The Democratic State and Class Politics: Who Benefits?

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Abstract

Rising inequality has raised concerns that democratic governments are no longer responding to majority demands, an argument we label the Subversion of Democracy Model (SDM). It comes in two varieties. One uses public opinion data to show that policies are strongly biased towards to the preferences of the rich; another uses macro-level data to show that governments are not responding to rising inequality. This paper critically reassesses the SDM. We point to potential biases and propose solutions that suggest a different interpretation of the data, which we label the Representative Democracy Model (RDM). We test the SDM against the RDM on both public opinion data and on a new dataset on fiscal policy and find that middle-class power has remained remarkably strong over time, even as inequality has risen. The rich have little influence on redistributive policies, and the democratic state appears not to be increasingly constrained by global capital.

1. Introduction

A new highly-cited literature on redistribution and economic policy-making paints a gloomy picture of contemporary democracy. It comes in two varieties. One uses public opinion data to show that policies are strongly biased towards the preferences of the rich (e.g., Gilens 2005, 2012; Gilens and Page 2014; Bartels 2008, 2017); another uses case studies as well as macro-level data on inequality, partisanship, and redistribution to show that democratic governments are no longer responding to rising inequality (e.g., Hacker and Pierson 2010; Streeck 2011, 2016; Piketty 2014). Both challenge standard models of redistribution in democracies, which typically assumes a pivotal role for the middle class and strong fiscal states. Such primacy is implied by models of democratic politics such as the responsible party government model (Schattschneider 1942; Downs 1957), by seminal work on the development of the welfare state (e.g., Baldwin 1990; Korpi and Palme 1998; Rothstein 1998), and by political economy models of redistribution (e.g., Meltzer and Richard 1982; Iversen and Soskice 2006).

This paper is a critical reassessment of the macro evidence and seeks to determine what classes gain and loses in government redistribution, and how such "revealed power" has changed over time. To do so we derive distributive interests of classes axiomatically and then estimate the interest-realization of particular classes against these benchmarks. This allows a multi-dimensional view of distributive politics, as opposed to relying on broad measures of "redistribution" or "social spending", which are common in the literature but mask how particular groups fare. We base our estimates on a new dataset on the distributive effects of fiscal policy by income class.

Contrary to much recent scholarship, but consistent with an older literature, we find that government policies and outcomes largely reflect the economic interests of the middle class, and we show that middle-class power over fiscal policies has remained remarkably stable over time, even though market inequality has risen, and despite a large recent literature on the "hollowing-out of the middle". The rich are large net contributors to the welfare state today as they have always been, and it does not appear that the democratic state is increasingly constrained by global capital. The rich *are* getting richer but considered across advanced democracies they have not been able to translate their economic gains into a renegotiation of the fiscal state as measured by net transfers and consumption of government services as a share of high-end income. Although there is some cross-national variance, the middle class has kept up with the advancement of the economy as a whole much better than is widely assumed. This is especially true when the political left is strong.

These conclusions appear to also apply to the bottom end of the earned-income distribution. However, transfers to the unemployed and underemployed, "outsiders", have eroded over time, possibly reflecting more segmented labor markets and increased bifurcation of risk (Rueda 2005, 2008; Alt and Iversen 2017). Lack of mobility undermines solidarity with outsiders among the middle classes.

2. A new pessimism about democracy

In recent decades a widespread and deep pessimism about advanced democracy, and whether it serves the needs of ordinary people, has taken hold. It is not hard to find reasons to be concerned: rightwing populism, rising inequality, declining growth, and a sense that the system is increasingly only working for the rich and powerful. There is worrying evidence to back up such

pessimism. Work by Bartels (2008), Gilens (2005, 2012), and Gilens and Page (2014) on the US, as well as recent work testing and extending their approach to other advanced democracies (e.g., Bartels 2017; Elsässer, Hense, and Schäfer 2018; Peters and Ensink 2015) find that the affluent dominate democratic politics to the point where other income classes do not matter. This is of obvious normative concern, and it also challenges standard models of democracy, which accords a strong role to the middle class.

Yet, the interpretation of the public opinion evidence is contested. Subgroup preferences are highly correlated over time (see Page and Shapiro 1992; Soroka and Wlezien 2008), and the middle class emerges as far more politically influential when preferred levels of spending are used instead of preferred changes in spending (Elkjaer and Iversen 2019).

Public opinion data also have inherent methodological limitations. Broad questions about spending and redistribution do not capture the targeting of taxes and spending to particular classes, and we only have indirect measures of voters' preferred spending levels. Nor do public opinion data capture the role of political parties. Voters may be generally uninformed about politics, which shows up in noisy survey responses and ill-considered policy positions, but they may know enough to vote for parties that are broadly representative of their interests using ideological cues (as originally argued by Downs 1957) or on retrospective economic evaluations (Fiorina 19??; Munger and Hinich 1994; Kitschelt 2000). Political parties may thus act as "trustees" for their constituencies and pursue their long-term interests in government (what Mansbridge 2003 refers to as promissory representation), even if the policy preferences of the public are often fickle and ill-conceived.

Even if governments respond to middle-class electorates, however, these responses may be increasingly constrained and inadequate. New work in comparative political economy

highlights macro-trends that appear to show that governments do not respond to rising inequality – a puzzle that is often referred to as the "Robin Hood Paradox" (following Lindert 2004). In addition, there is evidence that partisanship matters less for government policies than in the past (Huber and Stephens 2001; Pontusson). Such "convergence" could reflect that governments are increasingly hamstrung by footloose capital, as argued by Streeck (2011, 2016), Piketty (2014), and Rodrik (1997, 2018). Still another possibility is that big business and the rich exert veto power behind the scenes, outside the light of public discourse and electoral competition (Hacker and Pierson 2010).

Yet, there are theoretical reasons to be skeptical of these arguments. Advanced capitalism is based on investment in skill-intensive production, and such production is rooted in local skill clusters (concentrated in the successful cities) that are complemented by dense co-located social networks, which are very hard to uproot and move elsewhere (Iversen and Soskice 2019). In this perspective trade and foreign investment reinforce local specialization and raise the dependence of multinational capital on highly location co-specific assets, most importantly highly-skilled labor. Intense market competition, especially in globalized markets, also makes it hard for business to coordinate politically. From this perspective globalization does not undermine the responsiveness of democratic governments. If we see convergence it may instead reflect that parties are less and less tied to particular social groups and pulled to the center on economic policies by a large constituency of swing voters (Kitschelt).

To critically assess the evidence, we adopt an axiomatic approach in which class policy preferences ("interests") are derived deductively and then compared to actual tax-and-spend policies over time. Who *are* the winners and losers from government policies, and how do policies change over time? This approach does not presuppose any particular channel of

influence, or whether voters are informed or not, or whether governments have high capacity or not. Instead, it examines who actually gain and lose from government policies. We complement this analysis with a test of particular causal arguments by examining whether globalization, partisanship and other forces affect distributive outcomes.

3. Redistribution across classes

3.1. Class Preferences

We use a simple three-class setup where each class is defined as a third of the distribution of pre-fisc income: *L* (bottom third), *M* (middle third), and *H* (top third). The goal of each class is to maximize net income.[1] In the case of *M* this means that it wants to unilaterally set taxes and transfers to maximize its own net income:

$$\text{(1)} \qquad \text{Max} \quad y_M^{net} = y_M + t \cdot (y_H - \tfrac{1}{2} \cdot \alpha \cdot t \cdot y_H)$$

where *t* is the tax rate and α is a measure of the efficiency loss from taxation – including the possible loss of income and revenue because of capital flight.[2] Consistent with the notion of class self-interest, we assume that *M* will not want to tax itself.[3] We also rule out the possibility of

[1] We consider spending on public goods and insurance below.

[2] A broader interpretation of α would include "cultural" understandings of acceptable taxation rates. Insofar that this is the case we assume that culture is constant, and the effect will then be absorbed by the fixed effects in the empirical model.

[3] This however implies a sharp discontinuity between middle and high incomes, which introduces a discontinuous marginal tax rate right around the threshold. For this reason, a more proportional tax rate may be preferable, with income-graduated transfers. The model abstracts

regressive transfers so that *M* cannot tax *L* and transfer to itself. By a similar logic, *H* cannot tax *M* and use the proceeds for itself. The lowest class *L*, however, is unconstrained to tax both *M* and *H*, if it has the political power to do so. Non-regressivity is a standard assumption in all models of redistribution in advanced democracies, and there is no country-year observation in our sample where it does not hold empirically.[4] The specific form of the utility function is for mathematical convenience.

The tax rate on *H* that maximizes *M*'s net income is:

$$t_M^{H*} = \frac{1}{\alpha}.$$

We see that the optimal tax rate depends only on the efficiency losses of taxation (broadly construed), not on the income of either *M* or *H*. Again, *M* does not want to tax itself, so

$$t_M^{M*} = 0.$$

At *M*'s optimal tax rate, *M*'s net income is:

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from this complication, but the distributive logic would not change with a more proportional tax rate.

[4] A simple justification for this assumption builds on Acemoglu and Robinson's (2006) model of democracy. For democracy to be a credible commitment to redistribution, net transfers under democracy cannot be regressive. Stable democracy requires such a credible commitment, and since advanced democracies are stable, it stands to reason that the assumption is satisfied (see Iversen and Soskice 2006 for a further discussion). But again, for our purposes it suffices that there are no instances of regressive net transfers in our data.

$$y_M^{net*} = y_M + T_M = y_M + \frac{1}{\alpha} \cdot (y_H - \tfrac{1}{2} \cdot y_H) = y_M + \tfrac{1}{2} \cdot \frac{y_H}{\alpha} \ .$$

where T_M is the net transfer to *M*. Correspondingly, *H*'s net income is:

$$y_H^{net} = y_H + T_H = y_H - t \cdot (y_H + \tfrac{1}{2} \cdot \alpha \cdot t \cdot y_H) = y_H - \tfrac{3}{2} \cdot \frac{y_H}{\alpha} \ .$$

Note that *H*'s loss is greater than *M*'s gain because of the efficiency cost of taxation, which reduces *H*'s income without raising *M*'s income by the same amount.

We can conveniently express the (observed) transfer to *M* as a proportion of *H*'s net income:

(2) $$\tau_M^{H*} = \frac{T_M}{y_H^{net}} = \frac{\tfrac{1}{2} \cdot \frac{y_H}{\alpha}}{y_H - \tfrac{3}{2} \cdot \frac{y_H}{\alpha}} = \frac{1}{2\alpha - 3} \ .$$

We refer to this as the *rate of transfer*, τ_M^{H*}, and just like the tax rate it is not dependent on the income of either *M* or *H*. [5] If the middle class is politically pivotal – loosely speaking a median voter model – this is therefore the expected transfer rate adopted by governments. We cannot observe this rate directly since we do not know α, but we can infer that τ_M^H will be orthogonal to (independent of) relative income:

[5] The reason we express transfers as a proportion of net income instead of as a proportion of y_H is that we cannot observe gross income in a hypothetical world without taxes. We can however observe the net income of *H*, just as we can observe the net transfer to *M* by comparing the change in the income of the middle from before to after taxes and transfers. This is convenient since the effective tax rate of *H* or *M* is usually not known.

$\tau_M^H(M) \perp y_H^{'} / y_M^{'}$,

where $y_H^{'} / y_M^{'}$ is the observed pre-fisc income of *H* relative to *M*.

This implication of a middle-class pivot model is important because it means that top-end inequality does not matter, in stark contrast to arguments that underscore the political power of the rich. If "money talks" the transfer rate, τ_M^H , should respond negatively to the income of *H* relative to *M*:

$\tau_M^H = f(y_H^{'} / \bar{y}_M^{'})$.

If money begets influence and more money begets more influence, rising top-end inequality should reduce taxation and transfers from the rich to the middle – a conjecture that is consistent with much contemporary commentary as well as celebrated academic scholarship (Hacker and Pierson 2010; Page, Bartels, and Seawright 2013).

A related interpretation focuses on the structural power of business and implies that greater capital mobility will raise the cost of taxation, α , causing the transfer rate to fall as mobility goes up (see equation 2). Hence,

$\tau_M^H = g(\text{capital } \bar{\text{mobility}})$.

In the embedded liberalism interpretation, where the state is strong and responsive to educated middle classes, neither rising inequality nor growing capital mobility should affect the transfer rate to *M*.

3.2. The Role of Partisanship

We can generalize the strong-state argument by defining the preferred rate of *L* and allow for government coalitions between any pair of classes.[6] If *M* cannot govern alone, the outcome will reflect the outcome of a coalition bargain, which is a policy vector of taxes and transfers to and from each class. We show the implications of different coalitions in Appendix A, but the results confirm the intuition that an *LM* coalition will benefit *L* more, and hurt *H* more, than an *MH* coalition. Depending on bargaining power within the coalition, which may be captured by the share of seats or votes, *M* can ordinarily ensure that it will emerge as a net beneficiary, but this is of course an empirical matter. Again, this conclusion only holds if the power of democratic governments is not subverted by money or by the structural power of capital.

An interesting question is whether the middle class does better in center-left or in center-right governments. Iversen and Soskice (2006) imply that *M* does better in center-left than in center-right governments under PR, and better in center-right than in center-left governments under majoritarian rules. In the former case this is because a center-left coalition can more effectively tax *H* and divide the proceeds than a center-right coalition can tax *L*. In a majoritarian two-party system, the problem for *M* is that a center-left party that deviates to the left may cut benefits for *M* and raise taxes at the same time, while a center-right government that deviates to the left will (partially) offset benefit cuts with tax cuts. Empirically we cannot distinguish the latter cases since partisanship is coded at the party-level and does not change over the electoral period. This

[6] In Web Appendix A we show that in a model of pure redistribution, where public goods and insurance do not matter, *H* wants no taxation while *L* wants to tax both *M* and *H* at their maximum rates and transfer the proceeds to *L*. This corresponds to the preference ordering assumed in Figure 1 and shown in Figure 2 above.

means that the empirical evidence on how well *M* does under C-L versus C-R governments comes from PR systems. If so, the effect of C-L governments on *M*'s transfer rate should be positive.

3.3. The Effects of Insurance and Services

We have so far focused exclusively on redistribution of income, but many models of the welfare state emphasize the role of insurance and public goods provision (Baldwin 1990; Moene and Wallerstein 2001; Iversen and Soskice 2001; Rehm 2011). How do we incorporate these aspects of the welfare state into the analysis? For public goods – health, education, care for the old and young, housing, and other in-kind services – the answer is simple in principle: include the net (after tax) value of these services in the disposable income of each class. Below we construct a new dataset that does this based on recent estimates from the OECD and Eurostat.

In the case of insurance, we can indirectly account for its value by assuming that there is a risk of downward mobility, so that *M* benefits in some measure from transfers to *L*. The same is true of *H,* although those in the high-income group tend to be shielded from risks (risk of unemployment, for example, is strongly negatively related to income; see Rehm 2011 for evidence). With a standard concave utility function (which implies risk-aversion), the value to those in the "good" state from transfers to those in the "bad" state is proportional to the risk of falling into the bad state, measured over some politically relevant time-horizon.[7] We can capture

[7] Formally, if we assume a log utility function and that those in the good state make targeted transfers to those in the bad, the utility function to be maximized is:

this logic by weighting the transfer rate for *M* by the transfer rate for *L*, where the risk of falling into the bad state determines the weight. In the empirical analysis we proxy this risk by the unemployment rate plus the rate of involuntary part-time employment, but we also show that our conclusions are robust to a wide range of weights.

3.4. Estimating Equation

We can put these predictions together in a simple encompassing regression model, using the transfer rate to *M* (including or not services and insurance) as the dependent variable:

$$\tau^{H}_{M,i,t} = a_i + \beta_1 \cdot \left(\frac{y'_H}{y'_M} \right)_{i,t} + \beta_2 \cdot \left(\frac{y'_M}{y'_L} \right)_{i,t} + \beta_3 \cdot Mobility_{i,t} + \beta_4 \cdot Right_{i,t} + \beta_5 \cdot Left_{i,t} + \varepsilon_{i,t},$$

where the first two terms measure the direct effects of relative income on the transfer share to *M*; *Mobility* refers to widely used measures of the internationalization of capital; and *Right* and *Left* capture the influence of right and left parties in government (measured by cabinet shares). The Relative income of *M* to *L* is included to test whether the power of income (also) matters at the lower half.

3.5. Data

$$U = \ln[(1-t)\cdot y]\cdot(1-p) + \ln\left(\frac{t\cdot\bar{y}}{(1-\Theta)}\right)\cdot p,$$

where *t* is the tax rate, *y* is income in the good state, $\bar{y}$ is mean income, Θ is the share of the population in the good state, and *p* is the risk of falling into the bad state. The first bracketed term is income in the good state; the second in the bad. The tax rate that maximizes this function is simply *p*. If *M* is in the good state, *M* derives utility of the transfer to *L*, weighted by *p*.

We use a new dataset developed for this project that relies on data from the Luxembourg Income Study (LIS), supplemented by OECD and Eurostat data on spending on services and transfers, taxation of property, capital, and consumption. LIS provides an impressive database based on household income data stretching as far back as the 1970s across a broad range of countries. We restrict our sample to 18 advanced democracies[8] for which data are recorded at more than one point in time between 1974-2016 (although we have robust results for 21), and in accordance with standard practice we confine the sample of households to those that have positive market and disposable incomes. Market income inequality and transfers are greatly exaggerated when including non-working households, the far majority of which are retirees. This is particularly true of countries with generous public pension benefits, where many do not save for their old age and will appear as "poor" as a consequence (Huber and Stephens 2001). Another sizable group is students, who we would not ordinarily think of as poor because they have high expected future income.

[8] The 18 countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Greece, Iceland, Ireland, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, and the United States. Italy and France and some country-years are omitted because data on pre-fisc income are not recorded. South Korea is omitted because it has no information about employment status; Japan is omitted because there is only one observation. We also omitted Israel because of lack of comparable data on several independent variables. All the reported results are substantively identical if Italy, France and Japan are included (the latter for regressions without FEs).

We measure market income as factor income (labor cash income + capital income) plus private transfers, and disposable income as total cash income minus income taxes and social contributions. Following LIS standards, market and disposable incomes are equivalized by the square root of the number of household members, and they are bottom- and top-coded at one percent of the mean equivalized income and ten times the median unequivalized income. We use market income to calculate inequality indices and to divide households into deciles.

The LIS database accounts for cash transfers but not for in-kind services. To include the value of services, we rely on estimates of the combined value of education, health care, social housing, elderly care, and early childhood education and care. The estimates are from the OECD/EU database on the distributional impact of in-kind services and are, to the best of our knowledge, the only available data (OECD 2011, ch. 8). We also rely on an allocation key from this database to distribute the gross value of services to each income decile's disposable cash income.[9] The exact procedure we used is explained in Appendix B.

Before estimating the transfer rate, we allocate the costs of transfers and services to the income deciles' disposable income. Transfers and services are financed by tax revenues that mainly come from taxation of income, capital, property, and consumption. The LIS data capture the income tax burden of each income decile. Business taxes are treated as neutral with respect to income classes and simply added to government revenues. The rest is financed by (i) property and wealth taxes, which are paid almost exclusively by those in the top few percentiles and therefore added to the tax burden of the top income decile, and (ii) consumption taxes, which we

[9] For more information about these data see Verbist, Förster, and Vaalavuo (2012). We are grateful to these authors for providing us with the estimates.

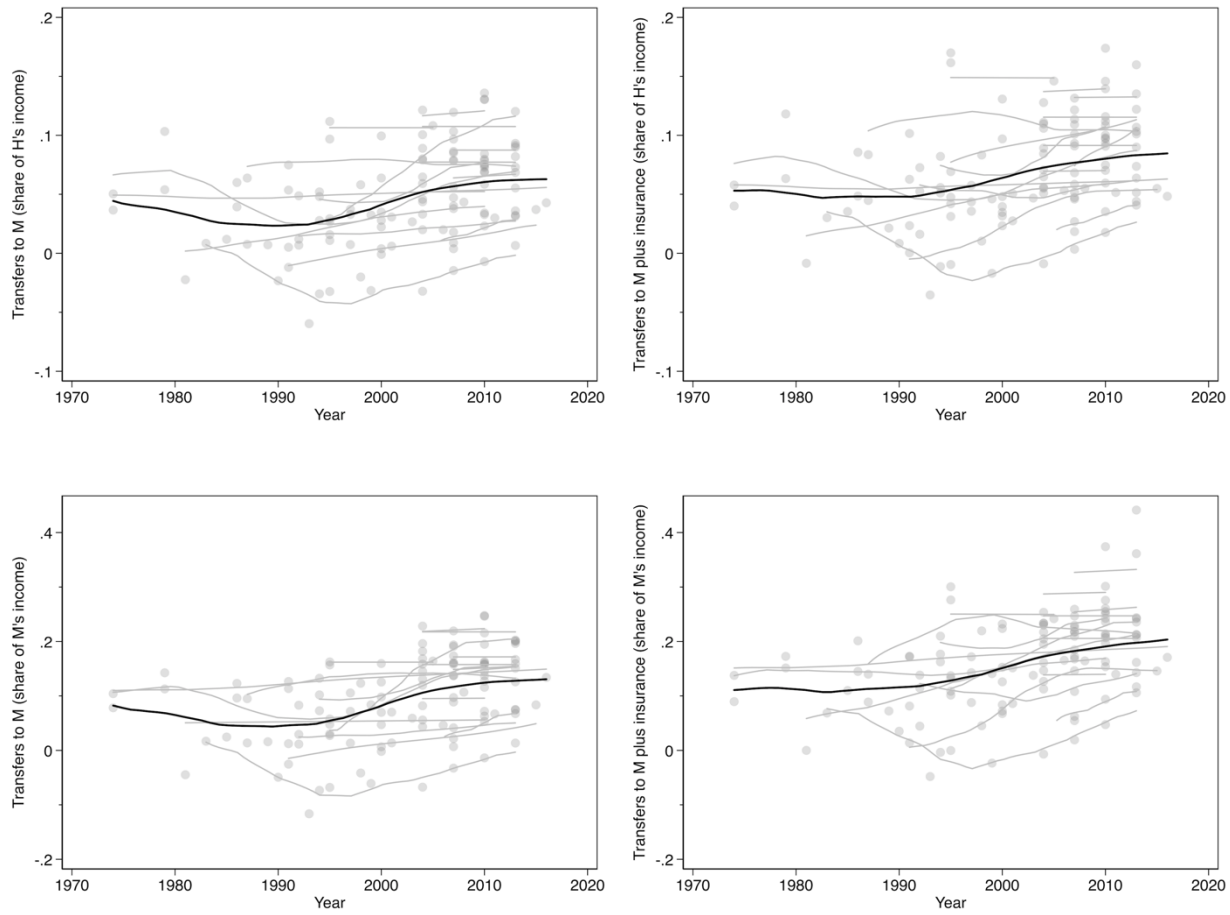
assume are paid in proportion to each income decile's consumption share. Further details are provided in Appendix B.

The sum of disposable cash income and the net value of in-kind services is called the net "extended" income of each income decile. Subtracting market income from net extended income yields net transfers received. Following the formal logic set out above, the rate of transfers to *M*, our main dependent variable, is net transfers received by the 5th income decile divided by the net extended income of the top income decile. To account for the value of insurance we add (in some models) the transfer rate to *L* weighted by the sum of the unemployment and involuntary part-time employment rates, as explained above (the mean weight is .1).[10]

Figure 1 presents the spatial and temporal variation in net transfers to *M* as a share of the net extended income of *H* (top panel) and *M* (bottom panel) with and without accounting for insurance (left and right panels). The grey lines are country-specific local polynomial smoothers and the black line describes the entire sample of countries and years.

Figure 1. Net Transfers to *M* as a Share of the Net Extended Income of *H* and *M*

[10] Nine values of involuntary part-time employment were imputed in Australia, the UK, and the US based on trends of countries belonging to the liberal welfare state cluster.



Note: N=110.

The panels illustrate that there is considerable spatial and temporal variation in the rate of transfers to *M*. The highest average values are observed in Ireland, Luxembourg, and Sweden and the lowest in the Netherlands and Germany. The average transfer rate to *M* is .05, ranging from -.06 in the Netherlands in 1993 to .14 in Ireland in 2010 (top left panel). The negative values imply that the 5th income decile is a net contributor to spending in a few country-years. That is the case in Germany in the 1990s, in Netherlands in the 1990s and 2000s, and in Australia in 1981.

Accounting for insurance increases the rate of transfers to *M* on average by .022 and makes the 5th income decile a net beneficiary of spending in Germany already in the mid-1990s and in the Netherlands in the mid-2000s (top right panel). However, we may significantly underestimate the value of insurance. The calculation is based on the twin assumptions that people are mildly risk-averse (RRA=1), and that the risk of falling into the *L* group is equal to the rate of unemployment and underemployment. If people are more risk-averse (as empirical estimates suggest), and if there are risks of falling into the *L* group for other reasons (such as illness or divorce), the value of insurance will increase. On the other hand, the value of unemployment insurance may have declined over time as a result unemployment being increasingly concentrated among semi-skilled workers. More accurately accounting for the value of insurance is an important task for future research. Our substantive results are robust to increasing the weight of *L*'s transfer rate all the way to 50 percent (models are reported in Appendix C), but it is conceivable that it has declined in importance over time.

The lower panels show that transfers and services account for a substantial part of *M*'s extended income. On average 9.3 percent of *M*'s extended income comes from transfers and services, topping at 25 percent in Ireland in 2010. Adding the value of insurance increases the average to 16 percent with a maximum of 44.1 percent in Spain in 2013.

The trends in Figure 1 show that during the last forty years, a period of sharply rising inequality, the rate of transfers to *M* has been remarkably stable if not slightly increasing. This suggests that *M*'s transfer rate is orthogonal to the relative income of *H* to *M*. That serves as a first indication that increased inequality has not weakened the power of the middle class to tax and redistribute income from the rich.

We test this descriptive result in Table 1, where we regress the rate of transfers to *M* on market income inequality, capital mobility, and partisanship of the government. Capital mobility is measured by Chinn and Ito's (2006, 2008) capital account openness variable, and we also include trade openness as measure of globalization (it is the sum of imports and exports as a share of GDP).[11] Partisanship of the government is a 20-year moving average of the share of government-controlled parliamentary seats held by right parties minus the share of government-controlled seats held by left parties (based on Armingeon et al. 2018).[12]

Table 1. Determinants of Net Transfers to *M* as a Percentage of *H*'s Net Extended Income

	(1)	(2)	(3)	(4)
	Transfer rate *M* (%)		Transfer rate *M* incl.	

[11] We have imputed five values on Chinn and Ito's capital account openness variable. One for Switzerland in 1992 and four values for Luxembourg between 2004-2013. In all cases, we have imputed values equal to 1. The mean for Switzerland is 1 with a standard deviation of 0 and the mean of the EU countries included in our models between 2004-2013 is also 1 with a standard deviation of 0. Two values of trade openness have been linearly extrapolated: Germany 2014 → 2015 and the United States 2014→2016.

[12] The Comparative Political Data Set (CPDS) (Armingeon et al. 2018) contains data going back to 1960. That means that the average partisanship of the government in the UK and US in 1974 are only 15-year averages. Trade openness and control variables are also from the CPDS.

			insurance (%)	
P90/P50	1.24	2.43	1.39	3.44
	(3.56)	(4.40)	(3.41)	(3.88)
P50/P10	1.84*	1.34*	3.10*	2.67*
	(0.63)	(0.62)	(0.54)	(0.67)
Trade openness (ln)	1.91	-0.07	1.05	-0.11
	(2.03)	(3.00)	(1.88)	(2.74)
Capital market openness	-0.72	1.11	-1.38	0.37
	(1.34)	(2.01)	(1.31)	(2.65)
Government partisanship (right)	-4.61*	-3.68*	-4.58*	-3.86*
	(1.17)	(0.95)	(1.25)	(1.17)
Labor force participation	-0.21*	-0.14	-0.33*	-0.25*
	(0.08)	(0.10)	(0.07)	(0.10)
Trend		-0.29		-0.27
		(0.19)		(0.20)
$Trend^2$		0.01		0.01
		(0.00)		(0.00)
Country FE	✓	✓	✓	✓
Constant	4.13	7.19	15.15+	12.18
	(8.27)	(19.07)	(7.98)	(17.77)
R-squared	0.35	0.41	0.44	0.47
N	110	110	110	110
N of countries	18	18	18	18

Note: * p<0.05, + p<0.1. Standard errors clustered by country in parentheses.

The results of Table 1 suggest that there is *no* association between top-end market income inequality and the rate of transfers to the middle class. In fact, the coefficient is positive, although not significant. The coefficient is also positive and significant for bottom-end inequality (P50/P10 ratio). It is tempting to interpret this result from a Lupu-Pontusson (2011) perspective

to imply that economic "distance" to the poor causes more resources to be concentrated on the middle. Yet, we will see below that the D5/D1 ratio is also positively related to *L*'s transfer rate (the skew has no effect). It appears that a middle class with a higher relative position in the income distribution has more political clout to redistribute to itself, which also brings *L* up in the process. Perhaps a higher P50/P10 ratio signals a more educated and politically efficacious middle class, but this is speculation -- we do not know the mechanisms behind this effect. It stands up to a variety of controls, so it is not the result of any obvious omitted variable bias.

Capital mobility, whether measured by capital account openness or trade openness, has no impact on the rate of transfers to the middle class. The most obvious interpretation is that trade and FDI do not undermine, and may reinforce, specialized local knowledge clusters, which are not themselves mobile and therefore leave the state in a position to tax. Nothing in our data suggests that globalization has undermined the position of the middle class.

Instead, distributive politics seems to depend heavily on partisanship. In model (1) the coefficient for partisanship of the government suggests that stronger left party participation in government is associated with higher rates of transfers to the middle class, consistent with the theoretical expectation. And the size of the effect is substantial. A one standard deviation increase in left (right) partisanship of the government is associated with a 1.7 percentage points increase (decrease) in the rate of transfers to *M*, equivalent to .43 standard deviations.

In model (2) we add a time trend to the specification to ensure that our results are not driven by temporal trends. The results are robust to this alternative specification. The time-trend variables themselves are also not indicating any significant decline in transfer rates over time, as would be expected if governments were increasingly limited by capital mobility (in case these are not fully captured by the Chinn and Ito or the trade measures) or by new high-income veto players.

In models (3) and (4), we include insurance as part of the transfer rate to *M*. Overall, the results are very similar to those of models (1) and (2). Top-end inequality and capital mobility are not related to the transfer rate, while bottom-end inequality is. The effect size of partisanship remains stable. All in all, accounting for insurance increases the transfer rate to the middle class but the associations between the transfer rate, inequality, capital mobility, and government partisanship remain stable.

In Appendix C, we test the robustness of these results using a series of additional model specifications. In all specifications we find that top-end inequality and capital mobility are irrelevant to the transfer rate to *M*, while left (right) partisanship increases (reduces) it. These results indicate that the power of the middle class is very stable over time, despite the sharp rise in top-end inequality. The rich are becoming richer, but this wealth is not translated into greater influence over fiscal policy; the political power of capital and the rich over redistribution is only as great as their electoral strength (via right parties).

Table 2 shows the findings for the rate of transfers to *L* and to *H*, defined as the bottom and top deciles, respectively. For *L* the results largely mirror those for *M*: there is no effects of top end inequality, of capital openness, or of trade, whereas right partisanship reduces transfers, as expected. A one standard deviation increase in right (left) partisanship decreases (increases) the transfer rate to *L* by 2.8 percentage points, or .35 standard deviations. Again, we find that transfers to *L* are associated with a higher P50/P10 ratio, which is robust to the inclusion of a variety of controls. Again, it appears that *M* gains influence as it moves up in the income distribution, and that *L* benefits from the result rise in transfers and public goods. But this is a conjecture in need of confirmation.

The results for *H* show that right partisanship improves top-end net income by reducing transfers away from *H* (although the effect is only marginally significant). So, apparently, does trade, which hints of a globalization effect. Correspondingly, rising trade is marginally related to lower bottom-end transfers. but the effect is small and insignificant, and it does not hold for *M*. Capital market openness is never significant. Perhaps most surprisingly, top end inequality is associated with a rise in transfers from *H* to other groups (a negative sign means that *H* retains less of its income). The result is only borderline significant, but there is clearly no support in our data for the notion that the rich have become politically more powerful as their market income has risen.

Table 2. Determinants of Net Transfers to *L* and *H*

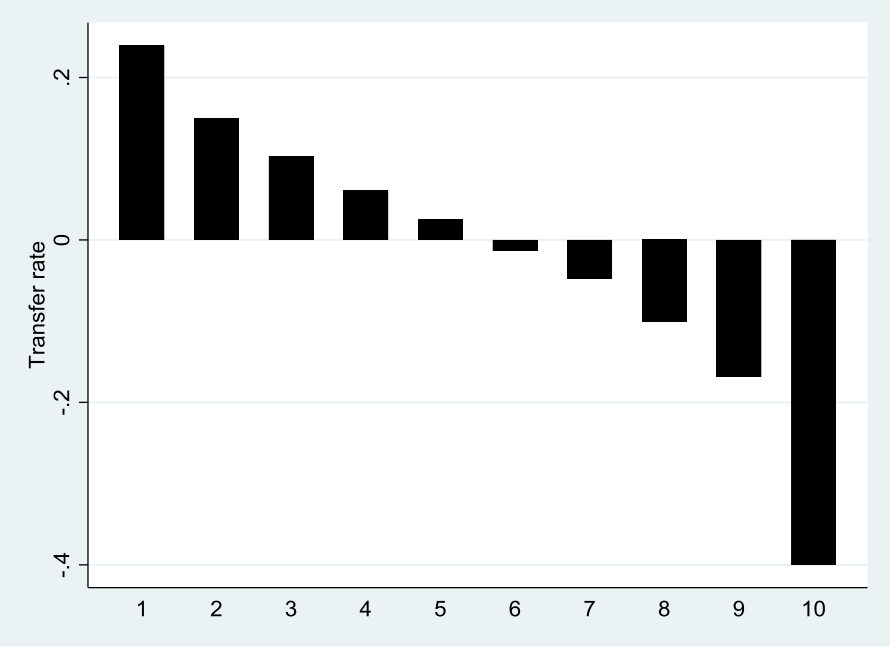
	(1)	(2)	(3)	(4)
	Transfer rate L (%)		Transfer rate H (%)	
P90/P50	-6.30	-6.30	-22.94*	-20.57
	(5.97)	(5.97)	(10.21)	(13.32)
P50/P10	5.01*	5.01*	-4.03	-3.64
	(0.77)	(0.77)	(2.33)	(2.65)
Trade openness (ln)	-5.08	-5.08	16.71*	20.24*
	(3.48)	(3.48)	(6.43)	(7.56)
Capital market openness	-5.89	-5.89	15.45	14.42
	(3.83)	(3.83)	(11.74)	(16.15)
Government partisanship (right)	-7.49*	-7.49*	13.76+	12.66
	(2.28)	(2.28)	(7.76)	(7.29)
Labor force participation	-0.15	-0.15	0.48	0.50
	(0.10)	(0.10)	(0.35)	(0.51)

trend				0.18
				(0.75)
$Trend^2$				-0.01
				(0.01)
Country FE	✓	✓	✓	✓
Constant	60.04*	60.04*	-101.24*	-122.38+
	(9.86)	(9.86)	(27.65)	(61.40)
R-squared	0.37	0.37	0.20	0.21
N	110	110	110	110
Number of countries	18	18	18	18

Note: * p<0.05, + p<0.1. Robust standard errors in parentheses

Figure 2 shows the net transfer rates for all ten income deciles (i.e., net transfers for each decile as a percentage of the net income of *H*). We only show period averages because the rates are very stable, with only a slight increase in the transfer from the top decile to other groups. What stands out is the overall redistributive effect of the tax and spending system (including transfers and public services), and the extent to which those in the top decile are net contributors. One might infer that the bottom end are the greatest beneficiaries, but it must again be kept in mind that if public spending serves insurance purposes bottom end transfers are also benefits for the middle. The overall picture that emerges is consistent with standard arguments about the redistributive effects of democracy, and there is no hint that the rich can skirt contributing to the system or that they are better able to do so today than 50 years ago. Of course, there may be differences in this respect between the rich and the very rich, which our top-coded data are not well-suited to uncover.

Figure 2. Net Transfers by Income Decile



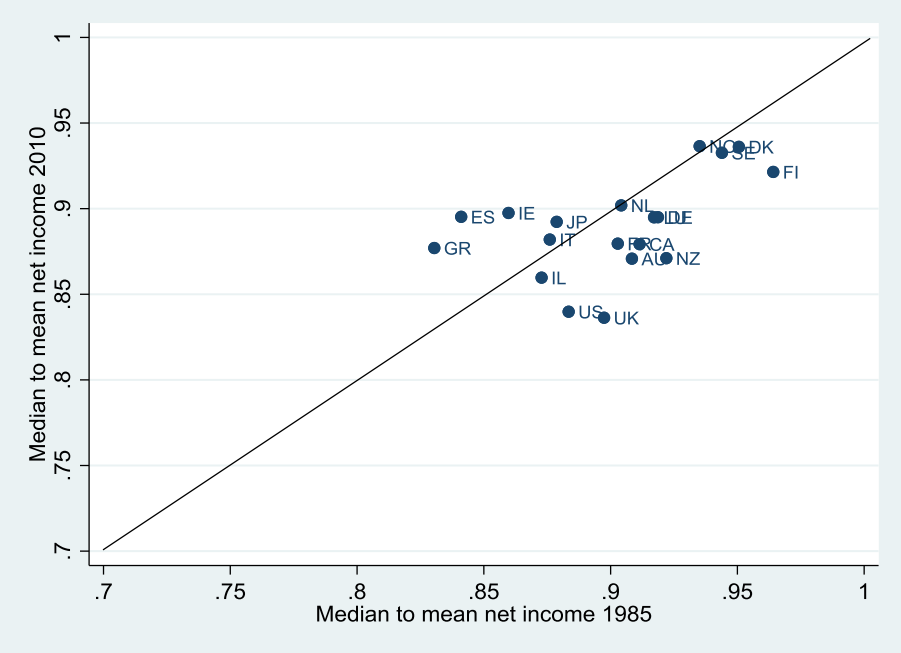
A potential objection to this conclusion is that rising incomes of *H before* taxes and transfers have come at the expense of *M* and *L*. This could reflect declining unionization, rising monopsony power in labor markets, rising monopoly power in product markets, skill-biased technological change, or a combination. There is ample evidence that the earnings distribution has widened, but how this affect the net income distribution, and relative welfare after accounting for public services, is not obvious. As the top earners gain, some of those gains are shared with the middle and the bottom. Iversen and Soskice (2019, ch. 1) suggest a simple test of this broader notion of power, which is to examine the position of the middle class in the overall income distribution over time. If a fall of earnings in the middle – what is sometimes referred to as a hollowing-out or polarization affect (Goos and Manning 2007) – outweighs middle-class

power over government spending policies, it will show up as a decline in median-to-mean net incomes.

We test this possibility in Figure 3. Panel (a) displays median-to-mean net income ratios for 19 countries around 1985 and 2010. This is the period with the sharpest rise in market income inequality, yet the figure shows that the median net income relative to the mean net income has been largely stable (the average change is not significantly different from zero).[13] There is some modest variance around the 45-degree line: Spain, Greece, and Ireland have all seen increases of 4.4-6.5 percent, while Australia, Canada, Finland, New Zealand, the United Kingdom, and the United States have all experienced declines of 3.5-6.8 percent. It is not an accident that much of the literature proclaiming a declining middle class comes from the liberal market economies because this is where we observe some erosion (in the case of Finland, a likely culprit is the collapse of the Soviet Union, which had large and politically unanticipated economic effects; it may not reflect changes in underlying class power). Still, even in these cases the relative drop (4.8 percent on average) is greatly outpaced by the rise in mean (and median) incomes. The average rate of increase in mean real income in this period is 34 percent.

Figure 3. The Median Net Income Relative to Mean Net Income, 1985 – 2010.

[13] the average change in the median-to-mean net income ratio is -1.2 percent ranging from a decline of 6.8 percent in the UK to an increase of 6.5 percent in Spain.



Note: The measures for AU, CA, DK, FI, FR, DE, IE, IL, IT, LU, NL, NO, ES, UK, and the US are the disposable income of the median relative to the mean (working households) from the LIS database (authors' calculations). For GR, JP, NZ, and SE the measures are the disposable income of the median relative to the mean (working-age population) from the OECD income distribution database. The start and end points of the countries are; AU: 1985-2010, CA: 1987-2010, DK: 1987-2010, DE: 1984-2010, ES: 1985-2010, FI: 1987-2010, FR: 1984-2010, GR: 1986-2010, IE: 1987-2010, IL: 1986-2010, IT:1986-2010, JP: 1985-2009, LU: 1985-2010, NL: 1983-2010, NO: 1986-2010 NZ: 1985-2009, SE: 1983-2010, UK: 1986-2010, US: 1986-2010.

This conclusion may seem surprising against the evidence of a hollowing-out effect of skill-biased technological change, but those most affected by SBTC are clerical jobs and manual jobs in manufacturing, which are typically somewhat below the median. The middle class has generally been able to either acquire new skills to retain a foothold in the knowledge economy, or to rely on government transfers and generous provision of public services (and insurance) to defend its living standards. This should not be taken to mean that the political upheaval over rising inequality and fear of middle-class decline is not real. To the contrary, such upheaval are precisely the political expression of a middle class striving to defend its position.

3.6. Outsiders

Unfortunately, we only have comparable data for the bottom income decile in five countries that go back to the mid-1980s (OECD only provides data for the median and the mean). These data also indicate stability in relative position, except in the case of the Netherlands where net income at the bottom as a share of mean net income have dropped from .7 to .6 – a change that is plausibly related to the exceptional rise in low-paid part-time employment. What stands out about the bottom decide is the degree of dispersion in relative incomes. The range of the bottom-to-mean ratio it about .3, while for the median-to mean ratio it is only about .1. The poor do really bad in a country like the US (.3), and much better in a country like Finland (.6).

Apparent stability may however mask the plight of the most vulnerable, some of whom live in households where everyone is unemployed, and therefore will not show up in our date (since they have zero income). We made use of OECD's Social Expenditure data to zero in on spending that is targeted to this group; specifically spending on unemployment benefits and active labor market programs. In combination, these benefits can be understood as spending on outsiders, who are seen in the literature as politically weak (Rueda 2005, 2008). Since spending in these areas is conjunctural -- rising and falling with the business cycle -- we seek to determine how aggressively governments respond to economic shocks.

We use deindustrialization as a proxy for shocks, which is arguably exogenous to government spending on outsiders, whereas open unemployment is clearly not (especially in the case of

ALMPs).[14] It is measured as the annual decline in industrial employment, defined as a share of the working-age population (positive numbers imply falling employment). Deindustrialization should be expected to trigger rising spending on outsiders.

Table 3. Spending on outsiders

	(1)	(2)	(3)	(4)
VARIABLES	Change in spending on outsiders			
Deindustrialization	23.45*	12.23*	19.33*	11.12*
	(4.69)	(3.59)	(2.44)	(2.77)
Trend	-0.01*	-0.01*	-0.01*	-0.01*
	(0.00)	(0.00)	(0.00)	(0.00)
Change in unionization	0.06*	0.04*	0.04*	0.03*
	(0.03)	(0.01)	(0.02)	(0.01)
Unexpected growth	-4.08*	-2.78*	-3.90*	-2.82*
	(0.57)	(0.56)	(0.64)	(0.61)
PR w/ weak CD * deindustrializ			18.53*	12.73*
			(5.44)	(4.19)
PR w/ strong CD * deindustrializ			-11.52	-9.80
			(8.42)	(7.84)
Automatic disbursements		47.42*		41.75*
		(7.33)		(5.87)
Country FE	✓	✓	✓	✓
Constant	0.09*	0.07*	0.08+	0.06+
	(0.04)	(0.03)	(0.04)	(0.03)
Observations	438	438	438	438

[14] We also tried to use a Blanchard-Wolfer non-linear approach where shocks are assumed to be common to all countries and proxied by a full set of year dummies. The results are substantively identical to those presented below, which is reassuring since the time dummies cannot be endogenous. As for the models presented in Table 3, we detect a declining trend (captured by regressing the year dummy coefficients on a trend variable), but in this approach we cannot, of course, exclude the possibility that shocks are getting smaller over time.

R-squared	0.54	0.63	0.59	0.66
Number of countries	18	18	18	18

Notes: Robust standard errors in parentheses; * $p<0.05$.

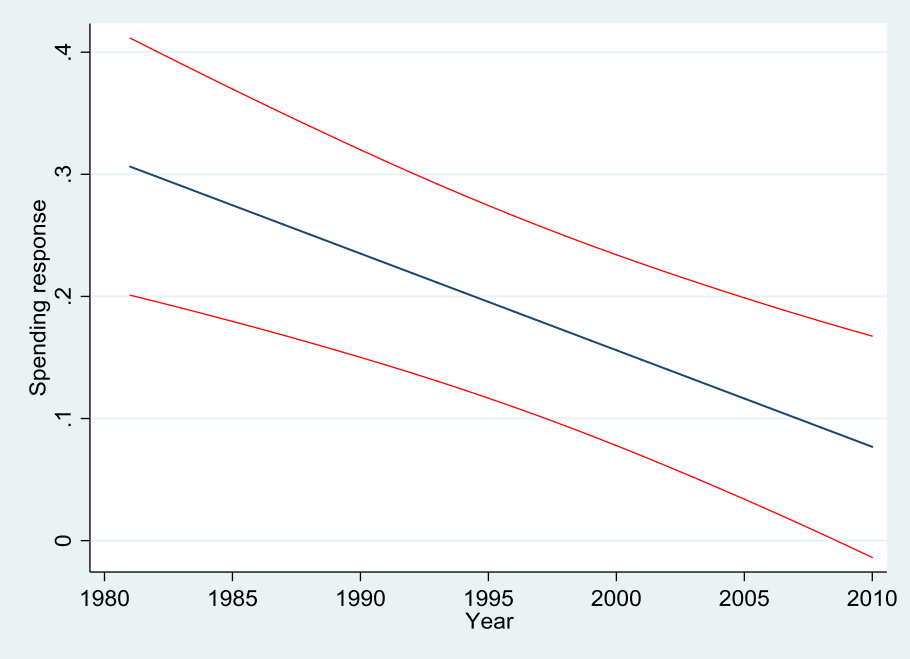
The results are shown in Table 3 for the period 1980-2010, using different model specifications. Deindustrialization does indeed have a strong and statistically significant positive effect on spending. In model (1) a one percent decline in industrial employment is associated with an average of one quarter of a percent rise in spending. Some of this spending is by legal entitlement, and if we include a control for such "automatic" spending -- which we measure as the first difference in unemployment as a percentage of the working age population times the net replacement rate in the previous year -- we find that the effect of deindustrialization is roughly cut in half (see model 2).[15] But replacement rates are themselves subject to political choice, so we may view the entire effect as a matter of government policy (model 1).

We have included two additional variables. One is unexpected growth, which is the difference in GDP per capita growth in year *t* minus the average of the previous three years, assuming that governments make budget projections based on recent growth trends. The effect is negative as expected. We also included a time trend variable. While we found no time trends in the overall transfer data presented above, spending on outsiders is declining over time and this effect is robust to many different model specifications (the trend is more or less linear, and adding a squared term does not show any effect). This suggest that governments are becoming less responsive to outsiders over time (see Figure 4). Seen over the entire 29-year period, a

[15] The replacement data are from Olaf van Vliet and Koen Caminada's (2012) updated version of Lyle Scruggs' (2004) original data set.

government that would have increased outsider spending by 10 percent in 1981 in response to a drop in industrial employment would be predicted to only raise it by 3 percent in 2010.

Figure 4. The responsiveness of governments to a one percent drop in industrial employment over time (the dependent variable: change in outsider spending as a pct of GDP).



Note: Estimates based on model (1) in Table 3. Red lines are 95 percent confidence intervals.

Declining union density could potentially explain this drop, but it is already included as a control (and shows a negative effect, as expected). Changes in trade openness and capital market integration are also potential drivers because they both go up more or less continuously over time, but neither registers any direct effect and neither alters the observed time trend (they have been omitted in Table 3).

A plausible alternative explanation for the trend is that risks have become more bifurcated in the knowledge economy, with educated middle-class voters becoming less committed to spending on outsiders (Alt and Iversen 2018). Cavaille and Trump (2014) find that in the UK the middle class supports redistribution from the rich, but not redistribution to the poor. We cannot test the bifurcation hypothesis directly, but we can show that such an interpretation is consistent with the notion that it is only when outsiders have a political voice that their needs are attended to (see model (3) and (4). Here we attempt to distinguish political institutions according to the electoral system – majoritarian on PR – and, among the latter, between systems with strong and weak Christian democratic parties under the assumption that institutions shape the representation of interests. Manow and Manow and van Kersbergen have argued that while PR is generally conducive to the inclusion of parties of the left, large Christian democratic parties can block such inclusion by forming majority coalitions with center parties. Our results are consistent with this interpretation since the effect of deindustrialization is notably larger in countries with PR and weak CD parties (compared to majoritarian countries, which is the reference group), while it is smaller in countries with PR and strong CD parties. It is notable that the responsiveness to outsiders is actually lower in latter countries compared to majoritarian systems. This does not explain why governments have become less responsive over time, but it does suggest that electoral preferences matter.

3.7. Some caveats

Our analysis has focused on income, taxes, transfers, and public services. We have not considered the distribution of wealth. Piketty (2014) has argued that there has been a notable concentration of wealth in the postwar period, although that concentration is not mainly due to rising returns on business capital relative to growth (as he suggested in his book), but rather to a

sharp rise in housing prices in the successful cities. Unlike income, there is no or little transfer of housing wealth, so the effect of the relative position of the middle class depends on its possession of private property and the relative growth in prices in different portions of the income-housing distribution.

A second limitation is that we have not considered the effects of financialization on relative welfare. Between 1995 and 2016 private debt in advanced democracies increased from an average of 90 percent to about 157 percent of GDP. A growing portion of personal income now goes to servicing debt, and this has a sizable effect on discretionary income. With an average interest rate of 10 percent such debt-service would amount to 16 percent of disposable income (but obviously with huge variation across countries, time, and individuals). Moreover, access to credit has become an important determinant of individual welfare in a new economy where credit is used to smooth income across increasingly nonlinear life-cycles. So, both access to credit and the cost of such access are becoming important determinants of inequality, and our data do not capture these determinants.

Finally, we have only included the working age population in our analysis, and we therefore do not know what is happening to income and transfers among the elderly. This is a complicated matter due to the great variety in pension systems across countries and over time. In some countries people rely much more on public systems than in others, and because savings for private plans are correspondingly lower in these systems they look much more redistributive, even though they are not necessarily more generous. Examining net income inequality among the elderly is more promising, but it is then hard to parse out the effects of public policies since they are not only, or even primarily, through transfers but through the regulation of pension funds,

which is often mediated by unions and professional associations. Methodological challenges aside, this is an important topic for future research.

4. Conclusion

The rise in income inequality over the past four decades has created concerns that democracy is being undermined by the rich, by footloose capital, or both. These concerns have been backed by alarming recent evidence that public policies – especially those pertaining to taxes, social spending, and redistribution – are being dictated by the rich or by the rising structural power of capital. This paper does not assuage the concern over rising inequality, but it does challenge the notion that democratic governments are no longer responsive to majority demands, and in particular to those of the middle classes.

Using macro evidence for transfer rates, we find consistently that policies are well-aligned with the distributive interests of the middle class, and the transfer rate (including the value of services) to the middle class has remained constant or even slightly risen during a period when top-end inequality grew notably. This is not consistent with a view that accords greatly increasing influence to the rich. Indeed, since we measure transfer rates as a share of the net income of the rich, it is unambiguously the case that net transfers as a share of middle incomes have *risen* over time. This finding is unacknowledged in the current literature, but it is very much in accordance with long-standing traditions in the field, which emphasizes the pivotal role of the middle class.

Our results are thus reassuring about the continued importance of democracy for distributive politics. But there are several qualifications to this broad conclusion. Although transfer rates are stable, if we consider the position of the middle in the overall (net) income distribution, we see

some erosion in majoritarian, liberal market economies from the mid-1980s. The drop in relative position is small compared to increases in real incomes in the same period, but it is noteworthy nonetheless. Also, we have not considered the consequences of changes in wealth inequality or the consequences of financialization.

Perhaps more fundamentally, it is important to keep in mind that democratic politics does not guarantee that inequality is adequately addressed. One of the misleading assumptions in some of the contemporary literature is that a working democracy will compensate for inequality, implying that when we see a rise in inequality we should also expect to see more redistribution. That is not implied by majority rule. Distributive politics is multidimensional, and political alliances determine who benefit and who do not. Since the middle class and its representatives usually stand at the center of the political coalition game, middle-class interests are generally well-attended to. But that is not true of the poor or "outsiders", who depend on being invited into government coalitions or else on the generosity of the middle class. The trend since the 1990s towards center-right governments has hurt the poor, and bifurcation of risks may have undermined insurance motives in the middle class to support bottom-end redistribution. When we examine government responses to shocks that adversely affect the most vulnerable segments of the labor force, we find that policies have become less responsive – especially outside of Scandinavia. Precisely because democratic governments are so important for redistribution, explaining partisanship and middle-class preferences remain important tasks for political economy.

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Appendix A:

Class Preferences and Transfer Rates with Coalition Governments

The preferred taxation of *H* is straightforward since *H* wants to minimize transfers to *M* (or to *L*), and since regressive taxation is ruled out *H* simply sets the tax rate equal to zero $t_H^* = 0 \quad \Rightarrow \quad \tau_H^{H^*} = 0$. *L* wants to tax both *M* and *H* to maximize transfers to itself $y_L^{net} = y_L + t \cdot (y_M + y_H - \tfrac{1}{2} \cdot \alpha \cdot t \cdot (y_M + y_H))$, which implies a tax rate of $t_L^{M^*} = t_L^{H^*} = \frac{1}{\alpha}$, and a net income of $y_L^{net^*} = y_L + \tfrac{1}{2} \cdot \frac{y_M + y_H}{\alpha}$. Total taxation demanded by *L* is greater than for *M*, since *L* wants to tax 2/3 of all income by $1/\alpha$, whereas *M* only taxes 1/3 of all income (again, *H* sets taxes equal to 0). This is the preference ordering assumed in Figure 1 in the main text.

L's optimal transfer as a share of the net income of *M* and *H* (*L*'s transfer rate) is identical to *M*'s optimal transfer rate from *H*: $\tau_L^{M,H^*} = \frac{T_L}{y_M^{net} + y_H^{net}} = \frac{\tfrac{1}{2} \cdot \frac{y_M + y_H}{\alpha}}{(y_H + y_M) \cdot \left(1 - \frac{3}{2\alpha}\right)} = \frac{1}{2\alpha - 3}$.

This completes the definition of preferences for each class. The next question is how political power shapes actual outcomes.

If *M* and *H* share power the observed transfer ratio is a weighted average of the preferred levels by M and H: $\tau_M^H(MH) = w_{M/H} \cdot \frac{1}{2 \cdot \alpha - 1} + (1 - w_{M/H}) \cdot 0 = w_{M/H} \cdot \frac{1}{2 \cdot \alpha - 1}$, where $w_{M/H} = [0,1]$ is a weight that measures the political power of *M* over *H* (*MH* indicates that both *M* and *H* matter politically). Since we cannot observe α we cannot identify $w_{M/H}$, but we can test empirically whether the transfer rate, τ_M^H, responds to the relative income of *M* and *H*, as opposed to who are

in government. If the democratic subversion thesis is correct, we should observe that $\tau_M^H(MH) = f(w_{M/H}) = g(y_M^{'}/y_H^{'})$, where $y_M^{'}/y_H^{'}$ are the observed relative pre-fisc incomes of *M* and *H*. In a model where the middle class is pivotal, as in the main text, the transfer rate is the preferred rate of *M.* As explained in the main text, we can infer that τ_M^H in that case will be orthogonal to $y_M^{'}/y_H^{'}$: $\tau_M^H(M) \perp y_M^{'}/y_H^{'}$. Note that this implication is stark because it means that even if top-end inequality, $y_H^{'}/y_M^{'}$ rises, as it has in most countries, this should have no effect on the transfer rate, which will remain constant (ceteris paribus). Note also that this implication is contrary to the Meltzer-Richard model. The reason is that the M-R model implicitly assumes that the interests of *L* and *M* are aligned so that when *M*'s income falls its preference for taxation rises. As soon as taxes and benefits can be targeted, *M* always wants to tax as much as it can and spend the proceeds on itself.

If government power matters (so the RDM applies) and M cannot govern on its own we need to derive the policy under different government coalitions. We assume such coalitions consist of at most two class parties. In the case of an *MH* coalition the bargain will lie between the optimal tax rate of *M* (which is $\frac{1}{\alpha}$) and the optimal tax rate of *H* (which is 0):

$t_M^{H*}(MH) = w_M \cdot \frac{1}{\alpha} + (1 - w_M^H) \cdot 0 = \frac{w_M}{\alpha}$, where $w_M = [0,1]$ is the bargaining weight of *M* vis a vis *H*. If the parties split their policy differences (i.e., have equal bargaining weights), *M* gets a transfer of $\frac{1}{2 \cdot \alpha} \cdot y_H$. Empirically we may think of w_M^H as the relative seat share of *M* in a coalition government with *H*. The case of an *LM* coalition is more complicated because both *L* and *M* can tax *H*, and *L* can also tax *M*. So *L* and *M* must compromise on both dimensions. The

policy vector is $P_j = \left\{t_L^H, t_M^H, t_L^M\right\}$, but because there is no incentive by either *L* or *M* to tax *H* beyond the point where additional taxation leads to lower revenues, the former two policies lie on a line. The logic is illustrated in Figure D1, where each axis represents a tax rate in the policy space and where the optimal taxation of *H* is constrained to a linear combination of taxes preferred by *L* and *M*.[16] The optimal policies of *L* and *M* are indicated by solid circles. When *L* and *M* form a coalition, they must find a compromise that divide the difference between their preferred policies. If the compromise is a simple 50-50 split, half the taxes on *H* will go to *L* and the other half to *M*, and *M* will only be taxed half the rate of that preferred by *L*. This is the case illustrated in Figure D1. But this may not be a feasible outcome if *M* has the option of allying with *H*, since *M* should then be able get at least as much as it can get from *H* (which is *M*'s outside option). In the split-the-difference scenario above, that means that M must get $T_M = \frac{1}{2 \cdot \alpha} \cdot y_H$, which is the middle of the solid line in Figure D1. Indeed, in any scenario with a binding outside constraint, the *LM* bargain must lie on this line. This implies that *M* gets the same in an *LM* coalition as in an *MH* coalition. In general, both *L* and *M* would be expected to get a share of the "full" taxation of *H* that equals their bargaining weight:[17]

$$\begin{aligned} T_M &= w_M \cdot \frac{1}{\alpha} \cdot y_H \\ T_L &= (1 - w_M) \cdot \frac{1}{\alpha} \cdot y_H \end{aligned},$$

[16] This assumes that *H* has no economic power to influence policies. We control for such influence in the empirical estimation.

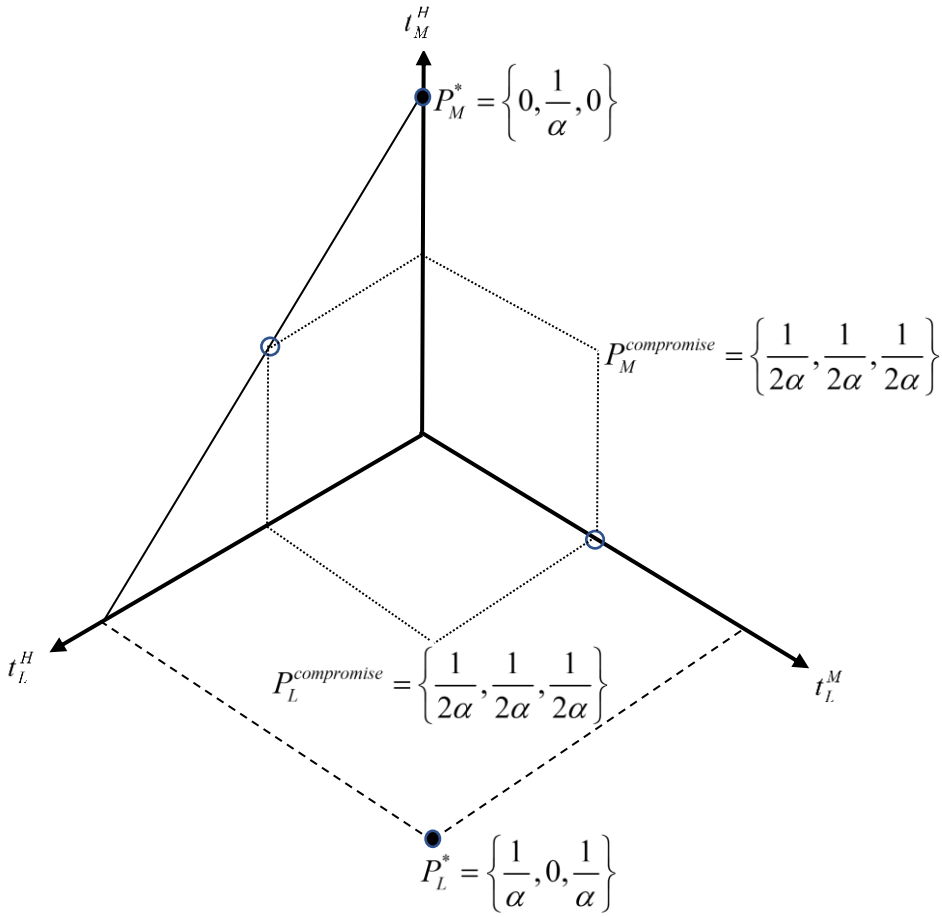
[17] Admittedly, *L* may have bargaining leverage over *M* either because it can offer *M* concessions in other policy areas, or because *H* and *M* cannot fully exclude *L* from sharing the spending in an *MH* coalition (as in Iversen and Soskice 2006). Either way, it would reduce *M*'s transfer rate. We let the data speak to whether that is the case.

where $w_M = [0,1]$ is again the bargaining weight of *M* relative to *L*. The net transfer rates from *H* to *M* and *L* are then:

$$\tau_M^H(LM) = \frac{T_M}{y_H^{net}} = \frac{w_M \cdot \frac{1}{\alpha} \cdot y_H}{y_H - \frac{3}{2} \cdot \frac{y_H}{\alpha}} = \frac{w_M}{\alpha - \frac{3}{2}}$$

$$\tau_L^H(LM) = \frac{T_L}{y_H^{net}} = \frac{1 - w_M}{\alpha - \frac{3}{2}}$$

Figure D1. The Taxation Policy Space (Example: *LM* Coalition with 50-50 Split of Policy Differences).



Note: The policy vector is $P_j = \left\{t_L^H, t_M^H, t_L^M\right\}$

Appendix B:

Allocating the Value of Services and the Cost of Taxation to Each Income Group

As explained in the main text, we include the value of services in the net "extended" income (disposable cash income + the net (after tax) value of services) of the income groups using estimates computed from the OECD/EU database on the distributional impact of in-kind services (OECD 2011, ch. 8). The estimates include the value of education, health care, social housing, elderly care, and early childhood education and care, and are measured as a share of disposable income. For a detailed description of these data, see Verbist, Förster, and Vaalavuo (2012).

Before adding the value of services to the disposable income of the income groups, we made the following adjustments. First, because of missing data for Switzerland we assigned it the average value of countries belonging to the conservative welfare state cluster (Germany, Austria, Italy, and France). Second, country-specific estimates are only publicly available for the overall population. We therefore adjusted the value of services to reflect our working household sample by the ratio of the OECD average value for the working age population (18-65 years) to the overall population, lowering the value by roughly 20 percent in all countries (using estimates from Verbist, Förster, and Vaalavuo 2012, 33-34). Third, the OECD/EU estimates of the value of services are only calculated for 2007 and not all countries have data for 2007 in the LIS database. We therefore matched the OECD/EU estimates to the year closest to 2007 for Australia (2008), Belgium (1997), and Sweden (2005). To get time-varying estimates, we adopted a production cost approach and imputed the value of services in years other than the base-year (2007 or the year closest to it) assuming that the ratio of the value of services/transfers moves proportional to

the ratio of spending on services/transfers.[18] Specifically, we multiplied the country-specific estimates of the value of services as a share of disposable income by total disposable income and divided by total transfers received. Then, this ratio of the value of services/transfers from the base-year was multiplied by the ratio of spending on services/transfers indexed to 1 in the base-year, using OECD data on spending on services and transfers. Finally, we multiplied the ratio of the value of services/transfers by total transfers received to get the total gross value of services for each country-year.

The total gross value of services is distributed to each income group's cash disposable income using an allocation key computed from the OECD/EU database on the distributional impact of in-kind services.[19] The allocation key is only calculated for 2007 but the distributive impact of services is fairly stable over time and seems to be driven almost entirely by changes in level of spending (Verbist, Förster, and Vaalavuo 2012, 60). We therefore assign the country and quintile specific values from 2007 to all years.[20] The quintile specific values are recalculated to fit our deciles using the ratio of the value of services for the first quintile (q1) to the value of services for q1+q2 as a weight for the first decile (d1) and the inverse for d2 and so on. At the top, we assign an equal weight of the value of q5 to d9 and d10. This ensures that services also have a

[18] This is a standard approach to estimate the value of services. The OECD/EU estimates are also calculated using a production cost approach with the exception of social housing, where the value is calculated from the prevailing market rents (Verbist, Förster, and Vaalavuo 2012, 13).

[19] We thank Verbist, Förster, and Vaalavuo (2012) for providing us with these data.

[20] Again, data are missing for Switzerland, which is assigned the mean of countries belonging to the conservative welfare state cluster (Germany, Austria, Italy, and France).

redistributive effect between deciles within a quintile and that it becomes less redistributive towards the upper end of the income distribution, just as the quintile-specific estimates suggest (see Verbist, Förster, and Vaalavuo 2012, 35).

Finally, we need to allocate the costs of transfers and services to the income deciles' disposable income. The costs are paid for by tax revenues that primarily come from taxation of income, capital, property and wealth, and consumption. Income taxes are accounted for in the LIS data. We treat business taxes as neutral with respect to the income classes and simply add it to government revenues. Remaining costs are covered by (i) property and wealth taxes, which are paid almost exclusively by households in the absolute top of the income distribution and we therefore add it to the tax burden of the top income decile, and (ii) consumption taxes, which we assume are paid in proportion to each income decile's consumption share and allocate accordingly.

We rely on OECD data to include revenues from taxation of capital, and property and wealth (OECD Revenue Statistics Database). Data on consumption shares are from the Eurostat Household Budget Survey for EU member states (and Norway) and from national statistics bureaus for non-EU countries (Australia, Canada, Iceland, Switzerland, and the United States). In most countries consumption shares are quite stable over time but data are not available for every country-year. We linearly inter- and extrapolate the series to maintain a full sample. In total, we extrapolate five observations, at most nine years back in time (UK:1988→1979) and three years into the future (Norway 2010→2013). Our results do not change when excluding the extrapolated observations.

Appendix C:

Alternative Model Specifications

Table C1. Determinants of Net Transfers to *M* as a Percentage of *H*'s Net Extended Income, Including Extra Controls

	(1)	(2)	(3)	(4)
	Transfer rate *M* (%)		Transfer rate *M* incl. insurance (%)	
P90/P50	2.09	3.19	2.01	3.40
	(3.30)	(4.66)	(2.51)	(3.59)
P50/P10	1.61	1.32	2.95*	2.70*
	(1.03)	(0.88)	(0.92)	(0.88)
Trade openness (ln)	3.18	1.45	2.82	1.55
	(2.61)	(2.19)	(2.55)	(2.38)
Capital market openness	1.13	2.72	0.81	2.37
	(2.99)	(2.24)	(2.38)	(2.06)
Government partisanship (right)	-5.07*	-3.92*	-5.46*	-4.50*
	(1.56)	(1.14)	(1.76)	(1.52)
Labor force participation	-0.23*	-0.07	-0.33*	-0.19*
	(0.07)	(0.07)	(0.07)	(0.09)
Real GDP growth	-0.21	-0.09	-0.28*	-0.19+
	(0.13)	(0.09)	(0.12)	(0.10)
Population 65+ (%)	-0.00	-0.38	0.06	-0.24
	(0.48)	(0.51)	(0.46)	(0.46)
Voter turnout	0.04	0.11+	0.09*	0.14*
	(0.04)	(0.06)	(0.04)	(0.06)
Union density	0.03	0.03	0.07	0.06
	(0.10)	(0.06)	(0.09)	(0.07)
Bargaining Coverage (adjusted)	-0.01	-0.06	-0.03	-0.07
	(0.07)	(0.06)	(0.06)	(0.06)
Trend		-0.48*		-0.42+
		(0.22)		(0.21)
$Trend^2$		0.01*		0.01+
		(0.00)		(0.00)
Country FE	✓	✓	✓	✓
Constant	-4.72	-4.57	-2.36	-3.96
	(10.34)	(14.48)	(10.12)	(12.28)
R-squared	0.42	0.53	0.55	0.61
N	104	104	104	104
N of countries	18	18	18	18

Note: * p<0.05, + p<0.1. Standard errors clustered by country in parentheses.

Table C2. Determinants of Net Transfers to *M* as a Percentage of *H*'s Net Extended Income, Random Effects Models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Transfer rate *M* (%)				Transfer rate *M* incl. insurance (%)			
P90/P50	5.02+	6.21+	4.95	4.38	4.42	6.46*	5.10+	5.40+
	(2.73)	(3.63)	(3.01)	(4.06)	(2.73)	(2.85)	(2.88)	(3.13)
P50/P10	1.67*	1.36*	1.91*	1.69*	2.84*	2.64*	3.18*	2.98*
	(0.48)	(0.45)	(0.59)	(0.60)	(0.43)	(0.44)	(0.50)	(0.55)
Trade openness (ln)	1.39	1.48	2.56*	1.29	1.22	1.61+	1.93	1.21
	(1.04)	(1.17)	(1.25)	(1.56)	(0.82)	(0.96)	(1.18)	(1.32)
Capital market openness	-2.96+	0.01	-1.50	1.41	-3.99*	-1.41	-2.34	0.91
	(1.61)	(2.11)	(2.17)	(1.99)	(2.00)	(2.99)	(1.94)	(2.35)
Government partisanship (right)	-3.09*	-2.92*	-4.12*	-3.52*	-3.12*	-3.19*	-4.11*	-3.61*
	(1.21)	(1.04)	(0.98)	(0.71)	(1.25)	(1.14)	(1.05)	(0.88)
Labor force participation	-0.10	-0.03	-0.08	-0.04	-0.18*	-0.10	-0.13	-0.08
	(0.07)	(0.08)	(0.08)	(0.08)	(0.07)	(0.07)	(0.08)	(0.07)
Real GDP growth			-0.15	-0.06			-0.19	-0.14
			(0.14)	(0.11)			(0.13)	(0.12)
Population 65+ (%)			-0.44+	-0.58+			-0.50*	-0.56*
			(0.24)	(0.32)			(0.19)	(0.24)
Voter turnout			-0.02	0.03			0.01	0.06
			(0.03)	(0.05)			(0.03)	(0.04)
Mod. PR (AU)			-1.70	-3.32			-1.90	-2.85
			(1.69)	(2.05)			(1.93)	(1.95)
PR			-1.35	-0.93			-0.48	-0.14
			(1.91)	(1.76)			(1.89)	(1.64)
Trend		-0.35*		-0.38*		-0.31*		-0.37*
		(0.13)		(0.19)		(0.13)		(0.18)
$Trend^2$		0.01*		0.01*		0.01+		0.01*
		(0.00)		(0.00)		(0.00)		(0.00)
Constant	-6.43	-12.21	-5.59	-3.04	1.14	-8.44	-2.29	-4.89
	(9.34)	(12.87)	(9.71)	(14.29)	(8.47)	(10.12)	(8.98)	(10.86)
N	110	110	107	107	110	110	107	107
N of countries	18	18	18	18	18	18	18	18

Note: * p<0.05, + p<0.1. Standard errors clustered by country in parentheses.

Table C3. Determinants of Net Transfers to *M* as a Percentage of *H*'s Net Extended Income, Weighed by .5 of *L*'s Transfer Rate

	(1)	(2)	(3)	(4)
	Transfer rate *M* with .5 weight to *L*'s Transfer Rate (%)			
P90/P50	-2.53	-2.01	-1.81	-2.65
	(4.52)	(5.55)	(4.53)	(5.65)
P50/P10	3.42*	2.95*	3.75*	3.39*
	(0.60)	(0.70)	(0.99)	(0.89)
Trade openness (ln)	-1.58	-3.88	-1.79	-3.41
	(2.57)	(3.42)	(3.22)	(2.41)
Capital market openness	-3.31	-1.62	-2.47	-0.39
	(2.26)	(3.67)	(3.10)	(3.72)
Government partisanship (right)	-6.05*	-5.08*	-7.37*	-5.99*
	(1.66)	(1.45)	(2.18)	(1.67)
Labor force participation	-0.18*	-0.12	-0.24*	-0.06
	(0.08)	(0.14)	(0.11)	(0.14)
Population 65+ (%)			0.16	-0.43
			(0.46)	(0.47)
Voter turnout			0.14+	0.21*
			(0.07)	(0.09)
Union density			-0.03	0.04
			(0.10)	(0.06)
Bargaining Coverage (adjusted)			0.04	-0.03
			(0.06)	(0.06)
Trend		-0.27		-0.47+
		(0.24)		(0.27)
Trend^2		0.01		0.01*
		(0.00)		(0.01)
Country FE	✓	✓	✓	✓
Constant	32.09*	38.62+	20.82	22.60
	(7.91)	(22.04)	(15.41)	(18.40)
R-squared	0.37	0.41	0.42	0.53
N	110	110	104	104
N of countries	18	18	18	18

Note: * p<0.05, + p<0.1. Standard errors clustered by country in parentheses.