restriction of all. Consider, for example, a household with a car with a resale value of ₩3,000,000. Since the car's value is converted to an annual income of ₩36,000,000[6] and exceeds 30 percent of the standard

[6] In the current NBLSS, the value of a car with a resale price of ₩3,000,000 is converted to an annual income of ₩36,000,000 (₩3,000,000 × 12 months).

median income, this household can no longer receive the livelihood benefit.

III. Safety Income

Park (2016, 2017, 2020) and Park and Byun (2017) proposed that all households earning less than the standard median income receive SI support, 50 percent of the difference between the standard median income and their current income. However, households earning more than the standard median income should not receive SI.

Figure 1 shows the basic structure of SI. It demonstrates the pattern that SI decreases as household income increases. For example, 4-member households with no income receive ₩30,000,000 (50 percent of the median income ₩60,000,000), while households earning ₩60,000,000 receive none. In the middle, households earning ₩30,000,000 receive ₩15,000,000 [50 percent of (₩60,000,000 − ₩30,000,000)]. Since the amount of SI support decreases as household income increases, SI is said to follow the principle of "thick bottom, thin top."

While livelihood, housing, self-reliance benefits, and earned income and child tax credits will be integrated into SI, NBLSS's four other benefits are maintained. In addition to NBLSS, other national welfare benefits such as basic pension, national pension, unemployment benefit, and child allowance are also maintained.

Adopting the SI's philosophy and welfare policy implications, Seoul Metropolitan Government launched the pilot project of SI (SSIP) in 2022 that provides cash assistance to selected households earning an income below a minimum threshold for three years (Seoul Metropolitan Government 2022). The SSIP differs from Park (2016)'s original SI as follows. First, households below 85 percent of the standard median income and below the net asset

value of ₩326,000,000 are eligible for SSIP. Second, while livelihood, housing benefits, and basic pension are incorporated into SSIP, self-reliance benefits, earned income tax credit, and child tax credit are maintained. In addition, Seoul's welfare programs, such as Seoul Youth Basic Living Security Program, Seoul Youth Allowance, Seoul Youth Support, Seoul Housing Voucher, are incorporated. The key differences between SI and SSIP are summarized in Table A1 in Appendix.

The SI is similar to the Negative Income Tax (NIT: Friedman 1962, Ch. XII) in that the two provide a household of its income lower than the standard level with the payment of 50 percent of the difference between the standard level and its income. The SI, however, is quite different from NIT in the following three respects.

First, while NIT abolishes all existing welfare benefits, SI maintains almost all of them. Second, while NIT was suggested with a flat tax rate on income by Friedman (1962, Ch. X), SI maintains the current tax system with many forms of deductions. Third, while NIT suggested by Friedman covers only the lowest 10 percent, SI covers as much as the lowest 50 percent of households.

The amount of SI support is determined only by the income of each household and "paid in advance and adjusted afterward," just as income tax is withheld monthly and settled at the end of the year, following the principle of "Support forward, settle afterward." Therefore, SI is more likely to prevent suicide due to economic hardship than the current NBLSS.

Would a household member without the market income who receives SI support of ₩30,726,000 (50 percent of the standard median income) be willing to work when he or she is given a job offer that guarantees annual earnings of ₩26,337,000? Then, if he or she works at the job, his or her disposable income is ₩26,337,000 + 0.5×(₩61,453,000 −

₩26,337,000) = ₩43,895,000: It increases by ₩13,169,000, which is 50 percent of the labor income so that it is less likely for him or her not to work. The SI would alleviate the disposable income gaps among households because the amount of SI support to a household below the standard median income decreases as its current income increases.

Now, we want to discuss which governmental institution should be in charge of Safety Income. In our opinion, the National Tax Service has the most comprehensive and precise information on the incomes and assets of citizens among all governmental institutions. Moreover, the NTS has gained years of incomparable expertise and experience in assessing and collecting various forms of taxes. Therefore, the NTS should be the most effective organization to administer SI and minimize the leaks in welfare spending.

IV. SI Support by Income Bracket and Household Members

We use the 2019 Korea Welfare Panel (KWP) data to estimate the amount of SI support. Figure 2 shows that the labor-leisure choice changes by receiving SI support in 2019. Suppose the household chooses A, where it receives the maximum livelihood and housing benefits. Then, the household is unwilling to work because its reservation wage rate exceeds 37.1 percent of its market wage rate.[7] If livelihood and housing benefits are replaced by SI support, the household's choice moves to B, where it supplies labor. When this occurs, its disposable income increases (BE > AC), its utility increases ($U_1 > U_0$), and the amount of government payment to the household decreases (BD < AC). The standard median income for a 4-member household was ₩55,362,000 in 2019. Therefore, we set the standard median income to ₩55,362,000 $\div 4 \times$ n for the n-member household.

[7] Note that the conversion rate of labor income into the recognized income is 100 percent in 2019.

The amount of SI support is determined by the current income subtracting "livelihood, housing benefits, and earned income and child tax credits,"[8] which are substituted by SI. Table 1 shows the average of this income by income bracket and household members.[9]

The amount of SI support is estimated to be 50 percent of the difference of the current income from the standard median income for a household, until it reaches the standard median income. Table 2 shows the average amount of SI support by income bracket and household members. First, the average amount of SI support is ₩5,002,000 for all households that receive it. Second, the average amount of SI support by household members is ₩3,090,000 for single households, ₩5,566,000 for 2-member households, ₩7,078,000 for 3-member households, ₩7,099,000 for 4-member households, ₩9,466,000 for 5-member households, and ₩11,515,000 for more than 5-member households. Table 3 shows the number of households eligible for SI support by income bracket and household members.

Table 4 shows the ratio of households eligible for SI support to households by income bracket and household members. First, among a total of 20,389,770 households, 9,175,338 households receive SI support, which account for 45.0 percent of the total. Second, the ratio of households that receive SI support is 58.9 percent of single households, 52.4 percent of 2-member households, 29.4 percent of 3-member households, 26.7 percent of 4-member households, 41.6 percent of 5-member households, and 50.9 percent of more than 5-member households.

V. Estimating the Additional Budget for Enforcing SI

[8] The current income is the market income plus the public transfer income. The market income is the total of the labor income, the business income, the property income, and the private transfer income subtracting the private transfer spending. The KWP does not have information on the self-reliance benefit.

[9] Each income bracket is based on the current income in all Tables in our paper.

We estimate the total cost for enforcing SI based on the market income that is defined as the current income minus the public transfer income such as livelihood and unemployment benefits. Then the additional budget for enforcing SI is estimated as follows. First, 100 percent of the budget for "livelihood, housing, self-reliance benefits, and earned income and child tax credits" is subtracted from the estimated total cost. Second, 50 percent of the budget for the other public transfer incomes is subtracted from it.

The total cost for enforcing SI is estimated to be ₩75,858.9 billion in 2019. Since "livelihood, housing, self-reliance benefits, and earned income and child tax credits" are substituted with SI support, the annual budget for them, ₩10,944.6 billion, is subtracted from the estimated total cost. The 2018 cash social expenditure of the government of ₩81,285.9 billion[10] includes the expenditure for "livelihood, housing, self-reliance benefits, and earned income and child tax credits." If SI were to be enforced, the market income and the expenditure for all the other public transfers, where the expenditure of all the other public transfers is calculated as ₩70,341.3 billion (₩81,285.9 billion - ₩10,944.6 billion), would add up to the current income. Therefore, 50 percent of ₩70,341.3 billion, which is ₩35,170.6 billion, would also save the budget for enforcing SI. Consequently, the additional budget for enforcing SI is estimated as

$$₩75{,}858.9 \text{ billion} - ₩10{,}944.6 \text{ billion} - 0.5 \times (₩81{,}285.9 \text{ billion} - ₩10{,}944.6 \text{ billion}) = ₩29{,}743.7 \text{ billion}.$$

Since the 2019 cash social expenditure of the government increased from that of 2018,

[10] This is the latest available number. The data source is from OECD Statistics.

the additional budget for enforcing SI would be estimated to be less than ₩29,743.7 billion.

In our SI, all households below the standard median income can receive SI support regardless of the amount of assets they own. In SSIP, however, households cannot receive SI support if their net assets exceed the threshold (Seoul Metropolitan Government 2022). In this case, the additional budget for SI will be reduced by that amount.

In the above formula, ₩70,341.3 billion should be paid to households below the standard median income, but in reality, a certain portion of the amount is also paid to households with earnings more than the standard median income. This increases the additional budget for SI by that much.[11]

Suppose the central government's budget growth rate for welfare, labor, and health service between 2017 and 2022 maintains until 2027. In that case, the 2027 budget will increase by ₩149,100 billion from the 2022 budget.[12] The estimated additional budget for SI, ₩29,743.7 billion, would be just 19.9 percent of the increment. The disaster subsidy seven times since the break of the COVID-19 pandemic has been ₩99,800 billion. Therefore, the estimated additional budget for SI would be 29.8 percent of the disaster subsidy, much smaller than the most recent subsidy in June of 2022, ₩39,000 billion.

How much would each person receive if an estimated additional budget of ₩29,743.7 billion for enforcing SI were evenly distributed to all people as the universal basic income (UBI)? Since the population of South Korea is 48,940,000 in the 2019 KWP data, each person would receive ₩608,339 per year, and 4-member households would receive ₩2,433,356 (₩608,339 × 4) per year. In contrast, in the SI scheme, 4-member households

[11] The estimated additional budget for enforcing SI is subject to change due to the yearly budget structure and income distribution of the beneficiaries. If we use the most relaxed estimation, the additional budget may rise to a maximum ₩35 trillion.

[12] The budget for welfare, labor, and health service have increased annually by 11 percent between 2017 and 2022.

with no income would receive ₩27,681,000 per year, 11.4 times the UBI.

While the benefits in SI are greatest for lowest-income households and decrease as household incomes increase, the benefits in UBI are uniformly small for all households regardless of their income level. So, assuming the same amount of additional budget for different welfare systems, UBI would practically become a “thin bottom, thin top” welfare system, and SI, a “thick bottom, thin top” welfare system.

Table 5 shows the amount of support by the income bracket and the number of household members.

Table 6 shows the amount of support by the income bracket and the number of household members if the additional budget for SI was distributed according to the proportions of current cash welfare benefits.

VI. Computable General Equilibrium Model

We use Cho’s (2017) computable general equilibrium model to evaluate the effects of SI, UBI, and the expansion of the current welfare system on economic performance such as income differentials, employment, and economic growth, assuming the same amount of an additional budget spent on each welfare system. Households are grouped into ten deciles according to their income, and each decile is a representative consumer maximizing the intertemporal utility.

$$U_j(Z_{j,t}) = \sum_{t=0}^{\infty} \beta^t \frac{Z_{j,t}^{1-\theta}}{1-\theta},$$

$$Z_{j,t} = \left[\alpha\left(C_{j,t} - \bar{C}_{j,t}\right)^{\rho} + (1-\alpha) l_{j,t}^{\rho}\right]^{-\frac{1}{\rho}},$$

where β is the discount factor, $1/\theta$ is the elasticity of intertemporal substitution, $C_{j,t}$ and $\bar{C}_{j,t}$ are the consumption and the minimum consumption, respectively, and $l_{j,t}$ is leisure of a household in *j* decile in year *t*. $1/(1-\rho)$ is the elasticity of substitution between the consumption and the leisure. This utility function is Stone-Geary one with the minimum consumption.

The budget constraint is

$$P_{c,t}\left(C_{j,t} - \bar{C}_{j,t}\right) + P_{s,t} S_{j,t} = \sum_i r_t K_{j,i,t} + \sum_i w_{j,i,t} L_{j,i,t} + P_{j,ue,t} LU_{j,t} + \sum_b T_{j,b,t},$$

where $P_{c,t}$ is the after-tax price of consumption composite, $S_{j,t}$ the savings of *j* decile, $P_{s,t}$ the yield rate of savings, $K_{j,i,t}$ the capital in *i* sector of *j* decile, r_t the after-tax yield rate of capital, $L_{j,i,t}$ the employment time, and $w_{j,i,t}$ the after-tax wage rate in *i* sector of *j* decile. $LU_{j,t}$ is the unemployment (job-search) time, and $P_{j,ue,t}$ the value of a unit of unemployment time. $T_{j,b,t}$ is welfare benefit *b* transferred to *j* decile.

The representative firm *f* in sector *i* produces the final output ($Y_{i,t}$).

$$Y_{i,t} = \left[\beta_y XA_{i,t}^{\epsilon_y} + (1-\beta_y) KL_{i,t}^{\epsilon_y}\right]^{\frac{1}{\epsilon_y}},$$

where β_y is the parameter showing the weights of the Armington composite goods ($XA_{i,t}$) and the composite production factor ($KL_{i,t}$), and $1/(1-\epsilon_y)$ is the elasticity of substitution

between them. The final output is assumed to be transformed into the export goods ($X_{i,t}$) and the domestic consumption goods ($XD_{i,t}$). The composite production factor is assumed to be composed of capital and labor,

$$KL_{i,t} = \left[\beta_k K_{i,t}^{\epsilon_k} + (1-\beta_k) L_{i,t}^{\epsilon_k}\right]^{\frac{1}{\epsilon_k}} .$$

The Armington composite goods are composed of the domestic goods and the imported goods ($XM_{i,t}$), which are imperfectly substitutable,

$$XA_{i,t} = \left[\beta_{a,i} XD_{i,t}^{\epsilon_a} + (1-\beta_{a,i}) XM_{i,t}^{\epsilon_a}\right]^{\frac{1}{\epsilon_a}} .$$

The Armington composite goods are distributed to the household consumption (C_t), the government expenditure (G_t), and the investment (I_t) as follows,

$$XA_t = \sum_j C_{j,t} + I_t + G_t .$$

The capital stock is accumulated according to

$$K_{t+1} = (1-\delta) K_t + I_t ,$$

where δ is the depreciation rate.

The government revenue is composed of the capital tax $\left(\tau_{r,t} R_{k,t}\right)$, earned income tax

$\left(\sum_w \tau_{w,t} W_{w,t}\right)$, and consumption tax $\left(\tau_{c,t} C_{k,t}\right)$. The government revenue is expended on the government consumption (G_t), and the transfer to households $\left(\sum_j \sum_b T_{j,b,t}\right)$. The budget deficit (D_t) is the difference between the government expenditure and revenue:

$$\tau_{r,t} R_{k,t} + \sum_w \tau_{w,t} W_{w,t} + \tau_{c,t} C_t = G_t + \sum_j \sum_b T_{j,b,t} - D_t \, .$$

The working age population is divided into the economically active and non-active populations. The economically active population is divided into the employed and the unemployed. The unemployed are assumed to pay the job search cost. The labor hours of *j* decile in year *t* $\left(L_{j,t}\right)$ are assumed to be

$$L_{j,t} = \sum_i L_{j,i,t} \, ,$$

where $L_{j,i,t}$ is working hours of decile *j* in sector *i* in year *t*. Since some participants in the labor market are not employed, the total available hours of decile *j* in year *t* $\left(\overline{L_{j,t}}\right)$ are

$$\overline{L_{j,t}} = L_{j,t} + LU_{j,t} + l_{j,t} \, ,$$

where $LU_{j,t}$ and $l_{j,t}$ are the unemployed hours and leisure of decile *j* in year *t*, respectively.

Unemployment is implied by the monopoly unionism theory, the matching theory, the efficiency wage hypothesis, and the regional migration theory.[13] In these four, the relation

[13] Unemployment occurs because the labor union sets the wage rate higher than the competitive

between wage and unemployment is summarized into the following wage curve,

$$\frac{W_{j,t}}{P_t} = \left(\frac{ur_{j,t}}{ur_{j,0}}\right)^{\gamma},$$

where the left-hand side is the real wage rate, which is the nominal wage rate divided by the price level, $ur_{j,t}$ is the unemployment rate of decile *j* in year *t*, and γ is the elasticity of the real wage rate with respect to the unemployment rate. Blanchflower and Oswald (1995) estimate the elasticity as -0.1 in all regions: the real wage rate decreases by 1 percent as the unemployment rate increases by 10 percent in a region.[14]

The employed are composed of wage and salary workers and the self-employed. The earnings are assumed to be determined by the perfect competition in the self-employed sector. The wage rate is assumed to be determined through negotiating between the labor union and the employer in the bargaining labor market (Kim and Park 2020). According to the Pissarides's (1990) search and matching, the sharing rule of the rent is derived from the Nash bargaining game: The bargaining power of both the labor union and the employer determines the sharing rate so that wage rate and the amount of employment are determined. Following Ferri (2004), the matching effect is reflected in our model,

$$E_i = G(E, ur)F(L_i),$$

equilibrium rate in the monopoly unionism theory (Lazear 1983) and the matching theory (Pissarides 1990). According to the efficiency wage hypothesis (Solow 1979, Shapiro and Stiglitz 1984), the firm sets the wage rate higher than the market rate to improve labor productivity so that unemployment occurs. In Harris and Todaro (1970), unemployment occurs in higher-wage regions where workers flock due to the regional wage differentials.

[14] See Boeters and Savard (2011) for the calibration of the labor sector.

where E_i and L_i are numbers of matched and employed workers, respectively, in sector i. E and ur are the number of matched workers and the unemployment rate, respectively, in the whole economy. The number of matched workers is affected by the number of matched workers and the unemployment rate in the whole economy. Since this function increases the returns to scale, we use Markusen's (2004) method to estimate the computable general equilibrium model.

Table 7 shows the estimated welfare benefits by household income decile based on the central government budget in 2019. Then, Table 8 shows the estimated numbers of the employed by industry and household income decile. These two Tables are the starting point. And then, we will insert the same additional budget of ₩29,743.7 billion into the economy by enforcing SI, UBI, and the expansion of the current welfare system, and compare the economic effects of the three ways.

VII. Comparison of SI, UBI, and Expanding the Current Welfare System

1. Mitigating Income Differentials

Assuming the additional budget of ₩29,743.7 billion is spent on its enforcement, Safety Income has two effects, direct and indirect, on the economy. The direct effect comes from the income transfer from the government to households. The indirect effect, contrarily, comes from the changes in the economic behavior of households and firms, including their consumption, investment, and labor supply. As shown in Table 9, the direct effect would decrease the Gini coefficient by 6.91 percent to 0.36142 and the Income Quintile Ratio by 24.84 percent to 7.02113.

If the additional budget of ₩29,269.5 billion were used for the Universal Basic Income or for expanding the current welfare system, these would also have the two effects. The direct effect of UBI would reduce the Gini coefficient by 1.36 percent to 0.38297 and the Income Quintile Ratio by 4.69 percent to 8.90287. Since UBI would increase the transfer income of all households including high-income households by the same amount, its effect on mitigating the income gaps among households would be much smaller than SI's.

The direct effect of expanding the current welfare system reduces the Gini coefficient by 2.26 percent to 0.37947 and the Income Quintile Ratio by 5.51 percent to 8.82644. Since the welfare benefits regardless of households' income such as child and childcare allowances would be also enlarged to increase the transfer income of high-income households, its effect on mitigating the income gaps among households would be smaller than SI's. Since the current welfare system is concentrated on low-income households, the expansion of the current welfare system would close the income gaps among households more than UBI.

According to the 2019 KWP data, the maximum livelihood benefit is ₩16,270 thousand for a 4-member household, and the maximum housing benefit ₩1,780 thousand. When a household receives both benefits, the total benefit is ₩18,050 thousand per year. Therefore, if SI were enforced, a household's disposable income would increase by at least ₩9,630 thousand (₩27,680 thousand - ₩18,050 thousand) to ₩27,680 thousand. By doing so, SI will considerably contribute to narrowing the income gaps among households.

The indirect effect of SI would also reduce the Gini coefficient by 0.10 percent to 0.00039 but increase the Income Quintile Ratio by 0.12 percent to 0.01104. As will be seen in the next section, if SI were enforced, the numbers of the employed would increase in 8, 9, and 10 deciles of household income so that the Income Quintile Ratio would increase. The total effect of SI would reduce the Gini coefficient by 7.01 percent to 0.36103 and the Income

Quintile Ratio by 24.72 percent to 7.03234.

The UBI and the expansion of the current welfare system have also an indirect effect by changing the behavior of economic agents such as consumption, investment, and labor supply. First, the indirect effect of UBI would increase the Gini coefficient by 0.14 percent to 0.00056 and the Income Quintile Ratio by 1.04 percent to 0.09688. The total effect of UBI would reduce the Gini coefficient by 1.22 percent to 0.38353 and the Income Quintile Ratio by 3.66 percent to 8.99975. Second, the indirect effect of the expansion of the current welfare system would increase the Gini coefficient by 0.06 percent to 0.00025 and the Income Quintile Ratio by 0.97 percent to 0.09058. The total effect of expanding the current welfare system would reduce the Gini coefficient by 2.20 percent to 0.37972 and the Income Quintile Ratio by 4.54 percent to 8.91702.

The indirect effects of UBI and the expansion of the current welfare system would widen the income differentials: the former would widen them more than the latter. The indirect effect of SI would reduce the Gini coefficient but increase the Income Quintile Ratio by approximately one tenth of the indirect effects of UBI and the expansion of the current welfare system. In short, the total effect of SI on reducing the income gaps is superior to those of UBI and the expansion of the current welfare system.

2. Effects on the Labor Markets

Since the transfer income increase from the government to consumers by ₩29,743.7 billion would decrease the work incentive and the labor supply, the employed would decrease generally. As in Table 10, while both UBI and the expansion of the current welfare system would decrease the number of the employed in all deciles, SI would increase the number of the employed in 8, 9, and 10 deciles. In total, UBI and the expansion of the current welfare

system would decrease the employed by 219 thousand and 277 thousand, respectively, but SI by 186 thousand. The UBI would increase the unemployed by 84 thousand but SI only by 9 thousand. The expansion of the current welfare system would make 1,063 thousand unemployed leave the labor market so that the labor force would decrease by 1,340 thousand.

Table 11 shows changes in the unemployment rates. The SI would decrease the unemployment rates in 1, 2, 7, and 8 deciles and increase the total unemployment rate only by 0.03 percent points. On the other hand, UBI and the expansion of the current welfare system would increase the unemployment rates in all deciles and the total unemployment rates by 0.30 percent points.

3. Safety Income as Pan-Welfare System

Although not shown in the Table, our computable general equilibrium model produces the following result. While UBI and the expansion of the current welfare system would decrease GDP by 0.54 percent and 0.49 percent, SI decreases GDP only by 0.24 percent. The reason why SI decreases GDP is because the income effect of ₩29,743.7 billion of the public transfer is more than offsetting the labor supply effect of SI. Therefore, comparing the effects on the income gaps, labor market outcomes, and GDP, SI should be evaluated as superior to UBI and the expansion of the current welfare system.

In addition, there are other merits of SI worth mentioning. Thanks to the relaxation of eligibility and the principle of "Support forward, settle afterward," SI can more effectively eliminate the blind zones that the current welfare system does not handle. Also, by implementing the "thick bottom, thin top" support principle, SI has an absolute advantage in alleviating poverty over UBI which almost certainly ends up with "thin bottom, thin top." SI would meet the financial needs of welfare recipients to maintain a decent life that UBI cannot

guarantee due to its budget constraint. A welfare system can be said to be a pan-welfare system if it effectively eliminates welfare blind zones and alleviates poverty in society. If so, SI is a pan-welfare system more than any other welfare system discussed above.

Everyone in our society could fall into a trap in economic life. When it occurs, SI allows a family to maintain a certain standard of living. One could attempt a risky business unless a family's living is threatened by failing it. Since such an effort is the driving force of the market economy, SI would promote economic development.

If we compare the welfare systems to insurance, both SI and UBI resemble auto insurance. Just as auto insurance allows the insured to drive safely, SI would ensure everyone conducts economic activities safely. Auto insurance is paid to the insured according to the extent of an accident, only in the event of an accident. Similarly, SI is paid to only those who fall short of a certain income level and more to those who need it more, following the principle of "thick bottom, thin top." However, UBI fundamentally differs from SI. UBI can be viewed as malfunctioning auto insurance, which pays the same small amount to all insured regardless of whether or not an accident occurs or the extent of an accident. In this sense, UBI is an unconditional and uniform welfare system.

VIII. Conclusion

We explained Safety Income suggested by Park (2016) and estimated the additional budget needed to enforce SI in 2019 as ₩29,743.7 billion. In addition, setting up a computable general equilibrium model, we compared the effects of SI, UBI, and the expansion of the current welfare system on the economy assuming the same amount of an additional budget of ₩29,743.7 billion spent on each welfare system. First, SI significantly

reduces the income gaps among households relative to UBI and the expansion of the current welfare system. Second, SI increases the unemployment rate only by 0.03 percentage points, while UBI and the expansion of the current welfare system increase it by 0.3 percentage points. Third, SI decreases GDP only by 0.24 percent, while UBI and the expansion of the current welfare system decrease it by 0.54 percent and 0.49 percent, respectively. Fourth, SI would eliminate the blind zone of the current welfare system and support beneficiaries much more effectively than expanding the current welfare system or UBI. Therefore, SI is considered the most effective among the three welfare policy alternatives.

SI would help everyone in our society make a living whenever he or she falls into a trap in economic life. As far as a family's livelihood is not threatened by failing a business, one could try a riskier adventure. Since such an attempt is the driving force of the market economy, SI would certainly stimulate economic growth. In this sense, SI should be viewed as both an economic and a welfare system.

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Table 1. Current Income Subtracting "Livelihood, Housing benefits, and Earned Income and Child Tax Credits" by Household Income Bracket and Household Members

(Unit: ₩10,000)

Household Members / Household Income Bracket[2)]	1	2	3	4	5	More than 5	Mean
W01	674.9	839.9	682.0	804.5	–[1)]	–	694.7
W02	1,326.1	1,323.5	1,274.4	1,578.5	1,794.0	–	1,325.9
W03	2,207.5	2,058.5	1,878.9	2,187.6	1,778.4	–	2,095.8
W04	2,906.6	2,936.9	2,848.8	2,857.5	2,080.3	–	2,897.7
W05	3,973.2	3,940.0	3,941.2	3,927.4	4,054.9	2,013.3	3,936.1
W06	4,964.9	4,954.6	4,958.8	4,988.4	5,029.9	5,189.7	4,971.1
W07	5,842.7	6,054.7	6,077.0	6,031.4	6,037.2	5,946.3	6,037.3
W08	7,280.4	7,320.6	7,334.3	7,334.3	7,380.4	7,377.1	7,336.2
W09	9,248.1	9,205.4	9,168.0	9,245.5	9,320.9	9,244.4	9,229.2
W10	15,620.1	15,738.0	13,695.9	15,287.5	14,125.9	15,363.8	14,770.0
Mean	1,602.5	3,423.8	6,297.3	8,178.3	8,292.7	9,292.8	4,217.6

Notes: 1) The cell is marked as –, if there is no household in the cell in the 2019 Korea Welfare Panel.
2) Household income bracket is set up with the household decile income that is sorted for the entire households, not for each number of household members.
3) The data source is from the 2019 Korea Welfare Panel.

Table 2. SI Support Average by Household Income Bracket and Household Members

(Unit: ₩10,000)

Household Members / Household Income Bracket[2)]	1	2	3	4	5	More than 5	Mean
W01	354.6	964.1	1,735.1	2,365.9	–[1)]	–	
W02	145.2	722.3	1,438.9	1,978.9	2,563.2	–	
W03	57.5	354.8	1,136.6	1,674.3	2,571.0	–	
W04	74.5	84.1	651.7	1,339.4	2,420.0	–	
W05	0.0	0.0	196.0	804.4	1,432.7	3,145.6	
W06	0.0	0.0	252.8	273.9	945.2	1,557.3	
W07	0.0	0.0	0.0	149.0	441.6	1,179.0	
W08	0.0	0.0	0.0	0.0	79.5	463.6	
W09	0.0	0.0	0.0	0.0	0.0	89.6	
W10	0.0	0.0	0.0	0.0	0.0	0.0	
Mean	309.0	556.6	707.8	709.9	946.6	1151.5	500.2

Notes: 1) The cell is marked as –, if there is no household in the cell in the 2019 Korea Welfare Panel.
2) Household income bracket is set up with the household decile income that is sorted for the entire households, not for each number of household members.
3) The data source is from the 2019 Korea Welfare Panel.

Table 3. Number of Households Eligible for SI Support by Household Income Bracket and Household Members

(Unit: Number of Households)

Household Members / Household Income Bracket[2)]	1	2	3	4	5	More than 5	Sum
W01	2,834,188	377,363	38,343	10,623	–[1)]	–	3,260,517
W02	775,336	1,206,986	89,467	21,245	3,117	–	2,096,152
W03	5,808	1,111,925	298,224	42,491	9,351	–	1,467,798
W04	2,904	273,660	400,472	116,850	31,169	–	825,055
W05	0	0	391,951	272,649	40,520	13,221	718,342
W06	0	0	21,302	396,580	99,741	22,036	539,659
W07	0	0	0	21,245	121,560	48,479	191,284
W08	0	0	0	0	28,052	39,664	67,717
W09	0	0	0	0	0	8,814	8,814
W10	0	0	0	0	0	0	0
Sum	3,618,236	2,969,936	1,239,759	881,683	333,510	132,215	9,175,338

Notes: 1) The cell is marked as –, if there is no household in the cell in the 2019 Korea Welfare Panel.
2) Household income bracket is set up with the household decile income that is sorted for the entire households, not for each number of household members.
3) The data source is from the 2019 Korea Welfare Panel and the 2019 Population Census.

Table 4. The Percentage of Households Eligible for SI Support by Household Income Bracket and Household Members

(Unit: Percent)

Household Members / Household Income Bracket[2)]	1	2	3	4	5	More than 5	Total
W01	100.00	100.00	100.00	100.00	–[1)]	–	100.00
W02	51.35	100.00	100.00	100.00	100.00	–	74.05
W03	0.76	100.00	100.00	100.00	100.00	–	65.86
W04	0.55	29.87	100.00	100.00	100.00	–	41.46
W05	0.00	0.00	69.17	100.00	100.00	100.00	39.16
W06	0.00	0.00	3.42	100.00	100.00	100.00	30.75
W07	0.00	0.00	0.00	4.14	100.00	100.00	11.45
W08	0.00	0.00	0.00	0.00	20.00	100.00	4.03
W09	0.00	0.00	0.00	0.00	0.00	13.33	0.53
W10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	58.86	52.44	29.39	26.72	41.63	50.85	45.00

Notes: 1) The cell is marked as –, if there is no household in the cell in the 2019 Korea Welfare Panel.
2) Household income bracket is set up with the household decile income that is sorted for the entire households, not for each number of household members.
3) The data source is from the 2019 Korea Welfare Panel.

Table 5. The Amount of Universal Basic Income Support by Household Income Bracket and Household Members

(Unit: ₩ Billion)

Household Members / Household Income Bracket[2)]	1	2	3	4	5	More than 5	Sum
W01	1,724.1	459.1	70.0	25.8	–[1)]	–	2,279.1
W02	918.6	1,468.5	163.3	51.7	9.5	–	2,611.6
W03	466.4	1,352.9	544.3	103.4	28.4	–	2,495.3
W04	319.7	1,114.5	730.9	284.3	94.8	–	2,544.3
W05	157.2	830.6	1,034.1	663.5	123.2	48.3	2,856.9
W06	67.1	613.3	1,135.2	965.0	303.4	80.4	3,164.5
W07	49.5	417.1	1,026.3	1,249.4	369.7	176.9	3,288.9
W08	14.1	290.9	1,150.7	1,473.4	426.6	144.8	3,500.5
W09	8.8	178.7	995.2	1,714.6	568.8	241.3	3,707.6
W10	14.1	164.7	847.5	1,499.2	512.0	257.4	3,294.9
Sum	3,739.8	6,890.5	7,697.4	8,030.4	2,436.5	949.1	29,743.7

Notes: 1) The cell is marked as –, if there is no household in the cell in the 2019 Korea Welfare Panel.
2) Household income bracket is set up with the household decile income that is sorted for the entire households, not for each number of household members.
3) The data source is from the 2019 Korea Welfare Panel.

Table 6. The Amount of Support by Household Income Bracket and Household Members When Expanding the Current Welfare System

(Unit: ₩ Billion)

Household Members / Household Income Bracket[2)]	1	2	3	4	5	More than 5	Sum
W01	615.2	651.4	602.6	530.9	–[1)]	–	2,400.0
W02	511.7	817.9	1,102.0	355.6	–	–	2,787.1
W03	167.6	612.0	1,210.7	718.0	778.6	–	3,486.9
W04	190.4	388.8	791.1	741.8	2,265.8	–	4,377.9
W05	58.1	258.2	428.9	638.1	899.7	4,359.8	6,642.7
W06	40.3	199.2	347.7	424.9	929.1	859.9	2,801.1
W07	1.3	58.5	247.1	364.4	757.9	1,175.0	2,604.3
W08	16.5	47.7	186.5	373.2	653.6	490.9	1,768.4
W09	0.0	13.2	147.5	185.5	490.6	587.3	1,424.0
W10	0.0	112.1	108.7	180.3	285.5	764.7	1,451.3
Sum	1,601.0	3,158.9	5,172.7	4,512.8	7,060.8	8,237.5	29,743.7

Notes: 1) The cell is marked as –, if there is no household in the cell in the 2019 Korea Welfare Panel.
2) Household income bracket is set up with the household decile income that is sorted for the entire households, not for each number of household members.
3) The data source is from the 2019 Korea Welfare Panel.

Table 7. The Amount of Current Welfare Benefits[1] by Household Income Bracket

(Unit: ₩ Billion)

Welfare Programs / Household Income Bracket	Social Security Benefits	Basic Livelihood Security Program	Basic Pension	Employment and Labor	Housing	Earned Income and Child Tax Credits[2]	Child-care	Others[3]	Total
W01	2,599.6	3,589.0	4,592.0	1,731.0	1,667.0	122.6	7.7	4,488.8	18,797.7
W02	6,747.8	3,411.9	4,340.9	2,750.0	2,648.4	499.3	176.6	7,131.3	27,706.3
W03	11,457.4	2,119.1	3,228.0	2,002.5	1,928.5	664.3	383.5	5,193.0	26,976.4
W04	14,833.1	1,852.2	2,091.4	4,445.5	4,281.2	878.7	243.7	11,528.1	40,153.9
W05	14,191.0	950.9	1,394.6	3,003.0	2,892.0	846.3	953.6	7,787.3	32,018.6
W06	14,030.1	463.5	842.7	2,018.7	1,944.1	975.4	1,202.1	5,235.0	26,711.7
W07	12,350.6	155.9	557.1	2,752.1	2,650.4	599.9	1,624.1	7,136.7	27,826.7
W08	10,879.5	148.6	547.7	2,457.8	2,366.9	252.3	1,909.3	6,373.5	24,935.6
W09	9,323.2	13.4	465.4	1,448.8	1,395.2	186.2	856.6	3,756.9	17,445.7
W10	11,667.3	0.0	367.1	4,109.2	3,957.3	4.7	772.4	10,655.9	31,533.9
Total	1,080,795	127,046	184,270	267,185	257,309	50,299	81,297	692,865	2,741,066

Notes: 1) Expenditures on welfare programs in Summary of Budget for FY 2019 are allocated in proportion to the weight of each household income bracket in the 2019 Korea Welfare Panel.
2) Earned Income and Child Tax Credits in National Tax Annual Report of 2019 are allocated in proportion to the weight of each household income bracket in the 2019 Korea Welfare Panel.
3) Others include general social welfare, public pension, veterans, health insurance, health care, food and drug, and security.

Table 8. The Distribution of Economically Active Population by Industry and Household Income Bracket

(Unit: Number of Persons)

Industry / Household Income Bracket	Manufacturing	Service	Agriculture, Fishing, and Self-employment	Employed	Unemployed	Economically Active Population	Economically Inactive Population
W01	455,950	283,900	2,246	742,096	57,982	800,078	4,578,391
W02	759,917	720,912	8,559	1,489,388	67,645	1,557,033	3,489,384
W03	1,177,871	903,276	19,646	2,100,793	115,964	2,216,757	2,560,022
W04	1,618,622	863,739	22,911	2,505,272	125,627	2,630,900	1,944,248
W05	2,070,773	791,773	26,364	2,888,909	299,573	3,188,482	1,260,055
W06	2,222,756	893,532	25,360	3,141,648	154,618	3,296,266	974,975
W07	2,731,900	643,343	21,645	3,396,888	106,300	3,503,188	598,669
W08	2,842,088	717,277	36,376	3,595,741	28,991	3,624,732	370,604
W09	2,952,276	587,584	45,162	3,585,022	38,655	3,623,676	347,798
W10	3,092,860	504,731	79,652	3,677,244	67,645	3,744,889	193,855
Total	19,925,013	6,910,068	287,919	27,123,000	1,063,000	28,186,000	16,318,000

Notes: 1) The total employed of the 2019 Economically Active Population Survey of National Statistical Office and the employed by industry in the 2019 Input-Output Tables of the Bank of Korea are allocated in proportion to the weight of each household income bracket in the 2019 Korea Welfare Panel.

Table 9. The Effects of Three Welfare Systems on Mitigating Household Income Differentials

Income Differential Index	Welfare System	Criterion Coefficient (a)	Direct Effects		Indirect Effects		Final Effects	
			Coefficient (b)	Change from Criterion (%) (b/a-1) x100	Coefficient (c)	Change from Criterion (%) (c/a-1) x100	Coefficient (d)	Change from Criterion (%) (d/a-1) x100
Gini Coefficient	Safety Income	0.38826	0.36142	-6.91289	-0.00039	-0.10045	0.36103	-7.01334
	Universal Basic Income	0.38826	0.38297	-1.36249	0.00056	0.14423	0.38353	-1.21826
	Expanding Current Welfare System	0.38826	0.37947	-2.26395	0.00025	0.06439	0.37972	-2.19956
Income Quintile Ratio	Safety Income	9.34129	7.02113	-24.83768	0.01104	0.11818	7.03234	-24.71768
	Universal Basic Income	9.34129	8.90287	-4.69336	0.09688	1.03712	8.99975	-3.65624
	Expanding Current Welfare System	9.34129	8.82644	-5.51155	0.09058	0.96967	8.91702	-4.54188

Table 10. The Effects of Three Welfare Systems on the Change of Employment, Unemployment, and Economically Active Population by Household Income Bracket

(Unit: Number of Persons)

Household Income Bracket	Safety Income			Universal Basic Income			Expanding Current Welfare System		
	Employed	Unemploy-ed	Economically Active	Employed	Unemploy-ed	Economically Active	Employed	Unemployed	Economically Active
W01	-12,849	-11,193	-24,042	-22,624	5,848	-16,776	-25,864	5520	-20344
W02	-53,620	-2,811	-56,430	-25,155	7,808	-17,347	-34,097	7248	-26849
W03	-67,705	8,951	-58,754	-26,264	9,549	-16,715	-41,085	9882	-31203
W04	-34,437	5,155	-29,282	-24,761	9,996	-14,765	-42,030	11864	-30166
W05	-29,125	6,808	-22,316	-27,414	13,664	-13,750	-53,691	19244	-34448
W06	-20,462	4,295	-16,167	-27,355	11,876	-15,479	-31,942	10690	-21252
W07	-2,051	-2,360	-4,411	-24,225	9,480	-14,744	-25,386	6993	-18392
W08	6,053	-573	5,480	-16,837	4,284	-12,553	-13,326	3088	-10238
W09	6,197	300	6,497	-14,517	5,011	-9,506	-7,719	3489	-4230
W10	21,902	-13	21,889	-9,548	6,503	-3,045	-2,277	5380	3103
Total	-186,096	8,559	-177,537	-218,701	84,020	-134,681	-277,416	83,396	-194,020

Table 11. The Effects of Three Welfare Systems on Unemployment Rate and Percentage Change by Household Income Bracket

Household Income Bracket	Current Unemployment Rate (%)	Safety Income		Universal Basic Income		Expanding Current Welfare System	
		Unemployed (%)	Change (%p)	Unemployed (%)	Change (%p)	Unemployed (%)	Change (%p)
W01	7.25	5.85	-1.4	7.98	0.73	7.94	0.69
W02	4.34	4.16	-0.18	4.85	0.50	4.81	0.47
W03	5.23	5.64	0.4	5.66	0.43	5.68	0.45
W04	4.78	4.97	0.2	5.16	0.38	5.23	0.45
W05	9.4	9.61	0.21	9.82	0.43	10.00	0.60
W06	4.69	4.82	0.13	5.05	0.36	5.02	0.32
W07	3.03	2.97	-0.07	3.31	0.27	3.23	0.20
W08	0.80	0.78	-0.02	0.92	0.12	0.89	0.09
W09	1.07	1.08	0.01	1.21	0.14	1.16	0.10
W10	1.81	1.81	0.00	1.98	0.17	1.95	0.14
Total	3.77	3.80	0.03	4.07	0.30	4.07	0.30

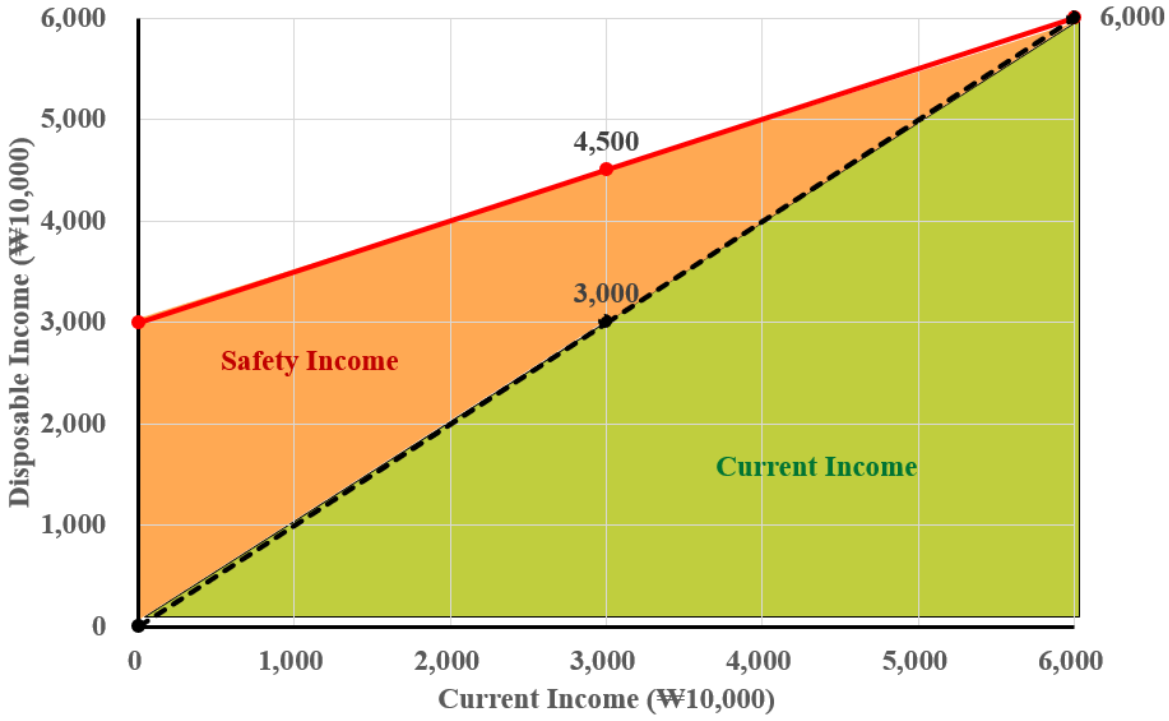


Figure 1. The Basic Structure of Safety Income Following the Principle of "Thick Bottom, Thin Top"

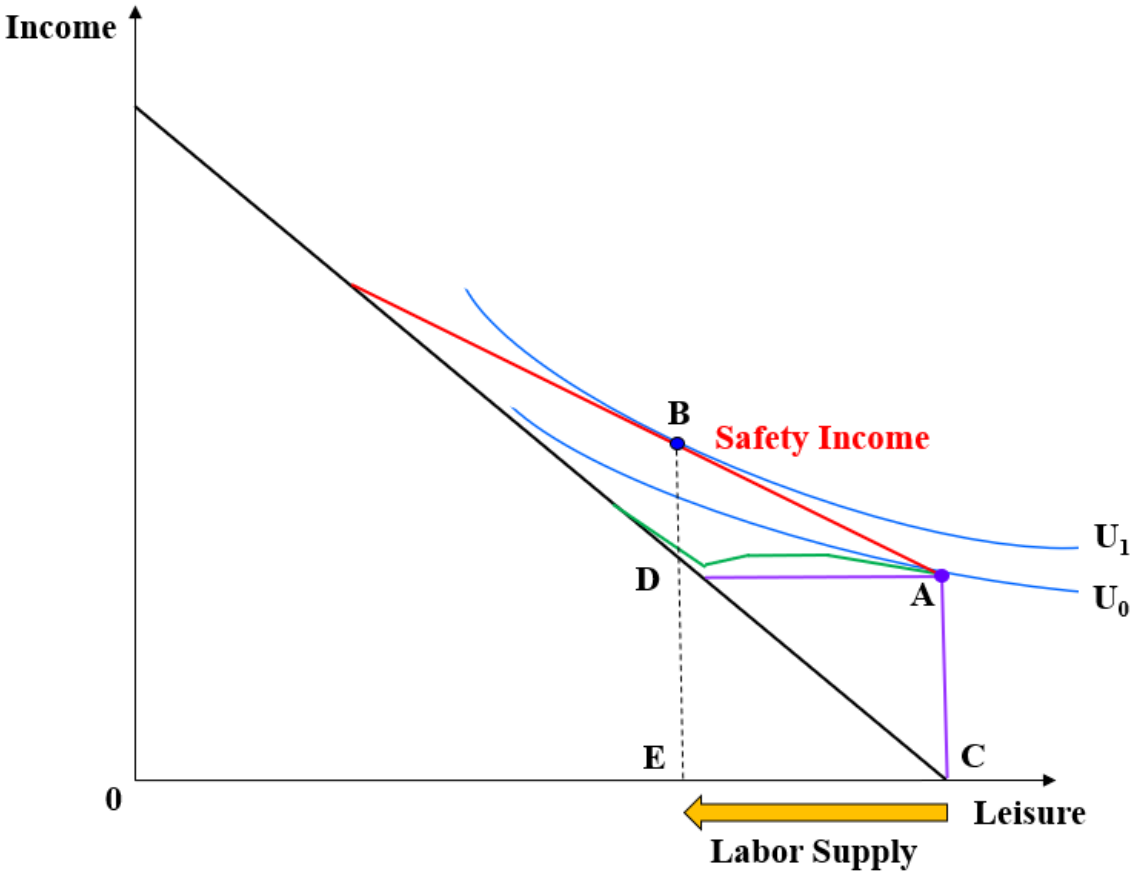


Figure 2. The Change of Labor-Leisure Choice by Safety Income Support in 2019

Appendix

Table A1. Key Differences between SI and SSIP

Key Factors		Safety Income (SI)	Pilot Project of Seoul Safety Income (SSIP)
Regional Coverage		Nationwide	Seoul
Eligibility	Current Income	Households with an income of the lowest 50 percent	Households with an income of the lowest 42.5 percent
	Net Assets	–[1)]	Below ₩326,000,000
Substituted Benefits[2)]		• Livelihood Benefit • Housing Benefit • Self-reliance Benefits • Earned Income and Child Tax Credits	• Livelihood Benefit • Housing Benefit • Basic Pension • Seoul Youth Basic Living Security Program • Seoul Youth Support • Seoul Youth Allowances • Seoul Housing Voucher
Standard Median Income for the n-member household		Standard Median Income of the 4-member household ÷ 4 × n	Standard Median Income of each n-member household

Notes: 1) There is no limitation on net assets to be eligible for SI support.

2) Benefits that are substituted with SI or SSIP.

[발 표 2]

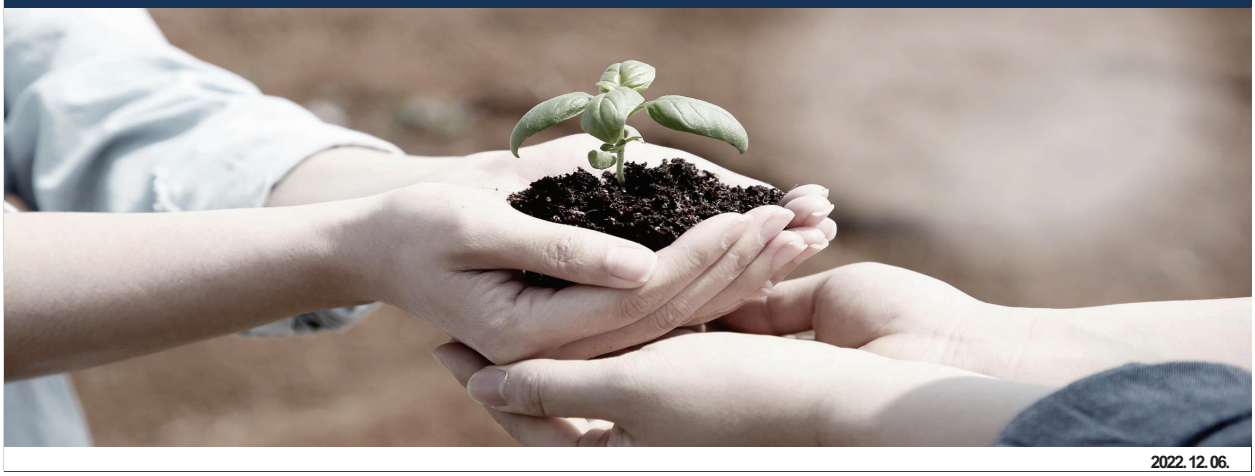
서울안심소득 사업설명 및 기초선조사 결과

2023. 2. 2.

류 명 석
(서울시복지재단)

Overview of the Seoul Safety Income Project & Results of the Baseline Survey

Seoul Welfare Foundation



2022. 12. 06.

Seoul Safety Income Project & Baseline Survey

Table of Contents

01 Introduction of Seoul Safety Income Project(SSIP)

02 Implementation of SSIP

03 Research Design of SSIP

04 Baseline Survey Plan & Results

05 Categorization & Characteristics of SSIP treatment group

06 Future Plan of SSIP

01 Seoul Safety Income Project & Baseline Survey

Seoul Safety Income Project

Introduction to SSIP

- ✓ Randomly select 500 households whose income is at or below 50 percent of the standard median income, and whose asset value does not exceed KRW 326 million
- ✓ Randomly Sampled according to the statistical criteria designed to ensure that the group accurately represents the households of diverse sizes and ages
- ✓ The ration was selected in consideration of the data(Payment data of Covid-19 emergency relief funds, National Basic Livelihood Security Program Benefits, income and property of Seoul citizens, etc.)

		1 households	2 households	3 households	4 households
~39 years	150	60	43	24	23
40~64 years	250	100	71	41	38
65 years ~	100	40	29	16	15
	500	200	143	81	76

(Control group : 1,000 households)

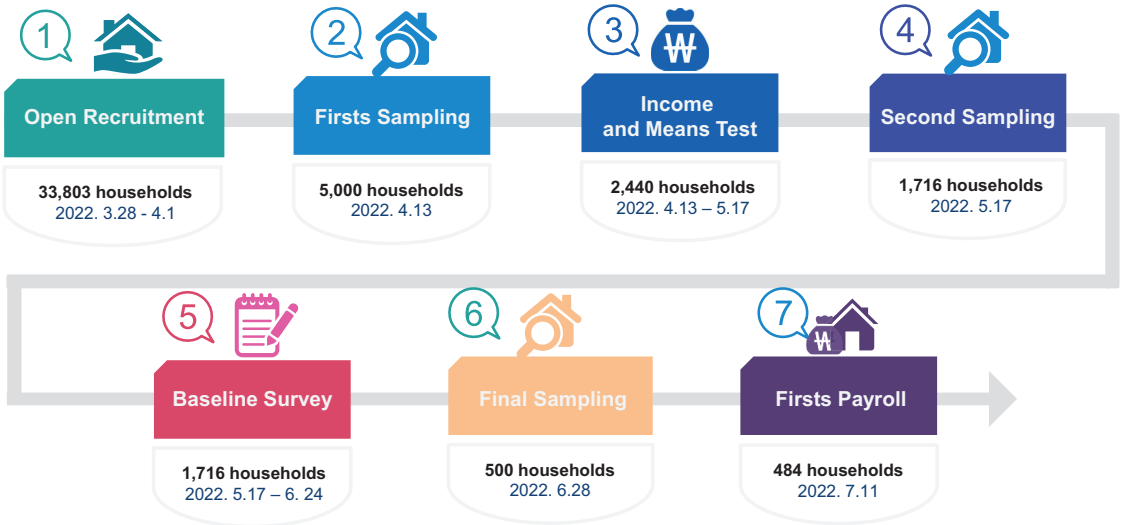
- ✓ Amount of SSIP income = 85% of baseline median income – current household income) * 0.5
- ✓ The size of the control group would be two times greater than that of the treatment group participants

SSIP is designed to provide more income support to low-income households. The amount of cash assistance a household receives varies by the number of family members and income.

02 Seoul Safety Income Project & Baseline Survey

Progress of SSIP

Sampling Process

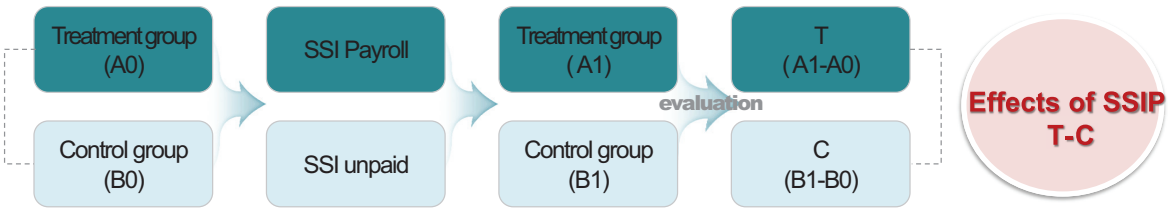


openly recruited the treatment participants via its portal.
The participants have been subject to : (1) 1st sampling, (2) document-based screening, (3) Income and means test, (4) 2nd sampling, and (5) final sampling

03 Research Design of SSIP

Seoul Safety Income Project & Baseline Survey

Research Design(pretest-posttest & time-series research design)



Baseline Phase (Before SSIP)	• Establish research frameworks(developing of survey questionnaire and indicators) • Conduct baseline survey of the applicants
Intervention Phase (Semi-annual)	• Monitor changes in households during SSIP • Compare changes to Baseline Phase(time series analysis)
Ex-post Phase (At end of SSIP)	• Verify changes in households at the end • Compare and analyze baseline, intervention, and ex-post results
Follow-up Phase (One year later)	• Track changes in households after SSIP • Projecting mid-term effect of SSIP

SSIP will provide income support for three consecutive years(2022 through 2025), And the participating households will be observed for five years(~2026)

5

04 Baseline Survey Plan & Results

Seoul Safety Income Project & Baseline Survey

Sectors	Indicators
work & employments	• Employment status, job-seeking activities, retirement status/preparation, satisfaction with work and workplace, etc.
Financial conditions & outcomes	• Current household status(income, debts and interest payments, assets, spending, etc.), living conditions, eligibility for governmental income programs, ways of managing expenses, savings, etc.
Education & Training	• Employment-related, entrepreneurial, and/or competency-enhancing training and development, education/daycare for children in high school or younger, etc.
Housing	• Housing conditions(housing type, living area, using air-conditioning & heating equipment, etc.), reasons for moving, satisfaction with current housing, etc.
Health	• Current health status, use of medical services, diet, food & nutrition, chronic illnesses/disabilities, healthy behaviors, mental health(stress), etc.
Family & Social relationship	• Satisfaction with family, involvement in recreational/religious/volunteer activities, social relations, etc.
Life satisfaction	• Satisfaction, happiness, self-esteem, innovativeness, future time perspective, etc.

At the beginning of the project, a survey was conducted of each households Planning to conduct additional investigations on a regular basis

6

Demographic Characteristics

Treatment Group(484 households)
Control Group(1,039 households)

Gender

	Male	Female
Treatment Group(484 households)	48.1%	51.9%
Control Group(1,039 households)	49.4%	50.6%

Age

Treatment Group(484 households)	50.4 years
Control Group(1,039 households)	52.2 years

Number of household members

Treatment Group(484 households)	2.2 person
Control Group(1,039 households)	2.0 person

Education

	Lower than middle school	High school graduate	College graduate or higher
Treatment Group(484 households)	19.2%	39.3%	41.5%
Control Group(1,039 households)	21.2%	39.3%	39.0%

To find the homogeneity between the treatment group and the control group
Analyzed demographic characteristics, employment, finance, housing, health, attitude toward life, etc.

7

04 Seoul Safety Income Project & Baseline Survey
Baseline Survey Plan & Results

Work & Employment

Treatment Group(484 households)
Control Group(1,039 households)

Work (over the last week)

	Yes	No
Treatment Group(484 households)	48.1%	51.9%
Control Group(1,039 households)	45.0%	55.0%

Working hours per week

	0~15 hours	15~40 hours	More 40 Hours
Treatment Group(484 households)	25.2%	35.5%	39.3%
Control Group(1,039 households)	23.5%	33.9%	42.6%

Job Searching (unemployed)

Treatment Group(484 households)	18.8%
Control Group(1,039 households)	20.1%

Job Stability (subjective satisfaction level)

	dissatisfaction		satisfaction
Treatment Group(484 households)	12.3%	29.9%	57.9%
Control Group(1,039 households)	15.6%	32.9%	51.5%

Reasons for not working are 1) lousy business(44.3%), 2) temporary illness & accident(26.2%)
Reason for working less than 36 hours in a week are
1) no jobs(48.4%), 2) working less than 36 hours(22.6%), 3) health reasons(19.4%)

8

Financial Status

Treatment Group(484 households)
Control Group(1,039 households)

Income (Monthly average)
1.39 million won
1.46 million won

Expenditure (Monthly average)
1.75 million won
1.66 million won

Property (As of 2022. 07)
84.85 million won
82.56 million won

Debt (As of 2022. 07)
73.21 million won
67.78 million won

Poor household (= income-expenditure)
55.8%
60.2%

Poor household (= property-debt)
41.2%
41.8%

Expenditure greater than income : Treatment Group(55.8%), Control Group(60.2%)
Self-evaluated economic status : 1) very dissatisfied(67.4%), 2) dissatisfied(29.3%), 3) neither satisfied nor dissatisfied(3.1%)

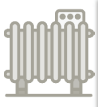
04 Seoul Safety Income Project & Baseline Survey
Baseline Survey Plan & Results

Housing

Treatment Group(484 households)
Control Group(1,039 households)

House

	Property	Long-term rent	Monthly rent	Etc.
Treatment Group(484 households)	11.4%	26.0%	56.4%	6.2%
Control Group(1,039 households)	11.3%	21.4%	62.4%	5.0%



Heating conditions

	Uncomfortable	Middle	Comfortable
Treatment Group(484 households)	84.5%	12.6%	2.9%
Control Group(1,039 households)	86.0%	10.6%	3.4%

Cooling conditions

	Uncomfortable	Middle	Comfortable
Treatment Group(484 households)	84.5%	16.1%	2.9%
Control Group(1,039 households)	86.0%	16.2%	4.0%

Residential location

	basement	Semi-basement	Ground floor	rooftop
Treatment Group(484 households)	3.3%	8.5%	86.0%	2.3%
Control Group(1,039 households)	3.7%	9.4%	85.5%	1.4%

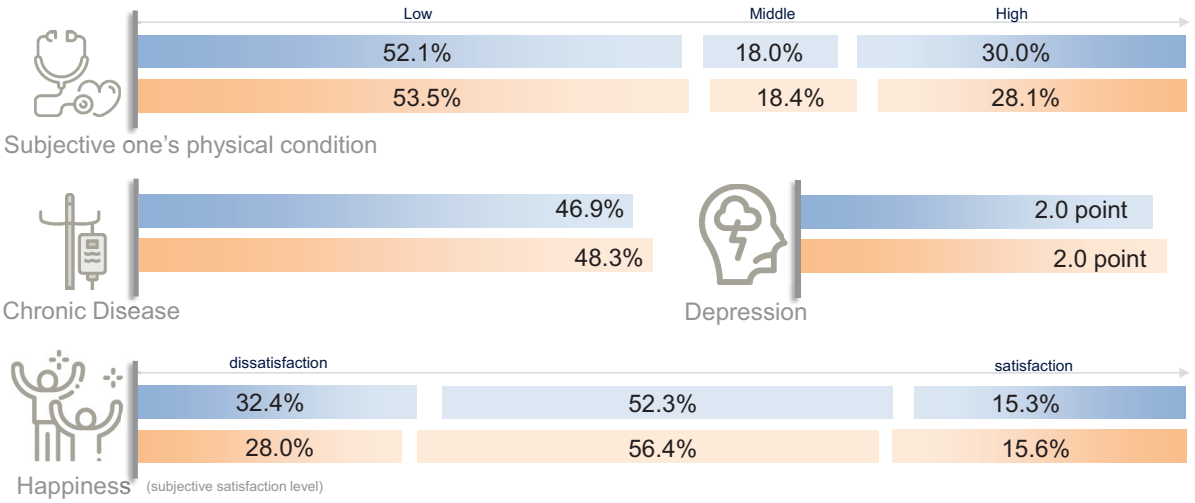
Respondents with unstable housing : 52 households out of 1,523 households
According to Income levels : 2nd Quartile(29%), 3rd Quartile(27%), 1st Quartile(25%) 4th Quartile(8%), 5th Quartile(4%)

04 Baseline Survey Plan & Results

Seoul Safety Income Project & Baseline Survey

Health & Life

Treatment Group(484 households)
Control Group(1,039 households)



Participants with Chronic Disease :

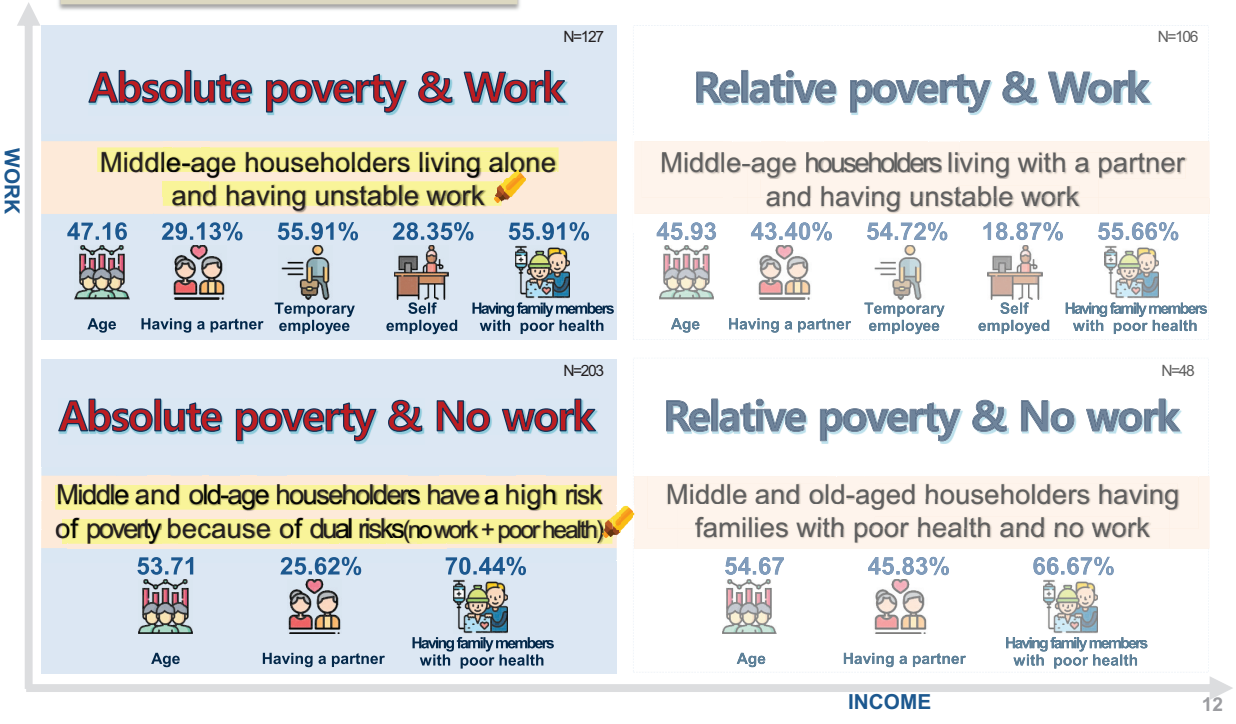
30-39years(9.3%), 40-49(12.2%), 50-59(25.8%), 60-69(28.8%), more 70(23.3%)

Participants with Chronic Disease having private insurance or not: having(52.8%), Not having(47.2%)

05 Categorization & Characteristics of SSIP treatment group

Seoul Safety Income Project & Baseline Survey

Income & Work



05

Seoul Safety Income Project & Baseline Survey

Categorization & Characteristics of SSIP treatment group

Income & Net asset

NET ASSET

Absolute poverty & Positive net asset — N=307

Non-working middle-aged householders having relatively financial stability

Age	Work	Temporary employee	Self-employed	Homeownerships
51.65	37.79%	20.85%	10.75%	11.40%

Relative poverty & Positive net asset — N=140

Working middle-aged householders having relatively financial stability

Age	Work	Temporary employee	Self-employed	Homeownerships
48.88	67.86%	38.57%	11.43%	12.86%

Absolute poverty & Negative net asset — N=23

Young-aged householders with financial Vulnerability

Age	Work	Temporary employee	Self-employed	Homeownerships
45.04	47.83%	30.43%	13.04%	4.35%

Relative poverty & Negative net asset — N=14

Middle-aged householders having a high risk of poverty entry

Age	Work	Temporary employee	Self-employed	Homeownerships
46.43	78.57%	28.57%	28.57%	7.14%

INCOME

13

05

Seoul Safety Income Project & Baseline Survey

Categorization & Characteristics of SSIP treatment group

Income & Social isolation

SOCIAL ISOLATION

Absolute poverty & Low isolation level — N=189

Non-working young and middle-aged Householders having the risk of social isolation

Age	Work	Living in Non-residential BLDG	Having family members with poor health	Depression
50.28	40.21%	4.76%	60.85%	31.01points

Relative poverty & Low isolation level — N=90

Working young and middle-aged householders having social networks

Age	Work	Living in Non-residential BLDG	Having family members with poor health	Depression
47.01	71.11%	3.33%	51.11%	24.21points

Absolute poverty & High isolation level — N=141

Middle-aged householders with multi-dimensional risk(economic, health, and relationship risk)

Age	Work	Living in Non-residential BLDG	Having family members with poor health	Depression
52.41	36.17%	13.48%	70.21%	38.73points

Relative poverty & High isolation level — N=60

Middle-aged householders with dual risks (relational vulnerability + poor health)

Age	Work	Living in Non-residential BLDG	Having family members with poor health	Depression
50.97	65.63%	12.50%	70.31%	39.68points

INCOME

14

Income & Plan

PLAN

Absolute poverty & Having a new plan

N=87

Not-working young-aged householders being possible out of poverty

Age	Work	Job searching	Receiving Public assistance
40.77	35.63%	46.30%	29.89%

Relative poverty & Having a new plan

N=27

Working young-aged householders being possible of economic upgrading

Age	Work	Job searching	Receiving Public assistance
43.19	62.96%	33.33%	25.93%

Absolute poverty & Not-having a new plan

N=243

Middle and old-aged householders with a high risk of persistent poverty

Age	Work	Job searching	Receiving Public assistance
54.92	39.51%	10.56%	35.39

Relative poverty & Not-having a new plan

N=127

Middle-aged householders with relative stability in current economic status

Age	Work	Job searching	Receiving Public assistance
49.82	70.08%	5.71%	25.98%

INCOME

05 Seoul Safety Income Project & Baseline Survey
Categorization & Characteristics of SSIP treatment group

Income & Health

HEALTH

Absolute poverty & Not-having poor health family

N=116

Not-working young-aged householders living alone

Age	Work	Receiving Public assistance	Depression	Medical Cost burden
41.53	48.28%	27.59%	29.28points	58.62points

Relative poverty & Not-having poor health family

N=63

Young-aged householders with relatively stable economic status

Age	Work	Receiving Public assistance	Depression	Medical Cost burden
41.41	74.60%	23.81%	23.04points	55.56points

Absolute poverty & having poor health family

N=214

Old-aged householders with a high risk of persistent poverty because of health problems

Age	Work	Receiving Public assistance	Depression	Medical Cost burden
56.42	33.18%	37.38%	37.03points	71.50points

Relative poverty & having poor health family

N=91

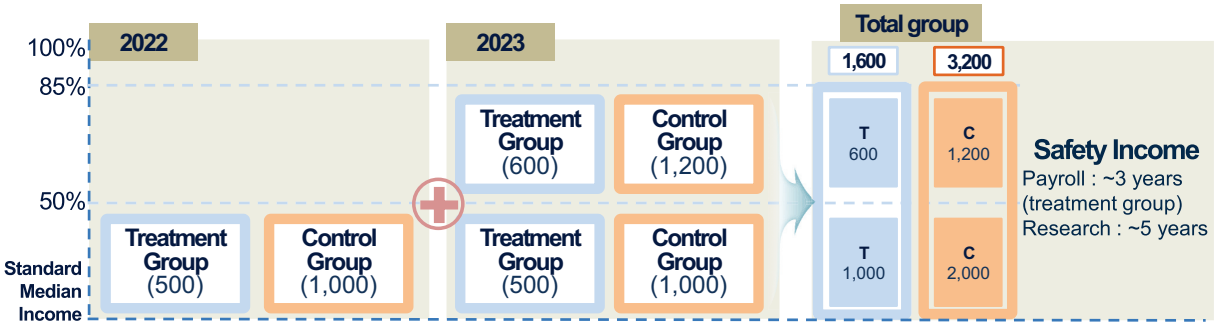
Middle-aged householders having a risk of poverty entry because of health problems

Age	Work	Receiving Public assistance	Depression	Medical Cost burden
53.67	64.84%	27.47%	35.90points	70.05points

INCOME

Future Plan of SSIP

- ✓ In its first phase(2022), SSIP will randomly selected 500 households whose income was at or below 50 percent of the standard median income, and whose asset value did not exceed KRW 326 million.
- ✓ In the second phase(2023), SSIP will randomly select more 500 households that same group in its first phase(below 50 percent) And select 300 households whose income is between 50 percent and 85 percent of the standard median income.



SSIP will provide income support for three consecutive years(2022 through 2025), and the participating households will be observed and tracked for five years(2022 through 2026) for research purposes.

Q & A