Countervailing Social Forces in Welfare States:

Public Pension Generosity in OECD Countries, 1981-2002

Juan Fernandez
jjf@berkeley.edu

March 2008
Why, despite the recent wave of pension reforms, has public pension generosity been stoutly resilient in post-industrial societies? In light of the synthetic pension replacement rates of 27 OECD countries, on average, pension generosity has changed very moderately between 1981 and 2002. To explain this stability this paper derives hypotheses from the principal theories on the development of the welfare state programs and tests them through fixed-effects models. The results demonstrate that the stability of pension generosity resulted from a countervailing dynamic involving three forces. Expansions in two groups, the elderly and deindustrialized workers, caused generosity to increases, while the partisan structure of government had no impact on generosity levels. Hence the working class has been substituted by the elderly and deindustrialized workers as the key constituency in contemporary pension politics. Finally, generosity reacted to the programs monitoring because increasing ratios of pensioners to contributors produced retrenchments in entitlements. The dynamic of countervailing forces identified in the pension policy field represents a distinct mechanism of institutional stability which has not been identified in existing neoinstitutional theory.
Recent comparative scholarship concurs that as a result of mounting ideological and financial pressures, public old-age pension programs have entered into a distinct ‘austerity’ era. Analysts agree that the long period of continuous growth in coverage rates and generosity levels, which had started in the 1930s, came to an abrupt halt in the 1970s. However there is still no consensus regarding the extent of the transformation from the previous ‘golden age of welfare’. One group of quantitative studies on the cross-national development of welfare state programs rejects the existence of major retrenchments in generosity levels and suggests that benefits have only stalled during the last two decades (Castles 2004: 131; Lindert 2004: 306; Scruggs 2006). In contrast, most case-studies of pension reform and another group of quantitative studies claim that on average, since the early 1980s, benefits of industrialized countries have suffered substantial cutbacks (Hicks 1999: 199; Huber and Stephens 2001: 209; OECD 1998; Weaver 1998: 201). For example, Myles and Quadagno have suggested the existence of a “(...) downward drifting trend line in the quality, generosity, and coverage of public entitlements (...)”(1997: 264). However most of these studies have relied either on anecdotal evidence or inadequate indicators. Most quantitative studies are based on aggregate expenditure measures which being determined with historically-changing calculation formulas unfortunately conflate benefits.

An additional controversy regarding pension programs relates to the role of population aging in the recent evolution of these schemes. Aging is perceived as exerting “pressure” on the programs and even threatening their financial viability. However there is still no consensus on the net effect of this factor; some scholars claim that it has been detrimental because it has been the main cause for the wave of recent retrenching reforms (Bonoli and Shinkawa 2005: 3; Lindert 2004: 183) while others sustain that it has led to the preservation (Pierson 1994; 1996) or expansion (Kittel and Obinger 2002: 45) of benefits. Here it is argued that the role of population aging has been
underspecified in previous research and claims that a better understanding can be gained by differentiating between actual and forecasted levels of population aging.

This paper answers two specific questions. Firstly, since 1981 has the average public pension generosity been retrenched in OECD countries? This question is addressed through and analysis of the levels of predictors of the synthetic pension replacement rates in 27 OECD countries during the 1981-2002 period. Researchers on the welfare state widely acknowledge that synthetic replacement rates constitute the best indicator of welfare programs’ generosity (e.g. Huber and Stephens 2001: 208) because they allow for the identification of the net effect of each pension calculation reform. The pension replacement rate is here defined as the proportion of the gross average national salary replaced by the gross pension awarded to a former employee with an average working career.

Furthermore, unlike most previous quantitative research that has been limited to the study of 18 medium or large size OECD countries, this study examines 27 OECD member states which by the first considered year already had a universal public pension system and were capitalist democracies.¹

Based on descriptive evidence, I show that OECD pension generosity has proven resistant to change during the 1980s and 1990s. In fact, contrary to the conclusions of previous empirical cross-national research, this study finds no evidence of a widespread pattern of programmatic retrenchments or cuts in benefits. Measured through replacement rates, pension generosity increased very moderately during the 1980s and since the mid 1990s it has remained largely unchanged.

Taking stock of the absence of an average substantive retrenchment, the second question is: what accounts for the stout resilience of public pension generosity? Through fixed-effects models, it is demonstrated that the stability of public pension systems resulted from the mutual cancellation of

¹ Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, The Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom and the United states conventionally form OECD-18. For the purposes of this paper, OECD-27 includes OECD-18 countries plus the Czech Republic, Greece, Iceland, Hungary, Luxembourg, Poland, Portugal, the Slovak Republic and Spain.
three social forces. Firstly and secondly, deindustrialized workers and the aging of electoral bodies partially succeeded in increasing pension benefits. During the 1980s and 1990s the elderly and deindustrialized workers acted as pro-decommodification electoral bloc. As they buttressed their size in the electoral body, by turning more probable pivotal voters in contested elections, they influenced the policy preferences of leading parties. Thirdly, by contrast, increases in the ratio of beneficiaries to contributors induced retrenchments in current benefits. Demographic balances of the programs have been a major determinant of their financial standing. Technocrats have closely monitored these, who in cases of fast deteriorations in the relation of beneficiaries to contributors used them as analytical means to persuade elected officials over the need for retrenchments.

These three conflicting forces collided in the partisan arena, where parties responded to the pressing capacities of the expansionary bloc or alarming research-based technocratic recommendations. However as they manifested themselves simultaneously in most OECD countries, they countervailed each other and thereby led to pension generosity resilience. In examining the effect of these social forces, it is shown that class-based analyses do not provide a satisfactory account of the changes in contemporary pension generosity.

1. Pension generosity resilience in OECD countries

In the course of this paper’s analysis this paper examines the evolution and determinants of changes in the gross synthetic pension replacement rates of 27 OECD countries between 1981 and 2002 are examined. The replacement rates represent the percentage of income of the “average production worker” as defined by the OECD that is replaced by a pension awarded to a hypothetical average production worker with a 40-years-long contribution history. The reported replacement rate averages the rates for a single and a married worker (equation 1).²

² Section 3 provides a more detailed discussion on the measure of replacement rates.
\[
\text{Replacement rate} = \frac{\text{Gross entry pension of single worker}_{(t1)} + \text{Gross entry pension of married worker}_{(t1)}}{\text{Gross average national wage}_{(t1)} \times 2} 
\] (1)

Figure 1 illustrates the cross-national and diachronic variations in the gross standard pension replacement rates for all countries with available data since 1981 and for the whole sample since 1994. It reveals that the replacement rates have been resilient during the period. On average the replacement rate increased moderately during the 1980s and early 1990s, while in the mid-1990s it stabilized around its historical maximum. However, even if the period from 1981 to 1994 observed an expansion in the average replacement rate, this increase was only of 5.2 percentage points. Thus the plateauing of the replacement rate in the second half of the 1990s did not represent a major departure from the previous years’ trend. As it turns out, neither for the 1980s nor 1990s is there evidence of an average retrenchment-as-rollback but instead a clear indication of a stabilization of pension generosity relative to the purchasing power of the average worker.

FIGURE 1 ABOUT HERE

TABLE 1 ABOUT HERE

To conclude, Figure 1 and Table 1 on average the standard pension replacement rates in OECD countries have shown an intense resilience during the period 1981 to 2002. The replacement rates have not remained static because (sometimes recurrent) phased-in or immediately effective modifications in the benefit-calculation formula shifted the numerator of the ratio, while changes in wage growth rates modified the denominator. However, on average, the rates have not been subject to either substantive expansion or retrenchment. Based on the most valid indicator of synthetic replacement rates, the conclusion cast doubts on claims made in recent empirical research that pension generosity has observed an average retrenchment-as-rollbacks (Hicks 1999: 199; Huber and Stephens 2001: 180; Myles and Quadagno 1997: 264; OECD 1998: 51; Weaver 1998: 201).
Having shown that old age pension generosity has been stoutly resistant to change, this paper now reexamines the principal theoretical accounts of the evolution of welfare generosity to explore what social forces underpinned this resilience.

2. Theoretical background

Historically, welfare generosity theorization has consistently taken an ensemble of diverse programs as its unit of analysis. Although these general theories forfeited the identification of idiosyncratic programmatic dynamics, they have proven functional as they have received empirical support with broad and program-specific data. Hence this study draws on three general approaches: the power resources, new politics and skills-specificity approaches. In addition to them a reflexivity model is considered.

Social democratic or power resources theory

The social democratic or power resources theory has identified social classes as the central actors in pension politics. The theory was formalized in the late seventies by Korpi (1978; 1983) and Stephens (1980) as an alternative to functionalist understandings of the expansion of the welfare state. Modernization theorists sustained that industrialization prompted the social dislocations that made public welfare programs necessary, at the same time that it habilitated national surpluses to fund them (Kerr, Dunlop et al. 1964). Social-democratic theorists, by contrast, have claimed that welfare policy is not the mechanical outcome of social structures, but a contingent result of collective cooperative relationships derived from the class struggle. For power resources theorists, welfare state generosity is expanded when labor parties attain democratic control of the state and enact policies that pursue the workers’ objective by redistributing resources extracted from the capitalist class.
The model is, therefore, based on the Marxist principle that modern societies are defined by the class struggle in the field of economic production. However, working from this premise, the model underscores the possibilities opened up by democratic policies for the redistribution of power in capitalist societies. In Korpi’s formulation (1983), with the universalization of political rights, capital is stripped of its monopoly of political mobilization, enabling both classes to employ their “power resources”. In this context, capital still benefits from its control of the means of production (Korpi 1983: 16), but labor has the resource of the “disciplined action of sheer numbers.” (Esping-Andersen 1985: 22; Shalev 1983: 321) As a result, the working class has the potential to effectively mobilize its institutional power resources, which consist of its political organizations to influence state policy.

If organized labor achieves control of the state, the model claims, it can redirect its goals and enact policies that foster the working class’ material wellbeing. Welfare policies would be of particular importance in this class-based political project because they have the potential of undercutting the essential inequality in capitalist societies: these policies enable workers’ “de-commodification” by guaranteeing an income flow to economically inactive individuals and provide them with means to ensure their livelihood away from the labor market.

As the social democratic approach stresses the role of contingent class-based mobilizations, its central hypothesis is that working class parties’ strength and ascendancy in government is the primary factor in the development and generosity of welfare programs. In addition, to this central argument it was subsequently claimed that as rightwing parties represent the economically privileged while in power they should undermine welfare generosity (Castles 1982: 85).

**H1: The larger influence of leftwing political parties on governmental policies, the larger the degree of pension generosity.**
H2: The larger influence of rightwing political parties on governmental policies, the larger the degree of pension generosity.

New Politics theory

In response to the explanatory limitations of the power resources theory, Pierson developed the “new politics theory” in the early 1990s. Pierson noted that, despite the prediction made by the power resources theory that the generalized decline of the labor movement during the 1980s should have led to major retrenchments, consistently to the evidence discussed in Section 1, neither the United States, United Kingdom nor Sweden have observed substantial changes in expenditure levels (1996: 149-150). For this reason Pierson (1994; 1996; 1997) has proposed the new politics theory which identifies welfare politics as revolving around welfare beneficiaries rather than determined social classes. Pierson’s central proposition is that mature welfare schemes have created a large mass of beneficiaries, who being concerned with the generosity of their entitlements, have become the central advocates of these policies. Since the recipients of welfare benefits constitute an interclassist network with selective and homogeneous interests, they have become an electoral constituency that substitutes the working class as the main collective actor supporting these programs: Pierson wrote, “maturing social programs develop new bases of organized support that have substantial autonomy of the labor market” (1994: 29)

Akin to the social democratic model, the new politics theory is grounded on the rational actor assumption that welfare provision results from the mobilization of social groups wishing to maximize their economic wellbeing. Yet both approaches differ fundamentally in their treatment of welfare policies. Korpi and Stephens conceptualized welfare structures
mostly as a passive outcome of political relationships, while for Pierson welfare policies are point of departure for political mobilization.

According to Pierson once welfare programs become universalized among coherent groups and provide substantial benefits, they become institutions that shape future developments. By providing a common identity of beneficiaries, they create a pressure group forced by individuals who previously did not consider themselves as sharing major interests. Furthermore, welfare benefits generate resources to participate in political action. However, most importantly, they provide incentives for interest group mobilization, because with mature welfare programs beneficiaries have concentrated interests in their benefits, and they therefore incentives to defend their position through political engagement.

In addition, elected officials can be expected to be receptive to these demands. Rational office-seeking politicians should be sensitive to the fact that these interest networks have become sizable electoral bodies and incorporate their demands into their political agenda. As a result, even if an escalation of programs’ outlays suggests the need for reform, officials will avoid pursuing programmatic retrenchments (Pierson 1996: 176). In short, in a context of mature programs an expanding welfare constituency increases its electoral leverage and will press for the preservation or expansion of its benefits.

In the case of old age pension schemes this key constituency is pensioners and pensioners’ dependents (Castles 2004: 132). These schemes have pensioners (or the elderly in universalized systems) as the basic interest group in the politics of the welfare state arena. Therefore, concerning pension politics, Pierson’s model converges with earlier research of Pampel and Williamson who also sustained that the elderly have legitimate avenues to voice their interests. In short, with the maturation of welfare programs, pension policy politics have changed from being class-based to age-based.
H$_2$: The larger the share of elderly population over all adult population, the larger the degree of pension generosity.

Skills-specificity theory

A third approach oriented towards accounting for the expansion in welfare state generosity up until the early 1990s (observable in figure 1) underscores another constituency as the central promoter of welfare politics. Instead of pointing to the working class or welfare beneficiaries as the reference group in the arena of social policy, the skills-specificity theory formulated by Iversen (2001; 2005) stresses the role of industrial and agricultural workers with industry-specific skills. According to Iversen, skills-specific worker’s income is more vulnerable to labor market dislocations, which has implications for their social policy preferences. For instance, industrial workers usually attain industry-specific skills and so if they are forced to leave their occupational branch they will face sharper wage drops that can only be cushioned by welfare policies.

The skills-specificity theory draws from the neoinstitutional economic theory (Williamson 1985) that has identified human capital specificity as a critical factor in the different forms of economic exchanges. Expanding this idea, Iversen suggests that the level of skills specificity constitutes a crucial social cleavage that determines the worker’s bargaining position in the relations of production. If the skills or human capital are general, they can be transferred across economic settings with little or no devaluation, which implies that workers maximize their wellbeing in the market. However if the human capital assets are specific, the market does not provide the best solution. Should conditions in their economic branch worsen and job availability in the industry decline, workers will be forced to migrate to other sectors where their skills are unlikely to be recognized, which will result in sharp income drop.
Under these conditions, according to Iversen, skills-specific workers improve their economic wellbeing through public policies that constrain income fluctuations. In the specific case of retirement-income insurance, state-programs represent a better deal for these workers for two reasons. Firstly, that unlike many occupational schemes, state-run benefits are not harmed by transitions across economic sectors (Iversen 2001: 53), and secondly due to the general redistributive orientation of public pension schemes, end-of-career wage drops will have less repercussions on their retirement income. For these reasons, workers with specific skills are likely to support income-protection provided by public pension systems and mobilize accordingly as a political bloc.

To Iversen an exemplary case of asset-specificity is entrenched in the process of deindustrialization. Most occupational skills in the industrial sector are poorly transferable to the service sector. Thus, following the massive sectoral shift from industrial to service sectors, which occurred in OECD economies since the 1960s, industrial workers have seen their skills increasingly devalued. After migrating to the services sector, these “deindustrialized” workers can only maximize their economic wellbeing through generous public pension programs; they have thus become a vested-interest group in favor of these policies. Hence, Iversen (2005: 16-17) hypothesizes that the speed of deindustrialization is a major factor behind the expansion of welfare generosity up until the early 1990s.

*H4*: The more intense the degree of economic deindustrialization, the higher the level of public pension generosity.

**Reflexivity and policy learning theory**

Along with the consequences of distributional struggles in welfare policy making, since the early 1980s a growing public policy literature has also scrutinized these programs to assess their practical problems, particularly their long-term financial viability. The programs’ shortcomings identified by this literature have been incorporated in policy-making debates, and in numerous cases
have been reflexively used by policy-makers to adjust these schemes. Indeed, European social theorists such as Habermas (1970: 67-8), Giddens (1984; 1990) and U. Beck (1998) have considered these reflexive dynamics in institutional arenas as defining traits of modern societies. Since social life is constantly monitored by involved agents (Giddens 1984: 3), reflexive action is an omnipresent process in which reflection over institutionally-conditioned action induces modifications in both institutions and actions. As U. Beck wrote, “the more societies are modernized, the more agents acquire the ability to reflect on the social conditions of their existence and to change them in that way.” (1994: 174)

Since the mid-1980s welfare policy-making has been especially prone to reflexive dynamics due to mutually-reinforcing ties between, on the one hand, macroeconomic and demographic research and, on the other, pension reform debates. Being designed as self-financing mechanisms, public pension programs have their financial viability dependent on the balance between revenues and outlays. Thus, extensive attention has been paid to past changes in this balance, and particularly to the demographic balance between pensioners and contributors.

Throughout the 1980s and 1990s pension expenditure continued growing, and given that benefits remained largely stable, this growth has been attributed to the expansion of the beneficiary population. Rises in the proportion of elderly pensioners to contributors have therefore been held responsible for the compression of programmatic surpluses and the increasing strain on these schemes (Chand and Jaeger 1996; Holzmann 1988; OECD 1998; World Bank 1994). Yet, expansions in the number of pensioners during the last decades have not been matched with increases in the number of contributors. Payroll contributors have usually plateaued or shrunk, threatening the financial balance of the programs. As a result, strategic actors in domestic pension debates have closely followed changes in the ratio of beneficiaries per contributor and the policymakers have considered this information in their evaluation of potential reforms.
H5: The larger the current pool of pensioners to contributors, the lower the level of public pension generosity.

Besides considering contemporaneous developments, the future viability of the programs has also remained in the limelight. Over this period collective concerns have also referred to prospective conditions stimulating the demand of financial and demographic projections. As the technical reliability of projections has been improved, they have provided increasingly confident expectations regarding future developments (Aaron 2000). In particular, forecasts have shown that population aging is likely to accelerate during the next few decades, which has dire policy implications. OECD-27 countries are expected to observe a continuous expansion of their elderly population relative to their active population at least until 2030 (Ogawa and Takayama 2006: 166). Hence as much as past population aging has boosted current outlays, future aging will put additional strains on pension programs, to the extent of imperiling their long-term solvency (e.g. Feldstein 1998).

The integration of economic projections into the policy analysis has bolstered the disquiet over the future of the programs among observers, public officials and legislators. Furthermore, this disquiet has stimulated the production of additional and increasingly-accurate forecasts of demographic trends (OECD 1998; United Nations several years), expenditure levels (Holzmann 1988; McHale 1999) and financial liabilities (van den Noord 1993), which have generally buttressed collective concerns (Disney 2000: F11). As a result, forecasts have transformed the monitoring of welfare policy to such extent that they have shifted the focus from a discussion on the distributional effects to the connection between foreseeable financial prospects and the present. And since most forecasts have presented looming financial difficulties for these programs, they have been utilized as factual basis to justify the need for retrenchment, ultimately facilitating the path to reform.

Following this new factual basis, policymakers have increasingly supported benefits rollbacks as an effective strategy to decelerate the expansion of welfare liabilities, which has been translated
into tangible changes. Diverse case-studies show that a range of countries have reacted by passing reforms that undermine the generosity of their schemes (e.g. Bonoli and Shinkawa 2005: 2). In short, predictions of coming shortfalls have expectedly led nations to downgrade the benefits provided by these programs.

\[ H_0: \text{The larger the prospective pool of pensioners to contributors, the lower the level of public pension generosity.} \]

3. Data and analytical approach

Data

The dataset includes 27 countries with yearly time-values for all countries. For 23 countries it covers the years between 1981 and 2002, and the others are as follows: for Hungary from 1992, Poland from 1993 and the Czech Republic and Slovak Republic from 1994. This produces a total of 545 year-values with an average of 20.2 observations per country.³

As mentioned above, the dependent variable is the gross synthetic pension replacement rate. It measures the proportion of an “average production worker’s” salary substituted by the pension awarded to a hypothetical average worker, and it is estimated according to individual-level provisions. Two assumptions are applied to this hypothetical worker. First, that the worker started working aged 21 and went on to have a 40-year-long career. Second, that the worker’s income continuously matched the salary of the “average production worker” as defined by the OECD. The synthetic replacement rate has been chosen over the average replacement rate, which conventionally represents the average pension expenditure per elderly person, because it reveals more accurately the impact of each pension reforms on pensioners’ economic wellbeing.

³ In combination the use of a one year lag with absence of data for 1979 for the variable Expected dependency ratio in 2025 (described below) impedes extending the dataset beyond 1981. Hungary and Poland first celebrated democratic elections in 1991 and 1992, while the Czech and Slovak Republics became independent in 1993.
Individual level indicators such as the synthetic replacement rate are consistent with the established conceptualization of welfare programs’ objectives. Specialists now concur that welfare programs are constellations of public policies aimed at protecting individuals from risks against diverse social risks through the provision of direct economic transfers, goods and/or services (Baldwin 1990; Esping-Andersen 1985). Hence welfare effort or programmatic generosity should be predicated upon the schemes’ effect on individual life chances, this is, their capacity to grant workers’ economic autonomy away from the labor market (for a review, see Allan and Scruggs 2004).

Most comparativists have responded to this conceptualization using the average pension replacement rate (Castles 2004; Hicks 1999; Huber and Stephens 2001; Pampel and Williamson 1985). However expenditure-based indicators’ validity is undermined by time-changing variations in the composition of the reference group. As Horlich put it, “an average old-age pension calculated by this method reflects too great a cross section of life histories and circumstances.” (1970: 5) Unlike those countries with old programs, in the countries with recently instituted programs, the proportion of workers with the maximum contribution will tend to increase boosting outlays independently from legislative reforms. Furthermore, most countries changed the pension calculation formula at least once since the 1970s. Hence in any given year the mass of pensioners include beneficiaries with entitlements calculated under different regimes. This means that simply due the maturation of each benefit regime, expenditure could rise without changes in the benefit formula. For these two reasons, the specific impact of each pension reform cannot be discerned with aggregate-expenditure measures.

---

4 Following Pampel and Williamson’s formulation, \[ \text{Average Replacement Rate} = \frac{\text{Pension expenditure/GDP}}{\text{Population/Population} + 65} \].
A more reliable alternative to average replacement rates are synthetic replacement rates calculated from statutory provisions. The main advantage of synthetic rates is that they illustrate the programs’ effect on individual economic autonomy without being affected by group compositional variations. They provide a continuous and valid gauge of the purchasing power obtained by the elderly away from the market, which in a market economy determines their life chances. In this vein, this paper follows a line of empirical mostly cross-sectional studies (Aldrich 1982; Day 1978; Eurostat 1993; Hannes-Olsen 1978; Horlick 1970; OECD 2005; Palme 1990) but also longitudinal ones (Scruggs 2006) using synthetic pension replacement rates.

In the course of the following analysis this paper develops the work initiated by Scruggs by extending the number of considered countries and conducting a parametric analysis. The data for 18 OECD countries were drawn from Scruggs’ (2004) seminal Comparative Welfare Entitlements Dataset (CWED), which followed the same model as Esping-Andersen (Esping-Andersen 1990) and has already been successfully used in welfare state research (Allan and Scruggs 2004; Brady, Beckfield and Seeleib-Kaiser 2005).

Although the CWED represents a critical stride in documenting longitudinally the generosity of welfare programs in post-industrial societies, its representativity is hampered by an arbitrary case selection. For at least part of the 1981-2002 period, universal pension programs and capitalist democratic systems also existed in Czech Republic, Greece, Hungary, Iceland, Luxembourg, Poland, Portugal, Slovak Republic and Spain. Thus to increase the cross-national representativeness of the analysis among post-industrial societies, I estimated the replacement rates for these nine nations and the years in which they were capitalist democracies. The sources for the estimation of the
replacement rates for OECD-18 and OECD-9 involve national legislation, case-studies, international reports and information from national experts.\footnote{A 29-pages long technical report detailing the calculation mechanisms of the replacement rates for OECD-9 and the sources for all country-year values of the independent variables and the final dataset are available on this website: https://webfiles.berkeley.edu/~jjf/} 

But departing from Scruggs and Allan’s reliance on net replacement rates, I only consider gross replacement rates, which disregard the tax treatment of average salaries and pension benefits. The main reason for this decision is theoretical. As seen in the review of Section 2, leading accounts of changes in pension generosity were specifically designed in the welfare policy field. Therefore, considering that nations’ policy fields evolve idiosyncratically (for a review, Burstein 1991: 329), adjusting gross salaries and pensions by their fiscal liabilities could jeopardize the face validity of the test.

Having described the dependent variable, attention can now be turned to the independent variables derived from the hypothesis presented in Section 2. As is conventional in comparative and longitudinal welfare state research, social democratic theory is operationalized through the partisan structure of the executive (e.g. Hicks 1999: 186) as the percentage of cabinet seats controlled by each type of party. The partisan cabinet distribution was obtained from Armingeon, Leimgruber et al.’s (2006) and Armingeon and Careja’s (2004) datasets, who offer the only consistent available classification for all OECD-27 parties with governmental representation. To discern the effect of each group of parties, the models include the \textit{Leftwing-party cabinet members} and \textit{Center-party cabinet members}.

The new politics theory is tested through the \textit{Share of population aged 65 or older over all the population aged 15 or older}. This better gauges the elderly population’s political influence than the share of elderly population over the whole population (Williamson and Pampel 1993: 194) as it is more
representative of the voting age populations. Furthermore, the skills-specificity theory is operationalized through the level of Deindustrialization. Consistently with Iversen (2001: 61), it is defined as the share of agricultural and industrial employment over the total working age population (not the total workforce), because in this way the possibility of reversed causality is reduced.

The reflexivity model is tested through two variables. The first evaluates the impact of past demographic changes in programmatic balances and is measured through the *Share of population aged 65 or older over the employed labor force*, also known in the literature as the current systemic dependency ratio. The second refers to the “medium variant” of the *Expected old age dependency ratio in 2025* as estimated by the United Nations’ biannual forecasts (1982; several years), which divides the estimated proportion of aged 65 in 2025 or older over the estimated working age population (aged 15 to 64) in that year as assessed biannually. Demographers agree that during the last three decades the UN projections have remained “(…) the ones whose figures are most widely and authoritative used by countries, international agencies and scientists (…)” (El-Brady and Kono 1986: 41).

However, as a result of compounding uncertainly about fertility and mortality rates, over this period projections have included errors and have been subject to regular adjustments (National Research Council 2000: 40-51; 188-190). From one forecast to another, demographers repeatedly realized that future mortality rates had been overestimated so that increases in the expected elderly population for a given country in 2025 were needed (Keilman 1988; 2001). Consequently over time the projected elderly population and working age population sin 2025 increased differently across countries, leading to a time-varying variable. Here is assumed that changes in UN forecasts were either followed or reflected reestimations made by domestic demographers.

---

6 A more precise measure would have consisted of the elderly over all adult population (18+), but OECD and United Nations’ data concerning the size of 15-18 cohorts is limited impeding use of this indicator.

7 For instance, the expected old age dependency ratio for Japan in 2025 grew 58 percent from 1980 to the 2002 projections, whereas for Hungary during the period the ratio increased only 7 percent.
Three control variables, which have been found empirically relevant for welfare or pension effort, are included in the statistical models. Two are macroeconomic indicators: the Annual GDP growth per capita and the Public deficit of the general government over GDP. Political economists suggest that economic crises facilitate pro-market reforms as they can transform interests of collective actors and reorganize the constellation of actors with a stake in the reform (Williamson and Haggard 1994: 563-4). Evidence for growth rates is from the World Bank (2006) and for public deficits mostly from OECD (2007).

The third control variable refers to formal political institutions. A growing line in welfare reform research argues that formal political institutions (i.e. federalism, veto powers or proportional system) constrain the possibilities of passing reforms by providing their opponents with avenues to block legislative projects. The measure of veto points is Checks and balances, which counts the total number of veto points in the legislative process. The variable was obtained from a database of political institutions assembled by T. Beck, Clark, et al. (Beck 2001b) updated in 2007. One point is given for all countries if the opposition controls the legislature. Then the measure is modified to count the veto points of presidential (a point for every chamber uncontrolled by the president’s party) and parliamentary systems (a point for every party in the government coalition need to maintain a majority).

Analytical approach

I fit fixed-effect (FE) regression models with panel-corrected standard errors, which are captured in Equation 2. The fixed-effect or within estimator recognizes the grouped nature of the data with sequential observations for each country, so that parameter estimates cover the deviation of each variable with respect to their average value within each country. Since parameter estimates in this model describe only variations within and not between countries, they do not absorb country-
specific effects ($\alpha_i$ in (2)). This means that the error term $\epsilon_{it}$ only captures the idiosyncratic ($\epsilon_{it}$) and not the country-specific error ($\nu_i$). Models with panel-corrected errors are reported (Beck 2001a).

$$RR_{it} = \beta_{0FE} + \beta_{1FE} \text{Leftwing cabinet}_{t, i} + \beta_{2FE} \text{Centerwing cabinet}_{t, i} + \beta_{3FE} \text{Elderly population over population 15 or older}_{t, i} + \beta_{4FE} \text{Deindustrialization}_{t, i} + \beta_{5FE} \text{Elderly population over all employed labor force}_{t, i} + \beta_{6FE} \text{Expected old-age dependency ratio in 2025}_{t, i} + \beta_{7FE} \text{GDP growth per capita}_{t, i} + \beta_{8FE} \text{Public deficit}_{t, i} + \beta_{9FE} \text{Checks and balances}_{t, i} + \alpha_i D_i + \epsilon_{it} \tag{2}$$

The FE model has been selected because it allows capitalizing on the data’s panel structure and reveal the effects over time in the explanatory variables on changes in the dependent variable. Secondly because, contrary to random effect models that also measure within variation, FE models protect the parameter estimates of the measured time-varying variables from the omitted-variable bias. The FE estimator removes all time-constant variation between cases from the independent variables as well as the error term, leading to unbiased and consistent parameter estimates for the measured variables. Consequently, it saves the measured variables from the potential influence of non-modeled time-constant factors (Allison 1994; Haliby 2004; Petersen 2004).

4. Results of the regression analysis

Section 1 illustrated that public pension generosity in OECD countries remained largely steady between 1981 and 2002. Despite the transition from the expansionary stages to the stagnation stage in the mid-1990s, on average the old-age entry pensions manifested a strong resistance to change. This section demonstrates that this average stability was due to the mutual cancellation of three social forces that promoted rises and reductions in pension generosity. Two forces converged in the expansion of replacement rates: deindustrialization and the aging of electoral bodies. But over the course of the period these group-based pressures were offset by changes in the balance of pensioners per tax-paying contributors (the systemic dependency ratio). As the systemic dependency ratio increased governments reacted with cutbacks in the replacement rates.
Thus, these programs’ resilience has not resulted from the demobilization of collective demands or the inability to translate these demands into effective policy change. It is clear that pension benefits have not been depoliticized for the continuity in pension generosity came about through the limited success (or partial failure) of persistent and widespread retrenching and expansionary projects, which clashed into each other, unintentionally reinforcing the status quo. The current section develops this argument in three parts. Firstly, there is a brief assessment of the sources of variation in the pension replacement rates. Then I go on to discuss the factors upgrading and downgrading pension generosity. Finally, relying on sensibility analyses I demonstrate the stability of the conclusions reached through the baseline model.

The role of deindustrialization and aging electoral bodies in stimulating pension generosity

According to the baseline and FE estimator of Table 3, pension generosity expansion was due to the processes of deindustrialization and increases in the proportion of elderly population. But before reviewing the effects of these forces it is necessary to assess the impact of partisan politics, which for decades remained the dominant account of welfare programs’ development.

Social democratic theory. The baseline model in Table 3 indicates that changes in the partisan control of the executive were inconsequential for variations in the pension replacement rates.

According to the standard linear codification, for the period covering from 1981 to 2002 neither the Left-wing cabinets nor the Center-wing cabinet variables prove statistically significant, while their coefficients are rather small. Furthermore, these results are insensible to changes in the configuration of the model. In other models not shown here, the coefficients remained insignificant when each partisan variable was included at a time.

In addition to this, even if the whole period is divided into an expansionary stage (until 1994) and an austerity stage (from 1994) the findings do not vary. As shown in Table 3 the Left-wing
cabinet and Center-wing cabinet variables remain statistically insignificant in both periods. All in all, these results are largely inconsistent with the claim of social democratic theory. Between 1980 and 2002 OECD labour and rightwing governments, respectively, neither substantially expanded nor retrenched pension generosity. This finding furthermore coincides with the lack of partisan effects found by recent research based on expenditure measures (Huber and Stephens 2001: 217; Kittel and Obinger 2002: 47) and Palme’s analyses of the standard replacement rates of OECD-18 up to the early 1980s (1990: 126). H1 and H2 are therefore rejected.

TABLE 2 ABOUT HERE

TABLE 3 ABOUT HERE

New politics theory. A major force pushing the replacement rates upwards was the network of pension beneficiaries or, put simply, the elderly. Table 3 shows that on average increases in the proportion of the elderly population over the population aged 15 or older had a positive and statistically significant effect on the pension replacement rate. According to the FE model for the whole period, *ceteris paribus* the average increase in the elderly population over the population aged 15 or older, which was equivalent to the change in New Zealand, produced an estimated expansion of 2.0 percentage points in the replacement rate. Further, as the pace of past population aging has differed in OECD countries, it is useful to compare the effect of the variable for an average country with the estimated effect for the country that underwent the largest expansion of the share of elderly over the population aged 15 or older, which in the period was Japan. Had New Zealand observed an increase in its share equivalent to which occurred in Japan, it would have raised its replacement rate 9.9 percentage points instead of only 2.0 points.

In sum, the rate of current population aging has had a positive and substantive impact on the replacement rate, which confirms H3 and is consistent with the principle that the programs’ beneficiaries are key supporters of contemporary welfare generosity. Furthermore, in combination
with the previous result indicating the lack of partisan effects, it provides solid supportive evidence of Person’s new politics theory regarding contemporary OECD pension programs. These findings confirm that after decades championing public pension generosity, in the 1980s and 1990s the working classes represented by leftwing parties were substituted by the elderly as the key collective actor in pension policies. Rather than becoming depoliticized, pension benefits have become “departisanized”. Over the last 25 years as OECD populations have grown older, pensioners have become an increasing electoral force which has acted rationally exerting political pressure to have pension generosity levels increased.

In addition, the significance of the Elderly population over the population aged 15 or older signals a potential generational struggle between contributors and beneficiaries. Discussing the conditions for pension reform in Western Europe, Pierson (1997: 281) suggested that different generations do not clash in their pension policy preferences because they uniformly agree that these redistributive mechanisms are collectively advantageous. However, this assertion is inconsistent with his basic theoretical claim that the beneficiaries are driving the new welfare politics. Since workers perceive that future cutbacks are likely in light of the dire financial prospects of pension programs (Boeri, Börsch-Supan et al. 2001: 26; Ferrera 1993: 29), following his theory to its logical end pension politics must necessarily involve an intergenerational conflict. In fact this form of conflict is reflected in Table 3. Since 1980 the elderly have succeeded in increasing their welfare entitlements only when they expanded their relative electoral salience.

Skills-specificity theory. Iversen (2005, ch. 3) has demonstrated empirically that workers with higher human capital specificity form a political bloc favorable to decommodifying welfare policy, however these preferences may not be materialized in legislative changes. Thus an evaluation of the impact of deindustrialization on pension replacement rates represents a more conservative test of the theory. In spite of it, deindustrialization is positively and significantly associated with the
dependent variable in the baseline model of Table 3. Indeed together with the aging of the electoral bodies, the process of deindustrialization has been the second critical force in the extension of pension generosity.

To assess the effect of deindustrialization, as with the case of the elderly population over the population aged 15 or older, there is more to be gained from examining the effect of increases rather than declines because the proportion of the working age population not employed in the industrial and agricultural sectors has generally increased over the period. From this point of view, ceteris paribus the average increase in the rate of deindustrialization, equivalent to the change in Japan, produced an expansion of the replacement rate of 3.0 percentage points. But given that countries also diverged in the pace of their deindustrialization, it is informative to compare the estimated effect of deindustrialization for the country that underwent the largest degree of deindustrialization which is Sweden. Had Japan undergone deindustrialization to the same extent as Sweden, it would have increased its replacement rate 5.5 percentage points instead of 3.0 points. These results lend strong support to the skills-specificity theory. The data confirms H4. Through their political mobilization, deindustrialized workers have achieved the reinforcement of overall pension generosity in OECD countries, and did so particularly between 1981 and 1994 (table 4).

The contemporary pension systemic ratio as a hindrance to pension generosity

While deindustrialization and the aging of electoral bodies stood out as the primary expansionary forces of public pension generosity, retrenchments were driven by current changes in the systemic dependency ratio. This factor countervailed pressures for the expansion of replacement rates which led ultimately to the stability of generosity levels that prevailed during the 1980s and 1990s.
As mentioned in Sections 2 and 3, two variables have been selected to operationalize the presence of policy learning processes in the public pension policy arena. One is the share of the elderly over the employed population (or systemic pension dependency ratio), which responds to the monitoring of past demographic balances sustaining pension programs. The other is the expected share of the elderly over the working age population in 2005 (or prospective old age dependency ratio), which responds to the monitoring of future developments.

The results reveal that the monitoring of past developments was relevant for the level of pension generosity as changes in the demographic balance between pensioners and contributors had a statistically significant negative effect on the replacement rates. Since most countries underwent a linear expansion of their systemic dependency ratio, similar to the variables elderly population over the population aged 15 or older and deindustrialization, it is useful to compare the average expansion in the systemic dependency ratio with the maximum change in this ratio. According to the baseline model in Table 3, ceteris paribus the average increase, equivalent to the change in Sweden, produced an estimated 1.2 percentage points decrease in the replacement rates. However had the average systemic old-age dependency ratio been equivalent to the maximum increase that occurred in Japan, the replacement rate would have decreased 6.7 percentage points. Knowing that changes in the programs’ demographic balances could have dire consequences of the treasury and the solvency of the programs, during the period studied OECD governments have closely followed the ratio of pensioners to contributors and reduced pension generosity levels when this ratio tended to increase. Furthermore, the systemic dependency ratio’s effect was stable through the expansionary period until 1994 and the stability period from 1994. Thus H₅ is confirmed.

Regarding the role of prospective population aging this study provides only rather weak confirmatory evidence. The FE model in Table 3 shows that increases in the projected old-age dependency ratio for 2025 were not significantly related to variations in the pension replacement
rate. This does not mean that the variable was fully irrelevant as in the period between 1995 and 2002 changes to the prospective dependency ratio were statistically significant and went in the expected direction (Table 4). Yet even for this period the effect of the variable is rather small (for the average country, it represented a decline in the replacement rate of 0.8 percentage points) and additional sensitivity analyses discussed below reveal that they are highly dependent on outlying countries. H6 is consequently rejected.

In all, the impact of past changes in the balance of pensioners to contributors sheds doubts over the claim that “whatever relevant policy learning may have in other contexts, its role in the formation of the agendas of retrenchments advocates has been minimal.” (Pierson 1994: 48) By contrast, if we understand policy learning and policy adaptation as regulatory changes justified by interpretations of prior policies’ effects (Hall 1993: 288; Heclo 1974: 305-306), pension programs have undergone processes of policy learning. The findings presented above demonstrate that perceptions over the past worsening ratio of beneficiaries to contributors were instrumental in the reductions of pension generosity.

*Macroeconomic performance.* Changes in public deficits did not have an impact on the replacement rates during the whole period nor during the expansionary or austerity stages (Tables 3 and 4). Furthermore, as shown in the baseline model of Table 3, the negative coefficient for GDP growth is statistically significant, nevertheless the effect is negligible. An increase in GDP growth equivalent to two standard deviations in the range of GDP values lowered the average replacement rate 0.7 percentage points. The non-significance of the public deficits variable is inconsistent with the political economy prediction that adverse macroeconomic scenarios facilitate the success of pro-market or re-commodifying reforms. And with respect to the GDP growth, its potential transformative role in domestic policy debates has not compensated its endogenous negative effect in the replacement rate discussed in Section 3.
**Additional sensitivity analyses**

In the above analysis the elderly population over all population aged 15 or older, deindustrialization and the systemic dependency ratio proved substantively related to changes in the replacement rate, while the partisan structure of the government and the expected dependency ratio in 2005 were not significantly related with the dependent variable. However these conclusions could be driven by the model's configuration or by outlying cases. To address this possibility Table 4 presents additional sensitivity analyses. In all, it reveals that the impact of the two expansionary forces and the single retrenching force are not sensitive to the specification of the model.

First, to ascertain if the three control variables mediate the effects of the partisan structure of government, a trimmed model was estimated (Model 1, Table 4). In it both the left-wing cabinet and center-wing cabinet remained below significance levels. Furthermore, the effects of the three variables with substantive effects discussed above retain similar t-scores and coefficients when the controls are excluded (model 2, Table 4), indicating the stability of their effects. Finally, 27 models with each country being eliminated at a time were estimated to address the possibility of the results being driven by outliers. The model 3 of Table 4 reports the t-values closest to 0 in these 27 models. It indicates that elderly population over all population 15 or older, Deindustrialization and the Systemic dependency ratio retain their statistical and substantive significance in all the 27 models.

**5. Conclusions**

This paper addresses a single question: what accounts for the contemporary resilience of public pension generosity in OECD countries? Since the early 1980s, pension programs of industrialized countries have received increasing attention due to growing concerns over their long-term financial solvency. It is generally feared that in a context of universalized benefits and waning activity rates, an accelerated population aging may ultimately threaten the programs’ financial
sustainability. In addition, analysts and policymakers concur that pressures to contain domestic production costs have reduced the margin of maneuver to rebalance the programs with tax contribution increases. As a result of these pressures, many observers have interpreted most of the pension reforms undertaken in the last three decades as being oriented towards retrenching entitlements. Nevertheless, in light of the evolution of the gross synthetic pension replacement rates, this paper indicates that the public pension generosity of OECD countries has proven highly resilient over the period. Despite the general upward trend until the mid-1990s, the average replacement rate has changed very moderately between 1981 and 2002.

The paper’s main claim, sustained by results of FE models, is that this pension generosity resilience has been an outcome of three countervailing forces: the aging of electoral bodies, deindustrialization and the increasing ratio of pension beneficiaries to contributors. OECD governments have reacted to concerns over the consequences of population aging. Where past demographic balance of pension programs has been more rapidly undermined and the ratio of pensioners to contributors has increased faster than average, governments passed benefits cutbacks to strengthen the schemes’ finances.

However, in a context of accelerated population aging, there has not been an average substantial retrenchment due to the mobilization of current and prospective beneficiaries that countervailed downward pressures in benefits. More concretely, deindustrialization and population aging have been the two central forces behind increases in pension generosity. Sharing limitations to enhance their economic wellbeing through market arrangements, ‘deindustrialized’ workers and the elderly had a common objective interest in pressing for rises in their pension entitlements, which to some extent they have achieved. As these collectives expanded, reinforcing their political influence, they had the replacement rates improved which compensated for the retrenching forces.
By contrast, no robust effects of the partisan cabinet structure were found. Together, the findings that deindustrialized workers and the elderly championed pension generosity while organized labor had no relevant positive role to changes in the replacement rates support to Pierson’s thesis that pension politics in mature systems are distinct from the dynamics in the maturation stage. In all, the mutual cancellation of two expansionary forces (deindustrialization and aging electoral bodies) and a contracting force (changes in the programmatic demographic balance) account for the average stability of pension generosity in OECD countries between 1981 and 2002.

The results presented above have an implication for the theoretical debate on the conditions for institutional reproduction. Over the last three decades, neoinstitutionalist theorists have identified three mechanisms of formal rules’ stability. One is through prescriptions and routines that become reactivated unintentionally and automatically without the direct promotion of involved actors. Under this first sociological approach, institutions have an impact “beyond the discretion of any individual participant or organization” (Meyer and Rowan 1991[1977]: 55), but there are not “reproduced by “action,” in the strict sense of collective intervention in a social convention.” (Jepperson 1991: 145) Second, an alternative more compromising sociological approach suggests that institutions can be reproduced as part of a domination project carried out by actors with vested interests. “Institutionalized organizational forms are reproduced when actors are willing to do institutional work in order to reproduce them.” (DiMaggio 1988: 13; also Fligstein 2001: 117) Finally, rational choice theorists explain institutional stability in a third way. To them, institutions are reproduced if they constitute uniformly efficient devices for the coordination of action among agents in a field. “An institution is robust in the same sense if after no history of experience would any decisive coalition wish to implement some alteration of the arrangements.” (Shepsle 1989: 142)

---

8 Bourdieu (1977: 189) lays in an intermediate stance between these approaches because he distinguishes orders that require continuous action for their reproduction, from those that are reproduced without the direct involvement of dominating agents.
But beyond these three accounts of stability, the conclusions of this paper suggest a fourth distinct form for the temporal stability of formal rules and shared understandings. Institutional reproduction may also emerge as an unintended consequence of the mutual cancellation of political transformative projects undertaken by groups with opposite interests and objectives. In this case, (contrary to the first sociological and the rational choice approaches) reproduction emerges from willful collective action of diverse competing groups, which (contrary to the second sociological and the rational choice approaches) all failed at imposing the institution most suitable to their interests.
References


Tables and figures

Figure 1. Replacement rates of standard public pensions in 27 OECD countries, 1981-2002
Table 1. Gross pension replacement rate in 27 OECD countries, 1981-2002

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>28.7</td>
<td>30.1</td>
<td>1.4</td>
<td>36.0</td>
<td>1991</td>
<td>28.7</td>
<td>1981</td>
</tr>
<tr>
<td>Austria</td>
<td>74.5</td>
<td>78.4</td>
<td>3.9</td>
<td>78.7</td>
<td>2001</td>
<td>73.9</td>
<td>1990</td>
</tr>
<tr>
<td>Belgium</td>
<td>66.3</td>
<td>59.5</td>
<td>-6.8</td>
<td>70.5</td>
<td>1987</td>
<td>59.5</td>
<td>2002</td>
</tr>
<tr>
<td>Canada</td>
<td>44.8</td>
<td>48.4</td>
<td>3.6</td>
<td>51.4</td>
<td>1994</td>
<td>42.3</td>
<td>1980</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>54.8</td>
<td>46.2</td>
<td>-8.6</td>
<td>54.8</td>
<td>1993</td>
<td>43.2</td>
<td>1995</td>
</tr>
<tr>
<td>Denmark</td>
<td>37.4</td>
<td>49.5</td>
<td>12.1</td>
<td>53.5</td>
<td>1994</td>
<td>37.4</td>
<td>1981</td>
</tr>
<tr>
<td>Finland</td>
<td>44.6</td>
<td>52.3</td>
<td>7.8</td>
<td>60.8</td>
<td>1994</td>
<td>44.6</td>
<td>1981</td>
</tr>
<tr>
<td>France</td>
<td>57.2</td>
<td>47.3</td>
<td>-9.9</td>
<td>57.8</td>
<td>1983</td>
<td>47.3</td>
<td>2002</td>
</tr>
<tr>
<td>Germany</td>
<td>55.1</td>
<td>46.1</td>
<td>-9.0</td>
<td>55.1</td>
<td>1981</td>
<td>46.1</td>
<td>2002</td>
</tr>
<tr>
<td>Greece</td>
<td>89.4</td>
<td>83.1</td>
<td>-6.2</td>
<td>110.6</td>
<td>1987</td>
<td>77.3</td>
<td>1998</td>
</tr>
<tr>
<td>Hungary</td>
<td>48.6</td>
<td>52.8</td>
<td>4.2</td>
<td>52.8</td>
<td>2002</td>
<td>37.1</td>
<td>1997</td>
</tr>
<tr>
<td>Iceland</td>
<td>47.1</td>
<td>48.6</td>
<td>1.5</td>
<td>51.7</td>
<td>1993</td>
<td>45.2</td>
<td>2001</td>
</tr>
<tr>
<td>Ireland</td>
<td>37.2</td>
<td>42.5</td>
<td>5.2</td>
<td>34.7</td>
<td>2002</td>
<td>37.2</td>
<td>1990</td>
</tr>
<tr>
<td>Italy</td>
<td>54.9</td>
<td>80.7</td>
<td>25.8</td>
<td>82.3</td>
<td>2001</td>
<td>54.9</td>
<td>1981</td>
</tr>
<tr>
<td>Japan</td>
<td>55.5</td>
<td>52.9</td>
<td>-2.6</td>
<td>57.8</td>
<td>1985</td>
<td>52.7</td>
<td>2001</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>65.1</td>
<td>87.4</td>
<td>22.2</td>
<td>87.4</td>
<td>1980</td>
<td>65.1</td>
<td>2002</td>
</tr>
<tr>
<td>Netherlands</td>
<td>46.9</td>
<td>40.5</td>
<td>-6.4</td>
<td>46.9</td>
<td>1981</td>
<td>37.0</td>
<td>1997</td>
</tr>
<tr>
<td>New Zealand</td>
<td>39.4</td>
<td>39.5</td>
<td>0.1</td>
<td>44.5</td>
<td>1983</td>
<td>39.4</td>
<td>1981</td>
</tr>
<tr>
<td>Norway</td>
<td>44.8</td>
<td>56.2</td>
<td>11.4</td>
<td>57.4</td>
<td>1994</td>
<td>44.8</td>
<td>1981</td>
</tr>
<tr>
<td>Poland</td>
<td>75.7</td>
<td>71.3</td>
<td>-4.4</td>
<td>80.5</td>
<td>1998</td>
<td>71.3</td>
<td>2002</td>
</tr>
<tr>
<td>Portugal</td>
<td>44.4</td>
<td>76.6</td>
<td>32.2</td>
<td>78.2</td>
<td>1996</td>
<td>41.0</td>
<td>1984</td>
</tr>
<tr>
<td>Slovakia</td>
<td>41.0</td>
<td>49.8</td>
<td>8.8</td>
<td>51.0</td>
<td>1999</td>
<td>40.0</td>
<td>1994</td>
</tr>
<tr>
<td>Spain</td>
<td>78.6</td>
<td>86.9</td>
<td>8.3</td>
<td>92.8</td>
<td>1986</td>
<td>78.6</td>
<td>1981</td>
</tr>
<tr>
<td>Sweden</td>
<td>67.8</td>
<td>62.3</td>
<td>-5.5</td>
<td>73.3</td>
<td>1983</td>
<td>61.1</td>
<td>2002</td>
</tr>
<tr>
<td>Switzerland</td>
<td>39.4</td>
<td>43.4</td>
<td>4.0</td>
<td>46.6</td>
<td>1997</td>
<td>38.5</td>
<td>1991</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>34.8</td>
<td>51.5</td>
<td>16.7</td>
<td>51.5</td>
<td>2002</td>
<td>34.8</td>
<td>1981</td>
</tr>
<tr>
<td>United States</td>
<td>54.3</td>
<td>58.5</td>
<td>4.2</td>
<td>58.5</td>
<td>1985</td>
<td>45.6</td>
<td>2002</td>
</tr>
</tbody>
</table>

Table 4. Estimates of the effects of several political and economic factors on the gross standard pension replacement rate in 27 OECD countries between 1981 and 2002

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Left-wing cabinet(t-1)</td>
<td>0.012 (1.600)</td>
<td>0.000 (-0.020)</td>
<td>0.007 (1.300)</td>
</tr>
<tr>
<td>Center-wing cabinet(t-1)</td>
<td>0.009 (1.400)</td>
<td>-0.003 (-0.450)</td>
<td>0.016 (1.740)</td>
</tr>
<tr>
<td>Elderly population over all the population aged 15 or older(t-1)</td>
<td>1.057*** (4.910)</td>
<td>0.765 (1.300)</td>
<td>1.213*** (4.670)</td>
</tr>
<tr>
<td>Deindustrialization(t-1)</td>
<td>0.450*** (4.940)</td>
<td>0.717*** (3.760)</td>
<td>0.414* (2.220)</td>
</tr>
<tr>
<td>Elderly population over employed labor force(t-1)</td>
<td>-0.380*** (-4.620)</td>
<td>-0.343* (-2.020)</td>
<td>-0.564*** (-3.780)</td>
</tr>
<tr>
<td>Expected old-age dependency ratio in 2025(t-1)</td>
<td>-0.120 (-1.420)</td>
<td>0.039 (0.220)</td>
<td>-0.350** (-3.380)</td>
</tr>
<tr>
<td>GDP growth per capita(t-1)</td>
<td>-0.161* (-2.090)</td>
<td>-0.062 (-0.530)</td>
<td>-0.094 (-0.840)</td>
</tr>
<tr>
<td>Public deficit(t-1)</td>
<td>-0.013 (-0.270)</td>
<td>0.170 (1.170)</td>
<td>-0.026 (-0.440)</td>
</tr>
<tr>
<td>Check and balances(t-1)</td>
<td>-0.164 (-0.810)</td>
<td>-0.582 (-1.700)</td>
<td>0.217 (1.750)</td>
</tr>
<tr>
<td>Constant</td>
<td>-5.767 (-1.080)</td>
<td>-25.325*** (-3.560)</td>
<td>3.488 (0.270)</td>
</tr>
</tbody>
</table>

N 545 329 216

Note: t-scores in parenthesis. The FE models include dummies for all the countries which are not reported. All models include panel-corrected standard errors.

* p < .05; ** p < .01; *** p < .001 (two-tailed tests)
Table 5. Sensitivity analyses decomposing the sample from the baseline model

<table>
<thead>
<tr>
<th></th>
<th>FE-trimmed 1</th>
<th>FE-trimmed 2</th>
<th>t-values closest to 0 in 27 regressions(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left-wing cabinet((t-1))</td>
<td>0.012</td>
<td>-</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(1.670)</td>
<td>-</td>
<td>(0.48)</td>
</tr>
<tr>
<td>Center-wing cabinet((t-1))</td>
<td>0.008</td>
<td>-</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>(1.230)</td>
<td>-</td>
<td>(0.290)</td>
</tr>
<tr>
<td>Elderly population over all the population aged 15 or older((t-1))</td>
<td>1.133***</td>
<td>0.993***</td>
<td>0.639*</td>
</tr>
<tr>
<td></td>
<td>(5.270)</td>
<td>(5.310)</td>
<td>(2.550)</td>
</tr>
<tr>
<td>Deindustrialization((t-1))</td>
<td>0.425***</td>
<td>0.440***</td>
<td>0.328*</td>
</tr>
<tr>
<td></td>
<td>(4.610)</td>
<td>(5.160)</td>
<td>(3.110)</td>
</tr>
<tr>
<td>Elderly population over the employed labor force((t-1))</td>
<td>-0.151*</td>
<td>-0.420***</td>
<td>-0.207*</td>
</tr>
<tr>
<td></td>
<td>(-2.170)</td>
<td>(-5.740)</td>
<td>(-2.730)</td>
</tr>
<tr>
<td>Expected old-age dependency ratio in 2025((t-1))</td>
<td>-0.369***</td>
<td>-</td>
<td>0.016</td>
</tr>
<tr>
<td></td>
<td>(-4.850)</td>
<td>-</td>
<td>(-0.170)</td>
</tr>
<tr>
<td>GDP growth per capita((t-1))</td>
<td></td>
<td>-0.164*</td>
<td>-0.089</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-2.410)</td>
<td>(-1.160)</td>
</tr>
<tr>
<td>Public deficit((t-1))</td>
<td></td>
<td>-</td>
<td>-0.040</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>(0.080)</td>
</tr>
<tr>
<td>Check and balances((t-1))</td>
<td></td>
<td>-</td>
<td>-0.085</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>(-0.410)</td>
</tr>
<tr>
<td>Constant</td>
<td>-5.360</td>
<td>-6.252</td>
<td>-10.083</td>
</tr>
<tr>
<td></td>
<td>(-0.950)</td>
<td>(-1.210)</td>
<td>(-0.050)</td>
</tr>
</tbody>
</table>

Residual variances:

\[
\hat{\sigma}_v^2 = \hat{\sigma}_\varepsilon^2 - \hat{\sigma}_\zeta^2 \\
\hat{\sigma}_\varepsilon^2 = \hat{\sigma}_\zeta^2 + \hat{\sigma}_v^2
\]

<table>
<thead>
<tr>
<th></th>
<th>20.976</th>
<th>21.063</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>R(^2)</td>
<td>0.920</td>
<td>0.919</td>
<td>-</td>
</tr>
<tr>
<td>N</td>
<td>525</td>
<td>525</td>
<td>525</td>
</tr>
</tbody>
</table>

Note: t-scores in parenthesis. The FE model includes dummies for all the countries. All models include panel-corrected standard errors.

\(^1\): coefficients and t-scores (in parenthesis) of the coefficients with a t-value closest to 0 in 27 regressions with each eliminating one of the countries.

* p < .05; ** p < .01; *** p < .001 (two-tailed tests), + p < .05 (one-tailed test).