# SOCIAL POLICY BY POPULAR DEMAND

By PHILIPP REHM*

## I. INTRODUCTION

UPON becoming unemployed, the average covered worker receives less than 50 percent of her previous net earnings in compensation in Ireland, whereas her counterparts in Switzerland and Portugal get 77 and 83 percent, respectively.[1] What explains these large differences in unemployment benefits?

In democratic systems with regular turnover in government and incremental changes in the status quo, policy outcomes should reflect the preferences of a large part of society. This should be true both for social insurance policies in general and for unemployment benefits in particular. To be viable, social insurance systems—which tend to be visible, expensive, and durable—need broad political support. In that sense, social policy is in large part determined by popular demand.

The argument that public opinion has an impact on social policy is not new. In their important book *Why Welfare States Persist*, sociologists Clem Brooks and Jeff Manza show that current and former mainstream explanations for social policy (logic of industrialism, power resources theory, institutionalism, path dependency) are "reaching for, but not grasping, public opinion."[2] By that they mean that existing explana-

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[1] These numbers refer to 2004 and are published in OECD 2006, 60, Table 3.2; see http:/dx.doi.org/10.1787/182506528237. More details below.

[2] Brooks and Manza 2007, 25.

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tions of welfare states are, in principle, compatible with the possibility that mass opinion is a factor "relevant to shaping social policymaking, and perhaps in accounting for differences between countries."[3] Brooks and Manza suggest an "embedded preferences" approach to the politics of welfare states, an approach positing that public support for, or opposition to, welfare state programs has an effect on politicians' behavior. But this approach cannot comprehensively answer the critical question of *why demand for social policies varies across countries*.

As an alternative approach to studying the impact of public opinion on social policy, I start by exploring—theoretically and empirically—the determinants of individual-level preferences for social policies, with unemployment benefits being the focus in this article. I show that citizens trade off the costs and benefits of unemployment insurance. There is strong evidence that demand for unemployment benefits increases with the risk of unemployment (due to an increase in the expected utility from them) and that it decreases with income (since the costs of unemployment insurance are related to income). On average, citizens seem to comprehend the redistributive and insuring function of unemployment benefits rather well.

In a second step, I formulate and test macrolevel implications of this straightforward microlevel logic. In particular, I argue that the *homogeneity of the risk pool* is a critical determinant of the generosity of benefits. When unemployment risk is relatively similar for most citizens (that is, when the risk pool is homogenous), everybody has a relatively similar chance of becoming unemployed and receiving unemployment benefits. In this scenario, citizens share a common interest in insurance and being part of the same risk pool is individually beneficial. As a result, generous benefits are politically feasible.

By contrast, when unemployment risk heterogeneity is high, those with low risk of unemployment have a low probability of needing benefits (their expected gains are low), while those with high risk have a high probability of needing them (their expected utility from benefits is high). As a result, low-risk citizens—whose support is critical for a generous benefit regime, as I will argue below—have few incentives to be part of a common risk pool, simply because they subsidize their higher-risk countrymen. In other words, ceteris paribus, we should expect that a more equal distribution of unemployment risk leads to more generous unemployment benefits. Thus, the distribution of unemployment risk, not its level, is what drives this explanation.

[3] Brooks and Manza 2007, 25–26.

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In developing these arguments, one goal of this article is to combine the literatures on political behavior and political economy that all too often fail to speak to each other. In doing so I aim to provide an explanation of social policy outcomes that plausibly and convincingly links the microlevel and the macrolevel, both theoretically and empirically. In this way, I hope to arrive at an explanation of individual-level preferences and how they matter at the aggregate level. Crucially, I also provide an explanation for *why* popular demand for social policies differs across countries, namely, because the risk distribution varies across them. While this approach comes with its own shortcomings and challenges, it is my hope that it expands our understanding of the political economy of social policy.

## II. Theoretical Framework

### The Microlevel

Social policy does not simply redistribute income. Rather, it serves to redistribute risk and income at the same time. Accordingly, preference for unemployment generosity should be a function of both unemployment risk and income: together, these two variables determine whether redistribution from those with work to those without work and from those who pay more to those who pay less leaves an individual a net beneficiary or net loser from a mandatory insurance scheme. In general terms, the social insurance literature has formalized this rather intuitive relationship.[4]

These two microlevel mechanisms can be illustrated with the following simple, generic model. Assume a utility function $U = e_i w_i(1-t) + (1-e_i)b - \frac{t^2}{2}$. Individuals have a probability of being employed ($e_i$), in which case they receive an exogenously determined wage ($w_i$), which is taxed with a proportional tax rate ($t$). Individuals also have a probability of being unemployed ($1-e_i$), in which case they receive a flat-rate benefit ($b$), which is tax financed.[5] Substituting the budget constraint[6] into the utility function and solving for the optimal unemployment

[4] Varian 1980; Sinn 1995; Sinn 1996; Iversen and Soskice 2001; Moene and Wallerstein 2001; Moene and Wallerstein 2003.

[5] The last term in the utility function captures the deadweight losses of taxation (and serves as a simplified way to introduce effects that are similar to risk aversion). Of course, benefits in many countries are not flat rate but proportional to previous earnings, but even then they usually have some redistributive element to them. In the macrolevel analyses below, I will control for the type of unemployment system (assistance versus insurance versus mixed).

[6] The budget constraint is $(1 - \bar{e})b = \bar{e}\bar{w}t$, where economy-wide averages are indicated with bars over letters.

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benefit lead to the finding that the optimal benefit is proportional to $\left[\frac{1-e_i}{1-\bar{e}} - \frac{e_i w_i}{\bar{e}\,\bar{w}}\right]$. This expression shows that preferences for unemployment benefits depend on an individual's relative unemployment probability and her relative income.[7] Demand for benefits decreases with income and increases with personal unemployment risk.[8] Ceteris paribus, we should observe a positive correlation between preferences for benefits and unemployment risk and a negative correlation between these preferences and income. I will test these hypotheses in the microlevel empirical analysis below. To anticipate, I find strong empirical support for this logic.

## The Macrolevel

This simple microlevel logic of preference formation has implications at the macrolevel as well. Widespread support for generous unemployment benefits depends on whether or not a majority of citizens can expect to be net beneficiaries. This, in turn, depends on the risk pool. The more homogenous the risk pool, the more citizens are ex ante beneficiaries of a mandatory social insurance system.[9]

The expected utility of unemployment benefits can be calculated as the probability of receiving the benefit, times its size, minus its costs (which are proportional to income). Since the risk of unemployment and income level are negatively correlated (mainly because education determines both variables), a more equal distribution of unemployment risk implies that this simple calculation will yield a positive expected benefit for more citizens. In such a scenario, it is not only the poor (who have a high risk of unemployment and pay low costs for insurance) who can expect to benefit from generous compensation. Benefits also outweigh costs for middle-income and potentially even some rich

[7] The comparative statics of $b^* = \frac{(\bar{e}\,\bar{w})^2}{1-\bar{e}}\left[\frac{1-e_i}{1-\bar{e}} - \frac{e_i w_i}{\bar{e}\,\bar{w}}\right]$ are $\frac{\partial b}{\partial w_i} < 0$ and $\frac{\partial b}{\partial e_i} < 0$.

[8] Note that this model is *not* an insurance model. Qualitatively similar, but algebraically more cumbersome, results follow when using a power utility function (instead of the deadweight loss term in the utility function). Unlike the simplified model presented above, demand for benefits would be positive for at least some above-median income agents, even with below-average risk of unemployment. However, such a model would make assumptions about individuals' relative risk aversion (RRA). More on this below.

[9] A median voter framework would suggest that the relative unemployment risk of the decisive voter should correlate with the generosity of unemployment benefits. A previous version of this article tested this prediction, assuming that the middle-income tertile represents the decisive voter. It showed that the risk of unemployment of this tertile correlates positively with unemployment generosity, controlling for the economy-wide unemployment rate. There are two main empirical challenges with such a narrow approach: getting good estimates of the joint distribution of income and unemployment risk, which proves rather difficult; and a naturally high (but not perfect) correlation of the unemployment rate of the middle tertile and the overall unemployment rate. A major theoretical challenge is the identification of the decisive voter. See Bertola 1996; Przeworski 2003, 212; Rehm 2008.

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citizens. In that way, low inequality in the risk of unemployment leads to a coalition supporting generous unemployment benefits—which, crucially, incorporates groups with political clout.

The key factor here is the distribution of risk, not its level. More aggregate risk may or may not imply more aggregate demand for social insurance.[10] Higher economy-wide unemployment means that fewer people (those working) have to pay higher taxes to guarantee the same level of benefits paid to the unemployed.[11] As a result, the price for insurance rises if aggregate unemployment increases. This is a common result from formal models of unemployment benefit generosity.[12]

I use these insights from the economic and historical social insurance literatures as a starting point to derive the following prediction about differences in unemployment generosity across countries: ceteris paribus, the more homogenous the risk pool, the more generous unemployment benefits.[13] In the empirical section below I will test this hypothesis.

The impact of income inequality on this relationship is not straightforward. Generally, a more equal distribution of income will make it easier to forge broad coalitions supportive of a generous social insurance scheme. But if social policy is determined by a small group of decisive voters, inequality may or may not make the price of insurance cheaper and, as a result, benefits more generous.[14] I will empirically explore the impact of income inequality on unemployment benefit generosity.

## III. Literature

The prediction of a correlation between the homogeneity of the risk pool and the generosity of social policy does not necessarily compete with existing explanations, though I will show below that, empirically

[10] On this point, see also Iversen 2001.

[11] A more complete model compared with the one sketched above would model entry into and exit out of unemployment. In such a model the unemployed would vote for high benefits, and higher unemployment may therefore increase overall demand for insurance. However, as long as the decisive voter is employed, this should not change the conclusion that the decisive voter's demand for benefits decreases in aggregate unemployment.

[12] Wright 1986; Atkinson 1990; Saint-Paul 1996; DiTella and MacCulloch 2002.

[13] In median voter parlance, this should hold as long as the decisive voter is not unemployed and is not a high-risk type. Since unemployment risk distributions are right skewed, these are reasonable assumptions.

[14] Note that this is not a median voter type of argument but one about coalitions in support of social insurance. Ceteris paribus, if the median voter is relatively poorer (that is, inequality is higher), demand for insurance should increase (unless demand for insurance increases in income, as in the Moene and Wallerstein model; more on this below). However, policies need a reasonably broad base of popular support to be viable, and social insurance systems are a particularly good example for this.

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speaking, it performs well in comparison with them. It is also the case that others have previously argued that the incidence of risk across groups is a relevant consideration. Peter Baldwin makes this point in his path-breaking book, *The Politics of Social Solidarity*. He points out that "the modern welfare state decisively advanced society's ability to treat each of its members equally […] less by redistributing wealth than by reapportioning the costs of risk and mischance." Historically, social insurance materialized "only when risk, redistributive advantage and political clout coincided." Essentially, "the redistributive pool [had] to be sufficiently homogeneous" for support for insurance to prevail.[15] In a similar vein, Isabela Mares analyzes the "relative incidence of risk" and its impact on social policy.[16]

Iversen[17] highlights the distinction between levels of risk and their distribution before concentrating on the determinants and effects of the former. Hacker[18] shows that Americans bear an increasing burden of risks, while Korpi and Palme[19] develop a typology that takes into consideration the distribution of risks across socioeconomic groups.[20] In a recent contribution, Kim relies on a useful formal model to explore the joint impact of unemployment risk and income inequality on benefit generosity. He hypothesizes a positive correlation between unemployment inequality and benefit generosity and presents evidence of a nonexisting or positive correlation (depending on the level of income inequality). This is the opposite of my hypotheses and findings.[21]

[15] Baldwin 1990, 1, 36.

[16] Isabela Mares (2003, 10) derives predictions about the policy preferences of firms based on their size and risk profile in her important book *The Politics of Social Risk*.

[17] Iversen 2001, 56.

[18] Hacker 2004; Hacker 2008.

[19] Korpi and Palme 1998; Korpi and Palme 2003.

[20] Korpi and Palme's finding of a trade-off between the degree of low-income targeting and the generosity of benefits implicitly relies on the logic outlined in this article: targeting tax-financed benefits makes it rather unattractive to support risk pooling since the benefits and costs are rather unfavorable for most taxpayers ex ante. As a result, benefit generosity should be low. However, their typology is based on the structure of old-age pension and sickness insurance "since they cover risks that are relatively equally shared by all socioeconomic categories" (Korpi and Palme 2003, 432), unlike, for example, unemployment (p. 431). Empirically, there is large within-type variance with respect to benefit generosity; see their Table 1. But in the macroanalysis below, I will control for their types.

[21] See Kim 2007. I use a different theoretical framework and assumptions; a different time period; and a completely different empirical strategy for my empirical investigations. For example, Kim relies on industry-level unemployment rates; by contrast, I rely on occupational unemployment rates, since I have argued elsewhere that they are superior measures of risk. I also show that sectoral unemployment rates do not predict redistributional preferences at the individual level, while occupational unemployment rates do (see Rehm 2009). Moreover, it seems that Kim assumes a positive correlation between income and risk (p. 241) to derive his conjecture, while I assume and find a negative correlation. I also find no substantive interactive effects of income and risk at the individual level, while the interaction between income and risk inequality is central for Kim's theoretical framework.

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Moene and Wallerstein[22] offer a model in which citizens have both redistributive and insurance motives for supporting welfare spending. It is the mixture of these two motives that determines the correlation between income inequality and support for welfare expenditures. A critical assumption in their model is that the coefficient of relative risk aversion (RRA) is larger than one, "which implies that the demand for insurance rises as income increases."[23] However, empirical investigations of preferences for insurance always find the opposite: controlling for risk, demand for insurance decreases with income,[24] a finding that I confirm below. More importantly, they assume that the distribution of risk is identical across countries, which is clearly not the case, as shown below. The few treatments by other economists[25] are typically purely formal[26] or based on simulations.[27]

Iversen and Soskice[28] show that skill specificity increases the demand for social protection and suggest that cross-national differences in the skill composition of populations explain differences in redistribution. However, according to my argument above, it is mainly the distribution of risk, not its level, that matters. But in robustness checks below, I will incorporate their account by controlling for skill specificity at the microlevel and for varieties of capitalism at the macrolevel.

The insider-outsider argument advanced in the literature[29] is, in a sense, a special case of the conjecture that the homogeneity of the risk

[22] Moene and Wallerstein 2001; Moene and Wallerstein 2003.

[23] Moene and Wallerstein 2003, 490.

[24] Iversen and Soskice 2001; Cusack, Iversen, and Rehm 2006; Rehm 2009; Rehm 2011.

[25] While the literature on the *causes* of unemployment benefits is small, there is a large and controversial literature on the *effects* of unemployment benefits. A recent study and review by Howell and Rehm 2009 finds no correlation between unemployment rates and unemployment benefit generosity.

[26] One of the earliest formal models of the determinants of unemployment benefits that stresses the importance of heterogonous unemployment risks is Wright 1986. DiTella and MacCulloch 2002 provide a formal model and econometric testing. They find, theoretically and empirically, a negative correlation between unemployment rates and benefit generosity, and weak partisan effects. They call for further research on the role of "risk" (pp. 419, 422). Neugart 2005 suggests a model in which the probability of unemployment varies across regions within countries, which he shows to lead to different URRs, depending on the electoral system. Saint-Paul 1996 provides a simple numerical example which shows that different hypothetical distributions of unemployment risk can change the median voter.

[27] See Pallage and Zimmermann 2001; Pallage and Zimmermann 2005; Pallage and Zimmermann 2006; Pollak 2007. In their cross-national simulation study of eleven OECD countries, Pallage and Zimmermann 2005 focus on differences in moral hazard, while incorporating differences in socioeconomic characteristics in their calibration study. Most relevant here is their distinction between different unemployment risk groups, with risk measured at educational groups. In their simulations they encounter the unexpected finding that unemployment inequality and benefit generosity are negatively correlated (as predicted by my framework), for which they provide no explanation. In contrast, I derive predictions theoretically and subject them to empirical testing at both the microlevel and the macrolevel. At least under certain assumptions, both approaches lead to similar findings, which should increase our confidence in them.

[28] Iversen and Soskice 2001.

[29] Lindbeck and Snower 1989; Saint-Paul 2000; Rueda 2007.

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pool matters with respect to social policy outcomes in which some citizens have very low risk (the insiders), while others have a high degree of risk exposure (the outsiders). To that extent, my theoretical framework is compatible with Rueda's important work on the topic.[30]

Finally, several contributions apply partisan arguments to unemployment benefits.[31] A central question in this literature is whether parties meaningfully shape social policy outputs. My theoretical framework puts citizen preferences first; this is compatible with parties playing some role. In the empirical macrosection below, I closely follow Allan and Scruggs[32] in taking account of potential partisan effects.

## IV. Data and Findings

### Microlevel: Data

I test my microlevel hypotheses with the International Social Survey Programme's [ISSP] Role of Government IV module, which was conducted around 2006.[33] One survey item relates directly to unemployment benefit preferences. It reads:

> "Please show whether you would like to see more or less government spending [for unemployment benefits]. Remember that if you say 'much more,' it might require a tax increase to pay for it." The five answer categories are: 1 spend much less; 2 spend less; 3 spend the same as now; 4 spend more; 5 spend much more.

Note that the item reminds respondents that insurance is not free, in that taxes may increase if spending on unemployment benefits goes up. For the purposes of my analysis, this is ideal, since the insurance-redistribution trade-off is exactly what drives my argument.

[30] However, Rueda 2007 deals primarily with employment protection and active labor-market policies (ALMPs). Passive labor-market policies—such as unemployment benefit generosity—are not his dependent variable. At the microlevel Rueda's measure of passive labor-market policy (PLMP) preferences is based on (dis)agreement with the following statement: "The welfare state costs too much to be maintained in its present form" (p. 44). At the macrolevel he measures PLMPs with an OECD measure of "total public social expenditure as percentage of GDP"; this includes social benefits for old age, survivors, incapacity, health, family support, ALMP, unemployment, and housing (p. 76). Rueda calls the same measure later in his book "total public social expenditure" and says that "this is, admittedly, a very encompassing measure of social policy" (p. 180). Unlike mine, therefore, Rueda's empirical focus is not on unemployment benefit generosity, at either the microlevel or the macrolevel. That the logic behind ALMPs and PLMPs is the same (as suggested on pp. 54, 76) is a conjecture I still need to be convinced of. Data limitations at the microlevel make it impossible for me to replicate Rueda's measure of insiders/outsiders/upscales, but I measure unemployment risk directly and control for characteristics of outsider status (unemployment, nonemployment).

[31] Boadway and Oswald 1983; Boix 1998; Swank and Martin 2001; Martin and Swank 2004; DiTella and MacCulloch 2002; Allan and Scruggs 2004; Korpi and Palme 2003.

[32] Allan and Scruggs 2004.

[33] ISSP Research Group 2006. For empirical investigations of job insecurity on social policy preferences, see also Anderson and Pontusson 2007; Mughan 2007.

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Besides income, the key explanatory variable is the *risk of unemployment*. I follow my previous work,[34] in which I argue and show that unemployment rates at the occupational level are a good proxy for an individual's unemployment risk. Occupational unemployment rates are calculated just like national unemployment rates, except that the calculations are performed at the occupational level (Appendix 1 provides details). Figure 1 shows the resulting occupational unemployment rates, which are matched to the occupations of individual survey respondents.[35]

The ISSP survey reports *respondents' family incomes*. This variable is standardized and employed in the estimations.[36] With respect to the control variables, I largely follow the set-up in Iversen and Soskice[37] and include the following variables: education (highest degree in three categories), age (in years), gender (dummy for female), and employment status (dummies for employed, unemployed, not employed, student, and retired).[38] For robustness checks, I also estimate models that include skill specificity and left-right party support,[39] as well as church attendance.[40] All estimations include dummy variables for countries and year of fieldwork.

## Microlevel: Findings

The dependent variable is ordinal (with five answer categories). I therefore estimate ordered logit models. However, respondents can easily be grouped according to those who want higher spending versus those who oppose it. This dichotomization not only increases interpersonal

[34] Rehm 2005; Rehm 2009.

[35] I assign 2001–4 averages to the 2006 survey because they are shown in Figure 1. Assigning the values from the actual year in which the survey was fielded leads to the same findings. All respondents with nonmissing values on their current or previous occupation (or, if missing, on their spouse's occupation) are in the sample, even if they are not in the labor force (anymore). The results tend to be even stronger if the sample is restricted to currently employed respondents.

[36] I convert the variable into nine quantiles. The income variable differs across country-years. But since the estimations below include country dummies, this is not particularly problematic.

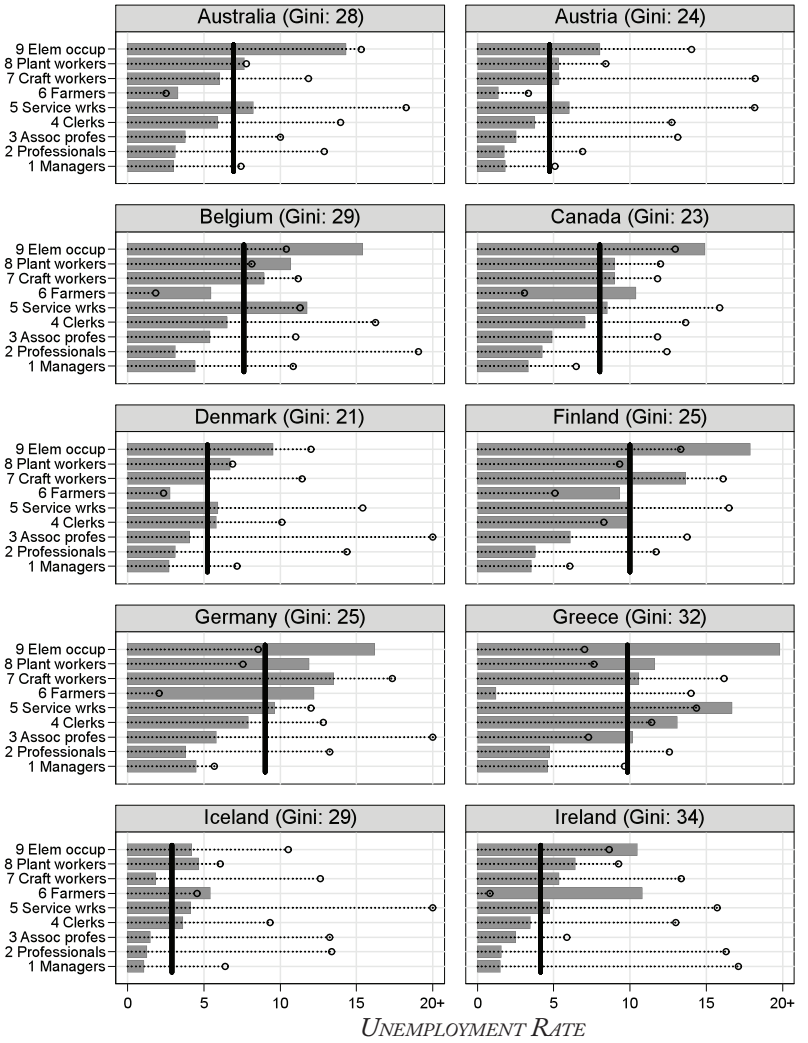
[37] Iversen and Soskice 2001.

[38] Because they are missing for too many country-years, three other desirable control variables are left out (union membership, self employment, and employment in the public sector), but this does not meaningfully alter the results in the samples with available data.

[39] As in Iversen and Soskice 2001. Skill specificity is variable "Absolute skill specificity (ISCO-8-1d)" (from http://www.people.fas.harvard.edu/~iversen/data/Measuring_skill-specificity.xls), divided by education, as in Iversen and Soskice 2001. The specification of these robustness checks is problematic. First, skill level is in the denominator of the skill specificity index, and I therefore need to drop the education variable from these models (as in the Iversen-Soskice set-up). But since education is an obvious determinant of unemployment risk, it is important to include the variable as a control. In other words, I can include either skill specificity or education, but not both. Second, left-right party support not only reduces the sample size dramatically but is also likely to be endogenous to social policy preferences.

[40] Scheve and Stasavage 2006.

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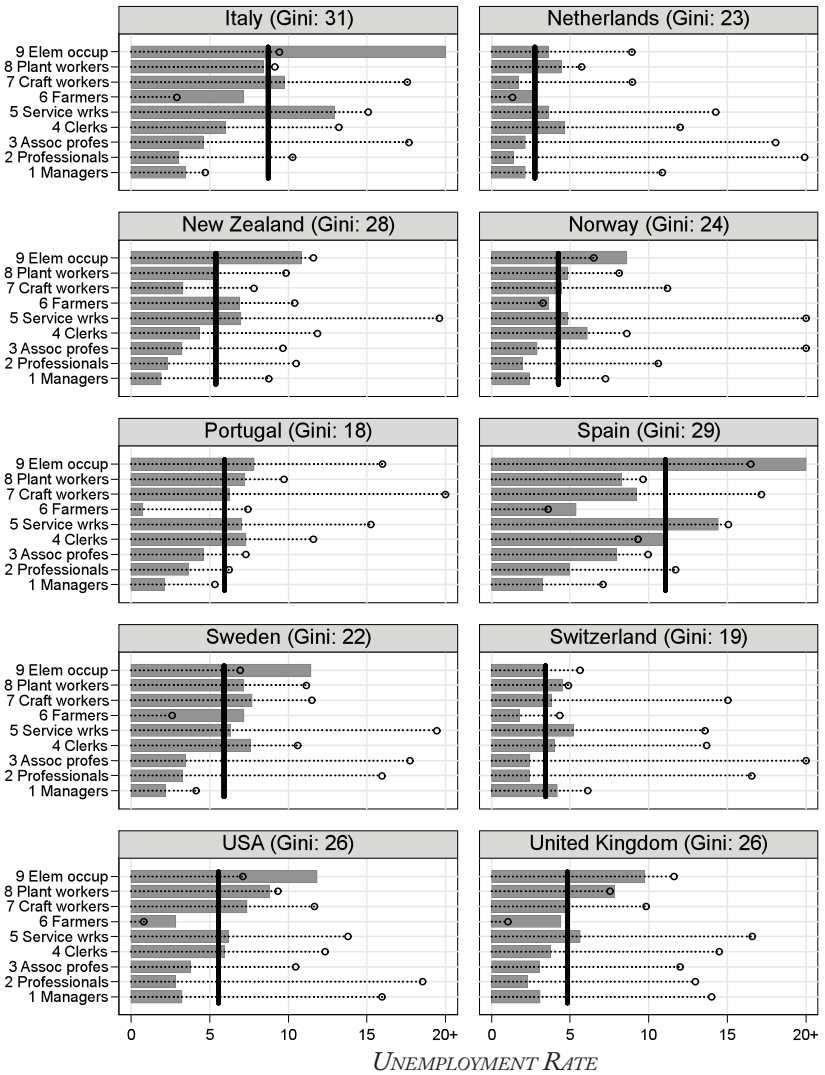



Vertical solid black line: national unemployment rate
Horizontal bars: occupational unemployment rates (capped at 20)
Horizontal dotted lines: size of occupation (capped at 20)

FIGURE 1
OCCUPATIONAL UNEMPLOYMENT RATES AND SIZE OF OCCUPATIONS
(2001–4 AVERAGES)

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FIGURE 1, *cont.*




Vertical solid black line: national unemployment rate
Horizontal bars: occupational unemployment rates (capped at 20)
Horizontal dotted lines: size of occupation (capped at 20)

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comparability[41] but also simplifies the presentation of the explanatory variables' substantive effects. Therefore, the dependent variable is also recoded into a binary variable (a dummy equaling one if a respondent wants to see "more" or "much more" government spending on unemployment benefits, zero for the other three answer categories). I estimate logits with this variable. For each version of the dependent variable, I estimate three models: unemployment replacement rate (URR) preferences are regressed on (1) income and a set of control variables; (2) the occupational unemployment risk variable, income, and a set of control variables; and (3) the occupational unemployment risk variable, income, and a different set of control variables (adding skill specificity, left-right party support, and church attendance, but dropping education).

With respect to the control variables, the coefficients point in the expected directions; most of the time they are also statistically significant at conventional levels. Support for generous unemployment benefits is higher among respondents with low education, women, the elderly, and the unemployed. Skill specificity and left-right ideology are statistically significant and correctly signed, while church attendance is not statistically significant.

More relevant for this article are the findings for the occupational unemployment rate and income variables. Supporting the comparative statics derived above, support for unemployment benefits increases with the risk of unemployment and decreases with income. In all models the two variables' coefficients are statistically significant and point in the expected direction (see models 1–6 in Table 1). This provides strong support for the individual-level hypotheses discussed above.[42]

To get a sense of the substantive effect of the key explanatory variables, Figure 2 presents changes in predicted probabilities based on model 5 in Table 1. They show how the probability of preferring higher benefits changes with simulated changes in income and occupational unemployment risk, respectively, while all other explanatory variables are held constant.[43]

[41] Not all respondents will interpret the difference between "more" and "much more" in the same way. In contrast, it is arguably safe to assume that the distinction between "more" and "not more (or less)" is meaningful and comparable.

[42] The econometric analyses also clearly show a negative correlation between income and demand for insurance, a correlation that casts some doubts on the assumption regarding RRA in Moene and Wallerstein 2001 and Moene and Wallerstein 2003.

[43] The predicted probability to be in favor of generous benefits is 0.376 when continuous variables are set to their means and dummy variables are set to their minimum.

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TABLE 1
DETERMINANTS OF PREFERENCES OF UNEMPLOYMENT BENEFITS[a]

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | *Dependent variable: "Please show whether you would like to see more or less government spending [for unemployment benefits]. Remember that if you say 'much more,' it might require a tax increase to pay for it."* | | | | | |
| | *1. "Spend much less" 2. "Spend less" 3. "Spend the same as now" 4. "Spend more" 5. "Spend much more"* | | | *Dummy for 4. "Spend more" or 5. "Spend much more" [vs. 1. "Spend much less," 2. "Spend less," or 3. "Spend the same as now"]* | | |
| | *Coefficients from Ordered Logit* | | | *Coefficients from Logit* | | |
| Occupational unemployment rate | | 0.032*** | 0.032*** | | 0.037*** | 0.042*** |
| | | (0.006) | (0.007) | | (0.007) | (0.009) |
| Income | −0.126*** | −0.118*** | −0.100*** | −0.132*** | −0.122*** | −0.115*** |
| | (0.008) | (0.008) | (0.010) | (0.010) | (0.010) | (0.013) |
| Education | −0.067*** | −0.042*** | | −0.146*** | −0.115*** | |
| | (0.013) | (0.014) | | (0.017) | (0.018) | |
| Dummy for female | 0.118*** | 0.121*** | 0.127*** | 0.051 | 0.055 | 0.094* |
| | (0.034) | (0.034) | (0.042) | (0.045) | (0.045) | (0.056) |
| Age in years | 0.009*** | 0.010*** | 0.014*** | 0.005*** | 0.006*** | 0.010*** |
| | (0.001) | (0.001) | (0.002) | (0.002) | (0.002) | (0.002) |
| Dummy for unemployed | 0.865*** | 0.841*** | 0.838*** | 0.874*** | 0.860*** | 0.830*** |
| | (0.106) | (0.106) | (0.148) | (0.127) | (0.128) | (0.167) |
| Dummy for employed | −0.151*** | −0.139** | −0.167** | −0.120 | −0.109 | −0.168* |
| | (0.054) | (0.054) | (0.067) | (0.074) | (0.074) | (0.092) |
| Dummy for not in labor force | 0.114 | 0.131* | 0.165* | 0.189** | 0.212** | 0.224* |
| | (0.070) | (0.070) | (0.088) | (0.091) | (0.092) | (0.115) |
| Dummy for student | −0.329** | −0.309** | −0.373** | −0.363** | −0.326** | −0.430** |
| | (0.137) | (0.137) | (0.163) | (0.166) | (0.165) | (0.209) |
| Dummy for retired | −0.321*** | −0.300*** | −0.279*** | −0.393*** | −0.367*** | −0.410*** |
| | (0.070) | (0.070) | (0.085) | (0.096) | (0.096) | (0.118) |
| Church attendance | | | −0.006 | | | −0.024 |
| | | | (0.013) | | | (0.018) |
| Skill specificity | | | 0.014** | | | 0.028*** |
| | | | (0.007) | | | (0.008) |
| Left-right ideology | | | −0.482*** | | | −0.483*** |
| | | | (0.021) | | | (0.030) |
| Constant | | | | 0.277* | -0.142 | 0.594*** |
| | | | | (0.149) | (0.172) | (0.203) |

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TABLE 1, *cont.*

| | *(1)* | *(2)* | *(3)* | *(4)* | *(5)* | *(6)* |
|---|---|---|---|---|---|---|
| | *Dependent variable: "Please show whether you would like to see more or less government spending [for unemployment benefits]. Remember that if you say 'much more,' it might require a tax increase to pay for it."* | | | | | |
| | *1. "Spend much less" 2. "Spend less" 3. "Spend the same as now" 4. "Spend more" 5. "Spend much more"* | | | *Dummy for 4. "Spend more" or 5. "Spend much more" [vs. 1. "Spend much less," 2. "Spend less," or 3. "Spend the same as now"]* | | |
| | *Coefficients from Ordered Logit* | | | *Coefficients from Logit* | | |
| Country dummies | yes | yes | yes | yes | yes | yes |
| Year of fieldwork dummies | yes | yes | yes | yes | yes | yes |
| N. of cases | 15,686 | 15,686 | 10,609 | 15,686 | 15,686 | 10,609 |
| Pseudo R2 | 0.100 | 0.101 | 0.111 | 0.169 | 0.171 | 0.177 |
| Wald Chi2 | 3498.9 | 3517.1 | 2602.3 | 2166.1 | 2173.3 | 1514.3 |
| Log likelihood | −18968.6 | −18950.2 | −12272.9 | −7798.7 | −7782.7 | −4891.8 |
| DF | 23 | 24 | 26 | 23 | 24 | 26 |

* p<0.10, ** p<0.05, *** p<0.01. All models include a full set of country- and year-dummies (not shown).

DATA SOURCE: ISSP 2006.

[a] Models 1–3 display coefficients from ordered logit estimations (cut points not shown). Models 4–6 display coefficients from logit estimations.

There is no rule about what amounts to a substantively important effect. But the simulations show that income and occupational unemployment risk are among the strongest predictors. Simulating a change from lowest to highest income decreases the probability of preferring higher government spending on unemployment benefits from about 0.47 to about 0.25, or by about 0.22 probability points. A change from lowest to highest unemployment risk increases the same probability from about 0.32 to about 0.50, that is, by about 0.18. This is roughly comparable to the change in predicted probability when simulating a change to unemployment.[44]

In substantive terms, therefore, the simulations show that the risk of unemployment is almost as powerful in shaping unemployment spending preferences as is being unemployed, and almost as important as

[44] When changing from the minimum to the maximum values, the results for changes in predicted probabilities for the other variables are: education, -0.13; female, 0.01; age, 0.12; unemployed, 0.21; employed, -0.02; not in labor force, 0.05; student, -0.07; retired, -0.08.

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income. These are clearly large effects, but they are also derived from extreme and potentially unrealistic simulation values. Figure 2 displays less extreme values on the horizontal axis. For example, the predicted probability of preferring higher spending for a respondent in an occupation with 4 percent unemployment (elementary occupations in Switzerland; see Figure 1) is 0.35, while it is about 0.47 for an occupation with 18 percent unemployment (elementary occupations in Finland; see Figure 1).

From their respective performance in terms of statistical significance, robustness across models, and simulated effects, I conclude that income and occupational unemployment risk are meaningful predictors of attitudes toward unemployment benefits. As hypothesized, citizens do trade off costs and benefits of unemployment insurance. At the microlevel, then, the logic of preference formation outlined above is strongly supported by the evidence.

## Macrolevel: Data

For the macrolevel analyses, I need a measure of the generosity of government unemployment benefits. Following Howell and Rehm's[45] detailed discussion of the strengths and weaknesses of existing benefit generosity measures, I employ average OECD net unemployment replacement rates (URRs) as the dependent variable.[46] Estimates are available for 2001–4.[47]

The key explanatory variable is the *homogeneity of the unemployment risk pool*. I use the occupational unemployment rates shown in Figure 1

[45] Howell and Rehm 2009.

[46] Definition: "Initial net replacement rate is an average of cases of a single person and one-earner married couple, an average of cases with no children and with two children, and an average of cases with previous earnings in work 67% of average production worker (APW) level, 100% of APW level and 150% of APW level. Typical-case calculations relate to a 40-year-old worker who has been making contributions continuously since age 18. Net income out of work includes means-tested benefits (housing benefits are calculated assuming housing costs are 20% of APW earnings) where relevant but not non-categorical social assistance benefits. Taxes payable are determined in relation to annualised benefit values (i.e. monthly values multiplied by 12), even if the maximum benefit duration is shorter than 12 months" (OECD 2006, 60). The OECD also publishes gross URRs. The country-year coverage is much broader than for the net URRs. However, since benefits are taxed in some countries, it is problematic to compare this measure across countries.

[47] Lyle Scruggs's ambitious Welfare State Entitlements Data Set, which is generously made available on his Web site, also provides estimates of net replacement rates, for 1971 to 2002. Unfortunately, the available country-years hardly overlap with my key explanatory variable.

Since a more nuanced measure of unemployment benefit generosity arguably would incorporate benefit levels and access to them (coverage), one could simply multiply the two measures. Scruggs's data set contains information on unemployment insurance coverage (see http://sp.uconn.edu/~scruggs/cwed/generosity12.xls), and these coverage data overlap with the OECD net URRs in 2001 or 2002, for a subset of my sample, with slight interpolation. Robustness checks with this dependent variable lead to comparable but weaker findings.

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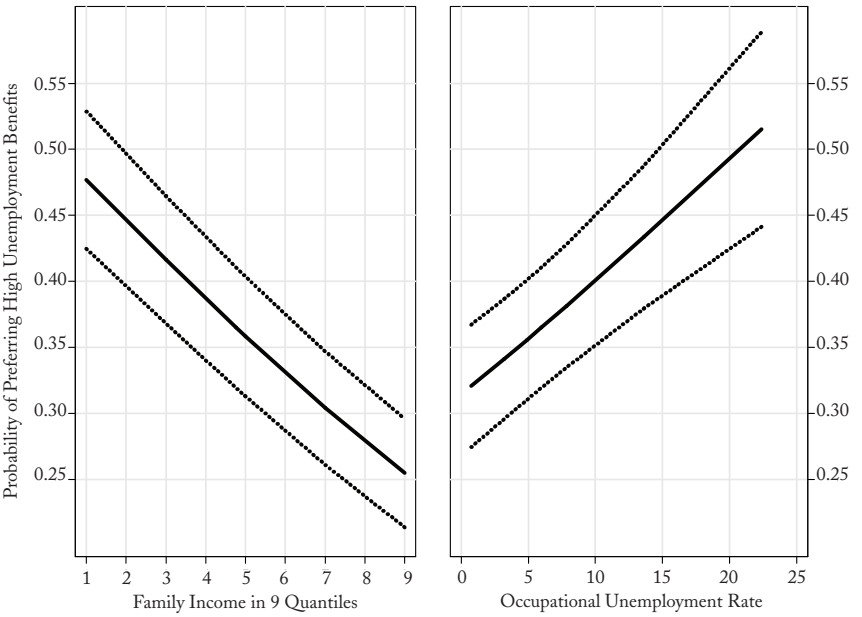



FIGURE 2
PREDICTED PROBABILITIES WHEN SIMULATING CHANGES IN INCOME OR OCCUPATIONAL UNEMPLOYMENT RATES[a]

[a]Shown is the change in the probability of preferring "more" or "much more" government spending on unemployment benefits when simulating a change in income (left panel) or the occupational unemployment rate (right panel) while holding all other continuous variables at their mean and all binary variables at their minimum. The simulations are based on model 5 in Table 1. Dotted lines are 95% confidence intervals. The horizontal axes display values of the simulated variable.

(and employed in the microlevel analysis) to calculate Gini coefficients of unemployment rates in a given country-year (using the size of occupations as weights).[48] Since citizens with political clout are almost certainly located at the lower end of the unemployment risk distribution (that is, face a low risk of unemployment), higher Gini coefficients imply a more uneven risk pool. The inequality of unemployment risk—the homogeneity of the risk pool—varies widely across countries (see Figure 1). I will discuss possible explanations for this fact in the conclusion.

[48] Note that I calculate Gini coefficients using grouped data, which ignore within-occupation inequality of unemployment risk (for which I do not have data for many countries). In that sense, the estimates are lower bounds of the inequality of unemployment risk.

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Despite its importance in the literature of income inequality, there exists no high-quality measure of *income inequality* with broad country-year coverage. Conceptually, earnings inequality is the appropriate measure, which is usually proxied with the p90/p10 earnings ratios published by the OECD. However, the country-year coverage is spotty. I therefore employ OECD's "Gini coefficient based on equivalised household market income, before taxes and transfers (18–65 years only)." Finally, for maximum country-year coverage and despite theoretical reservations, I also employ the "Gini coefficient based on equivalised household disposable income, after taxes and transfers (18–65 years only)."[49]

As discussed above, the economy-wide *unemployment rate* alters the cost-benefit calculus of insurance and may therefore be an important control variable. Since it is conceivable that the self-employed have no interest in generous unemployment benefit systems, I include a measure of the prevalence of *self-employment* as a control variable.

To take into account potential partisan effects, I control for *partisanship of the government*. Since my test is cross-national and hardly captures time dynamics, I employ a cumulative measure of right-wing party strength (percentage of cabinet posts held, weighted by days, cumulative since 1990). To take into account the possibility that *corporatist bargaining arrangements* matter, I include a measure of union density as a rough proxy. Regarding other control variables, I follow Allan and Scruggs[50] and control for *GDP growth*, *trade openness,* and *budget deficits*.

Finally, the political economy literature often groups countries into types. As discussed above, skill specificity plays an important role in the varieties of capitalism literature. So I include a dummy for *liberal market economies*, with lower unemployment benefits being expected in these countries. Vroman classifies unemployment *benefit systems* into those that primarily provide unemployment assistance, those that primarily provide unemployment insurance, and those that are a mix of the two.[51] Unemployment insurance systems should be more generous than unemployment assistance systems. Finally, Korpi and Palme[52] classify countries by their *type of dominant social insurance institution* (targeted, basic security, state corporatist, and encompassing), for which I control with a set of dummies. Appendix 2 contains the definition and sources of all macrolevel variables employed in this article.

[49] OECD 2008.
[50] Allan and Scruggs 2004.
[51] Vroman 2007.
[52] Korpi and Palme 2003, 435.

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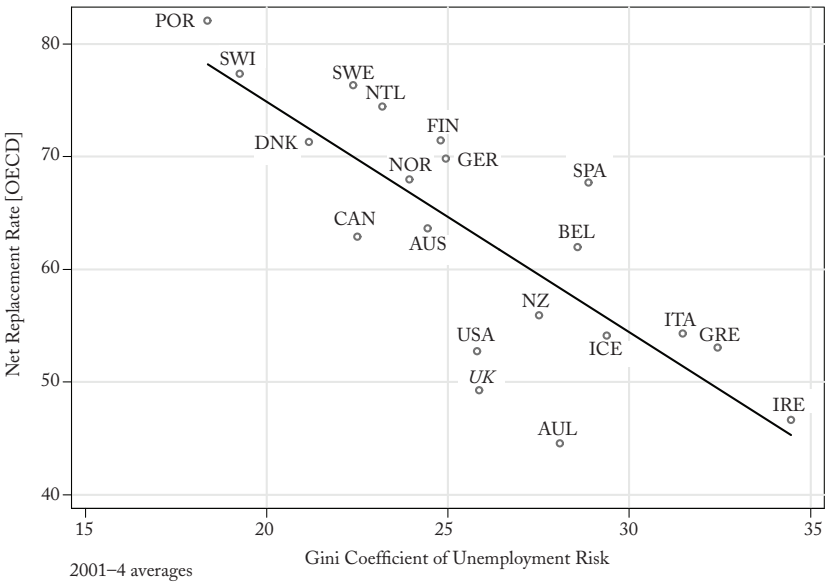



FIGURE 3
CORRELATION BETWEEN UNEMPLOYMENT RISK INEQUALITY AND NET UNEMPLOYMENT REPLACEMENT RATES

## MACROLEVEL: FINDINGS

Figure 3 graphs the correlation between the homogeneity of the risk pool, as measured by the Gini coefficient of unemployment risk, and unemployment benefit generosity, as measured by OECD's net URRs (the data are averaged over the years 2001–4). As hypothesized, there is a clear negative and statistically significant correlation: the more equally unemployment risk is distributed, the more generous are unemployment benefits. This is the central macrolevel finding of this article.

In what follows, I will demonstrate in various ways that this relationship is robust. Two estimation strategies will be used. First, to explore the impact of time-invariant (or only once observed) variables I will average all variables across the time period 2001–4 (for which I have net URRs) and estimate OLS regressions. Second, to explore the impact of time-varying control variables, I will estimate Prais-Winsten regressions with panel corrected standard errors.[53]

[53] Beck and Katz 1995. These estimations assume that there is first-order autocorrelation AR(1) and that the coefficient of the AR(1) process is common to all panels. As an alternative, I also estimated these models with between-effects regressions. The substantive conclusions from the results are the same.

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Table 2 presents the OLS results. The first model is the regression line from Figure 3. Models 2 and 3 control for income inequality, measured in different ways. In both cases, income inequality is negatively correlated with unemployment benefit generosity, but the relationship is not significant. Model 4 shows that unemployment systems that mix assistance and insurance elements are more generous than systems that provide only insurance and—especially—than systems that provide only unemployment assistance. Model 5 includes an indicator variable for liberal market economies (LMEs). As expected, LMEs have less generous net URRs. Finally, model 6 includes controls for the "types of dominant social insurance institutions" as per Korpi and Palme.[54] Although it is unclear whether these types should have much explanatory power when it comes to URRs, the results show some moderate differences across regimes.

Most important for my argument, however, is the finding that the Gini coefficient of unemployment risk is stable across these models and always statistically significant. The higher unemployment inequality is, the lower unemployment benefits are.

The same conclusion follows from Table 3, which reports results from regressions with panel corrected standard errors. Models 1–8 add the time-varying control variables one by one, while the last model in the table provides the results when all of these are included at the same time. The *unemployment rate* has no statistically significant effect on unemployment benefit generosity.[55] The prevalence of *self-employment* in an economy has, unexpectedly, a positive impact on net URRs, but the estimates vary across models. As expected, countries regularly governed by *right-wing parties* have somewhat lower net URRs, while countries with high *union density* have somewhat higher unemployment benefits. Higher *budget deficits* go hand in hand with higher net URRs—the causality here may be reversed (high net URRs may overstretch the budget). Countries more *open to trade* have slightly more generous benefits. Finally, model 8 shows no effect of GDP growth on net URRs.

But most remarkably, the homogeneity of the risk pool (as measured by the Gini coefficient of unemployment risk) proves to be a negative, statistically significant predictor of unemployment benefit generosity across all models.

[54] Korpi and Palme 1998; Korpi and Palme 2003.

[55] I also ran robustness checks that stratify the sample by three levels of unemployment (3–4 percent, 4–8 percent, and 8–11 percent unemployment rate). The correlation between URRs and the homogeneity of the risk pool remains negative and statistically significant within each of these groups.

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TABLE 2
DETERMINANTS OF UNEMPLOYMENT BENEFIT GENEROSITY I
(OLS ON 2001–4 AVERAGES)

| | *(1)* | *(2)* | *(3)* | *(4)* | *(5)* | *(6)* |
|---|---|---|---|---|---|---|
| | *Dependent Variable: Net URRs (OECD), 2001–4 Averages* | | | | | |
| Gini of unemployment risk | −2.045*** | −2.194*** | −1.844*** | −1.881*** | −1.737*** | −2.053*** |
| | (0.375) | (0.485) | (0.381) | (0.365) | (0.241) | (0.409) |
| HH market inc. inequality | | −0.222 | | | | |
| | | (0.522) | | | | |
| HH disposable inc. inequality | | | −0.740* | | | |
| | | | (0.403) | | | |
| Unemployment system: | | | | | | |
| assistance | | | | reference category | | |
| assistance / insurance | | | | 11.788** | | |
| | | | | (5.206) | | |
| insurance | | | | 8.397 | | |
| | | | | (5.239) | | |
| Dummy for LME | | | | | −11.808*** | |
| | | | | | (2.183) | |
| Dominant social insurance: | | | | | | |
| basic security | | | | | | reference category |
| state corporatist | | | | | | 6.003 |
| | | | | | | (3.593) |
| encompassing | | | | | | 8.002* |
| | | | | | | (3.856) |
| targeted | | | | | | −10.376 |
| | | | | | | (6.122) |
| Constant | 115.766*** | 127.786*** | 132.723*** | 102.518*** | 111.345*** | 112.576*** |
| | (9.835) | (19.903) | (13.457) | (11.167) | (6.189) | (10.418) |
| N. of countries | 20 | 16 | 19 | 19 | 20 | 16 |
| R2 | 0.623 | 0.667 | 0.678 | 0.712 | 0.861 | 0.800 |

* p<0.10, ** p<0.05, *** p<0.01; OLS estimates on 2001–4 averaged values; displayed are coefficients above standard errors (in parentheses)

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TABLE 3
DETERMINANTS OF UNEMPLOYMENT BENEFIT GENEROSITY II
(PCSE, COMMON AR1)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| | *Dependent Variable: Net URRs (OECD), yearly 2001–4* | | | | | | | | |
| Gini of unemployment risk | −1.213*** | −1.407*** | −1.400*** | −1.183*** | −1.150*** | −1.211*** | −1.162*** | −1.174*** | −1.518*** |
| | (0.365) | (0.366) | (0.381) | (0.342) | (0.375) | (0.357) | (0.388) | (0.331) | (0.383) |
| Unemployment rate (level) | | 0.382 | | | | | | | 0.030 |
| | | (0.418) | | | | | | | (0.226) |
| Self-employment as % of civilian employment | | | 0.059 | | | | | | 0.287*** |
| | | | (0.142) | | | | | | (0.096) |
| Cumulative right party cabinet participation | | | | −0.012*** | | | | | −0.012*** |
| | | | | (0.002) | | | | | (0.002) |
| Trade union density | | | | | 0.074*** | | | | 0.029 |
| | | | | | (0.027) | | | | (0.047) |
| Budget deficit as % of GDP | | | | | | 0.352* | | | 0.497** |
| | | | | | | (0.199) | | | (0.243) |
| Trade openness ([imports+exports]/ GDP) | | | | | | | 0.045** | | 0.061*** |
| | | | | | | | (0.021) | | (0.022) |
| GDP growth | | | | | | | | −0.898 | −0.703 |
| | | | | | | | | (0.647) | (0.504) |
| Constant | 94.289*** | 96.794*** | 98.161*** | 99.265*** | 89.826*** | 94.345*** | 89.264*** | 95.410*** | 98.850*** |
| | (9.649) | (8.568) | (9.286) | (9.104) | (10.538) | (9.417) | (10.241) | (8.800) | (9.463) |
| N. of observations | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| N. of countries | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Average obs. per country | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| R2 | 0.832 | 0.781 | 0.786 | 0.864 | 0.847 | 0.843 | 0.853 | 0.823 | 0.850 |

* p<0.10, ** p<0.05, *** p<0.01; Prais-Winsten estimates with panel-corrected standard errors (AR1);displayed are coefficients above standard errors (in parentheses);

In conclusion, the macrolevel evidence reveals a strong and robust negative cross-country correlation between the unemployment risk pool and unemployment benefit generosity: the more heterogeneous the risk pool, the less generous are benefits. This finding provides macrolevel evidence for the argument developed in this article.

## V. Conclusion

Are citizens' preferences relevant when it comes to making social policy? What are the microfoundations of the welfare state? How can we explain vastly different social policy outcomes with a simple micro/macrolevel framework? Using unemployment benefits as an example and focusing on the distribution of risk within societies, this article suggests some new answers to these important, yet understudied questions.

Modern welfare states provide social insurance. Citizens trade off expected benefits (redistributive benefits, insurance) and costs (taxes, contributions). Broad coalitions in support of the welfare state and generous social policies are feasible and sustainable if that trade-off leads to beneficial results for many citizens. One crucial determinant of whether the calculus leads to narrow or broad support is the relevant risk pool. Ceteris paribus, the more homogenous that risk pool, the more citizens will anticipate being net beneficiaries, since they will see themselves as being as likely as anybody else to lose their job and need the benefit.

Unemployment benefits are a good starting point to study social insurance more broadly.[56] But the basic argument developed in this article may apply to other social insurances as well. While unemployment benefit generosity may be a readily comparable case, the analysis in this article is by no means complete and several caveats are in order. Let me briefly mention three. First, my measure of unemployment risk—occupational unemployment rates—arguably misses out on potentially important aspects of unemployment, such as the duration of unemployment, the quality of jobs after unemployment, scar effects of unemployment, and so on.[57] Second, since data availability restricts the time period to the early 2000s, I have not addressed how risk pools

[56] For a variety of reasons, (1) the distribution of unemployment risk varies systematically across individuals (while everybody faces the same risk of aging); (2) unemployment risk can be, to a certain degree, anticipated and estimated (unlike, for example, the risk of illness); (3) it is difficult to take out private insurance against unemployment (unlike, for example, for the risk of disability); (4) almost all countries have mandatory unemployment assistance or insurance systems; and (5) the benefit structure is relatively comparable across countries.

[57] Ideally, one would calculate the distribution of expected losses due to unemployment. But data limitations made this impossible.

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evolve over time. In particular, government policies may shape the homogeneity of risk pools.[58] Third and related, I have so far said nothing about why unemployment inequality varies across countries. These topics are promising avenues for future research, and for now I will offer some preliminary thoughts about the last point.

A natural starting point for thinking about the determinants of unemployment inequality is the observation that its measurement depends on two variables: the unemployment rates of occupations and their relative size. There are three ways in which these variables could play a role in shaping unemployment inequality. First, it may be a function of the level of unemployment. While there is a positive correlation between the two, it is weak and not statistically significant. Second, the relative size of occupations could drive the differences in the distribution of unemployment. Yet this turns out not to be the case. Third, the unemployment rates of some occupations are statistically significant predictors of unemployment inequality. In particular, the higher the unemployment rate of professionals (ISCO88-2d=2) or the lower the unemployment rate of elementary occupations (ISCO88-2d=9), the lower unemployment inequality is.[59] Since these two occupational groups are at the very extremes of the skill distribution, this finding focuses attention on skill systems.

There is no straightforward mapping of unemployment inequality and countries' skill profiles,[60] but Figure 3 suggests that unemployment inequality tends to be particularly low in countries with low youth unemployment rates (such as Austria, Denmark, Germany, the Netherlands, Switzerland), while the opposite is true in countries with high unemployment among the young (Spain, Italy, Greece). The first set of countries is known for its highly developed vocational training systems, which tend to ensure an effective school-to-work transition at the lower end of the skill distribution. Quite possibly, the role of training and educational systems is an important piece for understanding differences in unemployment inequality.

[58] This potential endogeneity problem would suggest that demand for and supply of social insurance may be reinforcing. To sort out causality, one would need to look at exogenous shocks to risk pools. Wars (Dryzek and Goodin 1986), deep recessions, and German unification come to mind.

[59] The unemployment rate of crafts workers (ISCO88-2d=7) negatively correlates with the Gini of unemployment risk. Since crafts workers are indicative of a strong industrial sector, one may expect a negative correlation between the size of the tertiary sector and the inequality of unemployment. With Portugal as exception, there is, indeed, such a correlation, but it is weak.

[60] Estévez-Abe, Iversen, and Soskice 2001; Culpepper 2007.

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## Appendix 1
## Occupational Unemployment Rates

Many population and labor-force surveys report the occupation of the employed and the previous occupation of the currently unemployed. This allows me to calculate the unemployment rate of occupation j as:[61]

$$OUR_j = \frac{\#\ unemployed\ in\ occupation\ j}{\#\ unemployed\ in\ occupation\ j + \#\ employed\ in\ occupation\ j} * 100$$

Note that the national unemployment rate is the average of all occupational unemployment rates, if properly weighted by size of occupations. I rely on three different sources for these calculations: the Current Population Survey (CPS) for the U.S.,[62] the labor-force survey of the EU (EU-LFS) for many EU countries,[63] and the International Labour Office's database on labor statistics (ILO) for Australia, Canada, and New Zealand.[64]

All data sources but the CPS report occupations in the International Standard Classification of Occupations classification (ISCO88). However, it is possible to translate the CPS classifications into ISCO88.[65] The ISCO88 classification has different levels of detail.[66] The 1-digit level distinguishes 9 different broad occupational groups.[67] The 2-digit level differentiates between 27 occupations; the 3-digit level 116; and the 4-digit level 390 different occupations. This allows, in principle, for very fine-grained calculations of occupational unemployment rates. Moreover, one could easily differentiate unemployment rates by further socioeconomic characteristics, like gender or industry of employment. However, there are two clear trade-offs. First, more detailed subgroups are based on smaller cells and lead to less reliability of the estimates. Second, more detailed estimates are less comparable across countries and over time. For better quality of the estimates and for maximal cross-country comparability, I estimate the occupational unemployment rates at the ISCO88 1-digit level. This leads to 9 different occu-

[61] In fact, for maximum comparability, I first calculate shares of employed and unemployed in a given occupation and then compute the corresponding numbers of employed and unemployed, using OECD data on civilian employment and unemployment.

[62] King et al. 2009.

[63] Eurostat 2007.

[64] ILO 2010. In some cases (Austria, Portugal, Finland, and Sweden), I use ILO data or a mix of ILO and EU-LFS data if this leads to longer and/or smoother time series.

[65] Rehm 2011.

[66] Details are available at http://www.ilo.org/public/english/bureau/stat/isco/isco88/index.htm.

[67] In all of the analysis, I drop ISCO88-1d occupation zero, which are military occupations.

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pational unemployment rates per country-year. Figure 2 displays these occupational unemployment rates, averaged for the 2001–4 period (the Dutch data are from 2008).

Appendix 2
Variable Definition and Sources

| *Measure* | *Source* |
|---|---|
| Unemployment benefit generosity: OECD's net URR | OECD: benefits and wages (gross/net replacement rates, country-specific files, and tax/benefit models; latest update: March 2006), available at http://www.oecd.org/document/0/0,3343,en_2649_34637_34053248_1_1_1_1,00.html#statistics |
| Homogeneity of risk pool: Gini coefficient of occupational unemployment rates (ISCO88-1d level), weighted by size of occupation | based on CPS (http://cps.ipums.org/cps), EU-LFS (http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/lfs), ILO (http://laborsta.ilo.org) |
| National unemployment rate | occupation-size weighted mean of occupational unemployment rates |
| Income inequality:<br>(1) OECD's "Gini coefficient based on equivalized household market income, before taxes and transfers" (18–65 years only)<br>(2) Gini coefficient based on equivalized household disposable income, after taxes and transfers (18–65 years only) | OECD (http://stats.oecd.org/wbos/Index.aspx?DataSetCode=INEQUALITY), mildly interpolated (in-between missing years) |
| Self-employment as % of civilian employment | OECD's "Annual Labour Force Statistics summary tables," available at http://stats.oecd.org/Index.aspx?DataSetCode=ALFS_SUMTAB |
| Partisanship of the government: % of total cabinet posts held by right-wing parties, weighted by days, cumulative since 1990 | "Comparative Political Data Set III,"[68] calculated from variable gov_right1 |
| Corporatist bargaining arrangements:<br>trade union density (= wage and salary earners who are trade union members / total number of wage and salary earners) | OECD (http://stats.oecd.org/Index.aspx?DataSetCode=UN_DEN), mildly interpolated (in-between missing years) |

[68] Armingeon et al. 2009.

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APPENDIX 2, *cont*.

| *Measure* | *Source* |
|---|---|
| Growth of GDP (expenditure approach) | calculated from OECD's National Accounts of OECD Countries (http://stats.oecd.org/Index.aspx?DatasetCode=SNA_TABLE1) |
| Trade openness ([imports+ exports]/GDP) | calculated from OECD's National Accounts of OECD Countries (http://stats.oecd.org/Index.aspx?DatasetCode=SNA_TABLE1) |
| Budget deficit: government net lending, as % of GDP | OECD: Economic Outlook no. 86: Annual and Quarterly data (http://oecd-stats.ingenta.com/OECD) |
| Skill specificity: indicator variable for liberal market economies | dummy for Australia, Canada, Ireland, New Zealand, UK, US |
| Unemployment system | unemployment assistance only: AUL, NZ<br>unemployment insurance only: BEL, CAN, DNK, GRE, ITA, NOR, SWI, US<br>mixed systems: AUS, FIN, GER, IRE, NTL, POR, SPA, SWE, UK<br>Source: Vroman 2007. |
| Type of dominant social insurance institutions | targeted: Australia<br>basic security: CAN, DEN, IRE, NTL, NZ, SWI, UK, US<br>state corporatist: AUS, BEL, FRA, GER, ITA<br>encompassing: FIN, NOR, SWE<br>Source: Korpi and Palme 2003, 435 |

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