Appendix

DIVISIVE JOBS:

THREE FACETS OF RISK, PRECARITY AND REDISTRIBUTION

Contents

A Insurance Demand

Following similar assumptions to insurance models (Alt and Iversen, 2017), the proposed individual-level approach to risk is expected to inform social spending preferences as given by the present value of the following utility function:

$$V = (1 - p_{\rho_i})u[(1-\tau)y_i + \gamma\tau\bar{y}] + p_{\rho_i}u[(1-\gamma)\tau\bar{y}] \tag{1}$$

where p denotes the probability of individual i experiencing risk ρ, τ represents the share of income y that gets taxed and $\tau\bar{y}$ is the flat benefit received.[1]

The utility function has the following standard properties: $u'(x) > 0$, $u''(x) < 0$, and $\lim_{x\to 0} u'(x) = \infty$. Under the assumption of a constant relative risk aversion function, this becomes $u(x) = \frac{x^{(1-a)}}{1-a}$ $\forall a > 0, a \neq 1$ and $u(x) = ln(x), a = 1$. More specifically, assuming a constant relative risk aversion of unity, equation 1 can be re-written as:

$$V = (1 - p_{\rho_i}) \ln[(1-\tau)y_i + \gamma\tau\bar{y}] + p_{\rho_i} \ln[(1-\gamma)\tau\bar{y}] \tag{2}$$

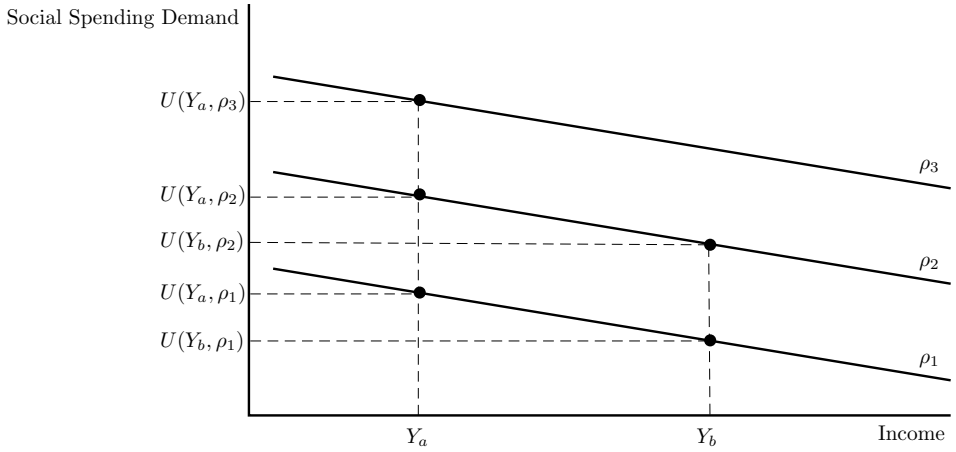
The optimal tax rate is calculated by setting the first order condition to 0 ($\max_\tau V = 0$) which yields ($\Xi = \frac{y_i}{\bar{y}}$):

$$\tau^* = p_{\rho_i} \cdot \frac{\Xi}{\Xi - \gamma} \tag{3}$$

Equation 3 informs that the optimal tax rate increases with the probability to become poor of the three risk groups, such that $\tau^*_{\rho_1} < \tau^*_{\rho_2} < \tau^*_{\rho_3} \quad \forall y$. Additionally, using the second order conditions, one arrives at the familiar RMR result, in which income is negatively related to the preferred tax level ($\frac{\partial \tau^*}{\partial y} < 0$). These results are depicted below in Figure A.1.

[1] Consider n individuals indexed by i where $i \in \{1, 2, ...n\}$. Denote y_i the pre-tax income of each individual i and $\bar{y} = \frac{1}{n}\sum_{i=1}^{n} y_i$ the average income in society ($y_1 < \bar{y} < y_n$, meaning some individuals can be considered 'poor' and others 'rich'). For simplicity and parsimony, let the income of the poor be normalized to 0. The government operates a balanced budget, by collecting a linear income tax $\tau \in [0, 1]$ and redistributing a flat-rate transfer, with benefits $(1-\gamma)\tau\bar{y}$ going to the rich and $\gamma\tau\bar{y}$ going to the poor. Let p_{ρ_i} denote a risk-specific probability to become poor and be in need of the $\gamma\tau\bar{y}$ transfer. Regardless of risk, any individual may be rich or poor. It is assumed that, regardless of the income level for any risk category, $p_{\rho_1} < p_{\rho_2} < p_{\rho_3}$, meaning that the risk to become poor (i.e. the probability of losing one's job or a share of one's income) is lowest for those in secure employment (with risk ρ_1).

FIGURE A.1: HYPOTHESIZED RELATIONSHIP



B Data Sources

The main data used in this paper is the Swiss Household Panel. However, other data sources are employed throughout the paper or in the supplementary materials and these are presented in TABLE B.1.

TABLE B.1: DATA SOURCES

Data Type	Data Source
Skill-Specificity	Iversen and Soskice (2001)
Routine Task Intensity	Thewissen and Rueda (2019)
Offshoring	Goos et al. (2014)
Occupational Unemployment Rates	Rehm data accessed from Rueda (2017)
Public Social Spending (% GDP)	OECD Social Expenditure Database

C Survey items used in the analysis

The survey items used for the dependent variable and the main independent variable are explained in the Data & Measurements section of the paper. The question on social spending was asked in all years except 2010, 2012, 2013. The sample considered includes only members of the labor force. Out of the labor force participants are not considered unless they join the labor force. While these groups may have a sense of the existing risks in the labor market, the prospect of unemployment and income loss is best applied to the active population (Rehm et al.,

2012). An additional number of time-varying covariates are employed based on theoretical considerations of their likely effect on social spending. I explain their relevance and how they are measured below.

Education could be considered a proxy for individual's skills. Based on respondents' highest achieved educational level (measured by years of education), they are grouped into a 'low education' category if they do not hold a high-school degree (reference group), a 'medium education' category if they hold a high-school degree or similar qualification, and those who finished tertiary education are grouped in the 'high education' category. Based on the SBTC, higher educational attainment should be associated with lower demands for redistribution – as expected in Rehm (2009); Thewissen and Rueda (2019). Others find that higher educational attainment is associated with more pro-welfare attitudes (Margalit, 2013) or that there are no differences between high and low skilled workers in sheltered industries (Walter, 2017). At the same time, higher educational attainment is associated with higher support for left-wing parties (Rueda, 2018). Therefore, it is unclear what the expectation regarding educational attainment should be. On the one hand, higher skills may act as insurance against risk. On the other hand, labour market risk may occur across the skill distribution – also suggested in Katz and Krueger (2016).

Civil status is often excluded from analyses, though many scholars have identified its importance in determining an individual's welfare preferences (Iversen and Rosenbluth, 2006; Armingeon, 2006; Svallfors, 1997; Edlund and Pande, 2002). The expectation is that people who have just divorced (or are expected to divorce) suffer an income shock on a personal level. Even if their personal income does not necessarily decrease, the fact that many common household expenses are no longer shared between partners makes the individuals feel poorer in relative terms. On the other hand, married people are expected to demand less because often times the partner's income acts as a buffer in case of a personal income shock (such as unemployment). This variable is thus coded as a categorical variable with three categories: 'single' (the reference category), 'married' and 'divorced'.

Home ownership is included as a binary variable, based on the expectation that wealthier individuals may be less likely to support redistribution (Ansell, 2014).

D Survey Supplementary Materials

D.1 Sample Descriptives

TABLE D.1: SUMMARY STATISTICS

	Mean	SD	Min	Max
Social Spending	0.414	0.493	0	1
Risk Level ρ_2	0.178	0.382	0	1
Risk Level ρ_1	0.797	0.402	0	1
Household Income (log)	10.996	0.493	6.908	14.539
Medium Education	0.468	0.499	0	1
High Education	0.399	0.49	0	1
Married	0.572	0.495	0	1
Divorced	0.111	0.315	0	1
Home Owner	0.525	0.499	0	1

TABLE D.2: CHARACTERISTICS OF RESPONDENTS BY NUMBER OF CONTACT

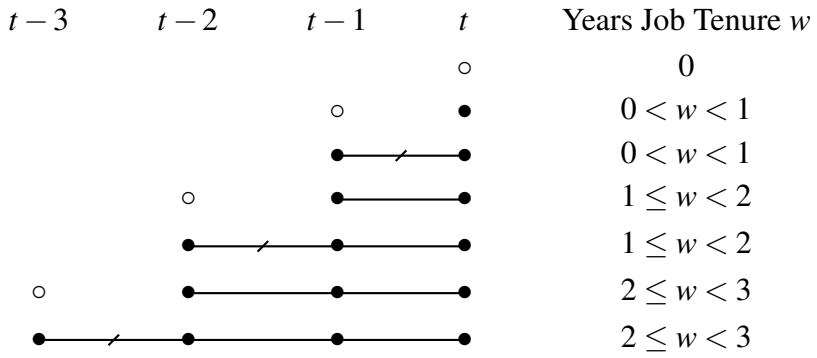
	(1) 1 Contact	(2) $\geq$ 2 Contacts
Social Spending	.57	.60
Risk ρ_2	.24	.17
Risk ρ_1	.70	.81
HH Income (Log)	10.89	11.00
Medium Education	.44	.47
High Education	.25	.41
Married	.39	.59
Divorced	.10	.11
Owner	.47	.53

Note: The summary statistics represent either means or percentages. Attrition in SHP between the first two waves (10%) is similar to other panel studies such as SOEP (10%) or PSID (12%) (Fitzgerald et al., 1998; Kroh and Spieß, 2005; Burton et al., 2006).

In common with most panel-data surveys, attrition may represent a concern to the extent that it is non-random and could thus lead to biased samples. Table D.2 explores the individual characteristics of those who take part in only one year compared to those who take part in at least two.

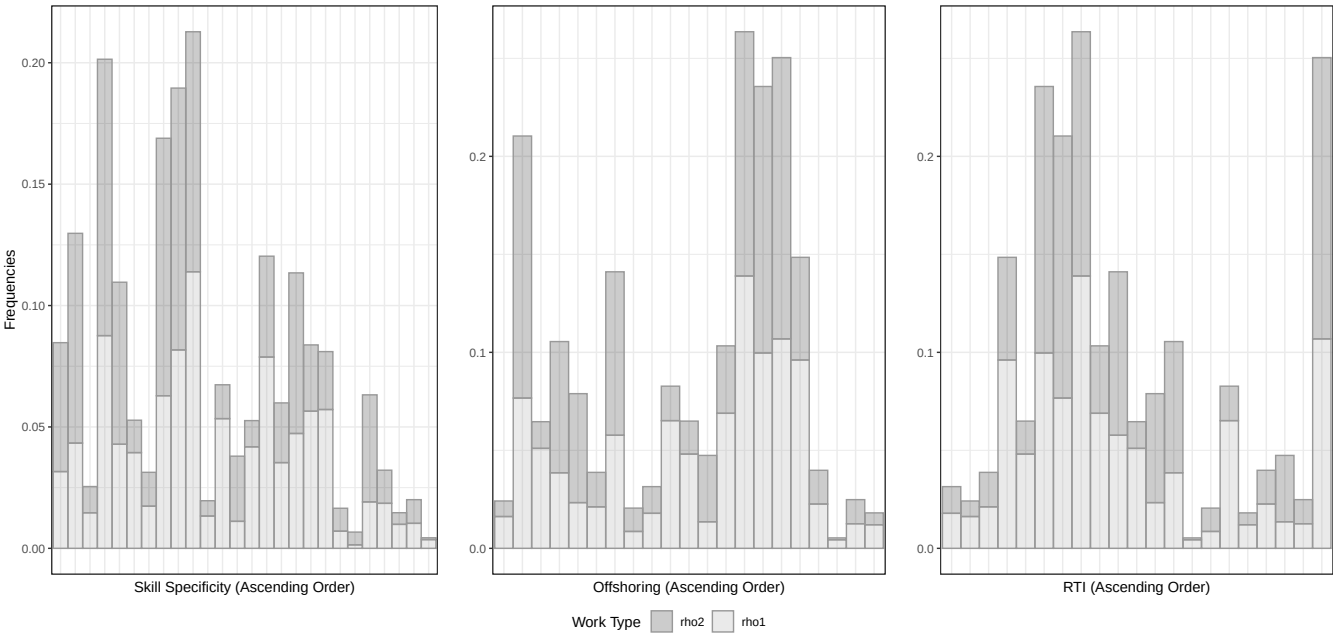
D.2 Risk Type Descriptives and Correlates

FIGURE D.1: DEFINING JOB TENURE



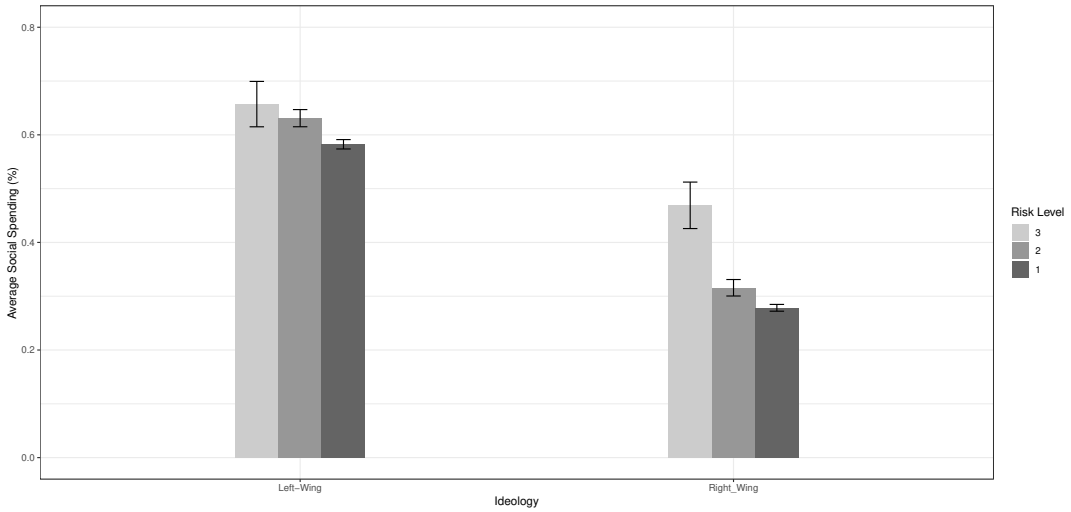
NOTE: This is an illustration covering 4 time periods. Pattern generalization is possible for n time periods. Black circles represent employment. White circles represent unemployment. Horizontal lines represent continuation of work in the same job, while interrupted horizontal lines represent a change of job between two adjacent years. Following OECD data on average job tenure, I base the cut-off for the binary variable on two-year continued work within the same job.

FIGURE D.2: DISTRIBUTION OF ρ_1 AND ρ_2 IN SKILL SPECIFIC, OFFSHORE, RTI



NOTE: The y-axis captures the percentage of secure and precarious workers within each available ISCO-2 occupation. On the x-axis, occupations are ordered based on their skill specificity, offshoring index or RTI, such that on the left of each graphs' x-axis, the occupation with the smallest index is plotted. The figure clearly points to the sizeable variation of employment characteristics within each occupation.

FIGURE D.3: RISK AND IDEOLOGY



NOTE: The estimates, based on a linear probability model, accompanied by their 95% confidence intervals, study the relationship between the individuals' risk and political preferences by ideology.

D.3 Additional Results

FIGURE D.4: UNEMPLOYMENT SPENDING AND SOCIAL SPENDING

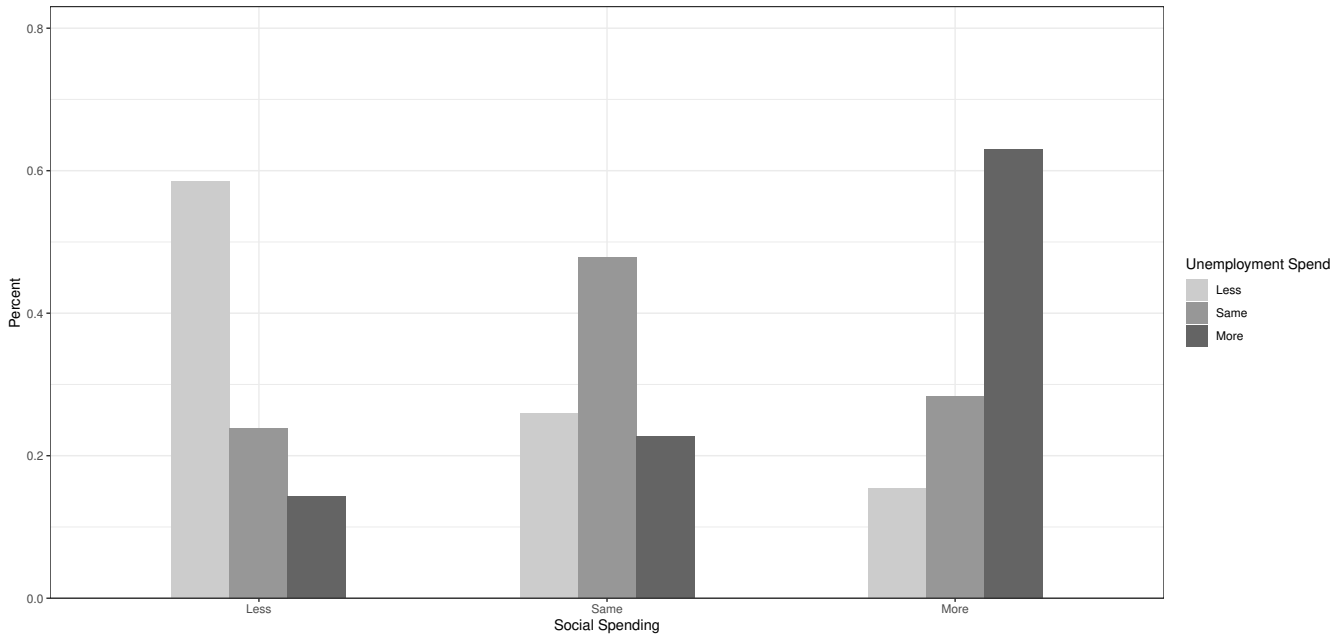
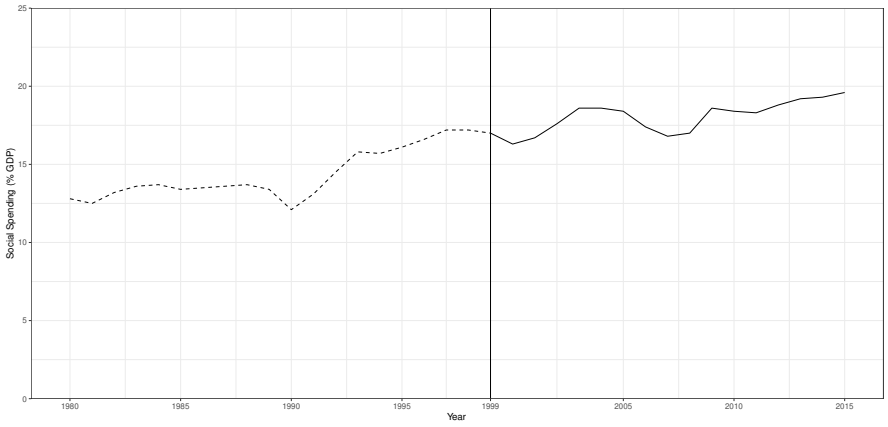


FIGURE D.5: PUBLIC SWISS SOCIAL SPENDING (%GDP)

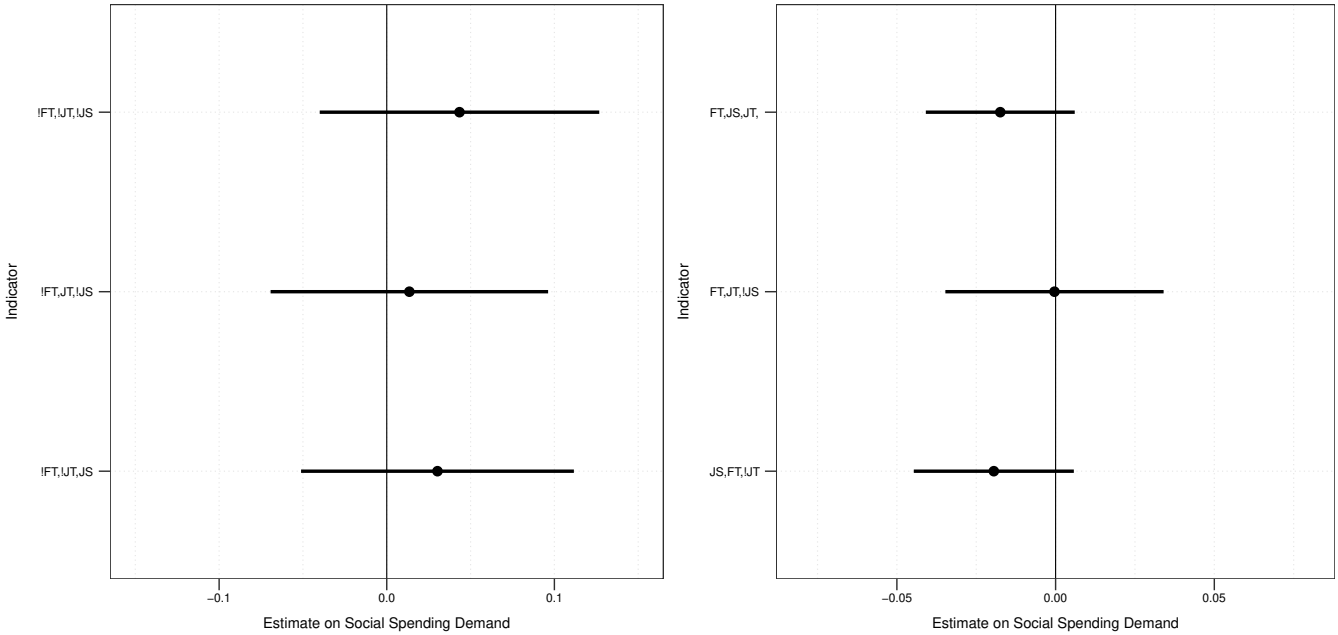


NOTE: The left panel defines ρ_2 as in FIGURE 2 – i.e. based on the combination of objective and subjective indicators – and shows null effects, meaning that there is homogeneity within the group in terms of social spending demand. The right panel defines ρ_3 as explained in FIGURE 2 and also confirms that the group is homogeneous with respect to its redistribution demand.

Individuals' spending demands might reflect overall reductions in spending, especially considering Switzerland's welfare state development (Esping-Andersen, 1990; Armingeon, 2001). FIGURE D.5 shows a stable pattern of aggregate spending, with volatility of less than 8% across the relevant period of observation.

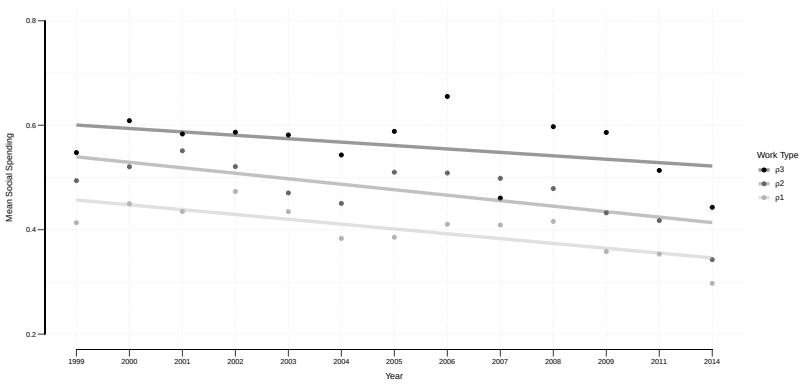
D.4 Robustness Reporting

FIGURE D.6: ROBUSTNESS WITHIN RISK TYPE



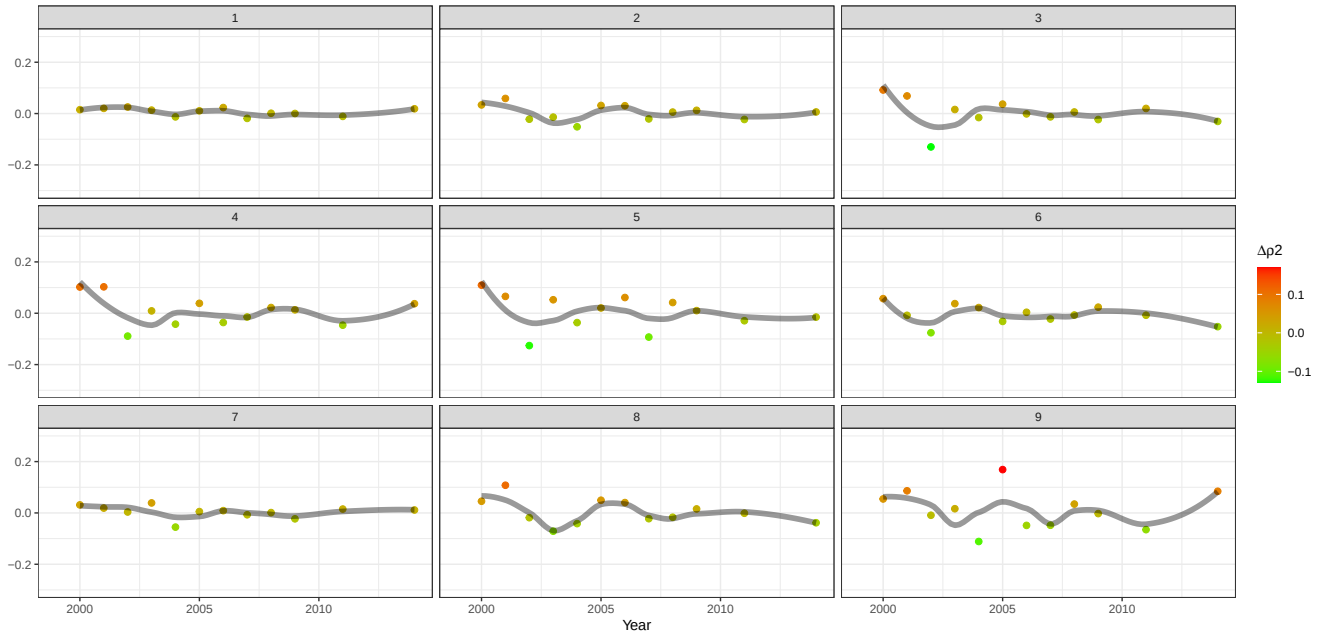
NOTE: The left panel defines ρ_2 as in FIGURE 2 – i.e. based on the combination of objective and subjective indicators – and shows null effects, meaning that there is homogeneity within the group in terms of social spending demand. The right panel defines ρ_3 as explained in FIGURE 2 and also confirms that the group is homogeneous with respect to its redistribution demand.

FIGURE D.7: SPENDING DEMAND BY RISK TYPE OVER TIME



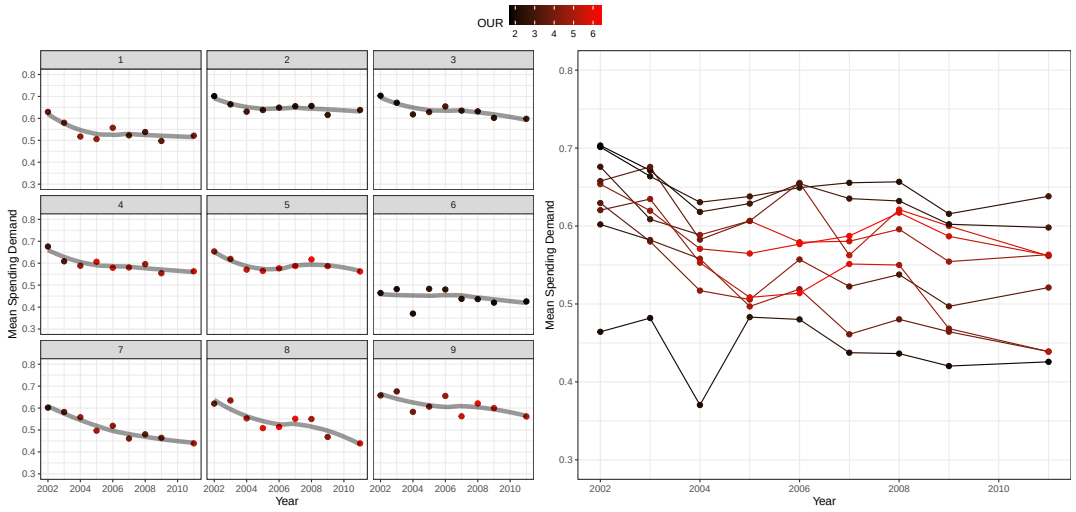
NOTE: The figure presents over-time support for social spending by risk type.

FIGURE D.8: VARIATION IN RISK ρ_2 WITHIN ISCO1 OVER TIME



NOTE: The figure presents the smoothed over-time variance of precarious work by ISCO-1. Darker red colouring implies a higher proportion of precarious work.

FIGURE D.9: SPENDING DEMAND BY OUR OVER TIME



NOTE: The left panel is presenting the smoothed over-time variance of OUR by ISCO-1. Darker colours imply lower unemployment risk. Similar inform is conveyed on the right panel, where each line represents an ISCO-1 group. While OUR does capture variance within each ISCO-1 (left-panel), it becomes clear that occupations are not distinguishable in their risk at each point in time, and, even more that high exposed occupations are not the ones demanding, on average, most social spending (right panel). This is by contrast to results in FIGURE D.7 that shows great support for the proposed measure.

TABLE D.3: PLACEBO AND TIME-VARYING OBSERVABLES

	(1) Placebo Spending	(2) Social Spending	(3) Social Spending	(4) Social Spending	(5) Social Spending	(6) Social Spending
Risk ρ_2	0.00		-0.03**	-0.03**	-0.03*	-0.04**
	(0.01)		(0.02)	(0.02)	(0.02)	(0.02)
Risk ρ_1	0.02	-0.02*	-0.05***	-0.05***	-0.05***	-0.05**
	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Public Sector		0.01				
		(0.01)				
Ideology			0.06***			
			(0.01)			
Union Member				0.00		
				(0.01)		
Controls	✓	✓	✓	✓	✓	✓
Individual FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Canton FE	✓	✓	✓	✓	✓	✓
Observations	38,824	29,498	39,764	39,724	39,764	34,210
R-squared	0.03	0.02	0.02	0.02	0.02	0.02

NOTE: Results based on Model (3) in Table 1. Only those employed are naturally considered in model (2). Local time trends are included in model (5). The sample is restricted to those over 25 years old in model (6). *** p<0.01, ** p<0.05, * p<0.1.

The individuals' prior beliefs proxied by her ideology may instead determine who is sup-

portive of the welfare state, rather than her labour market insecurity – (see, Jæger (2008)). Although identifying on the left side of the left-right scale represents a likely determinant of welfare preferences (model 3), this does not however nullify the significance and thus the validity of the proposed mechanism. Given that the present argument does not posit a mono-causal argument in which labour market risk is the *only* determinant of social spending support, it is therefore compatible with the significance of the individuals' prior political beliefs. While it is nevertheless true that there is a noticeable gap among left-wing and right-wing partisans (Figure D.3), both groups respond to changes in risk, perhaps even more so among right-wingers.

Fixed effects models account for unobserved individual level heterogeneity under the assumption that treatment effects remain constant over time (Imai and Kim, 2020). Recent work reveals potential challenges to such estimation strategies, and the issues raised are most severe when all or a large share of individuals become treated at some point. The presence of a large number of never-treated workers in my sample should largely limit any potential inferential problems. More importantly, informed by the theoretical discussion in the main text about asymmetric labor market shocks and their role in potentially accentuating regional differences in unemployment, I include in model (5) local time trends that account for exogenous labor market shocks at the level of canton. The effects remain informative about the impact of changes in labor market risk on political preferences.

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