Political Reinforcement: How Rising Inequality Curbs Manifested Welfare Generosity

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Abstract

We propose a political reinforcement hypothesis, suggesting that rising inequality moves party politics on welfare state issues to the right, strengthening rather than modifying the impact of inequality. We model policy platforms by incorporating ideology and opportunism of party members, and interests and sympathies of voters. If welfare spending is a normal good within income classes, a majority of voters moves rightwards when inequality increases. As a response the left in particular, shift their welfare policy platform towards less generosity. We find support for our arguments using data on the welfare policy platforms of political parties in 22 OECD countries.

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1 Introduction

How does rising inequality affect political parties? Do they adopt programs for more redistribution? In particular, are left parties crucial for social policy? Do they act as the main guardians of the welfare state in times of increasing inequality?

The conventional approach in political science and economics suggests that all political parties aim at more welfare spending as inequality rises, redistributing more income from the rich to the poor. The reasoning is simple. Rising inequality lead discontent lower-income voters to demand more redistributive social policies (Romer, 1975; Roberts, 1977; Meltzer and Richard, 1981). Political parties compete to cover this social demand. So as inequality goes up, political parties move left. We contest this view, suggesting, instead, that political parties move right when inequality rises. This is the political reinforcement hypotheses, which, if true, strengthens the impact of inequality, rather than modifying it.

Thus, this paper adds to the growing literature that apply conventional modeling to argue against the conventional conclusion of how higher inequality is met by more redistribution (see for instance Benabou, 2000; Iversen and Soskice, 2001; Moene and Wallerstein, 2001; Lindert, 2004; Barth and Moene, 2012). It focuses on how party programs are made in an environment where the welfare state offers better terms for the poor than for the rich, but where it does not simply take from the rich and give to the poor. The redistribution is tied to the supply of tax financed goods and services such as health care and social insurance. A voter's individual demand for these welfare goods depends on his social vulnerability and his care for others—in addition to his income.

To isolate the effects of rising inequality we consider changes in the income distribution that preserve the mean income. Voters below the mean experience declining incomes and feel more pressure to cover immediate necessities. As a result they become discontent and less interested in paying high taxes to finance a generous welfare spending. Their political demand goes down as they feel they no longer can afford the previous welfare levels.

If this is right, a *rise* in individuals' income leads to higher political demand for welfare spending, in contrast to the cross sectional pattern where richer voters demand less, not more, welfare spending than the poor (Rehm, Hacker and Schlesinger, 2012). The puzzle is easily resolved once we account for the obvious feature that the rich may have both higher incomes and higher security. This bundling of incomes and social conditions may lead to an overall decline in the support of welfare spending as we move from lower to higher income classes. A rise in income within an income class, in contrast, improves the individual economic situation, while the social conditions remain unchanged, inducing as we shall see an increase in the support for the welfare state's provision social services and social security. Our reasoning resonates well with the policy mood literature (Durr, 1993; Stevenson, 2001), which shows that aggregate public opinion moves to the left when the economy expands.

Thus the normal pattern across income classes is a poor guide to what will happen when inequality change. To understand changes and differences we need to make the distinction between alterations within and between income classes. For instance, the rise in inequality since 1980s is likely to reflect changes within income classes, rather than changes in their composition; cross country variations in the OECD area are likely to reflect variations in the gaps between income classes rather different class structures. Our theoretical predictions highlight this. They are consistent with welfare spending being a normal good within each income class, but an inferior good across income classes.

Thus, rising inequality would tend to reduce the vote share of the left and increase the vote share of the right, if party programs remain unchanged. Faced with more inequality, however, parties revise their programs, involving internal negotiations and external competition with the other bloc. To analyze this double interaction, we apply a simple mixture of cooperative and non-cooperative games, where party idealists find it costly to deviate from the party ideology, and where party opportunists find it necessary to deviate to win elections.

With one eye on party ideology and one eye on the rivalry for voters, left parties downplay their ideology to attract more voters, while right parties drift more towards their ideological position without losing many voters. As party platforms are strategic complements, each party further reduces its welfare generosity because the opposition has reduced its. Both sides of the political spectrum move in a rightward direction for both internal and strategic reasons, resulting in party programs with a less favorable description of the need to expand social services and social security.

To the extent that party ideology represents the interests of the the core group of voters, however, one particular caveat applies for the right party. Higher incomes to the rich may then change their bliss point to a more generous welfare spending. The net effect of higher inequality on the right party therefore depends on which is the stronger of opportunism and idealism.

Empirically, we explore information on policy platforms of left and right parties prior to 120 elections in 22 countries. Party manifestos provide a first hand source of information on policy responses as long as they are real political to do lists, as we assert, and not just party cosmetics—a feature that we test by studying the link between platforms and implemented policies of the winning party.

Welfare state platforms are tailored in accordance with the costs and benefits of equity as perceived by the party leadership. The platforms provide a much more targeted measure of the policy implications of inequality than policy outcomes such as a country's social spending as percentage of the national income.[1] Outcome measures are contami-

[1]Obviously, governments do not have complete discretion in implementing public policy, depending for instance on the degree of separation of powers between the executive and the legislature. The relationship between party manifestos and government policy is therefore a contested issue, but Stokes (1999, 261), in her review of the literature, concludes that "most studies do find a substantial consistency between

nated by a host of other factors, including changes in unemployment, income and other parts of public budgets.

We never observe isolated increases in inequality, however, but rather combined changes in inequality and the mean income. When the rich get richer we naturally associate the changes with increasing inequality even though the mean income and the tax base go up as well. When the poor get poorer we naturally associate the change with a declining tax base even though inequality goes up as well. We demonstrate that the effects of a change in the mean income depends on who gets it. We also investigate the role of rising inequality for political polarization between parties as reflected in their policy programs.

Our measures of the political parties' welfare policy positions over time are taken from the Comparative Manifesto Project (Budge et al., 2001; Klingemann et al., 2006). We combine these data with observations of wage inequality. Over the last decades most countries in the Organisation for Economic Co-operation and Development have indeed experienced increasing wage inequality (OECD, 2008) that has lead to much research on the determinants of inequality (e.g. Mahler, 2004; Wallerstein, 1999) and the political consequences of inequality (e.g. Kelly and Enns, 2010; Pontusson and Rueda, 2010; McCarty, Poole and Rosenthal, 2006). Yet, studies of how income inequality influences party platforms on welfare state generosity are particularly rare.[2]

As we shall see, our key empirical result supports the reinforcement hypothesis. First, however, we present our theoretical model (in section 2), before we present the data and the empirical analysis (in section 3), and finally conclude (in section 4).

2 Welfare platforms and inequality—Theoretical links

We emphasize the welfare state as a provider of social services and social security. The insurance logic of welfare spending is important. First of all, broad insurance motives, for one self and others, have been more important for the expansion of the welfare state than pure redistribution motives (Baldwin, 1990). Secondly, social insurance against loss of income (due to unemployment, disability, sickness and occupational injury) reacts more to changes in the income distribution than other types of public spending (Moene and Wallerstein, 2003).

campaigns or pre-election manifestos, on the one hand, and government policy, on the other". We explore this issue below by regressing the subsequent actual generosity of welfare policies on pre-election party positions on the welfare state, and find support for Stokes' conclusion also in our data.

[2]To our knowledge, Pontusson and Rueda (2010) is the only previous paper examining this issue, and they have a very different approach from us. We discuss their paper below.

2.1 Voters: Social interests and ideological sympathies

The electorate consists of three classes of voters: the poor, the middle class, and the rich, $\{p, m, r\}$, with incomes $w_p < w_m < w_r$. The social parameter h_i captures the vulnerability to own risks of income loss and the identification with others who might lose theirs. The bundling of economic and social characteristics produces a pattern: Consistent with rates of job loss and unemployment being higher among low skilled groups, lower income groups are more exposed to risk than higher income groups. In addition, as identification declines with social distance, lower income groups identify themselves more with others in need. For both reasons we assert that $h_p > h_m > h_r \geq 0$.

Finally, no income class is in majority, and income class i has a share of voters $n_i < 1/2$ where $\sum_{i \in J} n_i = 1$. The average income in society is thus $\bar{w} = \sum_{i \in J} n_i w_i$ which is assumed to be higher than the median income w_m.

Social interests depend on income class

Preferences for redistribution can seldom be fully explained by economic self-interest (Luttmer and Singhal, 2011). They might be influenced by economic, political, and social aspects of the current environment, and even by the cultural background. We summarize these social preferences over disposable income $C_i = (1-t)w_i$ and welfare spending G, contingent on the social parameter h_i, by a quasi concave utility function, $V_i = v(C_i, G; h_i)$ for members of income class i. In the exposition we use a simple example

$$V_i = U\left((1-t)w_i\right) + h_i G \equiv V_i(G; w_i) \tag{1}$$

(but all proofs in Appendix A use the general formulation). In (1) the immediate utility U has a coefficient of relative risk aversion, $\mu \equiv -U''C/U'$, that is greater than one, but not necessarily a constant; the preferences for welfare spending have the simple form $h_i G$ to capture both self interested social insurance and more identification with weak groups.[3] In addition we assume a balanced budget $t\bar{w} = kG$ where k represents the cost of welfare spending.

The ideal policy for income class i is determined by the first order condition

$$h_i = \frac{w_i}{\bar{w}} k U'(C_i^*) \quad \text{where} \quad C_i^* = (1 - \frac{kG_i^*}{\bar{w}})w_i \tag{2}$$

which simply states that the marginal gain h_i equals the marginal costs of welfare spending $(w_i/\bar{w})kU'(C_i^*)$. To be clear, one unit increase in G costs a voter in i a reduction in disposable income $kw_i/\bar{w}$ worth $U'(C_i^*)$ in utilities, where risk aversion implies that this

[3] We can replace $h_i G$ by $h_i U(G)$ and think about welfare spending as self-interested social insurance only with h_i as the odds of income loss. The general case used in the appendix incorporates both. In either case the level of G correlates with the provision of insurance against the loss of income.

individual cost of welfare spending is convex. Lower income classes have higher marginal costs, but also higher marginal gains h_i. In the exposition we assume that h_i increases sufficiently as we move to lower income classes, so that the preferred welfare spending is lower for higher income classes, confirming that welfare spending is an inferior good across income classes $G_p^* > G_m^* > G_r^*$.

In contrast, a higher wage, for a given level of the social parameter and a given average wage, raises the ideal policy G_i^*. Hence, welfare goods that have an inferior good property across income classes, can be a normal good within each income class, as long as the coefficient of relative risk aversion μ is greater than one (as we demonstrate in Appendix A).

When μ is constant, we can obtain the closed form solution

$$G_i^* = \frac{\bar{w}}{k} - \left[\frac{\bar{w}}{kw_i}\right]^{\frac{\mu-1}{\mu}} h_i^{-\frac{1}{\mu}} \tag{3}$$

Hence, the preferred level of welfare spending is increasing in the individual income w_i, and in the social parameter h_i, while it is declining in the cost of welfare spending k. It is also increasing in the average wage $\bar{w}$, but the magnitude depends on how $\bar{w}$ is raised. A proportional increase in all wages implies $dG_i^*/d\bar{w} = 1/k > 0$ as both the individual wage and the tax base increase proportionally; a rise caused by higher wages to other income classes, keeping w_i constant, implies a smaller effect[4] as the impact only comes through a higher tax base.

Ideological sympathies differ within income classes

We use a probabilistic voting model (Hinich, 1977; Lindbeck and Weibull, 1993; Roemer, 2001), and incorporate voters' ideological sympathies ϵ_i, that can take positive and negative values. Higher values mean more right-wing sympathies. The distribution of sympathies is not correlated with class characteristics. The cumulative distribution function for ϵ_i is $F_i(\cdot)$. When parties run on platforms G_L and G_R, all voters in income class i for whom the left right utility threshold

$$\Delta_i = V_i(G_L, w_i) - V_i(G_R, w_i) \geq \epsilon_i \tag{4}$$

vote left. In (4) a voter with $\epsilon_i > 0$ must evaluate the left sufficiently above the right platform in order to vote left. Hence, the expected vote share of the left is $s_L = \sum_{i \in J} n_i F_i(\Delta_i)$. It follows that prosperity generates leftist attitudes within the electorate:

Proposition 1 *Keeping policies $G_L > G_R$ and the distribution of the social parameter h_i*

[4] $dG_i^*/d\bar{w} = (1/k)\{1 - [(\mu-1)/\mu][(\bar{w}h_i)/(kw_i)]^{-1/\mu}[1/w_i]\} > 0$ where the inequality can be seen from (3), since $G_i^* > 0$ implies $1 > [(\mu-1)/\mu][(\bar{w}h_i)/(kw_i)]^{-1/\mu}[1/w_i]$ and the inequality sign follows as $(\mu-1)/\mu < 1$.

constant, the expected vote share of the left is higher in affluent societies: The left vote share increases with the left-right utility threshold Δ_i of each income class i. All these thresholds increase with higher average incomes. Each individual threshold increases with higher incomes within own class.

Thus people vote more to the left when society can better afford a more generous welfare policy, but irrespective of whether higher affluence comes within own income class or only within other income classes (see Appendix A for proof). The mirror image, of course, is that an economic decline in society, or within own class, erodes the political support for the left's welfare generosity.

Now, to go from expected vote shares to probabilities of winning we follow the literature of probabilistic voting by assuming that the actual votes are affected by random popularity waves after the program is written, but before the elections are held. The probability that the left wins is given by $q = q(G_L, G_R)$ (formally derived in Appendix A, assuming that both the ideological sympathies and the the popularity shocks have a uniform distribution).

Using proposition 1, we know that for given policy platforms the probability that the left wins must go up with affluence. Similarly, when the rich gets richer the probability that the left wins goes up, and when the poor get poorer the probability that the left wins declines. It would be wrong, however, to derive the impacts of rising inequality on this basis. First, these changes are associated also with changes in average incomes (an increase in the first case and a decline in the second), while we would be interested in the isolated effect of inequality per se, keeping the average income constant. Second, policy platforms are not likely to remain constant when the income distribution changes.

2.2 Policies: a bargaining approach to political programs

Parties rarely act as unitary actors (Roemer 2001, ch 8). Parties are composed of factions and the policy platform is a compromise that requires consent from all major factions of the party.[5] We concentrate on the haggling between two factions, the idealists and the opportunists, representing typical political forces in every party, we believe. Each party plays a cooperative bargaining game between the opportunists and idealists internally and a non-cooperative game externally towards the opposing party.

The idealists may be considered far-sighted, or just stubborn. They are concerned with the party ideology. They are the guardians of the eternal flame, as Schumpeter (1942) said. Other names are purists, conservers, or just militants as John Roemer calls them.

We represent the preferences of the idealists by $W_L(G)$ in the left party, and $W_R(G)$

[5]What we do below can be considered a simplistic version (for the case of one dimensional politics) of what John Roemer calls a party unanimity Nash equilibrium (PUNE).

in the right party. Their ideal polices are denoted G_L^* and G_R^*. Deviating from the ideals feels like a social cost, implying that $W_L'(G) \geq 0$ for $G \leq G_L^*$ and $W_R'(G) \leq 0$ for $G \geq G_R^*$. The costs of deviating are likely to be higher the larger the deviations, or equivalently, both $W_L(G)$ and $W_R(G)$ are concave.

The preferences of the idealists may represent the basic interests of core supporters of their party, the poor for the left party and the rich for right. Idealists may insist that their ideals represent these interests in a pure form without the consideration of short term popularity waves and ideological sympathies.

The opportunists, sometimes denoted the realists, are concerned with the chances of winning elections. They are impatient and short sighted, obsessed by the coming election. They are willing to design their policies in the light of expected popularity waves and (temporary as well as lasting) ideological sympathies in the electorate.

The preference of the opportunists can be summarized simply by q for the left party and $(1-q)$ for the right party.

Bargaining needs consent by both factions

If no agreement is obtained the party loses the election. In the left party the threat points of the factions, $\hat{q}$ and $\hat{W}_L$, are the fall-back position when the left is defeated. Thus we have $\hat{q} = 0$ for the opportunists, and $\hat{W}_L = W_L(G_R)$ for the idealists. Similarly, in the right party, $\hat{(1-q)} = 0$ and $\hat{W}_R = W_R(G_L)$.

By applying the Nash bargaining approach for the internal negotiations, with bargaining powers of $\alpha_i \in [0,1]$ to the opportunists and $(1-\alpha_i)$ to the idealists, the Nash-products can be written

$$N_L(G_L, G_R) = [q(G_L, G_R)]^{\alpha_L} [W_L(G_L) - W_L(G_R))]^{1-\alpha_L} \tag{5}$$

$$N_R(G_L, G_R) = [1 - q(G_L, G_R)]^{\alpha_R} [W_R(G_R) - W_R(G_L))]^{1-\alpha_R} \tag{6}$$

The equilibrium in the mixed cooperative non-cooperative policy game consists of a values $\tilde{G}_L$, $\tilde{G}_R$ that fit in the internal bargaining solution, and that are consistent best responses to the program of the opposing party, i.e. where $\max_{G_L} N_L(G_L, \tilde{G}_R) = N_L(\tilde{G}_L, \tilde{G}_R)$ and $\max_{G_R} N_R(\tilde{G}_L, G_R) = N_R(\tilde{G}_L, \tilde{G}_R)$.

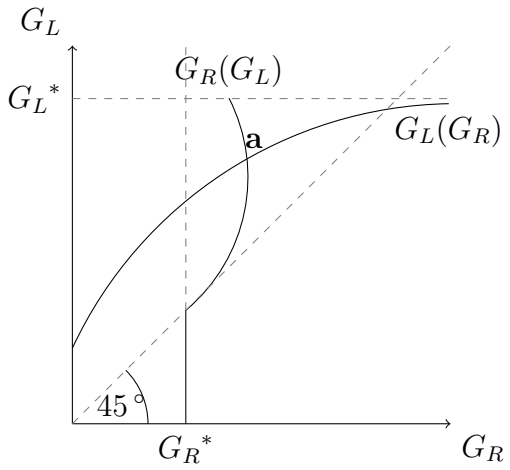
Using the notations $\partial q(G_L, G_R)/\partial G_L \equiv q_1$ and $\partial q(G_L, G_R)/\partial G_R \equiv q_2$, the first order conditions can be written

$$\alpha_L q_1 [W_L(G_L) - W_L(G_R)] + (1-\alpha_L) q W_L'(G_L) = 0 \tag{7}$$

$$-\alpha_R q_2 [W_R(G_R) - W_R(G_L)] + (1-\alpha_R)(1-q) W_R'(G_R) = 0 \tag{8}$$

The left reduces its welfare ambitions, $G > G_L^*$, to increase the probability of winning, until the gain of winning, $\alpha_L[W_L(G_L) - W_L(G_R)]$, times the increase in winning chances

Figure 1: The political party equilibrium



equals the marginal costs of a less ambitious program, $-(1-\alpha_L)qW_L'(G_L)$. Similarly, the right party increases its welfare program, $G > G_R^*$, until its gain of winning, $\alpha_R[W_R(G_R) - W_R(G_L)]$, times the increase in its winning chances equals the marginal ideological cost of more welfare spending $-(1-\alpha_R)(1-q)W_R'(G_R)$.

In each party the members perceive the policy of the other party when the internal negotiations over own policy take place. Figure 1 illustrates the consistency across parties by the intersection of the response curves for the outcome of the internal bargaining for each party contingent upon the policy of the opposing party $G_j(G_s)$. The equilibrium is in the intersection **a** in the figure. As seen from the figure (and demonstrated in Appendix A) party platforms are strategic complements—higher levels of G_R for instance, induce more generous welfare programs of the left.

Inequality affects party platforms

Since the expected vote share of the left declines with higher inequality, the winning probability of the left also declines for given policies. To increase its vote share, the left party lowers its welfare ambitions to attract more middle class voters, who now favors a lower G. Similarly, the declining vote share for the left means that the right party moves towards its ideologically preferred welfare policy platform without losing as many voters as before. These effects hold as long as the ideal party policies, G_L^* and G_R^*, remain unchanged. As discussed above, the ideal party policies may represent the interests of core voters. If so, the ideal of the left party becomes less ambitious, while the ideal of the right party may become more ambitious with a higher level of G_R^* (if $h_r > 0$).

We can show the following proposition for $0 < \alpha_i < 1$ with $i = L; R$:

Proposition 2 *i) As long as party ideals remain unchanged a mean preserving increase in earnings inequality leads each party to offer a less generous welfare policy in their*

programs. ii) If the party ideals reflect the interests of the core group of each party the adjustments of ideals reinforce the effect of inequality on the welfare policy of the left party, while it moderates the effects on the welfare policy of the right party.

Part i) of the proposition is shown in Appendix A. Part ii), the partial effects of rising inequality on party ideals, follows from the discussion of pure idealism below.

The proposition states the effects of a mean preserving increase in inequality. Most changes in the income distribution are not mean preserving, however. When the rich get richer, the rise in inequality is mean increasing, implying a higher tax base. The welfare policies of the left and right party both become more generous because the higher tax base (and for the right party with $h_r > 0$, because the income of its core group goes up). When the poor get poorer, however, the rise in inequality is mean declining, implying a lower tax base. The welfare policy of the left party becomes less generous because both the income of its core voters and the tax base decline. The welfare policy of the right party becomes less generous because of the lower tax base.

When the higher inequality is not mean preserving, the generosity of the welfare policy of each party moves in the same direction as the tax base. When the rise in inequality is mean preserving, in contrast, the tax base remains unchanged and the resulting policies are a combination of the two cases, implying a more narrow gap between the right and the left.

Special cases

For specific values of the bargaining power of the factions, there are interesting special cases.

Pure idealism: $\alpha_L = \alpha_R = 0$: When idealists are all powerful and their preferences reflect the interest of core groups, a mean preserving increase in inequality implies that the left party moves to the right, while the right party, if anything, moves to the left. These changes mean less polarization and more convergence of welfare platforms since $G_L = G_p^*$ goes down and $G_R = G_r^*$ goes up (as long as $h_r > 0$) (see Appendix A for proof).

Also in this case the generosity of the welfare policy of each party moves in the same direction as the tax base, when the higher inequality is not mean preserving,. When the rise in inequality is mean preserving, in contrast, the tax base remains unchanged and the resulting policies reflect rising incomes to the rich and declining incomes to the poor. The net result is a more narrow gap between the right and the left policies.

Pure opportunism, $\alpha_L = \alpha_R = 1$: When opportunists are all powerful, policies converge and rising inequality leads to a lower common value of $G_L = G_R = G^*$. Each party is simply interested in maximizing its vote share (the left maximizes q while and the right maximizes $(1 - q)$). Policies converge since the two parties end up maximizing

the same thing. As higher inequality spurs a right-wing movement of a majority of voters political parties would change their platforms to benefit from the trends. The platforms that maximize the probability of winning, must maximize the expected vote share. Rising inequality bends the interests of a majority of voters more towards less generous spending. Opportunistic parties run after the voters and this is reflected in the welfare statements of their policy platforms. If opportunists think that voters cast their votes according to local popularity or ideological sympathies, they would design policies in order to benefit from these sentiments. Formally, the wider the spread of popularity waves and sympathies the less impact do the real interests of voters have on the policy platforms.

Fair compromise, $\alpha_L = \alpha_R = 1/2$: When opportunists and idealists are equally strong, the equilibrium outcome is as if both parties maximize their expected party utilities, $qW_L(G_L) + (1-q)W_L(G_R)$ for the left and $(1-q)W_R(G_R) + qW_R(G_L)$ for the right, using the idealists' preferences $W_i(\cdot)$. The equilibrium platforms satisfy the following first order conditions:

$$q_1[W_L(G_L) - W_L(G_R)] + qW_L'(G_L) = 0 \tag{9}$$

$$-q_2[W_R(G_R) - W_R(G_L)] + (1-q)W_R'(G_R) = 0 \tag{10}$$

Compared to the case with pure ideals, there are some convergence in equilibrium, but the convergence is not complete. Fair compromise is a special case where proposition 2 applies.

In sum

The bargaining approach to policy platforms shows that mean preserving rises in inequality spur a less generous welfare policy of the left parties irrespective of whether their policy platforms are written out of idealistic identification with core groups of supporters, or out of opportunism in the hope of winning elections, or out of a combination of the two.

The same also holds for right wing parties as long as their ideal party policies are unaffected by the rise in inequality. If higher incomes of the core groups lead to a more generous ideal policy of the right party, the net effect on its policy platform is ambiguous, depending on which is the strongest—idealism or opportunism.

So, the core implication of rising inequality is a less generous welfare policy by the left bloc, and a less clear tendency to follow suit by the right bloc. In addition, our theory predicts that a higher average income raises the welfare generosity of the policy platforms. Conversely, when the poor get poorer—rising inequality combined with declining average incomes—erode manifested welfare generosity.

Clearly, the political reinforcement effects are more substantial the stronger the opportunists in the internal bargaining. The party with a higher weight on opportunism

also increases its chance to win elections. This can easily result in competing opportunism which in the end leads to a complete convergence of policies and to the strongest reinforcement effects.

3 Welfare platforms and inequality—Empirical links

Our key propositions are tested comparing party positions as announced in their manifestos. We distinguish between the position of the left and right bloc parties. The data is obtained from the Comparative Manifesto Project (Budge et al., 2001; Klingemann et al., 2006) which derives party positions by an extensive analysis of party manifestos prior to each election.[6]

3.1 Measures: party platforms and wage inequality

We construct a measure of party positions on the welfare state, *Welfare support*, using two variables from the Comparative Manifesto Project data set: The variable "Welfare State Expansion" (described as "favorable mentions of need to introduce, maintain or expand any social service or social security scheme; support for social services such as health service or social housing"), and "Welfare State Limitation" (described as favorable mentions of "Limiting expenditure on social services or social security; otherwise as ["Welfare State Expansion"], but negative") (see Budge et al., 2001, 226). Following the recent recommendations by Lowe et al. (2011) our measure is the difference between favorable and negative mentions of welfare expansion in the programs.[7]

Next we classify each political party as belonging to the left bloc or the non-left bloc based on Comparative Manifesto Project's party family classifications, and calculate bloc *Welfare support* policy positions as the weighted sum of the party positions within the respective bloc.[8] A more positive score implies a more pro-welfare state platform.

Wage inequality is measured as the ratio of pre-tax earnings between the 90th and the 10th percentile.[9] The data is mainly from earnings inequality database provided by the Organization for Economic Cooperation and Development.[10] We consistently include

[6]The Comparative Manifesto Project provides the most comprehensive data source on party positions, and the only available source to test hypotheses requiring longitudinal data on party positions. It has been shown that there is a high level of correlation between the Comparative Manifesto Project data and alternative measures of party positions, such as surveys of political experts (Volkens, 2007).

[7]See Appendix B for details and summary statistics.

[8]We weight the influence of each party on the bloc score based on their percentage of total seats within the respective bloc, to make sure that the positions are not unduly influenced by extreme parties.

[9]In the Appendix we present results using the 50/10 and 90/50 ratios as well.

[10]The OECD wage data are supplemented by data calculated from ECHP for the period 1994 to 2001, see Appendix B for details. Data from France, Italy (1979-1984), and Switzerland are net of taxes. Data from Canada (1967-1994), Finland, France, Netherlands, and Sweden are based on annual earnings. Index variables reflecting data source, and whether the basis is net wages and annual earnings, are included in all regressions to account for source-driven breaks in the wage inequality series.

country fixed effects to account for country-specific unobserved, time-invariant heterogeneity, and for time trends by including a second order polynomial in time. Control variables are described in the Appendix, as well as a list of country years used in the analysis.

3.2 A simple estimate of the reinforcement mechanism

Consistent with our main theoretical results, summarized in the end of Section 2, Table 1 shows that higher inequality shifts the position of the left parties in terms of welfare policies to the right, whereas the position of the right is not significantly changed. Columns 1 and 3 present "stripped-down" models including the country fixed effects, the controls for the time trend, and the source dummies only. Columns 2 and 4 include potentially important control variables.

The coefficient for wage inequality is negative and significant for the left: Rising wage inequality implies a rightward shift in the welfare policy. The coefficient is robust to the vector of controls. The results are politically significant as well: The size of the coefficient in column 2 suggests that a one standard deviation increase in the 90-10 ratio implies a rightward shift in the left bloc's position amounting to a shift of two thirds of a standard deviation of the dependent variable.[11]

For the right, however, we find no significant relationship between wage inequality and welfare state policy platform. The opportunistic effect appears to dominate for the right bloc as the coefficient is negative, but it is imprecisely estimated and smaller compared to the coefficient for the left bloc.

The signs of the coefficients for the control variables are similar for the left and the right, suggesting that these variables first and foremost move the political center of gravity rather than affecting the degree of political polarization. Only a few of them reach the conventional levels of significance: economic growth and union density (for the left) and trade openness (for the right).[12]

The main message from Table 1, however, is the clear picture that rising inequality leads to less, not more, welfare generosity in party platforms. Before we explore a causal interpretation of this link (in section 3.3), we consider the roles of affluence, polarization, political cosmetics, and alternative explanations.

[11]The wage inequality coefficient is slightly smaller, but still statistically significant, if we exclude the time trends from the model. The same holds when we allow the time trend to vary across Esping-Andersen's (1990) welfare state regime types. See also below.

[12]The positive impact of trade openness supports the so-called compensation hypothesis (e.g. Rodrik, 1998), but, contrary to what most have argued (Garrett, 1998; Burgoon, forthcoming), it is clearest for the right bloc. The positive impact of union density of the left is in line with power resources theory (Korpi, 1983).

Table 1: Welfare support. Dependent variable: Party bloc position on welfare.

	(1) Left bloc	(2) Left bloc	(3) Right bloc	(4) Right bloc
Wage inequality	-0.685***	-0.723***	-0.273	-0.231
	(0.233)	(0.215)	(0.561)	(0.477)
Economic growth		0.076*		0.079
		(0.044)		(0.063)
Percentage elderly		0.070		0.036
		(0.066)		(0.086)
Trade openness (log)		1.116		4.215***
		(1.022)		(1.348)
Union density		0.071*		0.013
		(0.041)		(0.079)
Union density-sq.		-0.001*		-0.001
		(0.000)		(0.001)
Trend	-0.024***	-0.044	0.001	-0.113**
	(0.008)	(0.040)	(0.024)	(0.054)
Trend-sq.	0.002***	0.002**	0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Country FE	Yes	Yes	Yes	Yes
R-squared (within)	0.139	0.235	0.089	0.345
Number of countries	22	22	22	22
Number of elections	120	120	120	120

*** p<0.01, ** p<0.05, * p<0.1 Robust standard errors adjusted for country clustering in parentheses. All models include dummies for wage inequality data source.

The effect of higher affluence depends on who gets it

Table 1 also shows the effects of economic growth for given inequality. Even though these effects are less precisely estimated than the effects of inequality, we still find them worth commenting. The point estimates are in accordance with proposition 2: Higher affluence shifts the center of political gravity towards the left. Voters become richer, have more to loose if their income is lost, and value the extra tax dollar less (see e.g. Markussen, 2008; Durr, 1993; Stevenson, 2001, for similar arguments).

The total estimated effects of higher income depend on who gets it, since there is an added effect of the corresponding changes in inequality. The estimated coefficient of .076 for the left is the benchmark effect of higher income on manifested welfare generosity when 'the tide lifts all boats'. It is the effect of economic growth distributed with an equal rate on the income of every social group. Increasing income per capita then means uniformly stronger support for the welfare state among the electorate, transformed into higher ambitions in the party programs.

If the economic growth is unevenly distributed across groups, however, the strength

of the effect on manifested welfare generosity depends on the vulnerability of the group that gets most the growth. For instance, if the economic growth is distributed to high wage groups only (the rich get richer), the effect is weakened compared to the benchmark because inequality goes up. If, in contrast, the growth is mainly distributed to low wage groups, the effects of higher average incomes are enhanced by the positive effect of lower inequality.

According to our estimates, a decline in national income that mainly hurts low-wage groups, the ensuing rightward shift is larger than if the decline hits the high wage groups the most. The reason is simple: When the poor get poorer, declining affluence is associated with rising inequality, implying two negative effects on the manifested welfare generosity. When the rich get poorer, however, declining affluence is associated with declining inequality, implying two effects in opposite directions.

The polarization in manifested welfare support is not driven by inequality

In Table 1 the different signs of the time trends between the left and the right suggest an underlying polarization. This polarization is independent of changes in the wage distribution and the other controls. From 1976 and onwards the right has consistently moved towards the right in welfare policies, whereas the left from the early 1990s and onwards has moved towards the left, increasing its support for the welfare state. To check if this pattern varies across welfare state institutions we classify the countries according to Esping-Andersen's (1990) welfare state regime types[13] and test if the time trends vary across the regime types. The interaction terms between the regime indicator dummies and the time trend are not jointly significant.

Our model cannot explain these trends. What seems clear, however, is that the polarization process (after 1990) cannot be explained by rising inequality. On the contrary, as it shifts the left towards the right, the contribution of rising inequality is in the direction of convergence rather than polarization.

Party platforms are not only political cosmetics

All in all higher wage inequality leads to lower support for the welfare state, in particular among the parties of the left, consistent with our reinforcement hypothesis. Does this decline in support translate into actual welfare policies? In Table 2 we regress Scruggs' (2004; 2006) indices of actual welfare state policies on the manifested positions of the left bloc. Each index is averaged over the election period and we regress it on the bloc position from the respective election period where the left bloc was represented in government. We account for time-invariant variation in governments' ability to implement their platform,

[13] We classify the Southern European countries not included in Esping-Andersen's study as conservative and Iceland as a liberal welfare regime.

Table 2: Actual welfare generosity of left governments.

	(1) Overall index	(2) Unemployment	(3) Sickness	(4) Pensions
Left bloc position	0.848***	0.381***	0.322*	0.144
	(0.286)	(0.139)	(0.163)	(0.121)
Country FE	Yes	Yes	Yes	Yes
Time trend	Yes	Yes	Yes	Yes
R-squared	0.465	0.349	0.421	0.294
Number of countries	18	18	18	18
Number of elections	68	68	68	68

*** p<0.01, ** p<0.05, * p<0.1
Dependent variables: Generosity indices from Scruggs' (2004).
Robust standard errors adjusted for country clustering in parentheses.

i.e. assuming that parties' ability to implement their own policy is first and foremost constrained by political institutions that do not change much over time.[14]

As is evident from Table 2, the coefficient for the left bloc is consistently positive, implying that policies of the left become more generous in election periods where the left, before assuming power, ran on more generous platforms.

The reinforcement effect survives robustness checks

In Appendix C we show that the inequality coefficient is robust to a long list of checks, including the incorporation of additional control variables such as left majority in government, welfare state generosity, the unemployment rate, immigration and voter turnout. It also survives when we use alternative measures of wage inequality and party positions, and when we account for measurement errors in the party positions, and include a lagged dependent variable. It is not driven by outliers or the data from a single country. In addition, we show that the competing claim in Pontusson and Rueda (2010) receives no support once we account for time trends. Thus the reinforcement mechanism seems remarkably robust.

3.3 A search for independent variation

We cannot give a causal interpretation to the correlation between wage inequality and welfare state platforms reported above. Wage inequality might be correlated with the error term not only due to an omitted variable, it is also conceivable that changes in welfare state platforms have an impact on wage inequality. One example is that more generous welfare policies raise the effective reservation wage, reducing wage inequality from below (Barth and Moene, 2012).

[14]More specifically, we include country fixed effects. In addition, we include a common time trend.

To approach this problem one may apply instrumental variable regressions. The key challenge is then to find variables that provide independent variation in wage inequality. Variations in bargaining institutions and unionism are known to affect the wage distribution (Wallerstein, 1999). However, unions are known to affect politics as well. In our view, unions' influence on politics arises mainly through their sheer weight as voters. We therefore include union density in our main model to account precisely for this channel of influence. Yet conditional on union density (and country fixed effects) we argue that certain properties of the bargaining system are likely to affect wages, but not union involvement in politics. These properties are the adjusted *bargaining coverage* among employees and the *effective number of union confederations*[15].

We expect an increase in bargaining coverage to reduce wage inequality. Measured by the scope of bargaining we also expect the effective number of union confederations to have a negative impact on wage inequality. Our claim is that coverage and the number of union confederations mainly influence the wage distribution, through the obvious direct channel of affecting wage setting, whereas the political influence of unions mainly depends on the unions' power in terms of vote share, not directly on how the wage bargaining is organized. However, since the two variables are relatively close in terms of what independent variation in wage setting they provide, we cannot rely on overidentification tests to substantiate our claim.[16]

To investigate our claim that the wage bargaining institutions do not have an independent effect on union involvement in politics, we analyze directly the relationship between our instruments and the involvement of unions in tripartite bargaining and policy making. Table A8 in Appendix D shows that our instruments, conditional on union density and country fixed effects, are neither significantly correlated with whether a social pact is announced (column 1) or signed (column 2) in a given year, nor significantly correlated with routine involvement of unions and employers in government decisions on social and economic policy (column 3). This strengthens our confidence that the exclusion restriction is satisfied.

To show which countries that are important in the "experiment" underlying our instrumental variable analysis, Table A3 in Appendix B shows the percentage change in the instruments from the first to the last observation by country. As is evident from the table, there are movement in these variables for most of the countries. Large reductions in coverage are found in New Zealand, the UK and the US, large increases in Finland and France. The effective number of union confederations has risen in Canada, France and Norway, and declined in Japan and the US.

In line with our expectations, the coefficients for our instruments are negative and

[15]Measured as the inverse of the Herfindahl index. Both variables are obtained from the data base of Visser (2011). The construction of the instruments is detailed in Appendix B.

[16]Even though the Hansen J-test statistic reported below is very low and cannot reject the null hypothesis that the instruments are indeed uncorrelated with the error term.

significant in the first stage of the IV-regression.[17] The F-value from the first stage is large (11.69) and above the "threshold" of 10 suggesting that the relevance criteria is fulfilled (see for instance Murray, 2010).

Table 3: Instrument variable (IV) regression models. Dependent variable is party bloc position on welfare policy.

	Left bloc	Right bloc
Wage inequality (90/10)	-1.400*	-1.639
	(0.723)	(1.027)
Economic growth	0.096**	0.094
	(0.044)	(0.065)
Percentage elderly	0.072	0.014
	(0.050)	(0.070)
Trade openness (log)	0.976	3.961**
	(1.056)	(1.575)
Union density	0.071*	-0.022
	(0.038)	(0.070)
Union density-squared	-0.001**	-0.001
	(0.0004)	(0.001)
Trend	-0.045	-0.122**
	(0.036)	(0.055)
Trend-sq.	0.002**	0.002
	(0.001)	(0.001)
Country FE	Yes	Yes
R-squared	0.199	0.239
Number of countries	21	21
Number of elections	117	117
Kleibergen-Paap F-statistic	11.69	11.69
Sargan statistic p-value	0.79	0.37

*** p<0.01, ** p<0.05, * p<0.1

Excluded instruments are the adjusted bargaining coverage and the effective number of union confederations (see data appendix for details). All models include dummies for wage inequality data source. Robust standard errors adjusted for country clustering in parentheses.

Turning to the substantive results from the second stage, reported in Table 3, we find that higher wage inequality, as picked up by changes in the instruments, move both blocs in a right direction. Only the coefficient for the left bloc, however, is significant.[18] These

[17](*Number of confederations*: $\beta = -.15$, Robust SE=.08, t=1.99. *Coverage*: $\beta = -.01$, Robust SE=.004, $t = 2.08$.

[18]We have experimented with 90-50 and 50-10 as well. Z-values are 2.61 and 1.73 for 90-50 and 50-10, respectively, but while the first stage F-statistic is large in the 90-50 equation (F=10.15), it is very low in the 50-10 equation (F=5.69). This suggests that we mainly identify the effect on platforms due to changes in the top half of the wage distribution. By including lags, however, we show that identification is equally strong using 50-10 and 90-50, see table A5 in Appendix C. In order to investigate further the

results clearly weaken potential concerns that the results in table 1 should be driven by omitted variables or reverse causality.

4 Conclusion

Theoretically, we derive the political reinforcement mechanism from a bargaining approach to political party platforms, utilizing probabilistic voting models with welfare provision as a normal good within each income class. We demonstrate how rising inequality can push party platforms rightwards; why this pattern is clearer in the left bloc than in the right bloc; why the rightward policy shift is larger when the opportunists become stronger within the parties; and why the effects are most distinct when the average income per capita drops as inequality goes up. How rises and declines in average incomes affect party platforms depend on how the rises and declines are distributed over income classes in the first place.

Empirically, we find support for the reinforcement mechanism in the platforms of the left bloc. The negative effect of higher wage inequality on the manifested welfare generosity of the left is clear and strong; the implemented welfare generosity by left parties in power is highly correlated with their manifested welfare policy prior to the elections, indicating that their party programs are not political cosmetics only. There are also signs of political polarization in our data, but our estimates indicate that rising inequality does not contribute to polarization as it mainly shifts the left to the right.

Does these political shifts indicate that left parties are not particularly important for social policy? Huber, Ragin and Stephens (1993) claim that 'left of Christian democratic presence in government' is indeed crucial. Our results do not question that left parties normally propose a more generous welfare policy than the right parties. What our results emphasize, however, is that left parties are less efficient guardians of welfare spending whenever inequality rises without much growth in average incomes. Under such circumstances welfare expansion may be most needed, but still the manifested welfare policy of the left becomes less generous. Indeed, regardless of the color of the government, most European countries have experienced rising wage inequality and declining welfare generosity since the end of the 1980s, and in particular after the financial turmoil in 2008. Thus the protection offered by the welfare state can be weakened by the same economic and social forces that it was meant to protect against.

validity of our experiment, we conduct a "placebo-regression", instrumenting wage inequality from t+1 in a regression of platform generosity from t. As seen in Table A9 in Appendix D, we find no significant effect of future wage inequality on current platforms.

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Appendix A: Mathematical Appendix

We use the general description of voters' interests: Members of income class i has social preferences, shaped by their social vulnerability h_i. The social preferences are over consumption C_i, welfare policies G represented by $V_i = v(C_i, G; h_i)$ where $C_i = (1-t)w_i$, $t = kG/\bar{w}$, $v_1 \equiv dv/dC_i$, $v_2 \equiv dv/dG$, $v_{11} \equiv d^2v/dC_i^2$, $v_{22} \equiv d^2v/dG^2$, $v_{12} \equiv v_{21} \equiv d^2v/dC_i dG$

- With h_i given the function v is quasi-concave with $v_1 > 0$, $v_2 > 0$, $v_{11} < 0$, $v_{22} \leq 0$, and $v_{12} \geq 0$.
- Relative risk aversion: $\mu \equiv -v_{11}C/v_1 > 1$, but not necessarily a constant.
- Both relative risk aversion, μ, and the degree of complementarity, v_{21}, between private goods C, and welfare goods and benefits G, are not increasing as we move from lower to higher income groups.
- $V_i = U(C_i) + h_i G$ used in the exposition is a special case.

G being a normal good:

The ideal policy of a voter in class i is determined by

$$\frac{dv(C_i, G; h_i)}{dG} = -\frac{w_i}{\bar{w}} k v_1 + v_2 = 0 \tag{A1}$$

G is a normal good within each income class:

$$\frac{dG_i^*}{dw_i} = \frac{(\mu - 1)v_1 k/\bar{w} + (1-t)v_{21}}{-d^2V_i/dG^2} > 0 \tag{A2}$$

Quasi concavity implies $-d^2V_i/dG^2 > 0$, and the assumptions that $\mu > 1$ and $v_{21} \geq 0$ are sufficient, but not necessary, for G being a normal good within each income class.

Expected vote shares and winning probabilities

Δ_i is the critical level of ϵ_i that makes voters of income class i indifferent between the two parties, voters with $\epsilon_i \leq \Delta_i$ vote left, and we can express the expected vote share of the left by $s_L = \sum_{i \in J} n_i F_i(\Delta_i)$. We call $\Delta_i \equiv V_i(G_L; w_i) - V_i(G_R; w_i)$ the left-right utility threshold.

To have a transparent case we assume that the density of voters in the distribution of sympathies are constant [the distribution ϵ_i is uniform over the interval $-1/(2f)$ to $1/(2f)$]. Realistically we also assume that there are some voters from all income classes among the voters of both parties, implying that the actual interval of ideological sympathies $1/f$ is larger than the maximum left-right utility threshold $V_i(G_L^*; w_i) - V_i(G_R^*; w_i)$.

The expected vote share of the left can then be expressed as

$$s_L = 1/2 + \sum_{i \in J} n_i f \Delta_i \quad \text{where} \quad \Delta_i \equiv V_i(G_L; w_i) - V_i(G_R; w_i) \tag{A3}$$

The random effects may be caused by popularity waves, the personality of major candidates, appearances on TV etc., implying that the outcome of the election can be written $s_L - r$ and $1 - s_L + r$ where r is a random variable with zero mean. Assuming again the convenient uniform distribution for the popularity shock with a density z, the probability that the left wins $q = \Pr[s_L - r \geq 1/2]$ can be written as

$$q(G_L, G_R) = 1/2 + zf \sum_{i \in J} n_i \Delta_i \quad \text{where} \quad \Delta_i \equiv V_i(G_L; w_i) - V_i(G_R; w_i) \tag{A4}$$

Using proposition 1, we know that for given policy platforms the probability that the left wins must go up with affluence. Similarly, when the rich gets richer the probability that the left wins goes up, and when the poor get poorer the probability that the left wins declines. It would be wrong, however, to derive the impacts of rising inequality on this basis. First, these changes are associated also with changes in average incomes (an increase in the first case and a decline in the second), while we would be interested in the isolated effect of inequality per se, keeping the average income constant. Second, policy platforms are not likely to remain constant when the income distribution changes—our next topic.

Proof of proposition 1

Fix policies $G_L > G_R$. Clearly, the left vote share increases with the left-right utility threshold $\Delta_i = v(C_i^L, G_L; h_i) - v(C_i^R, G_R; h_i)$. Proposition 1 claims that $d\Delta_i/d\bar{w} > 0$ and $d\Delta_i/dw_i > 0 > 0$.

Letting $C_i^L = (1 - kG_L/\bar{w})w_i$ be the disposable income of i with $G = G_L$, and $C_i^R = (1 - kG_R/\bar{w})w_i$ the disposable income with $G = G_R$, and using the first order condition we have

- $d\Delta_i/dw_i$ must be strictly positive since, by letting $C_i^L = (1 - kG_L/\bar{w})w_i$ and $C_i^R = (1 - kG_R/\bar{w})w_i$, we easily see that $\text{sign}[d\Delta_i/dw_i] = \text{sign}[v_1(C_i^L, G_L; h_i)C_i^L - v_1(C_i^R, G_R; h_i)C_i^R]$. Now, complementarity, $v_{12} \geq 0$, implies $v_1(C_i^L, G_L; h_i)C_i^L - v_1(C_i^R, G_R; h_i)C_i^R \geq v_1(C_i^L, G_R; h_i)C_i^L - v_1(C_i^R, G_R; h_i)C_i^R \equiv H$. In addition $H > 0$ since $d(v_1 C)/dC = (1 - \mu)v_1 < 0$ and $C_i^R > C_i^L$.

- the proof of $d\Delta_i/d\bar{w} = [v_1(C_L, G_L; h_i)G_L - v_1(C_i^R, G_R; h_i)G_R]kw_i/\bar{w}^2 > 0$ is analogous

Complementarity between party platforms:

Fix G_R. Using the first order condition for the left party, $P'_L = \alpha_L q_1[W_L(G_L) - W_L(G_R)] + (1-\alpha_L)qW'_L(G_L) = 0$, we find

$$\frac{dG_L}{dG_R} = \frac{-\alpha_L q_L W'_L(G_R) + (1-\alpha_L)q_R W'_L(G_L)}{-P''_L} > 0 \tag{A5}$$

To see the inequality observe that $P''_L < 0$ (from the second order condition), and that $-q_1 = -z\sum_i f_i n_i V'_i(G_L; w_i)$ and $q_2 = -z\sum_i f_i n_i V'_i(G_R; w_i)$. Now $-q_1 \geq 0$ from the first order condition, and both $-q_1$ and q_R are increasing in G. Hence, for $G_L \geq G_R$ we have $-q_1 \geq q_2$.

- $\alpha_L \geq 1/2$: From concavity we have $W'_L(G_R) \geq W'_L(G_L)$, implying that $dG_L/dG_R > 0$;
- $\alpha_L \geq 1/2$: Notice: q_2 is a constant as long as G_R is fixed. The first order condition implies that $(1-\alpha)W'(G_L)$ goes monotonically to zero as α goes to zero. Hence, $dG_L/dG_R \geq 0$ also in this case.
- dG_L/dG_R goes to zero as G_R becomes large and G_L approaches G^*_p.

Proof of proposition 2

We prove the propositions for G_L (for a given G_R and constant ideals G^*_L and G^*_R). The proof for G_R (for given G_L) is analogous. Notice that as G_L declines for given G_R, and as G_R declines for given G_L, complementarity between the two parties, demonstrated in section ii) above, leads to further decline in both. The effect of rising inequality in Proposition 4 follows by setting $\alpha_L = 1$.

To see that (if $f_i \approx f$ and $\mu > 1$) a mean preserving increase in wage inequality leads the left party to reduce its welfare generosity, we visualize a mean preserving rise in inequality by an increase in an operator, denoted I. Let $M_i \equiv n_i dw_i/dI$. Then a mean preserving overall spread implies $M_p + M_m = -M_r$ with $M_p < 0$ and $M_m < 0$. From the first order condition we have

$$\frac{dG_L}{dI} = \frac{q_{1I}\alpha_L[W_L(G_L) - W_L(G_R)] + q_I(1-\alpha_L)W'_L(G_R))}{-P''_L} \tag{A6}$$

showing that $dG_L/dI < 0$ if $q_1 = -z\sum_i f_i n_i V'_i(G_L; w_i)$ declines as inequality goes up, denoted $q_{1I} \leq 0$; or that q declines as inequality goes up, denoted $q_I \leq 0$; or both.

- We have

$$q_{1I} = z \sum_{i \in J} x_i f_i M_i \text{ where } x_i \equiv \frac{dV_i'(G_L; w_i)}{dw_i} \tag{A7}$$

$$q_I = z \sum_{i \in J} y_i f_i M_i \text{ where } y_i \equiv \frac{d\Delta_i}{dw_i} \tag{A8}$$

- $y_i \equiv d\Delta_i/dw_i > 0$ declines when we move to higher income classes, as $\text{sign}[dy/dw] = \text{sign}[C^L v_{11}(C^L, G_L) - v_{11}(C^R, G_R)] = \text{sign}[C^R v_1(C^R, G_R) - C^R v_1(C^L, G_L)]\mu < 0$

- $x_i \equiv dV_i'/dw_i = (\mu - 1)(k/\bar{w}))v_1 + (1-t)v_{21} > 0$ declines when we move to higher income classes, as $dx_i/dw \leq (\mu - 1)(k/\bar{w})v_{11}$ when μ and v_{12} are non-increasing in income w.

- Using $\sum M_i = 0$ we have that $q_{1I} = z \sum_{i \in J} x_i f_i M_i = (f_p x_p - f_r x_r)M_p + (f_m x_m - f_r x_r)M_m < 0$ as long as $f_i \approx f$, $x_p > x_m > x_r$,and $M_p < 0$ as well as $M_m < 0$.

- Similarly, $q_I = z \sum_{i \in J} f_i y_i M_i = (f_p y_p - f_r y_r)M_p + (f_m y_m - f_r y_r)M_m < 0$ as long as $f_i \approx f$, $y_p > y_m > y_r$, and $M_p < 0$ as well as $M_m < 0$.

Appendix B: Data definitions and descriptive statistics

Welfare support: The Comparative Manifesto Project derives party positions by extensive analyzes of party manifestos prior to each election. We follow the recent recommendations of Lowe et al. (2011) closely when deriving policy positions. In other words, we assume that it is the *balance* of favorable mentions of expansion versus favorable mentions of limitation that matters when a party wants to state its position on welfare state generosity. Next, we impose no bounds of extremity, yet we assume that expressing extreme positions require exponentially more pro- or anti-welfare state sentences in the party program. Finally, we smooth the positions slightly towards zero by adding .5 to both variables, something which should make estimates more stable (Lowe et al., 2011, 132). Together this implies that a party's welfare state policy platform, *Welfare*, is measured as:
Welfare = log("Welfare State Expansion" + .5)-log("Welfare State Limitation" + .5)

Wage inequality: Wage inequality is measured by the ratio of gross earnings between the 90th and the 10 percentile, manly taken from the OECD earnings database. The OECD wage data are supplemented by data calculated from ECHP for the period 1994 to 2001 for Austria, Belgium, Denmark, Finland, France, Greece, Ireland, Italy, Netherlands, and Portugal. Data from France, Italy (1979-1984), and Switzerland are net of taxes. Data from Canada (1967-1994), Finland, France, Netherlands, and Sweden are based on annual earnings. Index variables reflecting data source, and whether the basis is net wages and annual earnings, are included in all regressions to account for source-driven breaks in the wage inequality series.

Controls: We control for economic growth, the percentage elderly, trade openness, and union density since these are time-varying variables that potentially influence both wage inequality and party positions. The control variables are described the below table. The independent variables are lagged one year, i.e. they refer to the situation the year preceding the election.

Instruments: Bargaining coverage is defined as employees covered by wage bargaining agreements as a proportion of all employed income earners with a potential right to bargaining. The *adjusted bargaining coverage* is obtained by removing sectors or occupations without a defacto right to bargain from the number of income earners (see Visser (2011)). The adjusted bargaining coverage data are typically reported in five year intervals. We have interpolated between the observations and smoothed the observation by taking the average of the previous five years. A (few) missing observations are interpolated using the effective number of union confederations. The effective number of union confederations is defined as the inverse of the Herfindahl index. The union confederation data are missing for Iceland, reducing our sample to 116 elections from 21 countries. Table A3 shows the percentage change in the instruments from the first to the last observation by country.

Table A1: Descriptive statistics and variable descriptions. N=120,except if * for which N=117.

Variable	Description	Data source	Mean	Std. Dev.
Left generosity	See text and appendix	Budge et al. (2001)	2.61	.74
Right generosity	See text and appendix	Budge et al. (2001)	1.52	1.18
Wage inequality (90/10)	90-10 percentile ratio	OECD's earnings database	2.97	.68
Wage inequality (90/50)	90-50 percentile ratio	OECD's earnings database	1.79	.25
Wage inequality (50/10)	50-10 percentile ratio	OECD's earnings database	1.64	.22
Economic growth	Growth of real GDP,% change from previous year	Armingeon et al. (2006)	2.60	1.93
Percentage elderly	Population 65 and over as % of population	Armingeon et al. (2006)	13.67	2.47
Trade openness (log)	Exports of goods and services as % of GDP	Franzese and Hays (2008)	3.81	.65
Union density	Net union membership as a proportion of employment	Visser (2011)	40.69	21.49
Union bargaining coverage	Proportion of employees covered by wage bargaining	Visser (2011)	68.89	24.05
Effective number of confederations	Defined as the inverse of the Herfindahl-index	Visser (2011)	2.53	1.66

Table A2: Countries and years included.

Country	Years
Australia	1977, 1980, 1983, 1984, 1987, 1990, 1993, 1996, 1998, 2001
Austria	1990, 1994, 1995, 1999, 2002
Belgium	1987, 1991, 1995, 1999, 2003
Canada	1968, 1974, 1993, 2000
Denmark	1981, 1984, 1987, 1988, 1990, 1998, 2001
Finland	1987, 1991, 1995, 1999, 2003
France	1962, 1967, 1968, 1973, 1978, 1981, 1986, 1988, 1993, 1997, 2002
Germany	1987, 1990, 1994, 1998, 2002
Greece	1996, 2000
Iceland	1987, 1991, 1995
Ireland	1997, 2002
Italy	1983, 1987, 1992, 1994, 1996, 2001
Japan	1976, 1979, 1980, 1983, 1986, 1990, 1993, 1996, 2000, 2003
The Netherlands	1981, 1982, 1986, 1989, 1994, 1998, 2002, 2003
New Zealand	1987, 1993, 1996, 1999, 2002
Norway	1981, 2001
Portugal	1995, 1999, 2002
Spain	1996, 2000
Sweden	1976, 1979, 1982, 1985, 1988, 1991, 1994, 1998, 2002
Switzerland	1999, 2003
United Kingdom	1979, 1983, 1987, 1992, 1997, 2001, 2005
United States	1976, 1980, 1984, 1988, 1992, 1996, 2000

Table A3: Percentage change in the instruments from first to last observation.

	Adjusted bargaining Coverage (log)	Effective number of union condederations
Australia	-40	-5
Austria	2	0
Belgium	0	2
Canada	13	28
Denmark	2	12
Finland	21	12
France	29	90
Germany	-9	0
Greece	-3	3
Ireland	-5	0
Italy	-5	2
Japan	-39	-21
The Netherlands	1	-3
New Zealand	-67	-14
Norway	6	41
Portugal	-3	-3
Spain	5	1
Sweden	12	26
Switzerland	0	-6
United Kingdom	-51	10
United States	-41	-19

Appendix C: Robustness checks

Table A4 explores whether the wage inequality coefficient is robust to the inclusion of several additional control variables.

Left majority: Pontusson, Rueda and Way (2002) argue that left party in power may affect wage inequality. Bawn and Sumer-Topcu (forthcoming) suggest that there is a direct effect from being the incumbent on own party program. Together these two mechanisms may induce a bias in our estimates. Column 1 in the table demonstrates that the inequality coefficient is robust to the inclusion of the indicator of left majority in cabinet, indicating that this potential bias is not present in our case.

Generosity: Barth and Moene (2012) argue that a high level of welfare generosity may improve the bargaining situation of low-income workers and thus reduce wage inequality from below. Wilensky (2002) suggests a growth to limits effect, saying that the manifested political welfare ambitions decline in the current level of welfare generosity. Together the two mechanisms may induce a bias in our estimates. Column 2 in the table assures that the bias is not present as the inequality coefficient is robust to the inclusion of the current level of welfare generosity as measured by the overall generosity index in Scruggs (2004, 2006).

Unemployment: Higher unemployment may influence the support for social insurance and therefore also the party platforms. Unemployment may in addition affect wage inequality, in particular at the bottom of the wage distribution. Again this may induce a bias in our estimates. Column 3 in the table shows that bias is not present as the wage inequality coefficient is robust to the inclusion of current level of unemployment.

Immigration: Alesina and Glaeser (2004) argue that higher migration may reduce the support for the welfare spending that party programs can pick up. Immigration can in addition affect wage inequality in accordance with the skill profile of migrants (Card, 2009). This may induce a bias in our estimates. Column 4 in the table indicates that the effect of wage inequality is even stronger controlling for the share of immigrants in the population implying that an omitted immigration variable is not a problem for our main conclusion.

Turnout: Pontusson and Rueda (2010) argue that voter turnout may influence party positions since more of the poor vote when the turnout is high. In addition voter turnout and inequality may be correlated, for instance because the actual education policy affects both, creating an omitted variable bias in our estimates. Column 5 in the table shows no sign of the bias as the wage inequality coefficient is robust to the inclusion of voter turnout. The turnout coefficient in Table A4 is insignificant, and the wage inequality coefficient barely changes.

Outliers: We have a fairly small sample and one might worry that results are driven by a few extreme outliers. Estimating DFBETAS scores for the wage inequality coefficients[19] we examine if any observations change the wage inequality coefficient by one standard error or more (Bollen and Jackman, 1990, 267). We find no observations close to this absolute cut-off, and the wage inequality coefficient is slightly smaller, but not substantively affected, if we instead rely on a size-adjusted cut-off and exclude the 5 per cent of the observations with the most extreme DFBETAS scores (see for instance Hamilton, 1992, 126).

Excluding countries: Is the inequality coefficient driven by a single country? We re-estimate the models, excluding one country at the time in a rotating fashion. The largest drop in the coefficient is observed when we exclude Austria (β=-.804, SE=.272) and the US (β=-.784, SE=.247), while the largest increase occur when we exclude Canada (β=-.564, SE=.191) and Japan (β=-.553, SE=.199).

Lags: A party may not be free to decide its platform without taking its recent history into account. Table A5 in the Appendix shows that conclusions are not substantively different

[19]DFBETAS measure the influence of each observation on a specified coefficient by calculating by how many standard errors the coefficient change when the respective observation is excluded from the analysis (Hamilton, 1992, 125)

if we include the lagged dependent variable. In this table we also show that conclusions are similar if we rely on the ratio between the 90th and the 50th percentile or the 50th and the 10th percentile.[20]

Alternative measures: In column 6 in Table A5 we replace the dependent variable used so far with Cusack and Engelhardt's (2002) economic left-right index. This index is based on ten variables in the Comparative Manifesto Project data set and represents a broader set of economic policy issues (see description in the Appendix). The index has a theoretical range from -100 to 100 where a high score implies a rightist position. As evident, conclusions are the same; an increase in wage inequality is associated with a rightward shift of left parties. The wage inequality coefficient is insignificant for the right bloc.

Uncertainty in the estimates of the party positions: An important criticism of the Comparative Manifesto Project data is the lack of uncertainty estimates in the derived party positions (Benoit, Laver and Mikhaylov, 2009). Since we use the data as dependent variables, measurement error in the Comparative Manifesto Project data most likely only inflate the standard errors of the regressions. Nevertheless, as a robustness check we construct uncertainty estimates of the bloc positions based on the policy-specific uncertainty estimates constructed by Benoit et al. (2009).[21] Next, we estimate a weighted least squares regression including the same control variables as in Table 1, where each observation is weighted by its corresponding uncertainty estimate. The results support the same conclusion as above, reported in Table A6.

[20]The size of the coefficients are different, yet this reflects that the distributions of the ratios differ.

[21]The uncertainty estimates are constructed in a similar manner as the dependent variables, i.e. it is the sum of the estimates for the two Comparative Manifesto Project variables we use to construct the dependent variable, and the uncertainty estimate for the bloc is the sum across the parties within the bloc, where each party's contribution to the bloc score is weighted by the size of the party.

Table A4: Welfare support of the left. Dependent variable is left bloc position on welfare.

	(1)	(2)	(3)	(4)	(5)
Wage inequality (90-10)	-0.704***	-0.714***	-0.736***	-1.340***	-0.655***
	(0.213)	(0.175)	(0.207)	(0.450)	(0.199)
Left majority	0.189				
	(0.129)				
Generosity		0.088			
		(0.055)			
Unemployment			-0.003		
			(0.033)		
Immigrants (log)				-0.978	
				(0.605)	
Turnout					-0.037
					(0.032)
Controls	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Time trend	Yes	Yes	Yes	Yes	Yes
R-squared	0.247	0.275	0.243	0.445	0.259
Number of countries	22	18	22	19	22
Number of elections	120	105	119	70	120

*** p<0.01, ** p<0.05, * p<0.1

Robust standard errors adjusted for country clustering in parentheses. All models include dummies for wage inequality data source. Sample size differs from that of Table 1 because the added variable is missing for some observations.

Table A5: Linear regression models. Dependent variable is left bloc position on welfare policy (columns 1-5) or left bloc position on Cusack-Engelhardt's left-right economic policy index (column 6).

	(1) Welfare	(2) Welfare	(3) Welfare	(4) Welfare	(5) Welfare	(6) Index
Wage inequality (90-10)	-0.756***					26.623**
	(0.239)					(10.448)
Wage inequality (90-50)		-2.860**	-2.894**			
		(1.273)	(1.330)			
Wage inequality (50-10)				-1.555***	-1.648**	
				(0.547)	(0.583)	
Economic growth	0.078*	0.080	0.081*	0.067	0.068	-3.683**
	(0.044)	(0.047)	(0.047)	(0.043)	(0.043)	(1.575)
Percentage elderly	0.071	0.085	0.086	0.065	0.065	-1.558
	(0.068)	(0.068)	(0.070)	(0.073)	(0.074)	(2.033)
Trade openness (log)	1.126	1.276	1.286	1.190	1.198	-54.607
	(1.025)	(1.019)	(1.040)	(1.035)	(1.035)	(35.725)
Union density	0.072*	0.062	0.062	0.076*	0.077*	-3.558**
	(0.040)	(0.041)	(0.041)	(0.042)	(0.042)	(1.497)
Union density-sq.	-0.001*	-0.001*	-0.001*	-0.001*	-0.001*	0.031**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.013)
Trend	-0.045	-0.044	-0.045	-0.046	-0.047	1.952
	(0.041)	(0.039)	(0.041)	(0.041)	(0.043)	(1.572)
Trend-sq.	0.002**	0.002**	0.002*	0.002**	0.002**	-0.072*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.041)
Lagged dependent variable	0.047		0.023		0.045	0.306**
	(0.098)		(0.096)		(0.098)	(0.132)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared (within)	0.238	0.229	0.230	0.220	0.222	0.288
Number of countries	22	22	22	22	22	22
Number of elections	120	120	120	120	120	120

*** p<0.01, ** p<0.05, * p<0.1
Robust standard errors adjusted for country clustering in parentheses
All models include dummies for wage inequality data source.
Column 6 uses the Cusack-Engelhardt's left-right economic policy index (2002)

Table A6: Weighted Least Squares regression models. Dependent variable is party bloc position.

	Left bloc	Right bloc
Wage inequality (90-10)	-0.602**	-0.436
	(0.204)	(0.698)
Controls	Yes	Yes
Country FE	Yes	Yes
Time trend	Yes	Yes
R-squared	0.579	0.676
Number of countries	22	22
Number of elections	120	118

*** p<0.01, ** p<0.05, * p<0.1
Robust standard errors adjusted for country clustering in parentheses
Note: Two observations are dropped in the Right bloc regression because the uncertainty estimates are zero.

Replication of Pontusson and Rueda (2010).

Pontusson and Rueda (2010) argue that an increase in income inequality moves Left parties to the left, but only if voter turnout is high (i.e. more poor voters at the poll). They measure income inequality using top income share data, and measure party positions by using the CMP's general left-right-scale (ranging from -100 to 100) where a high score implies a rightist position. To assess their claim they estimate the following model:

$$RightScore_{i,t} = \alpha_{1i} + \beta_1 Inequality_{i,t} + \beta_2 Turnout_{i,t} + \beta_3 Inequality_{i,t} \times Turnout_{i,t} + \beta_4 MedianVoter_{i,t} + \beta_5 UnionDensity_{i,t} + \epsilon_{i,t}$$

where RightScore refers to position on the left-right-scale, α_{1i} is a country-specific intercept, UnionDensity is the level of union density, MedianVoter is the Kim-Fording-estimate of the position of the median voters, re-scaled to fit the left-right-scale. They estimate standard errors adjusted for country clustering. Their main findings are that β_1 and β_2 are positive, while β_3 is negative, i.e. inequality moves the left to the right, however, this effect declines with the level of turnout and the marginal effect of inequality reverses to negative and significant (i.e. the Left moves to the left) when turnout is higher than its sample average.

We find no significant interaction between wage inequality and turnout on welfare policy position of the left in our data, once accounting for the trend in policy positions. In order to reconcile their results with ours, we "replicate" their findings in Column 1, Table A7 using their model-specification, their dependent variable,[22] and their set of control variables, but we estimate their model on our sample. Since we do not have top-income share for all countries in our sample, we rely on the 90-10 ratio as our measure of inequality.[23] As in Pontusson and Rueda (2010), β_1 and β_2 are positive, while β_3 is negative. Moreover, the marginal effect of inequality is negative (i.e. left-leaning) when turnout is slightly above the sample mean. Thus, we are quite close to replicating their conclusions. When we add the trend terms in column 2, however, the interaction term is substantively reduced and no longer significant at conventional levels.

[22] We still focus on the left bloc rather than the main left party to avoid deciding on the main left party in countries not included in their sample.

[23] We also include controls for inequality data source, but conclusions are similar if we exclude the data source dummies.

Table A7: Linear regression models. Dependent variable is left bloc position on the general left-right-scale.

	(1)	(2)
Wage inequality (90-10)	24.21	22.79*
	(16.07)	(13.207)
Turnout	0.987	0.575
	(0.752)	(.597)
Wage ineq.× Turnout	-0.354*	-0.261
	(0.207)	(0.179)
Union density	-0.358	-0.209
	(0.231)	(0.320)
Median voter	0.386***	0.378***
	(0.060)	(0.072)
Trend		0.638**
		(0.224)
Trend-sq		-0.032**
		(0.012)
Constant	-65.72	-57.22
	(61.74)	(41.50)
Observations	120	120
R-squared	0.418	0.470
Number of countries	21	21

*** p<0.01, ** p<0.05, * p<0.1
Robust standard errors adjusted for country clustering in parentheses

Appendix D: Additional results

This appendix presents the results from two examinations of our instruments that we discuss in section 3.3.

Table A8 shows that our instruments, conditional on union density and country fixed effects, are neither significantly correlated with whether a social pact is announced (column 1) or signed (column 2) in a given year, nor significantly correlated with routine involvement of unions and employers in government decisions on social and economic policy (column 3).

Table A9 shows the results from a "placebo-regression" where we instrument wage inequality from t+1 in a regression of platform generosity from t. As evident, we find no significant effect of future wage inequality on current platforms.

Table A8: Instruments and tripartite consultations.

	(1) Pact negotiated	(2) Pact signed	(3) Routine consultations
Union bargaining coverage	0.013	0.007	0.003
	(0.009)	(0.008)	(0.012)
Effective number of confederations	-0.101	-0.118	0.061
	(0.121)	(0.116)	(0.135)
Controls	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
R-squared	0.124	0.158	0.141
Number of countries	21	21	21
Number of elections	117	117	117

*** p<0.01, ** p<0.05, * p<0.1
Robust standard errors adjusted for country clustering in parentheses

Table A9: Instrument variable (IV) "Placebo"-regression models.
Dependent variable is party bloc position on welfare policy.
Excluded instruments are the adjusted bargaining coverage
and the effective number of union confederations at t+1.

	Left bloc	Right bloc
Wage inequality t+1 (90/10)	0.275	-0.151
	(0.690)	(0.845)
Controls	Yes	Yes
Country FE	Yes	Yes
R-squared	0.142	0.129
Number of countries	21	21
Number of elections	130	130
Kleibergen-Paap F-statistic	7.37	7.37
Sargan statistic	1.03 (p=.31)	1.11 (p=.29)

*** p<0.01, ** p<0.05, * p<0.1
Robust standard errors adjusted for country clustering in parentheses
All models include dummies for wage inequality data source.