Jnl. Soc. Pol. (2024), 53, 2, 491–511 doi:10.1017/S0047279422000460

Welfare Expansion without Inequality Reduction: Institutional Explanation of Old-Age Poverty in Korea

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Abstract

Old-age poverty in Korea remains exceptionally high among OECD countries despite a significant expansion in pension expenditure. This article presents an institutional explanation for such a puzzle. Using 'targeting within universalism' as the analytic framework, this study examines the institutional effects of pension models on old-age poverty in Korea. Firstly, comparative analysis finds that universal provision of pensions negatively affects old-age poverty independent of the expenditure size, identifying Korean pensions as the least universal among OECD countries. Secondly, institutional analysis of the Korean pension system explains why the expenditure growth left a large share of the elderly with no or a partial pension. Finally, microsimulation analysis examines alternative assistance pension models for their potential to alter poverty outcomes. Strikingly, universal models alleviate old-age poverty more cost-effectively than the extant targeting model, questioning the efficiency-based justification for low-income targeting. In particular, the universal floor model appears to be the most effective, allowing greater benefits to the poorer without a means test. Even for assistance benefits, universal models may better remedy poverty under such conditions as low take-up among the needy, prevalence of low-income incidence, and pro-rich distribution of extant social transfers.

1. The Puzzle of Pension Expansion and Old-Age Poverty in Korea

Old-age poverty in South Korea (hereafter Korea) presents a puzzle regarding the relationship between welfare expansion and income inequality. In 2016, the old-age poverty rate was 47.7 percent, leaving almost half the elderly with an income below the poverty threshold. This is exceptionally high among Organisation for Economic Cooperation and Development (OECD) countries, about four times higher than the OECD average of 12.4 percent. Old-age poverty appears to be the main driver of national poverty in Korea, given that the poverty rate for the working-age population (12.9%) is similar to the OECD average

(10.7%) (OECD, 2020a). The public pension is the most important program to reduce old-age poverty, being the largest social expenditure item in most welfare states. Between 2006 and 2016, although pension expenditure increased from 1.5 percent to 2.2 percent of GDP (OECD, 2020b), old-age poverty grew from 43.9 percent to 47.7 percent in Korea. Since 2014, the assistance pension has provided benefits to the bottom two-thirds of the elderly, with a budget of 14 percent of social expenditure (National Assembly Budget Office [NABO], 2018), yet old-age poverty declined only slightly from 49.6 percent to 45.7 percent between 2013 and 2015 before it rebounded to 47.7 percent in 2016 (Statistics Korea, 2020).

The expansion of pension expenditure in Korea is in line with overall welfare expansion following the democratic transition in 1987. Departing from the previously small welfare state, electoral competition in a majoritarian electoral system has made both progressive and conservative governments expand social policy programs in terms of program type, coverage, and expenditure (Fleckenstein and Lee, 2014; Peng and Wong, 2008). Health insurance and public pensions have extended coverage from public employees to all residents. Newly introduced programs include assistance pension for the low-income elderly, along with unemployment insurance, minimum income protection, public childcare service, paid parental leave, and long-term care insurance. Such an expansion is evident in the expenditure involved. Between 1990 and 2016, the social expenditure on cash transfers quadrupled from 1.1 percent to 4.2 percent of GDP. To some observers, such a development signifies Korea's transition from a developmental to a universal welfare state (Kwon, 2019).

Despite the significant growth in social expenditure, income inequality has remained. Figure 1 presents social expenditure and income inequality in Korea from 1990 to 2016. While social expenditure data are available for the entire period, data on income inequality are available only for 2006–2016.[1] Between 2006 and 2016, social expenditure grew from 7.0 percent to 10.5 percent of GDP, while income inequality measured by Gini coefficients remained almost the same. Despite a steady growth in pension expenditure, old-age poverty remained exceptionally high and even increased slightly.

Why has old-age poverty endured despite the steady growth in pension expenditure in Korea? A large body of literature on comparative welfare states has focused on the cause of welfare expansion under the assumption that greater social spending leads to larger redistribution. The theoretical arguments vary from the need for social protection during industrialization (Wilensky, 1975) to political mobilization of the working class (Korpi, 1983; Korpi and Palme, 2003), constitutional veto points (Bradley *et al.*, 2003), the electoral system (Iversen and Soskice, 2006), party competition seeking the median voter's support (Meltzer and Richard, 1981), and the institutional model of social policy (Korpi and Palme, 1998). All these studies relate the cause of welfare expansion

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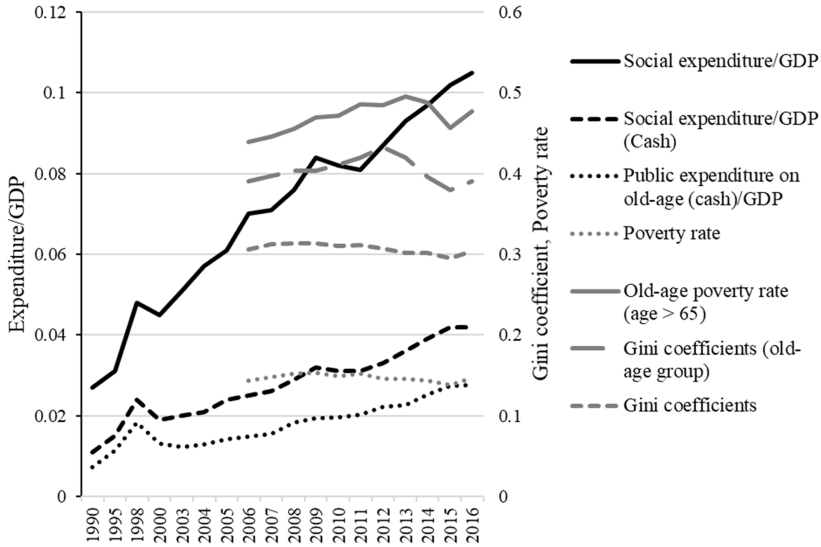

FIGURE 1. Social expenditure, income inequality, and poverty in Korea, 1990–2016
Source: OECD (2020b) and Statistics Korea (2020)

directly to inequality outcomes, presuming the positive effects of social expenditure on redistribution. Therefore, the Korean case provokes a rethink of the widely shared presupposition in the literature.

Drawing on the institutional theory of social policy, this study seeks to explain the puzzling old-age poverty outcome in Korea. According to the literature, redistributive effects of social policy vary depending on the institutional model of social policy. If the institutional model is ineffective in terms of inequality reduction, greater social expenditure will generate similarly ineffective outcomes. The institutional models either have long-term feedback effects on social solidarity and the redistributive budget (Gingrich and Ansell, 2012; Korpi and Palme, 1998) and work incentives among the poor (Maldonado and Nieuwenhuis, 2015), or relatively immediate effects on program efficiency (Kenworthy, 2011; Marx *et al.*, 2016) and the distribution of benefits among different income groups (Huber and Stephens, 2012). This study focuses on the immediate redistributive effects of social policy models, independent of expenditure size or behavioral change.

The paradox of redistribution theory posits that universal social policy better reduces income inequality than social policy targeted at the poor (Korpi and Palme, 1998). This is because universal policy induces broad political support for a redistributive budget, whereas a low-income targeted policy generates the opposite feedback effect. Although the theory explains the institutional effects through the expansion of social expenditure, universal social policy may affect income inequality independent of the expenditure size. As the

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literature on developing welfare states points out (Huber and Stephens, 2012; Mares and Carnes, 2009), if social provision is biased in favor of middle- or upper-class, such non-universal policy is not redistributive even with a large budget. In contrast, more universal policy reduces inequality more than less universal policy by distributing benefits in a more egalitarian way.

Recent research has shed new light on the role of low-income targeting in poverty reduction in a way so as not to undermine the long-term effects on social solidarity and redistributive budget. This can be done by targeting within universalism, which is to make room within 'universal policy frameworks for extra benefits and services that disproportionately help less privileged people without stigmatizing them' (Skocpol, 1991: 414). However, how to achieve such targeting remains inconclusive. The debate concerns whether targeting should be 'strong', even with a strict means test (Marx *et al.*, 2016: 21); if targeting should be 'without a means test' (Jacques and Noël, 2021: 7); or if strong targeting is compatible with an adequate level of benefits (Korpi and Palme, 1998; Nelson, 2013).

Institutional theory expects the institutional pension model to affect old-age poverty in Korea independent of pension expenditure in two ways – by making the distribution of overall pensions more, or less, universal and by providing assistance pension in a more, or less, effective way. The latter awaits empirical tests to specify how to achieve such targeting.

Using targeting within universalism as the analytical framework, this study conducts three empirical analyses. Firstly, using data from the Luxembourg Income Study (LIS), comparative analysis examines the effects of universalism in overall pensions and low-income targeting in assistance pensions on old-age poverty for 28 industrialized democracies. It finds that universal pensions have negative and highly significant effects on old-age poverty independent of pension expenditure, while low-income targeted assistance pensions have negative but no or weakly significant effects. It also identifies the Korean pensions as the least universal among OECD countries. Secondly, a detailed institutional analysis of the Korean pension system reveals how it left a large share of the elderly with no, or a partial, pension. The expansion of pension expenditure has therefore had limited effects on old-age poverty.

Finally, microsimulation analysis examines alternative assistance pension models for their potential to alter poverty outcomes. It finds that the extant targeting model is much less effective than intended due to the low take-up among the poorer elderly. Strikingly, universal models, particularly the universal floor model, reduce old-age poverty more cost-effectively than the extant targeting model, questioning the efficiency-based justification for low-income targeting. The benefit level also matters (Ferrarini *et al.*, 2016). With a benefit level equivalent to social assistance for the non-elderly, the universal floor model reduces old-age poverty by 34.1 percent, becoming even more effective than the

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universal allowance model. In general, assistance programs hardly gain broad political support for expansion because of their narrow recipients, but the assistance pension in Korea may do so because the prevalent low-income incidence makes an absolute majority of the elderly eligible for the benefits.

The findings offer an institutional explanation for an exceptionally high and resistant old-age poverty in Korea, previously considered deviant and unaccountable. Although a large part of the poverty is associated with the pension system historically established in favor of middle-class labor market insiders, this non-universal structure is not static but amenable to pension reforms. In particular, the assistance pension may alleviate old-age poverty more effectively by employing alternative institutional models. This policy implication is not limited to Korea but is applicable to developing welfare states with a similar pension model. When a large share of the elderly receive no or small insurance-based pensions, weak rather than strong targeting for assistance pension may better reduce old-age poverty. Still, this broad targeting based on high-income exclusion can be less effective than universal models, as means testing excludes not only the affluent but also the neediest.

This study contributes to the literature in search of the most effective social policy by finding the redistributive effects of universal pensions independent of pension expenditure. It also further specifies the conditions under which universal models can be more (or no less) cost-effective than low-income targeting for assistance benefits. Universal models, particularly the universal floor model, may better remedy poverty under such conditions as low take-up among the needy, prevalence of low-income incidence, and pro-rich distribution of extant social transfers.

2. Institutional Model of Social Policy and Income Inequality

The paradox of redistribution theory posits that universal social policy reduces income inequality far more effectively than social policy targeting the poor (Korpi and Palme, 1998). In this theory, the institutional effects are not direct, but through the institutionally induced expansion of social expenditure. However, universal social policy also has immediate effects on income inequality through the more egalitarian distribution of benefits. If the way of benefit distribution is biased in favor of middle- or upper-class, such non-universal programs have limited redistributive effects regardless of expenditure size (Huber and Stephens, 2012; Mares and Carnes, 2009). Moreover, the expansion of social expenditure is politically possible under non-universal policy as the middle-class beneficiaries play a critical role in a majoritarian electoral system, which is common in developing welfare states.

Recent literature has shed new light on the role of low-income targeting in poverty reduction, but in a way so as not to undermine long-term formative

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effects on the redistributive budget (Jacques and Noël, 2021; Marx *et al.*, 2016). The literature posits that universal policy and targeted policy are not necessarily contradictory but can be complementary to constitute the most redistributive programs. How can a program combine these contradictory distributive principles? The solution is either to embed a strongly low-income targeting subprogram in a universal program (Marx *et al.*, 2016), or to target the poor without a means test (Jacques and Noël, 2021). However, the suggested solutions contradict each other. Whereas the former requires a strict means test, the latter rules it out. While the former highlights 'strong' targeting, the latter does not allow targeting to be strong.

Above all, it remains inconclusive which solution better alleviates poverty. Although 'strong targeting' in assistance programs (Marx *et al.*, 2016: 21) appears to reduce poverty more cost-effectively, its necessary means testing can exclude the neediest from the benefits (Piven and Cloward, 1993; Soss *et al.*, 2011). It also remains contested whether strong targeting allows the benefit level to be adequately high. According to Nelson (2013), social assistance benefits seldom reach poverty thresholds, and this inadequacy of benefits is inherent in a low-income targeted program. This is because its narrow coverage makes the program politically unpopular and fiscally under-supported (Korpi and Palme, 1998). Thus, strong targeting may result in a low benefit level and even smaller anti-poverty effects. For developing welfare states, rather than strong low-income targeting, broad targeting may better reduce poverty, because extant social transfers are pro-rich (Huber and Stephens, 2012).

'Targeting without a mean test' more closely echoes what Skocpol (1991: 414) termed 'targeting within universalism'. Such targeting is possible by limiting the earnings-relatedness of the pension system (Jacques and Noël, 2021: 7). For assistance pension, the universal floor model, also called the basic security model, can achieve such targeting. It guarantees a minimum floor pension for all elderly persons, allowing greatest benefits to the much poorer whose insurance-based pension is further less than the floor amount. Although such targeting can avoid the negative effects of means testing, it allows smaller benefits to the poor than strong targeting with the same program budget.

Summarily, the theoretical expectation is that more universal pensions alleviate old-age poverty more effectively than less universal pensions independent of pension expenditure. In the paradox of redistribution, universal pension refers to the pension provided to all old-age persons. Although the literature has often treated universal pension as the opposite of low-income targeted pension, non-universal pensions include high-income targeted pensions as well, especially in developing welfare states. To distinguish it from various forms of non-universal pension, universal pension is defined as the pension that covers all the elderly population with the same rules on eligibility and benefits, providing earnings-related benefits for the economically active and basic income

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security for those who fall short of contribution records. Under the condition of low wage differentials and high employment rates, the benefit disparity is minimized (Korpi, 1983). This definition of universal pension approximates the encompassing pension model in Korpi and Palme (1998).

Low-income targeted assistance pension may reduce old-age poverty by providing greater benefits to the low-income elderly who have no or small insurance-based pensions. However, the effects can be contingent on the extant of low take-up among the needy, the use of a means test, and the distribution of insurance-based pensions.

3. Research Design

Three empirical analyses examine the institutional effects of pensions on old-age poverty in Korea. The first is a comparative analysis of OECD countries, including Korea. It measures two institutional dimensions of pension provision: universalism for overall pensions and low-income targeting for assistance pension. Overall pensions refers to public pensions of all types (insurance, assistance) and all functions (old age, disability, survivors), while assistance pension refers to a public assistance pension and non-pension public social assistance targeting the elderly in need. The expectation is that each institutional characteristic negatively affects old-age poverty independent of the expenditure size, but the effects of low-income targeting may not be significant.

Universalism is the measure of universal social policy. It is defined as the homogeneity across the population in terms of benefits, coverage, and eligibility, and is measured by the inverse of the coefficient of variation in social transfer incomes received by the population (Brady and Bostic, 2015). For pensions, it is measured as the homogeneity in public pensions received by the elderly.

Low-income targeting is defined as the disproportionate concentration of social transfers in low-income households (Besley, 1990; Korpi and Palme, 1998) and is measured by the Kakwani concentration coefficient of benefits across the distribution of equivalized household income (Kakwani and Subbarao, 2007). The present study measures low-income targeting for assistance pensions among the elderly. The Kakwani index ranges from -1, indicating that the poorest elderly receive all assistance pensions, to 1, indicating that the richest receive all assistance pensions. It is 0 if each elderly person receives the same amount. The index is reverse coded so that 1 is maximal low-income targeting.

The data are drawn from nationally representative household income surveys from the LIS.[2] The country cases are 28 industrialized democracies – 27 OECD members plus Taiwan (TW). The OECD members include both mature and developing welfare states: Austria (AT), Australia (AU), Belgium (BE), Canada (CA), Chile (CL), Czech Republic (CZ), Denmark (DK), Finland (FI), Germany (DE), Greece (GR), Hungary (HU), Ireland (IE), Israel (IL),

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Italy (IT), Japan (JP), Korea (KR), Lithuania (LT), Mexico (MX), Netherlands (NL), Norway (NO), Poland (PL), Slovakia (SK), Slovenia (SI), Spain (ES), Switzerland (CH), the United Kingdom (UK), and the United States (US). The year of survey is 2016, except for AU (2014), CL (2015), HU (2015), JP (2013), and SI (2015).

The analysis first ranks individuals aged over 65 from the richest to the poorest according to their income.[3] For income measure, disposable income is used, which is the sum of incomes from labor, capital, social, and private transfers less the amount of income taxes and social contributions paid. Then, the amount from overall pensions for each elderly person is measured to calculate universalism, and the amount of assistant pension for each elderly person is measured to calculate low-income targeting. The old-age poverty rate is measured as the population share of the elderly whose disposable income is below 50 percent of the national median income. The size of (assistance) pension expenditure is measured as the average share of the (assistance) pension amount in the elderly's disposable income.[4]

Using ordinary least squares regression models, the regression analysis assesses the effects of the two institutional variables, controlling for the expenditure size of overall pensions and assistance pension. To ensure that the results are robust and not strongly influenced by any particular country, the model is re-estimated using the jackknife sensitivity analysis (leaving out cases one at a time). In addition, the model is re-estimated using an alternative data source for old-age poverty (OECD, 2020a).

The second analysis is a detailed institutional analysis of three public pension programs in Korea: Public Employee Pensions, National Pension, and Basic Pension. It explains why Korean pensions have left a large share of the old-age population with no, or partial, pensions despite the expansion of pension expenditure. The analytical focus lies on the legislated rules by which these programs provide pensions to the elderly. Data are drawn from an original dataset for Korean social policy (Swedish Institute for Social Research [SOFI], 2020b) created using the Social Policy Indicator Database (SPIN) framework (Nelson *et al.*, 2020). The framework enables us to measure how social policies are institutionally organized (i.e. which individuals get what benefits and under what principles).

The final analysis estimates the poverty reduction effects by alternative assistance pension models – narrow or broad targeting with a means test and weak or no targeting without a means test – using the same budget. These are the contested issues not only in the literature but also in the 2014 pension reform in Korea.

The method is static microsimulation, exemplified by the EUROMOD program (Sutherland and Figari, 2013). It has been used for counterfactual analysis in cases where non-experimental designs are the only feasible way to evaluate program effects, such as national policy reforms in which no isolated

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comparison groups are likely to exist. It combines information on relevant policy rules with detailed and representative microdata from national household income surveys. The microsimulation allows simulation of the extent to which a change in the benefit component (assistance pension) of household income would affect poverty outcome, while controlling for other influential factors such as incomes from labor and capital, tax policy, and socio-demographic characteristics (Mitton *et al.*, 2000). This method is based on arithmetic calculations, and it does not take into account potential behavioral responses to a policy change. Thus, the result should be interpreted with caution.

The simulation uses the 2016 Household Income and Expenditure Survey of Korea. Statistics Korea constructed this survey with a nationally representative sample of 13,937 households (28,522 individuals), and LIS harmonized the data in an internationally comparable manner. The 2016 survey was used, because the Korean assistance pension was fully implemented in 2015, and it may take one year for eligible people to know about and apply for the benefit. Old age includes the age of 65 since the benefit is available from that age.

The simulation first estimates the old-age poverty rate without an assistance pension. In turn, it estimates the old-age poverty by the extant targeting model by intention (TI, a flat-rate allowance for the bottom 70% of the elderly); TI in practice (TP); the universal floor model (UF, a minimum floor pension to all elderly); the universal allowance model (UA, a flat-rate allowance to all elderly); and the strong targeting model by intention (STI, a flat-rate allowance for the bottom 36% of the elderly). The poverty reduction effects are compared in terms of low take-up in a means tested program (TI and TP), degree of targeting (TI and STI), use of means testing (TP, UF, and UA), and targeting within universal frameworks (UF and UA).

The flat-rate allowance is 2.4 M (million KRW yearly) for TI, according to the amount that the government set in 2016. The benefit amount for alternative models is set to maintain the same program budget as TI. For UF, the benefit amount is the difference between the floor pension (2.72 M) and the elderly's insurance-based pension amount.[5]

An additional set of simulations assesses the effects of benefit adequacy, using the benefit level equivalent to social assistance for the non-elderly (5.65 M in 2016, 60% of the poverty line income). This benefit level can be a benchmark for future reforms because the National Basic Living Security Act (2000) mandates social assistance programs to guarantee such a minimum living standard for all citizens, though not implemented in the assistance pension. The benefit amount for each model is set to ensure the same program budget (5.65 M for UF2, 4.06 M for UA2 and 5.90 M for TI2).[6] Table 1 summarizes the simulation models.

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TABLE 1. The institutional models for assistance pension

Factual model	Counterfactual models	
Targeting in Practice (TP) (TI in practice)	The same budget as TI	A greater budget to provide the elderly the same income security as social assistance for the non-elderly
	Targeting by Intention (TI) (a flat-rate allowance for the bottom 70% of the elderly)	TI 2
	Universal Floor (UF) (a minimum floor pension for all elderly)	UF 2
	Universal Allowance (UA) (a flat-rate allowance for all elderly)	UA 2
	Strong Targeting by Intention (STI) (a flat-rate allowance for the bottom 36% of the elderly)	

4. Distribution of Pensions and Old-Age Poverty

Comparative analysis for 28 industrialized democracies finds that old-age poverty tends to be lower when overall pensions are more universally distributed and assistance pensions are more low-income targeted. In Figure 2, the correlation between universalism in overall pensions and old-age poverty is high and statistically significant ($r = -0.54$, $p < 0.01$). The Korean pension is among the least universal, along with Chile, Mexico, and Taiwan. Figure 3 presents the correlation between low-income targeting of the assistance pension and old-age poverty. Korea and Taiwan are notably deviant. Excluding them, correlation is high and statistically significant ($r = -0.54$, $p < 0.01$). However, more universal pensions do not necessarily contain a strongly low-income-targeted assistance pension (e.g. DK). Conversely, less universal pensions do not necessarily contain a weakly targeted assistance pension (e.g. TW and JP). The relationship between the two institutional characteristics is weak and statistically insignificant even if the two deviant cases (KR, TW) are excluded ($r = 0.25$, $p = 0.21$).

In Table 2, the regression results support the theoretical expectations. Firstly, universalism in overall pensions has negative and highly significant effects on old-age poverty independent of pension expenditure. Secondly, the effects of low-income targeting in assistance pension are insignificant or weakly significant even if the two deviant cases are excluded. The result suggests that the effects of low-income targeting can be contingent on other factors, such as exclusion of the needy from means testing, the benefit adequacy, and the

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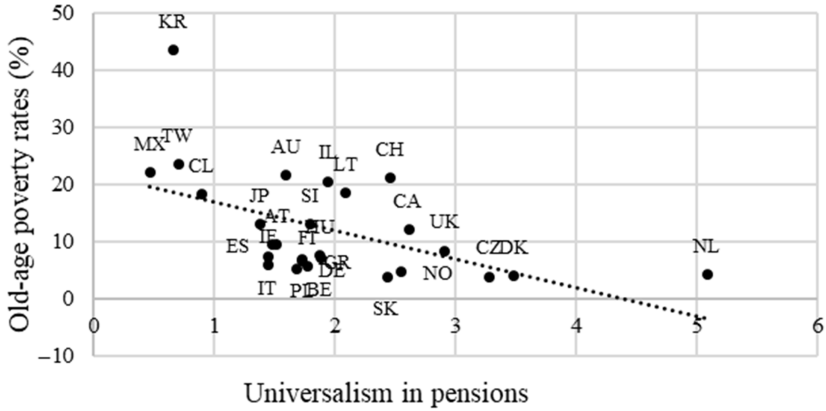

FIGURE 2. Universalism in overall pensions and old-age poverty in OECD countries, 2016

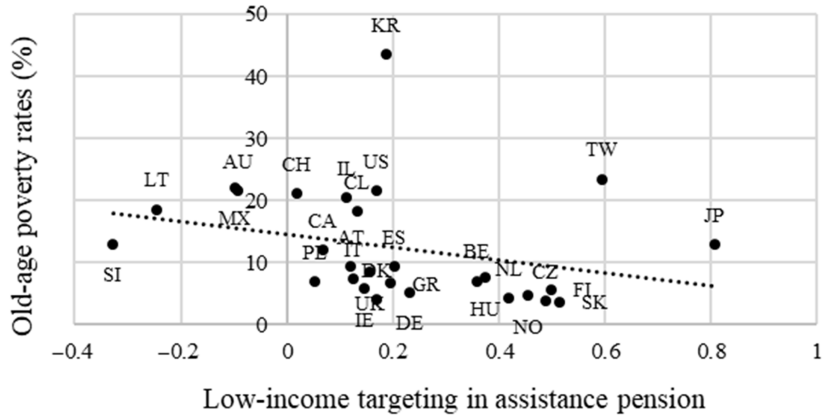

FIGURE 3. Low-income targeting of assistance pension and old-age poverty in OECD countries, 2016

distribution of insurance-based pensions. These results remain robust for different groupings of countries and the alternative old-age poverty measurement (OECD, 2020a).

It should be noted that the institutional variables are neither significantly correlated with each other nor with respective expenditure size.[7] The correlation between universalism in overall pensions and pension expenditure is weak and insignificant ($r = 0.23$, $p = 0.24$). This may have to do with the inclusion of both mature and developing welfare states in the analysis. The paradox of redistribution explains the size of social expenditure as the result of long-term institutional effects on welfare expansion (Korpi and Palme, 1998). This association does not hold, however, if developing welfare states are included (Brady and Bostic, 2015).

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TABLE 2. Universalism, targeting, and old-age poverty: standardized coefficients

	Old-age poverty	Old-age poverty (except KR, TW)
Universalism in overall pension	−0.38**	−0.33**
	(0.12)	(0.10)
Targeting in assistance pension	−0.22	−0.23*
	(0.12)	(0.09)
Pension expenditure	−0.63**	−0.54**
	(0.12)	(0.12)
Assistance pension expenditure	−0.05	−0.13
	(0.13)	(0.10)
Constant	0.00	−0.07
	(0.11)	(0.09)
R^2	0.71	0.71
N	28	26

Note: * $p < .05$, ** $p < .01$

This is because greater social expenditure is achievable with a non-universal policy (Huber and Stephens, 2012). The correlation between low-income targeting and assistance pension expenditure is also weak and insignificant ($r = -0.25$, $p = 0.20$), though the negative association suggests a potential trade-off between the degree of targeting and the budget size.

The result attributes high old-age poverty in Korea to its least universal pensions, but it remains unclear as to the effects of its moderately targeted assistance pension. For the assistance pension, Korea significantly deviates from the general pattern among OECD countries. In addition, the effects of low-income targeting are only weakly significant, prompting further investigation for other factors that may affect the assistance pension's poverty reduction effects.

5. Institutional Structure of Korean Pensions

Korea has institutionalized a corporatist pension model, combining three main programs with different rules on eligibility, benefit levels, and contributions. Compared to the ideal-typical corporatist model (Korpi and Palme, 1998), Korean pensions are less segmented in terms of occupational categories but more stratified in terms of benefits. Enacted in the early 1960s, Public Employee Pensions provide earnings-related benefits to former public sector employees and private school employees (replacement rate of 64%). Enacted in 1988, the National Pension, the main program, provides earnings-related but less generous benefits (replacement rate of 46%) to retirees from the private sector.[8] Finally, enacted in 2014, the Basic Pension provides a tax-funded assistance pension (a flat-rate allowance of around 14% of the median income) to the bottom 70 percent of the elderly with a means test (SOFI, 2020b).

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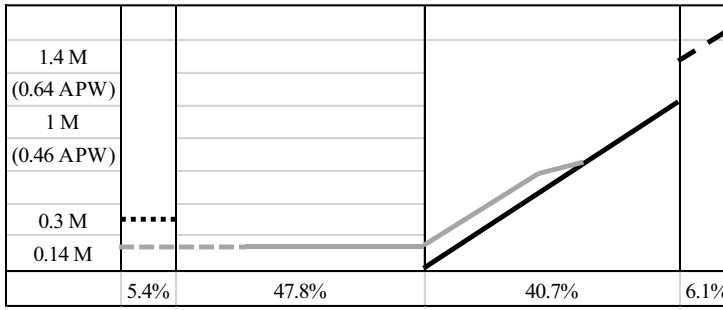

FIGURE 4. Institutional structure of Korean public pensions

Figure 4 illustrates the institutional structure of public pensions. The vertical axis indicates the benefit level in relation to the median income (M) or the average production worker's wage (APW); the horizontal axis is the program coverage (the share of recipients among those aged 60 or over in 2015), from the lowest pension amount on the left to the highest on the right. The benefit level increases according to contribution years for the National Pension (black line) and Public Employee Pensions (dashed black line), while it is a flat rate for the Basic Pension (gray line). The gray dashed line indicates incomplete coverage of the Basic Pension in practice. The black dotted line is social assistance for the non-elderly, for which some elderly are eligible as the member of the household in need.

The benefit levels of two earnings-related programs can be said to be adequate (100% and 140% of the median income), but their combined coverage is substantially limited, leaving more than half the elderly without pension rights.[9] The assistance pension covers those with no insurance-based pensions, but its benefit level is too low to be adequate (less than half the social assistance for non-elderly population).

There are two main reasons for the limited coverage of insurance-based pensions. One has to do with a typical feature of the corporatist model that excludes the economically inactive, such as dependent spouses. Since the current pensioner generation primarily followed the male breadwinner model during their working years, most elderly females have no pension rights. They are supposed to share the male breadwinners' pensions, but the supplementary benefit for the dependent spouse is too low to provide income security for a couple. It is 1 percent of the median income (NPS, 2019), an extremely low level in international comparison. For instance, the US public pension adds 50 percent to a pensioner's pension for the spouse's old-age security as a supplementary benefit (SOFI, 2020a). Moreover, in case of divorce or the death of the pensioner, the National Pension allows the spouse to inherit only half the pension amount.

The other reason for the limited coverage of insurance-based pensions is the late introduction of a public pension for private sector employees, which left

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TABLE 3. Poverty rate and pension coverage by age cohorts in Korea, 2016

Age group	Population share (%)	Poverty rate (%)	Pension coverage (%)	Employment rate (%)
60–65	29	17	50	62
66–70	22	31	60	48
71+	49	52	35	34

Source: LIS (2021)

senior retirees whose working life preceded the National Pension with no, or a partial, pension. Rapid industrialization has taken place since the 1960s. The so-called generation of industrialization, born in the 1940s and 1950s, experienced a massive transition from an agricultural to an industrial economy. In response to this change, the government enacted the National Pension Act in 1973, but postponed its implementation due to the oil crisis (Bae, 2015). Even after its implementation in 1988, those who worked in small businesses were exempted from mandatory membership until 1998 (National Pension Act, 1999). After the 2000s, the generation of industrialization began to retire with no, or a partial, pension.

Table 3 presents the poverty rate and the coverage of insurance-based pensions by age cohorts. The poverty rate increases with age: it is 52 percent for those aged over 70 and 31 percent for those aged between 66 and 70. The pension coverage (the share of pensioners) has the opposite order, being 35 percent for the senior group but 60 percent for the junior group.[10] This explains why one third of the senior elderly aged over 70 remained in the labor market, and why ongoing maturation of the National Pension may not reduce poverty risks for those senior elderly born in the 1950s or earlier.

Among the pensioners, a large benefit disparity exists between sectoral programs. The Public Employee Pensions' benefit is 40 percent higher than that of the National Pension. Given the disparity in the contribution requirement for full benefits (36 years for the Public Employee Pensions, 40 years for the National Pension), the Public Employee Pensions' benefit for the same contribution years is 55 percent higher than that of the National Pension. This is mainly due to the difference in contribution rates, but also the exclusive state subsidies afforded to Public Employee Pensions.

In addition, a substantial disparity exists in received pensions among National Pension recipients. In 2019, the average National Pension received remained at 14 percent of APW, far below the legislated level of 46 percent (SOFI, 2020b). This is because many current recipients fall short of full contribution years. In the early phase in particular, the National Pension relaxed the entitlement criteria to allow ten years of contribution for eligibility.

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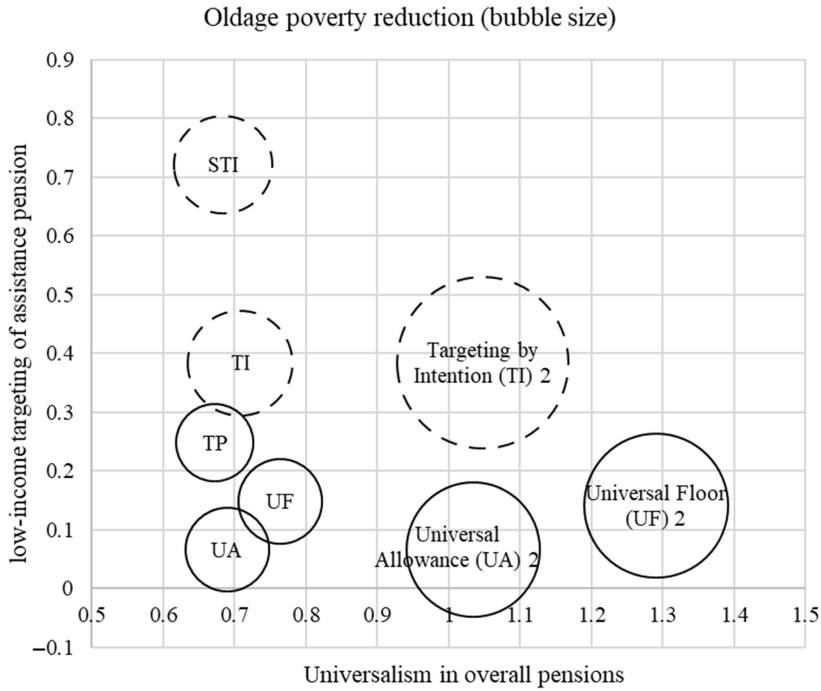

FIGURE 5. Old-age poverty reduction by institutional models for assistance pension

In brief, Korean pensions' low universalism is not due to low-income targeting, but to middle- or high-income targeting. The limited coverage of the National Pension left a large share of retirees with no, or a small, pension. The disparate benefit rules between two insurance programs undermine universalism. The Basic Pension benefits remain far from adequate for those with no insurance-based pensions. This institutional structure explains why old-age poverty remains high and resistant despite a significant expansion in pension expenditure.

6. Institutional Effects of Assistance Pension

Figure 5 presents the key findings of the microsimulation analysis (see Table 4 in Appendix for details). The vertical axis indicates low-income targeting in the assistance pension, while the horizontal axis universalism in overall pensions. The bubble size represents the poverty reduction effects.

The findings can be summarized in three points. Firstly, targeting with a means test generates a substantially low take-up among the needy. Although the extant model intended to cover the bottom 70 percent of the elderly, its actual coverage remains at 59.4 percent (Table 4). The extant targeting model reduces old-age poverty by 9.6 percent in practice (TP), although the model

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could alleviate poverty by 18.2 percent if the implementation is as complete and accurate as intended (TI). Low-income targeting is much weaker in practice (0.25) than was intended (0.38), indicating that the means testing disproportionately excludes the poorer.

A complex means test process may explain low take-up among the needy. However, there are additional reasons unique to the Korean program. One reason is means testing for both income and assets. If the low-income elderly live in their own house in urban areas where house prices are high, they can be ineligible for the benefit. Another reason is that the low-income elderly have to return the assistance pension if they receive social assistance as a member of the needy household.[11] This excludes most of the elderly recipients of social assistance from the assistance pension (Basic Pension Act, 2014). This result is in line with the literature on the negative effects of means-tested programs.

Secondly, both universal models (UF and UA) reduce old-age poverty about 1.2 times more cost-effectively than the targeting model in practice (TP). This result is striking because it questions the efficiency-based justification for low-income targeting (Kenworthy, 2011; Marx *et al.*, 2016). Targeting models can be more effective than universal models only when they provide greater benefits to the neediest as intended. However, means testing significantly constrains targeting models' redistributive potential. For the same reason, the result questions the effects of the broad targeting that uses a means test to exclude high-income people. As Huber and Stephens (2012) suggested, broad targeting may better reduce poverty than strong targeting when social transfers are pro-rich. However, the result shows that broad targeting is still less effective than universal models. The disadvantage of high-income exclusion can outweigh its advantage if the necessary means test excludes the low-income needy more than the affluent. This unintended consequence is substantial in Korea, where the administrative infrastructure is well developed.

Between the universal models, the universal floor model (UF) is more effective than the universal allowance model (UA). While their effects are not different with the current program budget (11.63% by UF, 11.61% by UA), with a greater budget UF2 reduces old-age poverty far more effectively than UA2 (34.1% and 29.4%). This can be explained by UF's pro-poor element to allow greater benefits to the poorer, especially those with no insurance-based pensions. UF also contributes to universalism in overall pensions more greatly than UA by reducing the pension income gap between low- and high-income elderly.

This result also suggests that the extant assistance pension is ineffective not because of its insufficiently strong targeting, but because of targeting with a means test. Actually, strong targeting (STI) is slightly less effective than broad targeting of the extant program (TI) if the implementation is complete and accurate as intended. This can be explained by a cancelling-out effect. When a majority of the elderly has income close to or below the poverty line, strong targeting

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can lift some low-income recipients out of poverty while impoverishing some low-income non-recipients. Such effects can be larger if the targeting is incomplete and inaccurate in practice.

Thirdly, the benefit level has a decisive impact on poverty reduction. With a more adequate benefit equivalent to social assistance for the non-elderly population, much greater poverty reduction resulted (UF and UF2). This result is in line with previous research for middle- and high-income countries (Ferrarini *et al.*, 2016). The required budget for UF2 is 2.5 times as much as the extant budget (UF), but the poverty reduction effects are even greater (2.9 times). Normally, assistance programs hardly gain political support for expansion due to their narrow coverage, but such political constraint may not apply to the Korean assistance pension. Due to the prevalent low-income incidence, 87 percent of the elderly are eligible for the benefit under UF2 as of 2016. With a target coverage of 70 percent, the extant program has been able to increase its benefits from KRW 2.4 million in 2014 to KRW 3.6 million in 2021.

By employing an alternative institutional model, the Korean assistance pension may alleviate old-age poverty more cost-effectively than the extant model. Universal models can better remedy poverty. In particular, the universal floor model may reduce poverty most powerfully by means of its pro-poor distribution without a means test. Such effectiveness is even greater if the administrative costs for means testing are considered.

7. Conclusion

The welfare state literature often takes for granted the positive effects of social expenditure on inequality reduction. The case of Korean pensions and old-age poverty turns this widely accepted assumption on its head. Despite a steady growth in pension expenditure since the 1990s, old-age poverty has remained exceptionally high and resistant in Korea. Drawing on the institutional theory of social policy, in particular a critical examination of the targeting within universalism model for Korean pensions, this study offers an institutional explanation for such a puzzling outcome.

Whereas previous research on universal social policy largely focuses on its long-term effects on inequality reduction through expenditure growth, the comparative analysis of this study shows that universal pensions have significant direct effects on old-age poverty independent of the expenditure size. It also identified Korean pensions as the least universal among OECD countries. The institutional analysis of Korean pensions explained how they left a large share of the elderly with no or a partial pension. A corporatist model in a male breadwinner society excluded most elderly females from insurance-based pensions. Moreover, late introduction of the public pension for private sector employees left a large share of senior retirees with no or a partial pension.

https://doi.org/10.1017/S0047279422000460 Published online by Cambridge University Press

The assistance pension remains far from adequate for those without insurance-based pensions. This non-universal structure explains why old-age poverty in Korea has remained high and resistant despite a steady growth in pension expenditure.

However, this non-universal structure is not static but amenable to reforms. The microsimulation analysis examined alternative assistance pension models for their potential to alter poverty outcomes. Remarkably, universal models alleviate old-age poverty more cost-effectively than the extant targeting model, questioning the efficiency-based justification for low-income targeting. In particular, the universal floor model appears to be the most effective by allowing pro-poor targeting within the universal framework. Even for assistance programs, universal models can be more effective under such conditions as low take-up among the needy, prevalence of low-income incidence, and pro-rich distribution of extant benefits.

Since the microsimulation did not take into account behavioral responses to the policy change, one should interpret the results with caution. Assistance pension benefits may reduce employment among the low-income elderly and, accordingly, affect the old-age poverty rate, given that a fair number of the elderly are still in the labor market in Korea. In particular, means-tested models can discourage employment because additional earnings make the recipient ineligible for the assistance pension. In contrast, universal models do not entail a work disincentive, allowing the low-income elderly to continue to work if they wish. Thus, if potential behavioral changes are considered, universal models' poverty alleviation can be even greater than targeting models. Above all, such considerations are less critical for pensions than for programs aimed at the working-age population.

The policy implications of the findings may not be limited to Korea but applicable to developing welfare states, including Taiwan and Latin American OECD countries. Under such conditions as pro-rich distribution of pensions and prevalence of the low-income elderly, no or weak targeting for assistance pension may alleviate old-age poverty more cost-effectively than strong targeting. Still, universal models may better reduce poverty than broad targeting models for high-income exclusion. In Korea, social provision has extended from middle-class down to low-income households. Therefore, new programs often problematize the eligibility of better-off groups, using a means test to exclude high-income individuals. Although Korea has a well-functioning administrative system, it has not been able to avoid the problem of low take-up among the needy and inaccurate targeting. This may suggest a new variant of the paradox of redistribution.

Acknowledgements

I am grateful to Kenneth Nelson, Rense Nieuwenhuis, Joakim Palme, Sebastian Sirén, Ola Sjöberg for their valuable comments on the paper, and thank two anonymous reviewers

and the editors of the journal. I appreciate Janet Gornick for introducing me to social policy research using LIS. The Korea Foundation's Policy-Oriented Research Program supported the research.

Competing interests

The author declares none.

Supplementary material

To view supplementary material for this article, please visit https://doi.org/10.1017/S0047279422000460

Notes

1 Social expenditure data are drawn from OECD (2020b), while income inequality data from Statistics Korea (2020). The latter are based on the Household Income and Expenditure Survey (HIES) and the original source of OECD (2020a) for Korea for 2006–2012. Because OECD (2020a) uses a different data source and new income definitions from 2013, Statistics Korea (2020) is used for data comparability. Although HIES provides data after 2016, it has undergone significant changes since 2017, such as the separation of income and expenditure surveys, a reduction of samples from 8,700 to 5,000 households for the income survey and to 1,000 households for the expenditure survey, and a change of survey methods from bookkeeping to interviews in person. Prior to 2006, HIES did not include single-person households.
2 LIS data are used due to its geographic coverage and scientific reputation.
3 Disposable household income is equivalized by household size to measure individual share of household income, following the LIS convention (the square root of household size).
4 For codes, see the online supplement.
5 The floor level is set to use the same budget as TI.
6 For codes, see the online supplement.
7 There is no signs of multi-collinearity. The variance inflation factor (VIF) for each explanatory variable is between 1.08 and 1.26, a level close to 1 (no correlation between the variable and the remaining variables) and far lower than 4 (that warrants further investigation).
8 The 2007 reform reduced the National Pension's replacement rate from 60% to 40% by 2028. In 2016, it was 46%. The 2015 reform reduced the Public Employee Pensions' replacement rate to 61% by 2035 (NABO, 2020).
9 The actual coverage could be lower than that presented because the coverage of National Pension and Public Employee Pensions includes disability pensions and inheritance pensions for widows and children whose age is lower than 60 years (NABO, 2020; National Pension Service [NPS], 2019).
10 The pension coverage includes the pensioners' dependent spouses who do not have their own pensions.
11 In practice, the government deducts the assistance pension from social assistance benefits while counting those de facto non-recipients as assistance pension recipients.

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Appendix

TABLE 4. Old-age poverty by institutional models for assistance pension (Korea, 2016)

	Old-age poverty (%)	Universalism (P)	Targeting (AP)	Costs (AP)	Coverage of AP (%)	Coverage of P (%)	Old-age poverty reduction (%)
no AP	48.68	0.44					
TI	39.85	0.71	0.38	1.0	72	87	18.15
TP	44.01	0.67	0.25	0.9	59	77	9.60
UF	43.02	0.76	0.15	1.0	75	100	11.63
UA	43.03	0.69	0.07	1.0	100	100	11.61
STI	40.97	0.68	0.72	1.0	36	69	15.85
UF2	32.10	1.29	0.14	2.5	87	100	34.07
UA2	34.36	1.03	0.07	2.5	100	100	29.42
TI2	25.05	1.05	0.38	2.5	72	87	48.54

https://doi.org/10.1017/S0047279422000460 Published online by Cambridge University Press