Elections, Right-wing Populism, and Political-Economic Polarization: The Role of Institutions and Political Outsiders

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While there is little doubt that technological change is generating labor market polarization around the world, we know much less about its translation into partisan polarization. I explore the political polarization driven by the rise of right-wing populist parties and leaders throughout developed democracies. I build a theoretical model to explain how right-wing populists have attracted the votes of routine workers, workers exposed to automation risk, and previously loyal to mainstream left-wing parties, within both majoritarian multi-district and multiparty proportional systems. I empirically evaluate the theory, focusing primarily on the US and Germany, using individual vote-switching data and campaign targeting strategies inferred from the content of political speeches and party manifestos.

Key Words: labor market polarization, partisan polarization, outsider-populist support, credible commitment

Since the mid-1990s, technological change has significantly increased the automation of production, service delivery, and business management tasks within industrialized economies. Automation is the main driver of structural changes in labor markets around the world, which economists have labeled economic polarization.[1] For instance, Acemoglu and Restrepo (2022) document that between 50 and 70% of recent changes in the US wage structure have been caused by automation. At the same time, we have seen important changes in the party systems of these countries. In particular, the political importance of rightwing populist parties has increased while the influence of established left parties such as the French Socialist Party, the Italian Democratic Party, and the German Social Democratic Party has declined (well documented by Golder 2016).[2] These changes have driven political polarization throughout advanced democracies. Are these two phenomena—automation and party systems change—related? How and to what extent does economic polarization fuel political polarization?

One common feature of the political polarization we observe globally is that rightwing populist parties have had to recruit supporters from traditional leftwing constituencies. Specifically, these populists have sought the political support of workers threatened by automation, those who perform “routine" employment tasks. Populist rhetoric has clearly resonated with routine workers, as noted by several studies (Frey, Berger, and Chen 2017; Im et al. 2019; Milner 2021). This has exposed the vulnerability of advanced democracies to political “outsiders," as exemplified by the emergence of figures like Donald Trump in the US. Populists can leverage their outsider status to compete for mainstream parties' supporters (Acemoglu, Egorov, and Sonin 2013; Guriev and Papaioannou 2020).

I argue that the nature of this recruitment process depends critically on a country's electoral and party systems, leading to “varieties of polarization." I build a game-theoretic model of outsider politics that predicts rightwing populists in majoritarian settings will focus on tax and transfer policies to win the support of routine workers, but only in marginal (swing) districts. In countries with PR electoral systems, trichotomous multipartism, and power-sharing (PRITM systems, for short), rightwing populists will emphasize cultural values rather than material transfers to recruit followers from the pool of dissatisfied, routine workers.[3]

[1] See, for example, Autor, Katz, and Kearney 2006; Goos and Manning 2007; Goos, Manning, and Salomons 2009; Autor 2013, 2015; Jaimovich and Siu 2020

[2] Among European countries, radical-right parties' vote share rose from 4.6% in the mid-1990s to 16.4% in 2020.

[3] Note that while in PR systems, outsiders can enter the competition through the entry of new parties (see, for instance, and A4 A5 about the rise of radical right parties); in two-party systems, one or both parties choose to become anti-

To empirically evaluate my theory, I focus primarily on Germany and the US, which provide valuable variation in their electoral and party systems. I first examine whether voters exposed to automation risk were more likely than other voters to switch from the mainstream left to populist right parties using data from the 2012-2016 US presidential and the 2013-2017 German general elections. I find that workers in occupations that require replaceable routine skills are more likely to switch from establishment candidates to outsiders in both countries.

Then, to evaluate the varieties of polarization phenomenon, I analyze parties' campaign targeting strategies by either examining manifesto or political speech content, as well as the geography of political rallies and electoral success. I find that Trump used pro-worker distributive politics rhetoric to target at-risk workers in competitive states, while the AfD in Germany focused on cultural threat messaging (e.g., anti-immigration). Finally, I extend the results for the PRITM systems by analyzing parties' campaign messaging in 16 advanced democracies between 1970 and 2019, finding that partisan polarization over fixed value positions, such as anti-global nationalism, increased after labor market polarization. To the best of my knowledge, these results are the first to consider how the political-institutional context moderates labor market polarization's effects on elections. Before turning to the analysis, I briefly review some of the closely related research.

Related Work

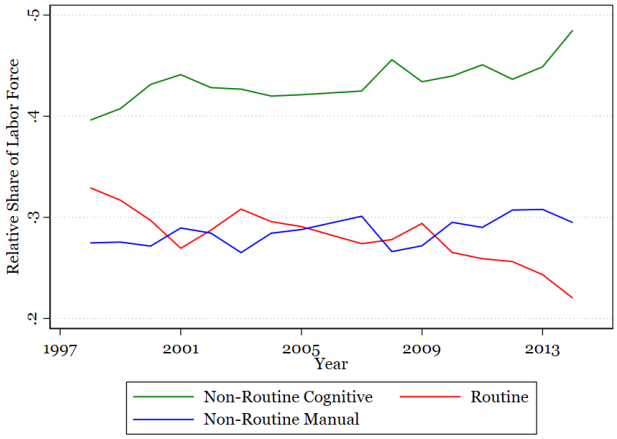
This paper's theoretical framework and results connect to and build upon several existing literatures. There is extensive literature in political economics that links job polarization and the decline of the middle class—in terms of employment and wages—to automation (Autor, Katz, and Kearney 2006; Goos and Manning 2007; Goos, Manning, and Salomons 2009; Autor 2013, 2015; Boix 2019). Figure 1 shows the declining share of routine workers and the increasing share of non-routine workers, reflecting the trend of growing economic polarization.[4] Recent scholarship also connects the populist backlash to automation anxiety.[5] Figure 2 shows routine workers' support for populist parties has increased, while it has sharply decreased for mainstream left parties.

establishment by selecting party leaders who are outsiders. For a discussion of outsider leaders entering through established parties in a majoritarian case with intense interparty polarization, see Buisseret and Van Weelden (2020).

[4]Figure A2 in the Appendix shows the same pattern for 23 European countries.

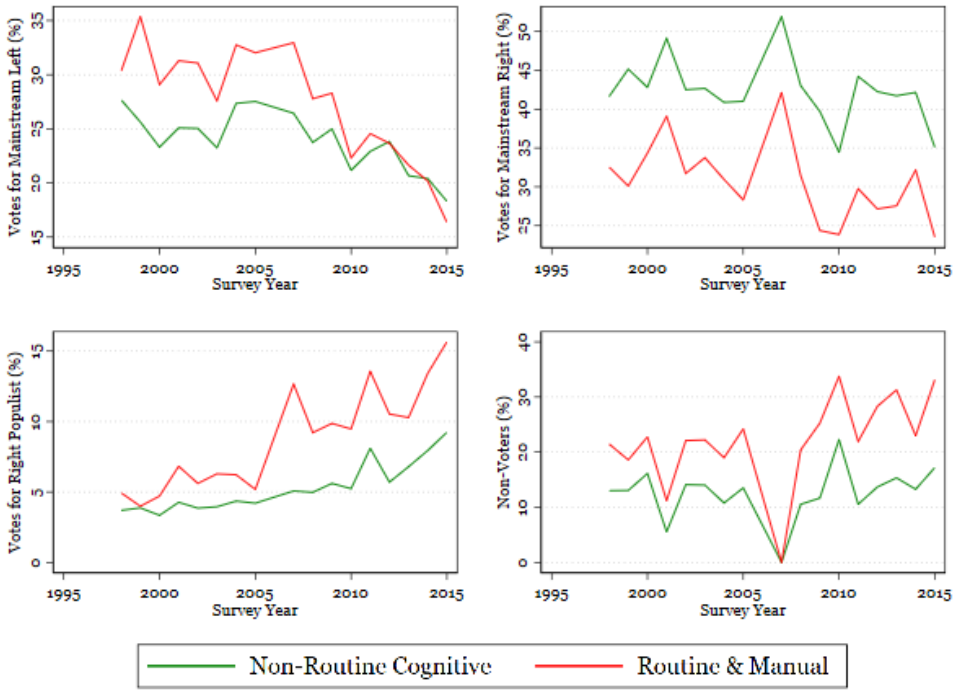
[5]See for examples: Frey, Berger, and Chen (2017), Gidron and Hall (2017), Colantone and Stanig (2018), Im et al. (2019), Gingrich (2019), Anelli, Colantone, and Stanig (2021), Kurer (2020), Kurer and Palier (2019), and Milner (2021)

Figure 1: Relative Share of Labor Force 1995 to 2014



Note: Countries included: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Italy, and United Kingdom. Source: Author's own calculation based on ISSP data

Figure 2: Electoral consequences, Routine and Non-Routine Voters



Note: Countries included: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Italy, and United Kingdom. Source: Author's own calculation based on ISSP data.

My definition of populism follows the lead of Guiso et al. (2017) and Norris and Inglehart (2019), among others. Populist parties use anti-elite and pro-people rhetoric to promote short-term protectionist policies. Populists may use pro-worker (Acemoglu, Egorov, and Sonin 2013), xenophobic, and nationalist rhetoric (Inglehart and Norris 2016). Recent work by Neuner and Wratil (2022) and Castanho Silva, Neuner, and Wratil (2022) uses conjoint experiments to study which components of populism appeal to voters in Germany and the US, respectively. Previous research suggests that extreme policies are used to signal independence from the elite (Acemoglu, Egorov, and Sonin 2013), giving populist outsiders an advantage in proposing radical policies (Karakas and Mitra 2020; Guiso et al. 2017), and

that economically disappointed voters support riskier candidates (Panunzi, Pavoniz, and Tabellini 2020) or mobilize against elites in response to inequality (Pastor and Veronesi 2018).

There is a considerable amount of scholarship on inequality's effect on partisan polarization, but the findings are inconclusive. While inequality may generate radical redistribution proposals (Meltzer and Richard 1981; Pontusson and Rueda 2008), this has not resulted in the emergence of pro-redistribution parties everywhere. There is also a large literature that examines the impact of institutions on the political economy of elections, voters, and parties.[6] Most relevant to my argument, Han (2015) shows that the permissiveness of electoral systems allows economic polarization to generate higher partisan polarization over redistribution. Moreover, we know that single-party executives (frequently in majoritarian contexts) have the highest pledge fulfillment rates than multiparty executives (Thomson et al. 2017).[7] And yet, despite this research, we know surprisingly little about how a country's political-institutional environment–specifically, its electoral and party systems as well as its power-sharing institutions–shape the way that economic polarization contributes to political polarization. This is my contribution. In the next section, I begin with the theoretical model.

The Model

In this section, I present a theoretical model of outsider politics that generalizes and builds upon the basic setup in Karakas and Mitra (2020). After deriving theoretical results for the baseline model, I extend the model to more realistic electoral and party system contexts. To begin, there are two office-motivated party leaders, labeled L and P, representing the mainstream left and the outsider populist party (indexed by j).[8] They compete for a continuum of routine (R) and non-routine (N) workers who constitute the electorate (indexed by h). Each candidate has a fixed value commitment ($\theta_j \in \mathbb{R}$), resistant to compromise (less divisible) that satisfies $\theta_L < \theta_P$, and a chosen policy position, a tax rate ($t_j \in [0, 1]$). A tax, in this context, is any policy that transfers the income of one group to another. The former reflects leaders' positions on indivisible issues, such as multiculturalism or traditional values, while the latter reflects a more divisible policy position, such as a tariff rate or the level of industrial subsidies.[9]

[6] This work draws on theories of coalition bargaining and redistribution. See, for example, Meltzer and Richard (1981), Austen-Smith (2000), Iversen and Soskice (2006), Iversen and Soskice (2015), Becher (2016), and Hays (2021).

[7] E.g., the UK governing parties fulfilled 86% of their electoral pledges, while the Austrian coalition government only 40%.

[8] See Glossary of Notation A for further details.

[9] While individuals do not compromise their fixed value commitments during the election, parties may choose leader-candidates based on their fixed-value positions in an extended version of the model.

The candidates differ in the credibility of their campaign commitments to radical policy positions. More specifically, they differ in terms of the probability (p_j) that a radical policy position taken during the campaign will be implemented when the candidate is in office. Outsider candidates, such as populist party leaders, can more easily commit to radical policies than mainstream leaders ($1 > p_P > p_L > 0$) due to less resistance from special interest groups and lack of prior policy actions impacting voter beliefs. (Karakas and Mitra 2020; Fortunato and Stevenson 2013). Radical policies are those that fall outside of the bounds $\underline{t}$ and $\bar{t}$, which are symmetric to the status quo (t_q). Extreme austerity proposals fall below $\underline{t}$, while extreme transfers are above $\bar{t}$. In moderate scenarios ($t_j \in [\underline{t}, \bar{t}]$), voters believe in all candidates' commitments ($p_j(t_j) = 1$).

Voters' Utility. Voters care about their income levels and the fixed-value positions of the candidates. The routine group favors transfers, while the non-routine group prefers to pay fewer taxes. Voters' fixed-value preferences (θ_{ih}) are uniformly distributed in each group, denoted by $\theta_{ih} \sim \text{Uniform}[\theta_h^{min}, \theta_h^{max}]$.[10] They vote sincerely for the closest party leader, considering the distance between the voters' and leaders' ideal points along two dimensions: fixed-value positions (θ) and transfers (t). The cumulative distribution function of voters is defined as F_h, with a density function f_h.

The model assumes the non-routine group will pay taxes and the routine group will receive transfers. The function $D(t_j)$ represents the consumption utility of group N after paying taxes. $G(t_j)$ represents the consumption utility of group R after receiving transfers. Thus, each group of voters differs in policy preferences (one pays taxes, and the other receives transfers).

$$\begin{aligned} \mathbf{E}[u_{iR}] &= \mathbf{E}[G(t_j)] - \lambda(\theta_j - \theta_{iR})^2 \text{ or} \\ \mathbf{E}[u_{iN}] &= \mathbf{E}[D(t_j)] - \lambda(\theta_j - \theta_{iN})^2 \end{aligned} \tag{1}$$

The index i designates an individual voter, θ_{ih} determines the utility derived from a candidate's fixed-value positions, and $\lambda > 0$ is a weighting parameter that determines the relative importance of the fixed-value positions. Both consumptions functions G and D are assumed to be twice continuously differentiable and strictly concave ($G''(t_j) < 0$ and $D''(t_j) > 0$). The assumptions imply that consumption utilities are strictly increasing in t_j for routine voters ($G'(t_j) > 0$) and strictly decreasing for non-routine voters ($D'(t_j) < 0$).

[10] For instance, R could be assumed to have a midpoint $\theta_R > \theta_N$. This assumption is not imposed, but since there are different uniform distributions, the case is possible.

Given θ_j and t_j, voter i in group $h \in \{N, R\}$ votes for party leader L instead of P if and only if

$$\mathbf{E}[u_{ih}(t_L; \theta_L)] \geq \mathbf{E}[u_{ih}(t_P; \theta_P)]$$

By substituting each expected value (equation 1), we can find the indifference point for routine workers:[11]

$$\mathbf{E}[G(t_L)] - \lambda(\theta_L - \theta_{ih})^2 = \mathbf{E}[G(t_P)] - \lambda(\theta_P - \theta_{ih})^2$$

$$\overline{\theta_h}(t_L, t_P) = \frac{\mathbf{E}[G(t_L)] - \mathbf{E}[G(t_P)] + \lambda(\theta_P^2 - \theta_L^2)}{2\lambda(\theta_P - \theta_L)}. \tag{2}$$

When both party leaders propose the same moderate proposal $t_L = t_P$, the indifference point depends completely on party leaders' fixed-value positions and is the midpoint between them $\overline{\theta_h} = \frac{(\theta_P + \theta_L)}{2}$. However, if both party leaders propose the same extreme policy ($t_L = t_P$), where $t_j \notin [\underline{t}, \overline{t}]$, the (ex-ante) indifference point is biased in favor of the populist candidate because, even though the policy proposals are the same, the outsider is more likely to implement the policy. When policies are radical, the indifference point is $\overline{\theta_{ih}} = \frac{\overline{p_L}[G(t_L)] - \overline{p_P}[G(t_P)]}{2\lambda(\theta_P - \theta_L)} + \frac{(\theta_P + \theta_L)}{2}$. Radical policy proposals made by outsider candidates are more likely to be implemented.

Party Leaders' Utility. Leaders maximize their share of votes using equations (3) and (4) for the mainstream and populist parties respectively. The endogenous choice variable is the tax (t) and candidates consider the relative size of each voting group (α_h):

$$V_L(t_L, t_P) = \alpha_R F_R(\overline{\theta_P}) + \alpha_N F_N(\overline{\theta_N}) \tag{3}$$

$$V_P(t_L, t_P) = \alpha_R(1 - F_R(\overline{\theta_R})) + \alpha_N(1 - F_N(\overline{\theta_R})). \tag{4}$$

Given the utility functions of party leaders and voters, the conditions for equilibrium in the baseline model are as follows: whether the proposal is a cut or hike in taxes and transfers is determined by the relative electoral importance of each group of voters (routine and non-routine), the distribution of leaders' fixed-value positions, and the marginal utility from taxation. This logic leads to lemma 1. Intuitively, taxes will be cut (hiked) when non-routine (routine) voters dominate in society.

Lemma 1 *The unique pure strategy equilibrium is such that* $t_j^* > t_q \iff \alpha_R \overline{f}_R G'(t_j^*) > \alpha_N \overline{f}_N |D'(t_j^*)|$ *for* $j \in L, P$

[11] For non-routine workers (N), the equation will be similar, but include the consumption function D instead of G.

Both party leaders target the same group of voters in equilibrium—routine or non-routine (i.e., both leaders propose either a tax hike or cut in equilibrium). Lemma 2, which comes from Karakas and Mitra (2020), captures this logic.

Lemma 2 *In equilibrium,* $t_P^* > t_q$ *if and only if* $t_L^* > t_q$.

Proposition 1 *The unique equilibrium takes three forms: radical, moderate, and threshold. If* $t_L^* = t_P^*$, *then there is a moderate equilibrium, while in a threshold equilibrium, any party leader can propose either* $\underline{t}$ *or* $\overline{t}$, *while the other proposes an extreme policy. Moreover, if* $|t_L^* - t_q| \leq |t_P^* - t_q|$, *there is a radical equilibrium.*

There are three types of equilibria described in Proposition 1. There is a moderate equilibrium in which both party leaders propose the same moderate policy change. There is a radical equilibrium in which both candidates propose radical policies, but the outsider's proposal will be more extreme (or equal to) the mainstream's, resulting in a divergence in policy proposals. (There is no equilibrium in which one party leader proposes a moderate policy while the other offers an extreme one.) There is, however, a threshold equilibrium in which one of the leaders proposes the threshold $(\underline{t}, \overline{t})$ policy, while the other offers a radical policy.

The Theoretical Implications of Labor Market Polarization

Before moving to the theoretical implications of the institutional context for political-economic polarization, I explore the mechanisms that link the rise of outsider support to automation-induced economic changes, specifically increased labor market polarization (LMP). What are the implications of an increase in job polarization? In particular, how do parties respond to the exogenous displacement (income decline) of routine voters? The implicit function theorem gives the comparative statics for taxes and transfers when there is an exogenous change in the income of routine voters, which is an element of its consumption utility, $G(t_j)$: $\frac{\partial t_j}{\partial I_R} = \frac{-\frac{\partial^2 V_j(t_L, t_P)}{\partial I_R \partial t_j}}{\frac{\partial^2 V_j(t_L, t_P)}{\partial^2 t_j}}$.

Proposition 2 *As LMP increases (decline in* I_R*),* j*'s proposed taxe rate increases for* $j \in \{L, P\}$. *Therefore, the advantage of outsider party leaders also increases.*

As the Appendix shows, the relationship between taxes and transfers and the income of routine voters is negative $(\frac{\partial t_j}{\partial I_R} < 0)$. The substantive interpretation is that when routine workers experience a decline in income, holding non-routine workers' income constant —i.e., LMP increases— taxes and transfers increase. This is because routine voters have a higher marginal utility for transfers when their income declines, making them more receptive to these policies. Consequently, the outsider party leader

P gains an advantage by proposing higher transfers to target routine voters. The following section will examine how outsiders benefit from different electoral and party systems. I focus on two institutional contexts in particular: a multidistrict, fist-past-the-post system with two parties (majoritarian) and a single district, proportional representation system with three parties (PRITM).

Varying Electoral Systems

To model the majoritarian case, I incorporate the logic of multiple (three) districts with one marginal district (Persson and Tabellini 1999). To model the PRITM case, I incorporate coalition bargaining with compromise proposals (e.g., Iversen and Soskice 2006).[12]

The Majoritarian Case (marginal district)

The electoral system consists of three districts: one marginal and two safe. Instead of aiming for the support of a majority of the population, candidates compete to win the marginal district. Distributive policies in this context refer to targeted transfers used to raise the welfare of politically significant groups (Becker 1983; Acemoglu and Robinson 2001). The candidates choose a t_j to raise taxes across the three districts, and they use it to finance subsidies $S_m(t_j)$, with m indicating whether the transfer pertains to the marginal district (m = 1) or not (m = 0). An individual targeted in the marginal district will receive the transfer $S_1(t_j)$, where $S_1'(t_j) > 1$. The main change with this extension is that $G_m(S(t_j))$, transfers received by group R in the marginal district m, may be larger than the taxed income in that district $D_m(t_j)$. Thus, voters' utility will be as follow, with m indicating the marginal district.

$$\mathbf{E}[u_{iR}] = \mathbf{E}[G_m(S(t_j))] - \lambda(\theta_j - \theta_{iR})^2 \text{ or } \mathbf{E}[u_{iN}] = \mathbf{E}[D_m(t_j)] - \lambda(\theta_j - \theta_{iN})^2 \quad (5)$$

What are the political implications of an exogenous increase in the proportion of routine workers in the marginal district? In short, candidates will target routine workers in the marginal district. Candidates maximize their expected vote share in the marginal district only. The comparative statics result for an exogenous increase in the proportion of routine workers, holding the tax rate constant, is summarized the effects of that change:

Proposition 3 *As the share of routine workers (α_R) in the marginal district increases, transfers ($S_1(t_j)$) to the routine group in the marginal district also increase, while transfers to the routine groups in safe districts decrease.*

[12]The comparison of multidistrict (majoritarian) models with single-district (proportional) models follows the approach in Persson and Tabellini (2002, Chapter 8).

Thus, candidates will increase subsidies to routine workers in the marginal district for a given tax rate if their share increases. Under majoritarianism, candidates can target contested regions without raising the overall tax burden.

This logic reflects recent instances where outsider candidates have gained electoral support in majoritarian systems, even when establishment parties, traditionally associated with representing at-risk workers, were present. For example, in the 2016 US presidential election, Donald Trump won the support of many workers facing economic challenges, even though Hillary Clinton represented a party with a historically more pro-redistribution stance. Trump was able to win these voters by focusing his campaign on swing states like Ohio and Pennsylvania, while Clinton spent more time campaigning in safe states like California and New York.[13]

The PRITM Case (single national district)

In the PRITM case, all voters, regardless of group identity and district residence, carry equal weight because what matters is winning the majority of the population rather than just winning marginal districts. Therefore, the electoral system consists of a single district that comprises the entire population. Unlike in the majoritarian case, the model assumes three office-motivated parties: the populist party leader P, the mainstream left party leader L, and the mainstream right party leader M. The model assumes that P competes with L (as Figure 2 shows) while M is the potential coalition partner. Each party leader proposes a tax rate t_j to transfer income, where the amount of revenue raised is equal to the amount transferred. The single-district system focuses on overall redistribution instead of targeted transfers to particular groups in specific regions.

Power-sharing lessens the credibility advantage of outsiders with respect to radical policies because the populist party will need to join a coalition with a mainstream party. Under PRITM, a coalition of two parties must agree on policy (e.g., positive parliamentarism); thus, I expect voters to evaluate coalition partners based on the coalition policy (t_c) rather than t_j. Similar to Iversen and Soskice (2006), I assume that the coalition policy will be a compromise between the two partners (outsider and mainstream). I define the coalition policy as $t_c = \omega \times t_P + (1 - \omega) \times t_M$, where ω represents the bargaining cost of coalition government and takes values between 0 and 1, the latter represents

[13] For example, during the general election campaign in August, Clinton spent 11 days in safe regions such as California, Maryland, New York, and Washington DC, while Trump only spent one day in Texas.

that there is no share of power.[14] The intuition is that voters realize that outsider parties need to reach agreements with other parties—likely more moderate parties—in the coalition-building stage. I do not model coalition bargaining and government formation under PRITM; for simplicity, and based on historical evidence,[15] I assume the outsider P will join the mainstream right M, and the latter positions are treated as exogenous and known to voters.

Under PRITM, the expected utility for the party that will not join a coalition (L) is similar to equation (5), but includes the entire electorate. For a voter from group R who supports a party that may join a coalition, the expected utility is calculated as follows, with t_c representing the expected distribution of the coalition (a compromise between P and M):

$$\mathbf{E}[u_{iR}] = \overline{p_j} G(t_c) - \lambda(\theta_j - \theta_{iR})^2 \tag{6}$$

The extension to the PRITM includes the effect of coalition bargaining ($\omega < 1$) and occurs when proposals are radical ($\overline{p_L} \neq \overline{p_P}$). Intuitively, we would expect the gap between the mainstream and the outsider party to be smaller in PRITM contexts, which means that the outsider advantage with respect to radical policy proposals is diminished. The swing voter ($\overline{\theta_{ih}}$), thus, deviates from the midpoint between the leaders' fixed-value positions. Two sources cause this deviation: candidates' credible commitments ($p_j < 1$) and the cost of coalition bargaining ($\omega < 1$). Thus, in PRITM systems, when there is a significant gap between t_P and t_M, the cost of coalition bargaining may eliminate the outsider's credibility advantage.

Partial Equilibrium. I provide a partial equilibrium analysis for the PRITM case. The initial stage of the electoral competition is endogenous and strategic, while post-election bargaining is treated as fixed. The equilibrium conditions, as defined by Karakas and Mitra (lemmas 1 and 2), also extend to both the majoritarian and PRITM cases. However, under PRITM, the radical and threshold equilibria differ from winner-take-all systems. In a radical equilibrium, the distance between policy proposal and the status quo is smaller, as the outsider has less of a commitment advantage to exploit due to coalition bargaining. In what follows, propositions 4 and 5, show that divergence in a radical equilibrium will still happen in a PRITM context, but it will be less pronounced. This challenges the commonly held view that the median voter moderates parties' electoral proposals under majoritarianism. It suggests that

[14] Coalition commitment only affects voters' utility concerning distributive policies, not their evaluation of fixed-value positions, which can be considered expressive voting.

[15] Most populist right parties in government since 1970 have compromised with mainstream right parties (see Table A24).

majoritarianism can be more prone to policy extremism than PRITM systems once we consider the role of coalition bargaining.

Unlike the majoritarian model presented by Karakas and Mitra, which only allows the outsider to be radical in a threshold equilibrium, under PRITM, an equilibrium exists in which the mainstream proposes an extreme policy and the populist the threshold. This requires coalition bargaining to erase the commitment advantage of outsiders.

The Theoretical Implications of Coalition Bargaining

What are the theoretical implications coalition bargaining? The comparative statics show that when an outsider's coalition government disadvantage increases, there is a more moderate tax and transfer proposal, given that both leaders move closer to the status quo (in both a tax and transfer hike or cut equilibrium). Specifically, there is a higher tax and transfer rate proposed in a radical redistribution cut equilibrium and a lower tax and transfer rate offered in a redistribution hike equilibrium. Another way to say this is that power-sharing institutions generate more similarity among party leaders in any equilibrium (cut or hike), and thus the policy space shrinks.

Proposition 4 *A decrease in* ω *leads to a decrease in* $|t_j^* - t_q|$ *for* $j \in \{L, P\}$. *Furthermore, coalition costs moderate extreme proposals, undermining candidate* P*'s advantage in radical policies.*

Intuitively, the reduced credibility from power sharing weakens the candidate's appeal to dissatisfied voters, hindering her ability to exploit her outsider advantage with respect to radical policy proposals fully. The moderation effect described above directly undermines outsiders' ability to differentiate from the mainstream in a radical equilibrium. Proposition 4 illustrates that the outsider leader's ability to target a group declines as the coalition government's disadvantage increases. Hence, in a majoritarian case—ω equals 1—the outsider can better appeal to the dominant group and move toward the extremes.

Proposition 4 implies that coalition costs can decrease polarization over redistribution policies in PRITM contexts. However, non-PRITM systems may not necessarily exhibit higher taxes and transfers. In majoritarian systems, redistribution is typically lower, but targeted distribution in marginal districts may be higher due to widespread costs and benefits aimed at specific groups.

Endogenous Candidates and Fixed-value Positions. I have demonstrated that in a PRITM institutional context, party leaders have less space for policy differentiation. What would happen if we were to treat the remaining critical parameter—fixed-value positions as a variable? We can imagine a situation in which the party starts by defining its policy proposal to maximize its share of votes and then chooses

the leader closest to the fixed-value positions preferred by the people as a commitment device. Thus, I propose an extension in which θ_j is fixed for leaders, but parties can choose their leaders considering their attributes. This extension allows us to understand the role played by indivisible positions once coalition costs moderate tax and transfer proposals.

For simplicity, I deviate from the baseline model, reformulating coalition costs as a fixed-penalization parameter e_j larger for the outsider candidate P $(1 > e_p > e_L > 0)$. I explore the implications by applying the envelope theorem and show how individual attributes may become a vote-winning strategy when the policy proposal space shrinks (proposition 5).

Proposition 5 *As coalition bargaining costs rise and the outsider party's credibility advantage with respect to radical policy proposals shrinks ($p_L - e_L > p_P - e_P$), populist parties can increase their vote share by choosing leaders with more extreme fixed-value positions.*

Propositions 4 and 5 shed light on observed political polarization across countries. While parties in winner-take-all contexts polarize relatively more over broad-based taxes, with revenues targeted to a small group of recipients (distributive policies), parties in PRITM contexts polarize relatively more over fixed-value positions.

To provide context for this reasoning, it is important to note that in majoritarian contexts, populist leaders have an advantage in making radical proposals due to the absence of power-sharing arrangements that bind them. They can directly target groups in marginal districts without having to promote broad-based redistribution. This was exemplified by Trump's strategy of appealing to workers in marginal districts while maintaining a low redistribution profile in other districts. In contrast, parties in power-sharing systems face limitations in their pledges as they must compromise with less radical coalition partners regarding redistribution. They cannot solely focus on marginal districts, as they aim to secure a majority of votes from a national electorate. In theory, parties use the selection of leaders as a commitment device to signal their party's extremist cultural stances.

Empirical Implications of the Theoretical Model

The theoretical model generates testable hypotheses. First, the model predicts that under high job market polarization, the electoral advantage of outsiders should increase (proposition 2). This expectation can be tested with individual vote-switching data in the context of increasing LMP.

Hypothesis 1 *Routine voters are more likely than non-routine voters to switch from establishment to populist parties and candidates in response to job market polarization.*

Moreover, the electoral strategies adopted by party leaders are contingent upon the electoral and party systems. In majoritarian contexts where coalition costs are low to non-existent, we can expect greater polarization over taxes and transfers and extreme proposals, especially in marginal districts (proposition 3). Conversely, under power-sharing institutions, extreme proposals are moderated, moderating polarization over taxes and transfers (proposition 4).

Hypothesis 2a *In majoritarian-two-party systems, outsider candidates will focus on distributive politics rather than cultural politics to target routine workers.*

Hypothesis 2b *Candidates will target marginal (competitive) districts.*

The third hypothesis follows from the second one: when the scope for policy differences shrinks (moderation) in contexts of economic polarization and power-sharing institutions, parties may differentiate themselves based on candidates' fixed values (Proposition 5), such as opposition to multiculturalism.

Hypothesis 3 *In PRITM systems, outsider parties will focus on cultural politics rather than redistributive politics to target routine workers.*

Empirical Analysis

In this section, I empirically test **Hypotheses 1-3** using two illustrative cases: the US and Germany. These cases are highly relevant for several reasons. First, they provide valuable variation in their party systems and electoral rules. The US has a majoritarian system, while Germany has a PRITM system. This variation allows me to illustrate the model's theoretical expectations under different party and electoral contexts. Second, according to data from the International Federation of Robotics (IFR), these two countries are among those with the highest rates of robot incorporation into economic production processes. Third, scholars have extensively documented LMP due to technological change in both countries (e.g, Autor, Katz, and Kearney 2006; Acemoglu and Autor 2011; Acemoglu and Restrepo 2018; Dauth et al. 2018; Antonczyk, DeLeire, and Fitzenberger 2018). Finally, there has been an increase in political polarization in both countries. In the US, an outsider populist leader, Donald Trump, emerged as a presidential candidate, while in Germany, a populist far-right party, the Alternative für Deutschland (AfD), was founded.

My empirical analysis employs a combination of methods. First, I evaluate **Hypothesis 1** looking at whether voters exposed to automation risk respond to campaign targeting, specifically by switching their vote from an establishment party candidate to the outsider party-leader in the next election. Through my analysis, I demonstrate that routine voters are more likely to switch.

I then examine the campaign strategies used by outsiders to target this group of workers in the US and Germany (**Hypotheses 2a-b and 3**) relying on automated topic analysis of political text, as well as data on candidate visits and electoral performance. The analyses demonstrate that Trump used pro-worker distributive politics messaging in districts with closely contested elections and exposed workers and that the AfD, which focused on anti-immigration and cultural messaging, did better among routine workers in districts characterized by high levels of hate crimes. These findings are consistent with the theoretical model and provide insights into the relationship between economic polarization and political polarization in different institutional contexts.

In addition to these cases, I provide time-cross-sectional evidence examining party manifestos in PRITM countries (Volkens et al. 2020). The analysis indicates a growing emphasis on cultural values, which are becoming the focus of polarization in the post-LMP era, as predicted by the theory.

Vote-switching across Institutions

This section focuses on whether voters negatively impacted by LMP respond to outsider targeting by switching from establishment parties and candidates. To estimate the relationship between exposure to automation and vote-switching, I use a logistic regression model that takes the following form:

$$Y_i = \beta_o + \beta_1 Routine + X_i\beta_2 + \epsilon_i \tag{7}$$

where Y_i represents vote-switching, my dependent variable, which is coded 1 when a voter changed their vote (from time t to $t+1$) from supporting an establishment party to supporting an outsider, and 0 otherwise. For instance, when looking at the case of the US, this means those voters in the 2012 presidential election who voted for Obama, an establishment candidate, switched to support Trump, a populist candidate, in the 2016 election. $Routine$ is the independent variable and captures exposure to technological change. X_i contains various control variables, and ϵ_i is the error term. The theoretical expectation is that routine voters should be more likely than non-routine voters to switch from the establishment to outsider party leaders ($\beta_1 > 0$).

Measurement: Dependent and Independent Variables. To analyze vote-switching in the US, I use the General Social Survey (GSS, Smith et al. 2020) database and operationalize the dependent variable using answers from the 2012 and 2016 presidential elections.[16] A switcher is someone who supported Trump in 2016 but voted for the Democratic candidate (Obama) in 2012. In the German

[16] I use the immediate response to avoid measurement bias: 2014 for 2012's election and 2018 for the 2016 election.

case, I rely on the German Socio-Economic Panel (SOEP) and look at responses from the 2014 and 2018 surveys regarding voting behavior for the 2013 and 2017 elections, respectively. The dependent variable, vote-switching, takes a value of 1 when the voter chose a populist party in 2017 but voted for the establishment left party in 2013 (SPD). [17]

To assess the types of voters (routine and non-routine), I use measures of automation exposure. First, I use the routine task intensity (RTI) index developed by Goos, Manning, and Salomons (2014), which measures the log routine task input per occupation, subtracted by the log manual and abstract task inputs. This index ranges from -1.52 (lowest exposure) for managers of small enterprises to 2.24 (highest exposure) for office clerks. I also use the task routineness indicator from Autor, Levy, and Murnane (2003). It is a dummy taking the value of 1 for routine workers and 0 otherwise, based on their occupations (International Standard Classification of Occupations, ISCO-88).

Control Variables. The literature on electoral choices suggests various factors that influence vote-switching probabilities (e.g. Frey, Berger, and Chen 2017; Gingrich 2019; Thewissen and Rueda 2019). I include individual demographic controls (age, sex, education, foreign-born dummy), income differences, and regional controls (dummy for each region) in the model.[18] Additionally, I explore occupational risks related to skills and globalization (skill specificity, task logic, offshorability).[19]

Results. Figure 3 displays the predicted probability of switching to an outsider as voters become more exposed to automation (x-axis).[20,21] The solid line represents the predicted point estimates, and the dashed lines indicate the 95% confidence interval. In both the US and Germany, the results suggest that voters with higher exposure to automation are more likely to switch from establishment to outsider parties and candidates. For instance, in the US, a voter with minimum exposure to automation (RTI equals -1.52 for managers of small enterprises) has a 0.08 probability of switching to a populist candidate, while a voter with the maximum exposure (RTI equals 2.24 for office clerks) has a 0.22 probability of switching. In Germany, the probability of vote-switching goes from almost zero at the non-routine extreme to 0.02 at the routine extreme.[22] These results are consistent with the theoretical model, showing a positive

[17] Tables A1 and A2 present the descriptive statistics for the data.

[18] The US model includes extra checks (black ethnicity, unemployment, nonreligious), also, while two German regions and nine US regions are analyzed. I do not have access to less aggregate geographic units such as states.

[19] See for example: Iversen, Cusack, and Rehm (2011), Oesch (2013), Kitschelt and Rehm (2014), and Walter (2017).

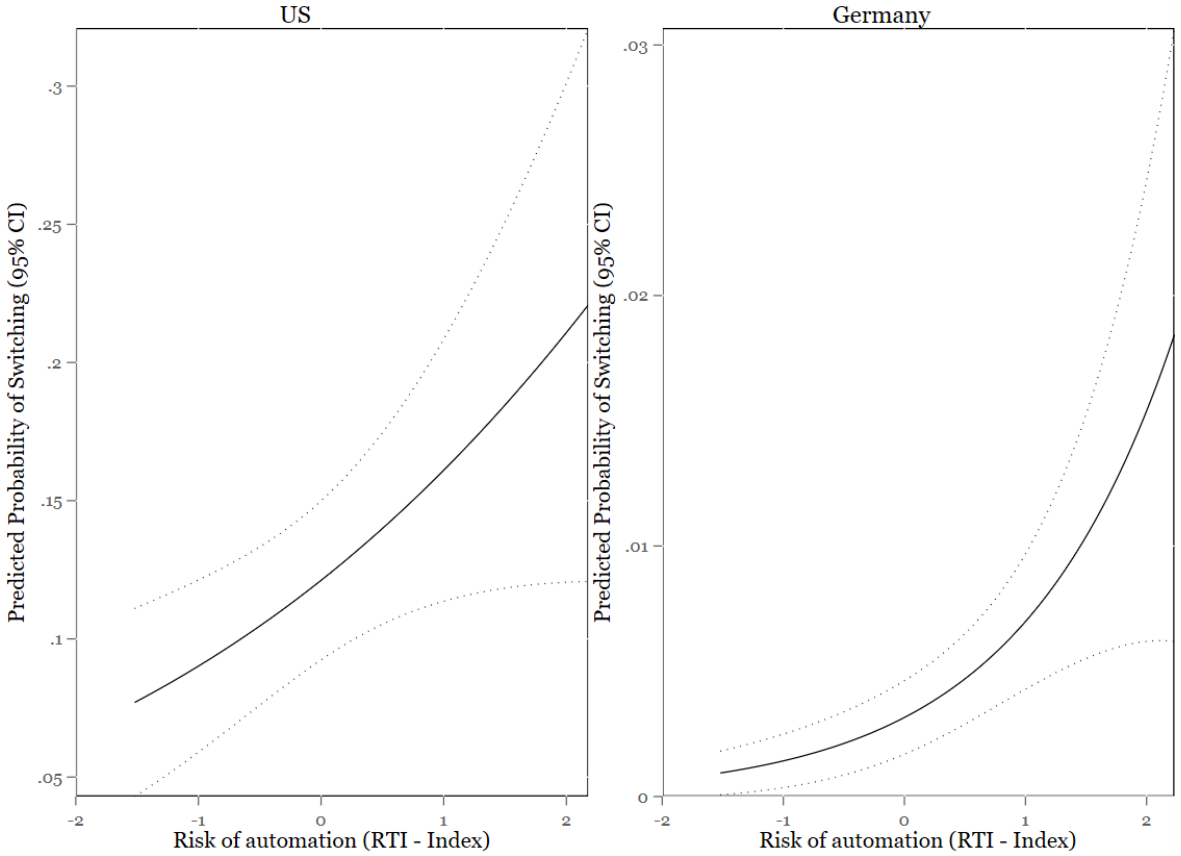
[20] See Tables A3 and A4 for the full models.

[21] Predicted probability estimated for the model including all control variables.

[22] To provide context for the results in the multiparty case, it's worth noting that from 2002-2013, the rates of switching from mainstream parties to non-mainstream parties in German elections were around 7.1% and 3.8%, as shown in Table A10. However, the estimated probability of workers exposed to automation switching to the AfD is 2% (from the left and

correlation between automation exposure (routine workers) and switching from the establishment-left to a populist-right party.

Figure 3: The effect of exposure to automation on vote-switching.



The results are robust to alternative specifications and additional controls. For the US, a narrower definition of vote-switching and different measures of automation exposure yield similar positive relationships (see Table A5 and Appendix Table A6). In Germany, considering switching as movements from the establishment overall (adding the right CDU, CSU) to populist parties and using an alternative proxy for automation also produce consistent results (see Table A7 and Appendix Table A8). Note there were a greater proportion of switchers from CDU (thirty-four versus sixteen percent from SPD), but these movements were not explained by exposure to automation.[23]

Finally, several of the control variables are also statistically significant. Older voters are more likely to switch, while women, foreign-born, nonreligious, and black respondents tend not to switch. There is evidence that more educated voters are also less likely to switch, but this result is not always robust. Additionally, offshorable voters are less likely to switch. These findings are consistent with previous

about 3.7% considering all establishment parties), which is considerable compared to previous switching rates. This rate is 36% of the average rate of switching of mainstream parties from 2002 to 2013 and is double the rate among workers not exposed to automation. Therefore, the 2% probability represents a significant effect.

[23]Table A9 shows that exposure to automation does not explain the switching from CDU to AfD.

research on the relationship between technological change and populism (Frey, Berger, and Chen 2017; Im et al. 2019; Gingrich 2019; Anelli, Colantone, and Stanig 2019; Kurer 2020).

Targeting Strategies: Candidate Rhetoric and Party Platforms

To this point, the analysis has revealed that routine workers switched from establishment to outsider candidates and parties. Do outsiders use different targeting strategies in different institutional contexts? Do Trump and the AfD target routine workers? In this section, I study how outsiders use campaign strategies to appeal to routine workers. In order to do so, I analyze the content of Trump's speeches and the AfD's party manifesto. I present additional evidence of targeting strategies by examining the geography of Trump's campaign visits and the electoral performance of the AfD.[24] All else equal, Trump visited more frequently cities with high numbers of routine workers located in marginal states. The AfD's campaign platform translated into votes at higher rates in districts with larger numbers of routine voters whose cultural values were most likely to align with their campaign message (i.e., districts with higher reported hate crimes).

US: Majoritarian case with Marginal District

As the model suggests, during a period of increasing job polarization in the US, Donald Trump focused on protecting jobs and preventing further job losses to appeal to routine voters. While his rhetoric was not specific to technological change, it would have appealed to those workers at risk from automation. He employed a pro-worker rhetoric that specifically targeted groups of workers, such as steelworkers and autoworkers, by empathizing with their vulnerable situations and referring to them as the "forgotten workers." For instance, he lamented the disappearance of the middle class,[25] and in one marginal state he described these workers as virtuous, hard-working, and deserving of well-paid jobs (September 2016 in Asheville, North Carolina).

Donald Trump's distributive politics strategy included promises to save and create jobs, appealing to workers through pro-worker rhetoric in areas heavily populated with routine workers in competitive states. He proposed to create "massive numbers of jobs, high-paying jobs, good jobs, not the jobs we have today, which everybody agrees are bad jobs," as he stated in a campaign speech in Monessen, Pennsylvania, also a marginal state (June 2016). In fact, the word "job(s)" was one of the most frequently

[24] I implement the analysis at the aggregate level due to data limitations at the individual level, such as restricted access to geographically disaggregated data of questions regarding fixed values' preferences.

[25] Donald Trump's opinion piece, March 2016, see USA Today.

used in his speeches during general elections, along with “go," “people," “American," “country," “Hilary," and “Clinton." In Michigan, another marginal state, he explicitly claimed to be the voice of the workers who “have not been heard for many years" and promised that his victory would be “a victory for the people, a victory for the wage-earner, the factory worker. Remember this, a big, big victory for the factory worker. They haven’t had those victories for a long time" (Dimondale, August 2016). Moreover, in a campaign speech in New York City in June 2016, he also promised to be “the greatest jobs president that God ever created ... I’ll bring back our jobs from China, Mexico, Japan, and so many places. I’ll bring back our jobs and I’ll bring back our money.”

In Florida, also a marginal state, Trump identified with workers and expressed a preference for them: “I feel more comfortable around blue-collar workers than Wall Street executives" (Pensacola, September 2016). Furthermore, in a speech delivered in Erie, Pennsylvania, in August 2016, when he was referring to ‘steelworkers’, ‘miners’, ‘electricians‘ ‘plumbers,’ and overall ‘working people’ he mentioned, “I liked them [working people] better than the rich people that I know."

To achieve targeted distribution toward routine workers in competitive states, Trump also proposed to impose tariffs to reduce US trade deficits and provide subsidies for declining industries. In a speech delivered in Warren, Michigan, in October 2016, “If Ford or another company announces they want to move their jobs to Mexico or another country, then I will call the executives – and tell them that we will charge a 35% tax when they try to ship their products back across the border."

Topic Analysis. To further explore the alignment of Trump’s campaign behavior with the theoretical model, I analyzed his speeches. My corpus consisted of rally speeches available during the general elections (June-November 2016),[26] of which 58 transcripts were obtained through the American Presidency Project,[27] and 40 were collected using Youtube’s API. The list of rallies was sourced from the Wikipedia page on Trump’s presidential campaign.[28]

Using non-negative matrix factorization (NMF) to reduce the high-dimensional complexity of the text combined with log-based term frequency-inverse document frequency (TF-IDF) as a weighting factor, the analysis resulted in 4-topic clusters (see Table A17 in the Appendix).[29] One of the four topics clearly

[26]The starting point is June 2016, the point at which the candidate had surpassed the delegate requirement for securing his nomination.

[27]Source: https://www.presidency.ucsb.edu/, accessed February-March 2023.

[28]To ensure accuracy, I cross-checked the information provided at each rally with the American Presidency Project, Youtube, and an online archive of U.S. newspapers.

[29]Appendix F contains further details about steps for preprocessing the corpus and the topic analysis.

connects to the pro-worker rhetoric used by Trump (43.4% of the corpus). Representative sentences in this cluster include “We’re going to bring our jobs back to this country,” and when criticizing Ford for building massive plants abroad instead of in Michigan, “But they’re [Ford] not going to do that and they’re not going to take advantage of us without retribution. There are consequences when you fire thousands of people and move to another country and then think you’re going to you’re your product and sell it in here" (July 16, New York City).

Campaign Strategy and Rhetoric. The analysis above highlights that Trump appears to have targeted routine workers. Nevertheless, did he design his campaign strategy to focus on these groups? Did he visit marginal states with a high proportion of routine workers more frequently than safe states? Moreover, did he use different rhetoric in these locations? To answer these questions, I first collect and analyze data on his rallies at the Metropolitan Statistical Area (MSA) level,[30] supplemented by geographic data on the automation exposure of workers[31] and hate incident reports between 2013-2016.[32] Next, I link speeches with MSA data and analyze whether the content differs across rallies. This regional data identifies the rhetorical targeting strategy employed by the candidate.

The theoretical model predicts that outsiders will target exposed voters, especially in closely contested regions. Table 1 presents the estimates for regression models predicting the number of rallies by MSA relative to population (DV). The results indicate that the share of workers exposed to automation and close elections (based on 2012 results)[33] are positively associated with the number of visits, while a higher number of hate incidents (per 100,000 residents) is associated with a decrease in the number of visits (Model 1). These results are consistent with **Hypothesis 2a**. Model 2, which interacts exposure and competitiveness, provides valuable insights, showing that regions with both a high concentration of exposed workers and competitive elections had even more visits from Trump; this result is consistent with expectations as the coefficient of the interaction between exposure and the close election is positive and statistically significantly different from 0. Given two closely contested elections, Trump’s strategy prioritized regions with a high concentration of routine workers, where he can leverage his distributive politics rhetoric, supporting **Hypothesis 2b**. Lastly, when accounting for hate crimes and their interaction

[30] Trump visited 20.5% of MSA, and maximum 4 times (e.g., Cincinnati, Ohio). Refer to Appendix D for more details.

[31] Source: Muro, Maxim, and Whiton’s 2019 replication data.

[32] Source: ADL Center on Extremism, which documents incidents reported at https://www.adl.org/resources/tools-to-track-hate. Accessed on March 23, 2023.

[33] Results using close elections as 10% or forecasting of 2016 election remains unchanged (see Tables A12 and A13.

TABLE 1: Trump's Campaign Strategy

	(1) Simple	(2) Close	(3) Hate	(4) All
Workers Exposed to Automation	0.194***	0.177**	0.169**	0.155**
	(0.071)	(0.070)	(0.065)	(0.066)
Close Elections	0.005*	0.001	0.007**	0.002
	(0.003)	(0.005)	(0.003)	(0.005)
Hate Incidents Per 100K Pop	-0.052*	-0.051*	0.015	0.015
	(0.029)	(0.029)	(0.031)	(0.035)
Exposed x Close Elections		0.344***		0.331***
		(0.071)		(0.091)
Exposed x Hate Incidents			-0.259	-0.249
			(0.156)	(0.164)
Hate Incidents x Close				-0.033
				(0.031)
FE State	Yes	Yes	Yes	Yes
Observations	381	381	381	381
R^2	0.661	0.674	0.681	0.689
AIC	-2.2e+03	-2.2e+03	-2.2e+03	-2.3e+03

Standard errors in parentheses, clustered by state.

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV is the number of Trump's rallies per 100,000 of the population by Metropolitan Statistical Area. Standard errors are clustered by state. The IV, 'close elections,' is a dummy variable that takes a value of 1 when the result of the state in the 2012 presidential election was determined by less than 5%.

with the number of exposed workers, the full model indicates no relationship with the number of rallies. Because they were safe, Trump did not target states in which his cultural threat message was most popular.

What about Trump's rhetoric in these locations? To shed light on this mechanism, I analyze the content of 98 speeches during the general election to generate measures of pro-worker and cultural rhetoric. To construct the dependent variables for this analysis (pro-workers and cultural scores), I used quantitative text analysis relying on dictionary techniques previously used to analyze political speeches (e.g., Pauwels 2011). I developed a novel dictionary for pro-worker and cultural rhetoric (see Appendix D) based on a close reading of speeches and previous qualitative analysis (e.g, Lamont, Park, and Ayala-Hurtado 2017). The pro-workers dictionary contains stem terms such as "worker," "labor," "job," while the cultural rhetoric dictionary contains terms like "immigr," "border," "values," and "way of life." The score is determined by counting the number of appearances of words from the dictionary relative to the total word count of the speech.

Table 2 presents the results of the analysis, with speeches as the unit of analysis. In columns (1-3), regressions were conducted to examine the relationship between the score of pro-worker rhetoric in a

TABLE 2: Trump's Campaign Strategy: Speeches

	Pro-worker Rhetoric (1-4)			Cultural Rhetoric (5-8)		
	(1)	(2)	(3)	(4)	(5)	(6)
Workers Exp. to Auto.	0.444***	-2.874***	-2.693***	0.024**	0.043	0.044
	(0.150)	(0.557)	(0.512)	(0.011)	(0.080)	(0.082)
Hate Inc.x 100K Pop	-0.047**	-0.051**	0.157**	-0.004**	-0.004**	-0.002
	(0.021)	(0.019)	(0.057)	(0.001)	(0.001)	(0.004)
Close	-0.041***	-0.447***	-0.410***	0.007***	0.009	0.009
	(0.012)	(0.069)	(0.059)	(0.001)	(0.010)	(0.010)
Exposed x Close		3.361***	3.060***		-0.019	-0.021
		(0.515)	(0.446)		(0.081)	(0.084)
Exposed x Hate			-0.778***			-0.007
			(0.210)			(0.012)
FE State	Yes	Yes	Yes	Yes	Yes	Yes
Foreign	Yes	Yes	Yes	Yes	Yes	Yes
Fe Month	Yes	Yes	Yes	Yes	Yes	Yes
Observations	98	98	98	98	98	98
R^2	0.503	0.537	0.571	0.336	0.336	0.337
AIC	-320.397	-327.377	-332.854	-828.802	-828.840	-826.928

Standard errors in parentheses, clustered by state.

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV of columns 1-3 is the pro-worker score by speech, and columns 4-6 is the cultural rhetoric score.

given speech and the number of workers highly exposed to automation (relative to the population), close elections, the number of hate incidents (per 100,000 residents), and their interactions. The coefficient for the number of workers highly exposed to automation is positive, suggesting that Trump used more pro-worker rhetoric in areas with a higher number of exposed workers, which aligns with the theoretical expectations of the model (columns 1). In expectation, for a 4909-word speech, areas with the highest number of exposed workers have 632 more pro-worker words than areas with the lowest number. Furthermore, columns (2-3) show that Trump's pro-worker rhetorical strategy was more pronounced in areas where the race was expected to be close (indicated by the positive coefficient of the interaction term between exposure and close elections). This provides additional evidence of distributive politics in a majoritarian context like the United States.

Columns (4-6) use the cultural threat scores as the dependent variable. The models show no relationship between exposed workers and the use of anti-immigration rhetoric or a focus on values in the marginal district. These findings support the idea that distributive politics plays a more significant

role than cultural message in the competitive states most affected by job market polarization,[34] providing support for **Hypothesis 2a and b**.[35]

Germany: PRITM case with Single National District

I now shift the attention to a different institutional context: PRITM. In Germany, where economic polarization has also been increasing, a far-right populist party entered the political arena: the AfD, founded in 2013 after the Eurozone crisis (Franzmann 2016). This party used strong anti-establishment rhetoric and presented an electoral alternative to the establishment parties (Berbuir, Lewandowsky, and Siri 2015; Franzmann 2016). It combined moderation in economic policies and Euroskepticism by promoting the restoration of the powers to the nation-state and raising concerns about Euro with a populist discourse focused on moral issues, migration policy, and law and order (Franzmann 2016).

For instance, the AfD campaign messaging in the 2017 election has a clear focus on culture, traditional family and values, and anti-immigration, which aligns with the model's expectation for the PRITM case. Its manifesto stated the need to preserve "German culture heritage" through language, promoting identity, and a call to fight multiculturalism. In this regard, one of the main elements of the campaign was to "firmly oppose Islamic practice" (p.47), claiming that "Islam does not belong to Germany" (p.48). They described Islam's expansion as a "danger to our state, our society, and our values" (p.48), and several of their campaign's statements included Islamophobia: "Burkas? We like bikinis," or a picture of a pig and stated, "Islam? It doesn't fit in with our cuisine."

Another dominant part of their campaign was to blame asylum seekers for disrupting German culture. For instance, Alexander Gauland, one of the AfD party leaders, called on supporters to fight the "invasion of foreigners" after the 2015 refugee crises. The party proposed to limit the free movement of people inside the EU but welcomed "highly-skilled immigrants with a distinct willingness to integrate" (manifesto, p.66).

Topic Analysis. To check the consistency of its content with Hypothesis 3, I conduct a topic analysis of the AfD manifesto, accessed in English from the party's official website. Again, I employ NMF to identify the most salient topics in the text. The resulting 4-topic model (see Table A17) is consistent with the theoretical expectations, as the AfD manifesto focuses heavily on culture, tradition, and anti-immigration.

[34] Results remain unchanged using the absolute number of word counts (see Table A14).

[35] Note that the increase of polarization in the US regarding distributive politics can be further seen when comparing with the estimations for Clinton's rhetoric. I replicated the analysis for all available speeches during general elections in the American Presidency Project (38), and I see the coefficients related to exposure to automation to be negative and statistically insignificant (Table A15).

Two topics were explicitly linked to cultural values, one about family and traditions and another about anti-immigration, accounting for 38.3% of the text. Notably, none of the four topics were associated with a clear pro-worker rhetoric. An example of a sentence belonging to the family and traditions cluster with high probability is "As the birth rate is more than 1.8 children amongst immigrants, which is much higher than that of Germans, it will hasten the ethnic-cultural changes in society." An example from the anti-immigration cluster is "The German 'maverick approach' however, has promoted immigration into the German social security systems and the low-wage sector, but not into the qualified job market."

Electoral Performance Across Districts. The theoretical model predicts that the AfD will target routine voters using cultural threat messaging. Did this message resonate with routine workers holding more extreme cultural values? To answer this question, I analyze district-level electoral performance using official results data,[36] as there is a dearth of systematic campaign data available. In addition, I use regional exposure to automation data[37] and a dataset on anti-refugee violence in Germany,[38] based on hate crime reports from 2014-2017. This analysis aims to determine whether the AfD's focus on cultural rhetoric and less on distributive politics was successful in areas with high exposure to automation and incidents of anti-refugee violence, as the theoretical model predicts.

Based on the theoretical model, I expect that the AfD will achieve greater success in areas with higher levels of risk exposure (Proposition 2). Additionally, according to Proposition 5, in a power-sharing system, job market polarization will lead to political polarization with respect to cultural issues. Thus, I expect that the AfD will achieve greater success in areas with higher shares of routine workers and higher numbers of hate crimes.

Table 3 displays the results of a model predicting the success of the AfD, measured as the share of valid votes. Model 1 indicates that an increase of one hate incident per thousand residents is associated with an 8.3 percent increase in the AfD's share in that region. In Model 2, I add control variables and find that a 1% increase in the share of routine workers' is associated with a .3% increase in the AfD's vote share, while hate incidents are no longer significant. Models 3-5 present the main results, showing that regions with both a higher share of routine workers and a greater number of hate incidents (per

[36] Source: https://www.bundeswahlleiter.de/, accessed March 23, 2023.
[37] Source: Dauth, Findeisen, and Suedekum's 2017 replication data.
[38] Source: ARVIG by Benček and Strasheim (2016).

TABLE 3: AfD Performance

	(1)	(2)	(3)	(4)	(5)
Share of exposed workers	-0.224	0.296*	-0.362	0.257	0.199
	(0.241)	(0.141)	(0.231)	(0.184)	(0.145)
Hate Incidents Per 1K Pop	0.083*	0.006	-1.125***	-0.831***	-0.800**
	(0.043)	(0.012)	(0.367)	(0.231)	(0.296)
Exposed x Hate			15.115***	10.502***	10.087**
			(4.434)	(2.879)	(3.831)
Other controls	No	Yes	No	Yes	Yes
FE State	No	Yes	No	No	Yes
Observations	400	400	400	400	400
R^2	0.028	0.698	0.035	0.596	0.702
AIC	-1.1e+03	-1.6e+03	-1.1e+03	-1.5e+03	-1.6e+03

Standard errors in parentheses, clustered by state.

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: Dependent variable is the share of votes of the AfD by region in 2017. Further control variables are employment shares in the manufacturing of cars, and non-car manufacturing, employment shares of workers with university degree, women, foreigners, dummy per region (south, east, north), and by state. Standard errors are clustered by state.

1,000 residents) are associated with a clear increase in support for the AfD. These results remain robust after adding other control variables (Model 4) and fixed effects by state (Model 5).

To translate these results into politically meaningful quantities, consider a region with the highest number of hate incidents (per 1,000 residents) and largest share of routine workers in the sample. In this case, the expected AfD vote share almost triples relative to areas with both low automation exposure and a low number of hate crime reports. These results are consistent with the theoretical predictions of the model; the cultural messaging of the AfD was most successful in regions characterized by high levels of both automation exposure and hate crime offenses. Together with the text analysis, these results suggest that the party's strategy was more centered on anti-immigration and cultural values rather than redistribution, which aligns with my theoretical expectations and presents support for **Hypothesis 3**.

Labor Market Polarization and Campaign Messaging in PRITM Systems: Time-Series-Cross-Sectional Evidence

The emergence of outsider (populist) party leaders of previously mainstream parties, such as Donald Trump or Boris Johnson, is a relatively recent phenomenon, and so there are no pre-LMP data for the majoritarian democracies. By contrast, outsider parties have existed for a long time in PRITM countries. This allows us to empirically evaluate whether the content of these parties' manifestos has changed over time in response to labor market polarization. Do the theoretical implications extend to other PRITM cases? To answer this question, I analyze 16 democracies with PRITM systems between 1970 and

2019.[39] I use the CMP database to calculate my dependent variable, partisan polarization, which is the net favorability gap for redistribution (and fixed-value positions) between establishment left parties (social democratic or socialist party family) and outsider parties (proxied as nationalist).[40]

Based on the theoretical model, I expect that outsider parties will increasingly emphasize cultural issues in response to increased job polarization and that redistribution will play a less significant role (**Hypothesis 3**). Thus, the empirical model includes a dummy variable for the post-LMP period after mid-90.[41] This period has witnessed a significant rise in the stock of industrial robots, known as the "robot shock" (e.g, Anelli, Colantone, and Stanig 2021).[42] My dependent variable, redistribution, measures broad redistribution through two questions on the welfare state and social security. Note, this measure only aligns with the concept of broad redistribution, but it does not cover targeted distributive politics (common in non-PRITM contexts). For my second DV, fixed-value positions, I use categories such as internationalism, anti-EU, and nationalism, as defined by Burgoon and Schakel (2022). Please refer to the Appendix for detailed calculations.

TABLE 4: PRITM: Partisan Polarization over Redistribution and Fixed Attributes

	(1) Redistribution	(2) Fixed Values	(3) Redistribution	(4) Fixed Values
Post-LMP	2.919	2.708***		
	(2.304)	(0.866)		
Robots Stock			0.074	0.561**
			(0.215)	(0.219)
Control Variables	Yes	Yes	Yes	Yes
LDV	Yes	Yes	Yes	Yes
FE Year	Yes	Yes	Yes	Yes
Observations	186	186	62	62
R^2	0.519	0.346	0.492	0.390
AIC	783.599	760.063	291.086	278.110

Standard errors in parentheses, clustered by country.

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV is the polarization over redistribution, and fixed-value positions, estimated as the distance between establishment left and outsider parties. Further control variables are whether there are OECD members and the total number of seats.

Table 4 presents the estimates for four regression models, using two indicators of automation exposure, the main driver of labor market polarization. The results indicate an increased focus on

[39] These countries have PR electoral systems and feature parties from the left, center, and right: Austria, Belgium, Denmark, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Italy, Netherlands, Norway, Slovakia, Slovenia, Sweden, and Switzerland. The classification is based on Bormann and Golder (2013) and Armingeon et al. (2017).

[40] Appendix G presents descriptive statistics, measurement details, a list of outsider parties, and robustness checks.

[41] Note different cut-offs do not affect the results A19.

[42] In 1994, the number of robots per thousand workers was below one, but it has since grown exponentially, according to the International Federation of Robotics (see Figure A1).

fixed-value positions after LMP (column 2) while no change in polarization over redistribution (column 1). These estimates imply that during the post-LMP period there is a 1.27 standard deviation increase in partisan polarization over fixed-value positions. Columns 3 and 4 provide further evidence by replacing the dummy Post-LMP for the natural logarithm of robots per thousands of workers by country; for data limitations, the analysis is restricted to 2004-2019.[43] Again, these relationships are substantively in line with the theoretical model. A one-unit increase in the logged number of robots (per 1,000 industrial workers) increases by 0.23 standard deviations partisan polarization.[44]

Conclusion

This paper has provided a new theoretical framework and empirical evidence on how economic polarization relates to partisan polarization in different institutional environments. I have argued that electoral and party systems are important to understanding leaders' policy proposals and voters' decisions under economic polarization. Using a game-theoretic model, I have offered mechanisms that link labor market polarization to different varieties of partisan political polarization. The paper suggests that outsider leaders under majoritarianism will use distributive politics to target routine workers in marginal districts. However, outsider parties may see their commitment credibility for radical policies undermined by power-sharing institutions. In these contexts, policy differences tend to narrow, and candidates' fixed-value positions, such as opposition to multiculturalism, become more critical in shaping voters' choices. The empirical evidence is consistent with these theoretical claims.

Although the scope of this study's empirical analysis is limited to two illustrative cases and 16 PRITM countries, the results are compelling and raise questions about whether outsider candidates and parties will exhibit similar polarization patterns in other countries. This study provides an initial framework for investigating the impact of economic polarization on partisan polarization and offers a roadmap for testing new hypotheses in future work that explores the interplay between economic polarization and the political-institutional context. There remains much to explore in the political economy of polarization. With respect to the theory, it would be natural to endogenize party entry and coalition bargaining and to allow voter abstention. My model is only a starting point.

[43] Data provided by the International Federation of Robotics (IFR). Received on September 5, 2022

[44] To check the robustness of these results further, I present in the appendix the models using different operationalization of fixed values (i.e., anti-EU, internationalism, anti-global and cultural values, Table A20), and using as DV measures of overall party system polarization (see Tables A21, A22, and A23).

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Online Appendix

Contents

A. Glossary

Terms. This section expands the explanations of some of the concepts used in the paper.

- **Coalition costs:** refers to the actions of compromising campaign pledges in order to build a coalition government with other parties.

- **Distributive politics:** refers to taxes, subsidies, tariff protection to particular industries, and other political instruments used to raise (cut) the welfare of groups (Becker 1983; Acemoglu and Robinson 2001). In this targeted redistribution, the benefits are concentrated in specific groups and regions (marginal districts), while the costs are widespread across all districts.

- **Distributive politics rhetoric :** refers to the type of rhetoric used by Trump. He promised to save and create jobs in areas heavily populated with routine workers and located in competitive states (marginal districts).

- **Establishment or mainstream:** refers to leaders or parties that are likely to face resistance from special interest groups that are connected with the elite as they have a long political career and prior policy actions. These types of party leaders have less credible commitment toward radical policies than outsider leaders.

- **Labor Market Polarization (job polarization):** refers to the growing division between routine and non-routine jobs (e.g., employment share, wages), with fewer opportunities for workers in the middle of the distribution. Technological change since the mid-1990s has been the main driver of these structural changes in the labor market, which has caused this economic polarization (i.e., disappearing middle class). For references, see Autor, Katz, and Kearney (2006), Goos and Manning (2007), Goos, Manning, and Salomons (2009), and Autor (2013, 2015).

- **Marginal District:** In majoritarian elections, there are several districts, but the marginal district will be the one in which parties will focus with the purpose of winning it (Persson and Tabellini 1999). In other words, instead of aiming for the support of a majority of the population, under majoritarianism, parties compete to win the marginal district.

- **Fixed-value positions:** reflect leaders' positions on more indivisible issues, such as nativism and identity politics. For the purposes of the model, these positions are more fixed at the time of the election for the individual candidate. However, parties could choose leaders considering these attributes (i.e., flexible for parties).

- **Radical policies:** refer to proposals that imply a great departure from the status quo. The model formalizes this as those policies outside the thresholds $\underline{t}$ and $\overline{t}$ symmetric to the status quo (t_q). Extreme austerity proposals fall below $\underline{t}$, while extreme redistribution hikes are above $\overline{t}$. Moderate scenarios are $t_j \in [\underline{t}, \overline{t}]$.

- **Redistributive politics:** refer to taxes or other political instruments used to raise (cut) the welfare of groups in a single national district. In this broad redistribution, there is an equivalence between regions paying revenues and regions receiving spending.

- **Routine and Non-Routine:** refer to the group of workers relative to the type of occupations they perform regarding the degree to which the task can be automated. Routine occupations are mainly middle-skill and middle-wage jobs, prevalent in blue- and white-collar sectors (e.g., manufacturing, administration). This is the group that is more vulnerable to the incorporation of new technology.

- **Single National District:** refers to the type of electoral system that consists of a single district that comprises the entire population. This system characterizes the PRITM case, where winning votes in all groups and regions carries equal weight because what matters is winning the majority of the population rather than just winning marginal districts.

- **Targeting:** Way to signal the willingness to distribute to a certain group.

- **Taxes and transfers :** refers to a policy instrument that can involve broad-based taxes with revenue transferred to a large group of recipients (redistribution) or broad-based taxes with revenues transferred to a small group of recipients (distribution).

- **Outsider:** Refers to leaders who gain political prominence, not by affiliating with established and competitive political parties but through their independent means or by joining emerging or recently competitive parties (Barr 2009). In other words, these are leaders who recently entered the competition and are not identified as part of the established leaders or parties. Given the lack

of ties with special interests, the model assumes these leaders will have a credibility advantage. Two mechanisms support this assumption. On the one hand, the establishment leader would face resistance from special interest groups connected with the elite, as she has had a long political career (Karakas and Mitra 2020). On the other hand, she is more affected by prior policy actions, as voters update their beliefs by looking at those actions (Fortunato and Stevenson 2013; Woon and Pope 2008), while the challenger, an outsider, has no record of policy-making activity.

- **Populist**: refers to parties or leaders which I define following Guiso et al. (2017) as "champions [of] short-term protection policies while hiding their long-term costs using anti-elite rhetoric" (p. 1). I also follow Norris and Inglehart (2019) who highlight a style of rhetoric in which power is claimed for "the people," not the elites, but "the discourse has a chameleon-like quality which can adapt flexibly to a variety of substantive ideological values and principles" (p. 4). In their view, populist beliefs favor monoculturalism over multiculturalism, nationalism over cosmopolitan values, and distrust of science, politicians, and media, among others. They claim that populism "might equally well be described as xenophobic authoritarianism."

- **Power sharing**: refers to environments where coalition-building requires compromises. This case is the opposite of single governments, and the model assumes party leaders' credibility will be harmed.

- **PRITM**: countries with proportional representation electoral systems and ideological trichotomous multipartism (PRITM). Notation from Hays (2021), and refers to cases in which power-sharing is common.

Notation.

- α_h relative size of each group
- $D(t_j)$ represents the consumption utility of group N after the revenue from taxes.
- $\mathbf{E}[u_{ih}(t_j;\theta_j)]$: expected utility of individual i from group h given candidate j's t and θ.
- e_j coalition costs (simplified approach to ω when using envelope theorem)
- F_h the cumulative distribution function of voters
- f_h density function of F_h.
- $G(t_j)$ represents the consumption utility of group R after receiving society subsidies.
- γ_m indicates whether the subsidies are greater (>1) or lower than the revenue raised in the district (<1).
- h refers to a group of workers
- i refers to individual voters.
- I_h income of the group, which is an element of the consumption utility of each group G_R or D_N
- j refers to candidates
- L mainstream left party leader
- λ is a weighting parameter for the importance of the fixed-value positions (exogenous to the model, $\lambda > 0$).

- M mainstream right party leader
- m indicates whether it is the marginal district ($m = 1$), or a safe district ($m = 0$)
- N non-routine group of workers who constitute the electorate
- ω represents the commitment disadvantage of coalition governments and takes values from 0 (disadvantage) to 1 (advantage of single-party government)
- R group of workers who constitute the electorate
- $S_m(t_j)$ subsidies
- θ: Fixed value commitment.
- $\overline{\theta_h}(t_J, t_{-J})$ indifference point, swing voter.
- t_c is the policy position of taxes and transfers of the coalition $t_c = \omega \times t_P + (1 - \omega) \times t_M$
- t_j: Policy position of taxes and transfers ($t_j \in [0, 1]$)
- t_q status quo regarding taxes and transfers
- Radical policies are those outside the thresholds $\underline{t}$ and $\overline{t}$ symmetric to the status quo (t_q).
- P populist party leader
- p_j credible commitments to radical policy positions
- $V_J(t_J, t_{-J})$ utility function of party j.

B. Theoretical Model

Theoretical Implications: Credible Commitment Advantage of the Outsider. What are the implications of an exogenous increase in credibility regarding radical policies? What are the consequences for distribution policies? The implicit function theorem gives the comparative statics for the relationship between distribution policies and outsiders' commitment advantage:

$$\frac{\partial t_j}{\partial p_j} = \frac{-\frac{\partial^2 V_j(t_L, t_P)}{\partial p_j \partial t_j}}{\frac{\partial^2 V_j(t_L, t_P)}{\partial^2 t_j}} \tag{8}$$

Proposition 6 *An increase in $\bar{p}_j$ leads to an increase in $|t_j^* - t_q|$ for $j \in \{L, P\}$. In a radical equilibrium, the candidate j's share of the vote increases among routine voters in a redistribution hike equilibrium ($t^* > \overline{t}$).*

This result is not surprising. It shows that in both PRITM and majoritarian contexts, stronger commitments increase outsider advantage leading to more polarization (extreme policies), as suggested by Karakas and Mitra (2020) in the majoritarian context.

Proofs.

Lemma 1 and 2. These lemmas are the same as in Karakas and Mitra (2020), so I do not reproduce it here.

Proposition 1. First for lemma 2 we know that it is not an equilibrium solution that one party leader proposes a cut while the other a hike of taxes. Therefore to prove each equilibrium:

- **Radical**: Let's prove by contradiction that is not possible to have an equilibrium in which one party leader chooses an extreme policy while the other a moderated one. Then suppose an equilibrium in which $t_j^* > \overline{t}$ and $t_{-j} \in [t_q, \overline{t})$. Then because this is an equilibrium we know that the FOC of V_j' exists. That is $V_j'(t_j = t_j^*, t_{-j}^*) = 0$. Then in a moderated equilibrium for strict concavity of $D_N(t_j)$ and $G_R(t_j)$ and quasiconcavity of V_j we can say that $V_j'(t_j = t_j^*, t_{-j}^*) < 0$ which is not an equilibrium.

  Moreover, without losing generality suppose that the party leader L proposes the moderated policy, while the P the radical. Then if we are in a hike equilibrium for lemma 1 we know that the group R is the dominant. Then, the establishment will have incentives to propose a higher redistribution policy in order to target the group with electoral importance, and being close to the status quo is not enough when the outsider is in an extreme. Therefore the mainstream will have incentives to deviate from the moderated proposal to $[\overline{t}, 1)$ in order to target the routine group.

  Finally, regarding the radical equilibrium, and given that the populist party leader P has an advantage over the establishment regarding extremist policies because $P_p > P_L$, however, because of the penalization for coalition of candidate P the distance to the status quo is expected to be smaller under a PRITM context. That is $|t_L^* - t_q| \leq |t_P^* - t_q|$ in a PRITM context is smaller than the same in the winner take all situation.

- **Moderate**: in this case given that party leaders do not differentiate in the commitment credibility p_j, and the resulting t_c will be moderate (i.e, similar to t_P) party leaders will have the same conditions for maximization, which means that in this equilibrium their proposals will be symmetric ($t_L^* = t_P^*$). If they differ, imagine that one candidate increases taxes, then, the other candidates will choose the same to avoid losing voters with the opposite. Thus, in equilibrium when the policy is moderated both converge at the same rate of taxes. This situation is the same for PRITM and winner-take-all cases, as long as the gap between t_M and t_P is small enough.

- **Threshold**: Unlike the majoritarian case of Karakas and Mitra (2020), under PRITM institutions it can exist an equilibrium in which $t_p^* = \overline{t}$ and $t_L^* > \overline{t}$ (or the same in a tax-cut equilibrium) but if and only if the gap between t_M and t_P is large enough to compensate the commitment advantage of the party leader P with extremist policies. Otherwise if the outsider does have an advantage, that is the coalition costs ($\omega < 1$) do not absorb her advantage, then she will have incentive to deviate to an even more radical policy to increase the share of vote (i.e, radical equilibrium).

Comparative Statics.

***Proposition 6** - Commitment advantage of Outsider Parties.* First I analyze the second-order regarding the vote share function V_j to ensure that equation 3 and 4 give tax-policy proposal maximization for party leaders L and P are:

$$\frac{\partial^2 V_L(t_L, t_P)}{\partial t_L \partial t_L} = \frac{(-p_L)[\alpha_N f_N D_N''(t_L) + \alpha_R f_R G_R''(t_L)]}{2\lambda(\theta_L - \theta_P)}$$

$$\frac{\partial^2 V_P(t_L, t_P)}{\partial t_P \partial t_P} = \frac{(-p_p \omega^2)[\alpha_N f_N D_N''(t_c) + \alpha_R f_R G_R''(t_c)]}{2\lambda(\theta_L - \theta_P)}$$

Then, for being a maximum the sufficient condition is that these are negative definite. Labeling the second derivative as δ, I will now define the conditions for $\delta_j < 0 \; \forall j \in \{L, P\}$

- I start by looking at δ_{H_L}
  - The denominator is always the same, where $2\lambda > 0$, and $(\theta_L - \theta_P) < 0$ given that $\theta_P >_L$. Thus, the denominator is negative, which means that for the H_L begin negative definite we need that the numerator is positive.
  - Now looking at the numerator we know that $(\alpha_N f_N + \alpha_R f_R) > 0$.
  - We also know that $(-p_L) < 0$ because by definition the commitment is a probability between 0 and 1.
  - Then regarding $\alpha_N f_N D''_N(t_L) + \alpha_R f_R G''_R(t_L)$ we know that for strict concavity of $D_N(t_j)$ and $G_R(t_j)$ are negative.
  - Thus, $(-p_L)[\alpha_N f_N D''_N(t_L) + \alpha_R f_R G''_R(t_L)] > 0$
  - Therefore, $\dfrac{\partial^2 V_L(t_L, t_P)}{\partial t_L \partial t_L} < 0$
- Now, looking at δ_P
  - For what I previously mentioned $\dfrac{\partial^2 V_P(t_L, t_P)}{\partial t_P \partial t_P} < 0$

Following, trying to solve for p_j, which is the exogenous coalition cost parameter I apply the *implicit function theorem* which states that:

$$\frac{\partial t_j}{\partial p_j} = \frac{-\frac{\partial^2 V_j(t_L, t_P)}{\partial p_j \partial t_j}}{\frac{\partial^2 V_j(t_L, t_P)}{\partial^2 t_j}}$$

Then, I need to estimate $\dfrac{\partial^2 V_j(t_L, t_P)}{\partial p_j \partial t_j}$

The derivatives with respect to the exogenous parameter p_j are:

$$\frac{\partial^2 V_L(t_L, t_P)}{\partial p_L \partial t_L} = -\frac{\alpha_N f_N D'_N(t_L) + \alpha_R f_R G'_R(t_L)}{2\lambda(\theta_L - \theta_P)}$$

$$\frac{\partial^2 V_R(t_L, t_P)}{\partial p_P \partial t_P} = -\frac{\omega[\alpha_N f_N D'_N(t_c) + \alpha_R f_R G'_R(t_c)]}{2\lambda(\theta_L - \theta_P)}$$

Therefore, the implicit function is:

$$\frac{\partial t_L}{\partial p_L} = -\frac{\frac{\partial^2 V_L(t_L, t_P)}{\partial p_L \partial t_L}}{\frac{\partial^2 V_L(t_L, t_P)}{\partial t_L \partial t_L}} = -\frac{-\frac{\alpha_N f_N D'_N(t_L) + \alpha_R f_R G'_R(t_L)}{2\lambda(\theta_L - \theta_P)}}{\frac{(-p_L)[\alpha_N f_N D''_N(t_L) + \alpha_R f_R G''_R(t_L)]}{2\lambda(\theta_L - \theta_P)}}$$

$$\frac{\partial t_L}{\partial p_L} = -\frac{-\alpha_N f_N D'_N(t_L) + \alpha_R f_R G'_R(t_L)}{(-p_L)[\alpha_N f_N D''_N(t_L) + \alpha_R f_R G''_R(t_L)]}$$

Now for t_P

$$\frac{\partial t_P}{\partial p_P} = -\frac{\frac{\partial^2 V_P(t_L, t_P)}{\partial p_P \partial t_P}}{\frac{\partial^2 V_P(t_L, t_P)}{\partial t_P \partial t_P}} = -\frac{-\frac{\omega[\alpha_N f_N D'_N(t_c) + \alpha_R f_R G'_R(t_c)]}{2\lambda(\theta_L - \theta_P)}}{\frac{(-p_P \omega^2)[\alpha_N f_N D''_N(t_c) + \alpha_R f_R G''_R(t_c)]}{2\lambda(\theta_L - \theta_P)}}$$

$$\frac{\partial t_P}{\partial p_P} = -\frac{-\omega\left[\alpha_N f_N D'_N(t_c) + \alpha_R f_R G'_R(t_c)\right]}{(-p_p\omega^2)\left[\alpha_N f_N D''_N(t_c) + \alpha_R f_R G''_R(t_c)\right]}$$

Therefore, looking at the relationship between the redistribution proposal and the exogenous commitment advantage we can see that:

- Analyzing $\alpha_N f_N D'_N(t_P) + \alpha_R f_R G'_R(t_P)$, we can state:
  - $\alpha_N f_N D'_N(t_P) + \alpha_R f_R G'_R(t_P) > 0 \iff \alpha_R f_R G'_R(t_P) > \alpha_N f_N D'_N(t_P)$ which for Lemma 1 happens when $t_j^* > t_q$
  - $\alpha_N f_N D'_N(t_P) + \alpha_R f_R G'_R(t_P) < 0 \iff \alpha_R f_R G'_R(t_P) < \alpha_N f_N D'_N(t_P)$ which for Lemma 1 happens when $t_j^* < t_q$
- $(-p_L)\left[\alpha_N f_N D''_N(t_L) + \alpha_R f_R G''_R(t_L)\right] > 0$
- Therefore, we can conclude that:
  - When $t_j^* > t_q$ (imagine radical redistribution)
    - $\frac{\partial t_L}{\partial p_L} > 0$
    - $\frac{\partial t_P}{\partial p_P} > 0$
  - When $t_j^* < t_q$ (imagine radical austerity)
    - $\frac{\partial t_L}{\partial p_L} < 0$
    - $\frac{\partial t_P}{\partial p_P} < 0$
- Therefore, we can conclude that $|t_j^* - t_q|$ increases with the commitment advantage. In other words, p_j generates more dissimilarity among the party leaders in any of the equilibrium (cut or hike).
- The commitment advantage plays a similar role in a PRITM or winner-take-all context, as ω does not change the results.

Proposition 3 - *Share of Routine and Trasnfers in the Marginal District.* Following, trying to solve for α_R, which is the exogenous size of the routine group in the marginal district. I apply the *implicit function theorem*, which states that:

$$\frac{\partial S(t_j)}{\partial \alpha_R} = \frac{-\frac{\partial^2 V_j(t_L,t_P)}{\partial \alpha_R \partial S(t_j)}}{\frac{\partial^2 V_j(t_L,t_P)}{\partial^2 S(t_j)}}$$

We know that $\frac{\partial^2 V_j(t_L,t_P)}{\partial^2 S(t_j)} = -\frac{\alpha_R f_R p_P G''(S(t_R))}{2\lambda(\theta_L-\theta_P)}$. Given that $G''(S(t_R)) < 0$, α_R, f_R, p_P, λ are greater than 0, and $\theta_L - \theta_P < 0$, we know that $\frac{\partial^2 V_j(t_L,t_P)}{\partial^2 S(t_j)} < 0$

Moreover, $\frac{\partial^2 V_j(t_L,t_P)}{\partial \alpha_R \partial S(t_j)} = -\frac{f_R p_P G'(S(t_P))S'(t_P)}{2\lambda(\theta_L-\theta_P)}$, where f_R, p_P, $G'(S(t_P))$, $S'(t_P)$, λ are grater than 0, and $\theta_L - \theta_P < 0$. So, $\frac{\partial^2 V_j(t_L,t_P)}{\partial \alpha_R \partial S(t_j)} > 0$

Simplifying we get that, $\frac{\partial S(t_j)}{\partial \alpha_R} = -\frac{G'(S(t_P))S'(t_P)}{\alpha_R G''(S(t_P))}$. Thus, $\frac{\partial S(t_j)}{\partial \alpha_R} > 0$

Proposition 4 *- Commitment disadvantage of coalition governments (i.e, coalition costs).* Following, trying to solve for ω, which is the exogenous coalition commitment advantage parameter I apply the *implicit function theorem* which states that:

$$\frac{\partial t_j}{\partial \omega} = \frac{-\frac{\partial^2 V_j(t_L,t_P)}{\partial \omega \partial t_j}}{\frac{\partial^2 V_j(t_L,t_P)}{\partial^2 t_j}}$$

We know that $\partial^2 V_j(t_L, t_P) < 0$, so I will focus on $\frac{\partial^2 V_j(t_L, t_P)}{\partial \omega \partial t_j}$

The derivatives with respect to the exogenous parameter ω are:

$$\frac{\partial^2 V_L(t_L, t_P)}{\partial \omega \partial t_L} = 0$$

$$\frac{\partial^2 V_P(t_L, t_P)}{\partial \omega \partial t_P} = -\frac{1}{2\lambda(\theta_L - \theta_P)} \times (p_R[\alpha_N f_N D'_N(t_c) + \alpha_R f_R G'_R(t_c)] + \omega(-t_M + t_P)(\alpha_N f_N D''_N(t_c) + \alpha_R f_R G''_R(t_c))$$

Therefore, the implicit function is:

$$\frac{\partial t_L}{\partial \omega} = -\frac{\frac{\partial^2 V_L(t_L,t_P)}{\partial \omega \partial t_L}}{\frac{\partial^2 V_L(t_L,t_P)}{\partial t_L \partial t_L}} = 0$$

$$\frac{\partial t_P}{\partial \omega} = -\frac{(p_R[\alpha_N f_N D'_N(t_c) + \alpha_R f_R G'_R(t_c)] + \omega(-t_M + t_P)(\alpha_N f_N D''_N(t_c) + \alpha_R f_R G''_R(t_c))}{(-p_p \omega^2)[\alpha_N f_N D''_N(t_c) + \alpha_R f_R G''_R(t_c)]}$$

Therefore, looking at the relationship between the redistribution proposal and the exogenous commitment advantage we can see that:

- $-\frac{1}{2\lambda(\theta_L - \theta_P)} > 0$
- When $t_j^* < t_q$ $(p_R(\alpha_N f_N D'_N(t_c) + \alpha_R f_R G'_R(t_c)) < 0$, and the opposite is true when $t_j^* > t_q$.
- When $t_P > t_M$ $(\omega(-t_M + t_P))(\alpha_N f_N D''_N(t_c) + \alpha_R f_R G''_R(t_c)) < 0$
- Therefore, we can conclude that:
  - When $t_j^* > t_q$ and $t_P < t_M$ (imagine radical redistribution)
    - $\frac{\partial t_L}{\partial \omega} = 0$
    - $\frac{\partial t_P}{\partial \omega} > 0$
  - When $t_j^* < t_q$ and $t_P > t_M$(imagine radical austerity)
    - $\frac{\partial t_L}{\partial \omega} = 0$
    - $\frac{\partial t_P}{\partial \omega} < 0$

- Note that larger values of ω denote lower commitment disadvantage of the coalition government (e.g, majoritarian system is $\omega = 1$). Therefore, we can conclude that in a radical hike having a lower commitment disadvantage allows greater redistribution proposals. The opposite happens when the commitment disadvantage is greater.

- Accordingly, we can conclude that $|t_j^* - t_q|$ increases the larger the commitment advantage of single-party governments. In the other direction this means that the more power-sharing (lower ω) the less polarization in terms of taxes there will be.

Proposition 2 *- Decline of Routine Voters' Income.* This section presents the implicit function for the relationship between t_j and I_R, which is the exogenous income parameter for routine voters:

$$\frac{\partial t_j}{\partial I_R} = \frac{-\frac{\partial^2 V_j(t_L,t_P)}{\partial I_R \partial t_j}}{\frac{\partial^2 V_j(t_L,t_P)}{\partial^2 t_j}}$$

As I presented for coalition cost $\frac{\partial^2 V_j(t_L,t_P)}{\partial^2 t_j} < 0$, thus I just need to focus on $\frac{\partial^2 V_j(t_L,t_P)}{\partial I_R \partial t_j}$.
The derivatives with respect to the exogenous parameter e_j are:

$$\frac{\partial^2 V_L(t_L,t_P)}{\partial I_R \partial t_L} = \frac{\alpha_R f_R(-p_L)\frac{\partial^2 G_R(t_L)}{\partial t_L, I_R}}{2\lambda(\theta_L - \theta_P)}$$

$$\frac{\partial^2 V_P(t_L,t_P)}{\partial I_R \partial t_P} = \frac{\alpha_R f_R(-p_P)\frac{\partial^2 G_R(t_P)}{\partial t_P, I_R}}{2\lambda(\theta_L - \theta_P)}$$

It is worth noticing that G_R is the consumption function for the routine group (i.e, receiving subsidies), which is twice-differentiable and strictly concave in t_j; strictly increasing in t_j for routine voters. This function depends on routine voters' level of income and consumption thanks to redistribution (subsidies received thanks to N contribution to the raise of taxes). That is the increased level of consumption for redistribution collection over I_N.

Then analyzing the denominator, we know that $2\lambda(\theta_L - \theta_P) < 0$ because by assumption $\theta_P > \theta_L$. Then looking at the numerator, there are three elements mulplied:

- $\alpha_R f_R > 0$ because α_R represents the share of routine voters, and f_R is the pdf regarding the fixed characteristics.

- $(-p_P) \leq 0$

- $\frac{\partial^2 v_R(t_P)}{\partial t_P, I_R} < 0$ (specified through an example).

See example for G_R when establishment, considering $G_R = \sqrt{I_R + (\alpha_N I_N) t_L}$

```
In[442]:= Gexample = Sqrt[Iu + tl (alphas*Is)]

Out[442]= Sqrt[Iu + alphas Is tl]

In[443]:= secondparGexample = Simplify[D[D[Gexample, tl], Iu]]

Out[443]= -((alphas Is)/(4 (Iu + alphas Is tl)^(3/2)))
```

Therefore $\frac{\partial^2 V_P(t_L,t_P)}{\partial I_R \partial t_P} < 0$, which means that after applying the implicit function means

$$\frac{\partial t_j}{\partial I_R} < 0$$

This ends the proof that ceteris paribus all the parameters, when there is a decline of income level (pre-taxes) of routine voters, while the non-routine voters remain the same, thus when labor market polarization –inequality– increases, then the redistribution proposal will be higher. In other words, as LMP increases, party leaders' redistribution proposal increases. Therefore, this generates an advantage of the outsider leader P, who can more easily target the routine voters.

Envelope Theorem.

Proposition 5. In what follows, I prove **Proposition 5**.

Until this point, we have treated θ_j as a fixed characteristic, that is, as a constant. Now, I ask, what if we were to treat it as a variable? That is, what is going to happen if now we assume that the process of candidate selection is based on the characteristics of the candidates (after the policy proposal has been maximized)? Therefore, we can rewrite $f(V_j(t);\theta_j)$ as $f(V_j^*(\theta_j);\theta_j)$, where $V_j^*(\theta_j)$ represents the value of the function at its optimum (best t).

Then, treating $f^*(\theta_j)$ as a funciton of θ_j allows us to evaluate how the function at its optimum changes with θ_j. Then, by applying the chain rule we can obtain:

$$\frac{dV(t_j,\theta_j)}{d\theta_j}\Big|_{t_j=t_j^*(\theta_j)} = \frac{\partial V(t_j,\theta_j)}{\partial t_j}\Big|_{t_j=t_j^*(\theta_j)} \frac{dV(t_j,\theta_j)}{d\theta_j} + \frac{\partial V(t_j,\theta_j)}{\partial \theta_j}\Big|_{t_j=t_j^*(\theta_j)}$$

Given that now we are treating both t_j and θ_j as variables, we know that for being in a maximum the FOC for t is $\frac{\partial V(t_j,\theta_j)}{\partial x}\Big|_{t_j=t_j^*(\theta_j)} = 0$. This means that the first term of the chain rule is also zero when the function is evaluated at the optimum. Therefore, this means that:

$$\frac{dV(t_j,\theta_j)}{d\theta_j}\Big|_{t_j=t_j^*(\theta_j)} = \frac{\partial V(t_j,\theta_j)}{\partial \theta_j}\Big|_{t_j=t_j^*(\theta_j)}$$

which is the envelope theorem.

$$\begin{aligned}\frac{dV(t_L,\theta_L)}{d\theta_L}\Big|_{t_L=t_L^*(\theta_L)} &= \frac{1}{2\lambda(\theta_L-\theta_P)^2}\\ &(\alpha_N f_N \lambda\theta_L^2 + \alpha_R f_R \lambda\theta_L^2\\ &-2\alpha_N f_N \lambda\theta_L\theta_P - 2\alpha_R f_R \lambda\theta_L\theta_P\\ &+\alpha_N f_N \lambda\theta_P^2 + \alpha_R f_R \lambda\theta_P^2\\ &+\alpha_N f_N(-e_L+p_L)D_N[t_L] + \alpha_R f_R(-e_L+p_L)G_R[t_L]\\ &+\alpha_N f_N(e_P-p_P)D_N[t_P] + \alpha_R f_R(e_P-p_P)G_R[t_P])\end{aligned} \tag{9}$$

- *Positive*
  - $+\frac{1}{2\lambda(\theta_L-\theta_P)^2}$
  - $+\alpha_N f_N \lambda\theta_L^2 + \alpha_R f_R \lambda\theta_L^2$
  - $+\alpha_N f_N \lambda\theta_P^2 + \alpha_R f_R \lambda\theta_P^2$
  - $+\alpha_N f_N(-e_L+p_L)D_N[t_L] + \alpha_R f_R(-e_L+p_L)G_R[t_L]$
- *Negative*

- $-2\alpha_N f_N \lambda \theta_L \theta_P - 2\alpha_R f_R \lambda \theta_L \theta_P$
- $+\alpha_N f_N (e_P - p_P) D_N[t_P] + \alpha_R f_R (e_P - p_P) G_R[t_P]$

Analysis

1. Compensation

$$+\alpha_N f_N \lambda \theta_L^2 + \alpha_R f_R \lambda \theta_L^2 + \alpha_N f_N \lambda \theta_P^2 + \alpha_R f_R \lambda \theta_P^2 > -2\alpha_N f_N \lambda \theta_L \theta_P - 2\alpha_R f_R \lambda \theta_L \theta_P$$

2. Positive if:

   - The condition $p_L - e_L > p_P - e_P$ is met

$$\alpha_N f_N (-e_L + p_L) D_N[t_L] + \alpha_N f_N (e_P - p_P) D_N[t_P] > 0$$

   - The condition $p_L - e_L > p_P - e_P$ is met

$$\alpha_R f_R (-e_L + p_L) G_R[t_L] + \alpha_R f_R (e_P - p_P) G_R[t_P] > 0$$

To conclude, $\frac{dV(t_L,\theta_L)}{d\theta_L}\Big|_{t_L = t_L^*(\theta_L)} > 0$ when $p_L - e_L > p_P - e_P$, and $\frac{dV(t_L,\theta_L)}{d\theta_L}\Big|_{t_L = t_L^*(\theta_L)} < 0$ when $p_L - e_L < p_P - e_P$.

The analysis is similarly for $\frac{dV(t_P,\theta_L)}{d\theta_P}\Big|_{t_P = t_P^*(\theta_P)}$ so I do not reproduce it.

$$\begin{aligned}
\frac{dV(t_P,\theta_L)}{d\theta_P}\Big|_{t_P = t_P^*(\theta_P)} = & -\frac{1}{2\lambda(\theta_L - \theta_P)^2} \\
& (\alpha_N f_N \lambda \theta_L^2 + \alpha_R f_R \lambda \theta_L^2 \\
& -2\alpha_N f_N \lambda \theta_L \theta_P - 2\alpha_R f_R \lambda \theta_L \theta_P \\
& +\alpha_N f_N \lambda \theta_P^2 + \alpha_R f_R \lambda \theta_P^2 \\
& +\alpha_N f_N (e_L - p_L) D_N[t_L] + \alpha_R f_R (e_L - p_L) G_R[t_L] \\
& +\alpha_N f_N (-e_P + p_P) D_N[t_P] + \alpha_R f_R (-e_P + p_P) G_R[t_P])
\end{aligned} \tag{10}$$

Summarizing,

- When $p_L - e_L > p_P - e_P$, which means that the commitment advantage of the radical party leader is diminished.
  - $\frac{dV(t_L,\theta_L)}{d\theta_L}\Big|_{t_L = t_L^*(\theta_L)} > 0$
  - $\frac{dV(t_P,\theta_P)}{d\theta_P}\Big|_{t_P = t_P^*(\theta_P)} > 0$
- When $p_L - e_L < p_P - e_P$, which means that the commitment advantage of the radical party leader is increased then.
  - $\frac{dV(t_L,\theta_L)}{d\theta_L}\Big|_{t_L = t_L^*(\theta_L)} < 0$
  - $\frac{dV(t_P,\theta_P)}{d\theta_P}\Big|_{t_P = t_P^*(\theta_P)} < 0$

Thus, when the commitment advantage of the radical party leader is diminished there is a positive relationship with fixed-value positions, which means that leaders will have clearer positions on them.

C. Switching

Summary Statistics. The following two tables contain summary statistics of the data used for the switching analysis.

TABLE A1: Descriptive statistic: USA GSS 2016 vs 2012

	Mean	Median	S.D.	Min.	Max	Obs.
Vote Switching	0.15	0.00	0.36	0	1	1129
RTI	-0.12	-0.44	0.98	-2	2	1585
Age	46.07	44.00	17.58	18	89	1819
Female	0.54	1.00	0.50	0	1	1824
Foreign born	0.14	0.00	0.35	0	1	1823
Black	0.14	0.00	0.35	0	1	1824
Unemployed	0.04	0.00	0.18	0	1	1824
Non-Believer	0.24	0.00	0.43	0	1	1824
Income Level	10.30	12.00	3.05	1	12	1037
City/Town size	3.75	3.00	2.42	1	10	1824
Offshorability	0.42	0.00	0.49	0	1	1734
Skill-Specificity	4.08	3.38	3.24	1	25	1729
Task-Tech	0.27	0.00	0.44	0	1	1734
Task-Inter	0.38	0.00	0.49	0	1	1734

TABLE A2: Descriptive statistic: Germany SOEP 2014 vs 2018.

	Mean	Median	S.D.	Min.	Max	Obs.
Switching Vote	0.03	0.00	0.16	0	1	65901
RTI Index	-0.12	-0.44	0.93	-2	2	26350
Age	50.96	52.00	18.90	17	103	65901
income	2718.82	2500.00	1886.07	20	40000	32838
Female	0.51	1.00	0.50	0	1	65901
Foreign born	0.12	0.00	0.32	0	1	65901
Unemployed	0.04	0.00	0.20	0	1	65901
High-Skilled	0.21	0.00	0.41	0	1	65901
Offshorability	0.46	0.00	0.50	0	1	29228
Skill-Specificity	4.23	3.58	3.26	1	25	29118
Task-Tech	0.34	0.00	0.47	0	1	29053
Task-Inter	0.37	0.00	0.48	0	1	29053
Region (West 1 - East 2)	1.17	1.00	0.38	1	2	65901

Long Table. The following Tables contain the model reflecting the estimated in the Figure of the main text.

TABLE A3: Switching Vote, IV - RTI, US

	(1) +Income	(2) +Demographic	(3) +Regional	(4) +Offshoring	(5) +Skill	(6) +Task	(7) All	(8) Extra
Switching								
RTI	0.173*	0.234**	0.286**	0.393***	0.284**	0.395***	0.423***	0.437***
	(0.100)	(0.109)	(0.116)	(0.131)	(0.116)	(0.137)	(0.144)	(0.156)
Female		-0.351	-0.319	-0.351	-0.300	-0.406*	-0.390	-0.578**
		(0.224)	(0.234)	(0.237)	(0.235)	(0.242)	(0.245)	(0.268)
Age		0.040***	0.044***	0.047***	0.044***	0.045***	0.047***	0.044***
		(0.007)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)
Foreign born		-1.988***	-1.980***	-1.913***	-1.961***	-1.995***	-1.912***	-1.919***
		(0.619)	(0.640)	(0.644)	(0.637)	(0.636)	(0.638)	(0.732)
Education		-0.063	-0.063	-0.036	-0.062	-0.061	-0.040	-0.058
		(0.046)	(0.050)	(0.052)	(0.050)	(0.050)	(0.053)	(0.057)
Offshorability				-0.774***			-0.677**	-0.725**
				(0.252)			(0.264)	(0.313)
Skill-Specificity					0.019		0.018	0.031
					(0.028)		(0.031)	(0.032)
Task-Tech						0.152	-0.003	-0.261
						(0.308)	(0.340)	(0.392)
Task-Inter						0.666**	0.255	0.274
						(0.326)	(0.344)	(0.389)
Unemployed								-1.074
								(1.076)
Black								-3.533***
								(1.059)
Non-Believer								-2.249***
								(0.523)
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	671	665	665	665	665	665	665	665
R^2	0.017	0.095	0.139	0.155	0.139	0.147	0.157	0.271
AIC	605	565	555	547	556	553	552	490

Notes: Parentheses contain robust standard errors. The dependent variable is *Vote Switching* from the GSS

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

TABLE A4: Switching Vote (Only left) - Germany, IV - RTI

	(1) +Income	(2) +Demographic	(3) +Regional	(4) +Offshoring	(5) +Skill	(6) +Task	(7) All
Left to Pop Right							
RTI Index	0.282***	0.208*	0.214**	0.817***	0.217**	0.319**	0.826***
	(0.086)	(0.111)	(0.108)	(0.142)	(0.111)	(0.146)	(0.127)
Female		0.133	0.087	0.084	0.142	0.226	0.386
		(0.329)	(0.326)	(0.315)	(0.332)	(0.372)	(0.363)
Age		-0.050***	-0.049***	-0.060***	-0.051***	-0.050***	-0.065***
		(0.012)	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)
Education		-0.599***	-0.576***	-0.547***	-0.563***	-0.548***	-0.541***
		(0.105)	(0.102)	(0.114)	(0.098)	(0.090)	(0.095)
Offshorability				-2.492***			-3.123***
				(0.475)			(0.538)
Skill-Specificity					0.034		0.122***
					(0.021)		(0.027)
Task-Tech						0.639**	-0.504
						(0.315)	(0.386)
Task-Inter						0.531	-1.173**
						(0.499)	(0.576)
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional controls	No	No	Yes	Yes	Yes	Yes	Yes
Observations	4628	4286	4286	4286	4286	4268	4268
R^2	0.011	0.142	0.148	0.222	0.149	0.152	0.241
AIC	543.031	471.505	470.495	432.787	471.552	471.677	427.989

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Robustness Checks.

US. The following Tables present robustness for the US. First, I redefine vote-switching as 0 only when voters continue to vote for the establishment party (Democrat) at the election in 2016. Note that the previous specification coded as 0 when the voter chose the Republican Party in 2012. It is now 1 when voters have defected by switching from the mainstream to the outsider party (Trump). It can be seen that the estimates are, if anything, slightly larger than in the baseline models.

TABLE A5: Switching Vote (alternative definition), IV - RTI

	(1) +Income	(2) +Demographic	(3) +Regional	(4) +Offshoring	(5) +Skill	(6) +Task	(7) All	(8) Extra
Switching								
RTI	0.349**	0.277*	0.384*	0.454**	0.410**	0.470**	0.486**	0.951***
	(0.150)	(0.163)	(0.196)	(0.201)	(0.207)	(0.213)	(0.222)	(0.251)
Female		-0.746**	-0.740**	-0.809**	-0.788**	-0.989**	-1.014**	-1.058**
		(0.322)	(0.370)	(0.375)	(0.385)	(0.400)	(0.411)	(0.509)
Age		0.036***	0.043***	0.047***	0.043***	0.041***	0.045***	0.031*
		(0.013)	(0.014)	(0.015)	(0.014)	(0.015)	(0.016)	(0.018)
Foreign born		-2.497***	-2.703***	-2.662***	-2.741***	-2.809***	-2.766***	-2.286**
		(0.895)	(0.767)	(0.871)	(0.778)	(0.805)	(0.886)	(0.970)
Education		-0.291***	-0.314***	-0.294***	-0.314***	-0.330***	-0.311***	-0.266***
		(0.079)	(0.080)	(0.083)	(0.081)	(0.082)	(0.086)	(0.087)
Offshorability				-0.727*			-0.612	-1.240*
				(0.408)			(0.456)	(0.641)
Skill-Specificity					-0.030		-0.011	-0.057
					(0.040)		(0.045)	(0.048)
Task-Tech						-0.539	-0.511	-0.056
						(0.526)	(0.586)	(0.723)
Task-Inter						0.418	0.092	-0.314
						(0.433)	(0.500)	(0.740)
Unemployed								-1.069
								(1.140)
Black								-4.917***
								(1.404)
Non-Believer								-2.428***
								(0.674)
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	219	218	218	218	218	218	218	218
R^2	0.026	0.183	0.286	0.299	0.288	0.297	0.304	0.492
AIC	313	272	257	255	259	258	260	209

Notes: Parentheses contain robust standard errors. The dependent variable is *Vote Switching* from the GSS

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

To further test the robustness of these findings, I also estimate the models using different specifications of the independent variable (see Table A6 for the US, and Table A8 for Germany), and other alternative explanations (control variables).

TABLE A6: Switching Vote, IV - Routine (dummy), US

	(1) +Income	(2) +Demographic	(3) +Regional	(4) +Offshoring	(5) +Skill	(6) +Task	(7) All	(8) Extra
Switching								
Routine	0.660***	0.903***	1.039***	0.969***	1.024***	1.070***	1.009***	0.982***
	(0.211)	(0.250)	(0.270)	(0.274)	(0.273)	(0.276)	(0.285)	(0.312)
Female		-0.267	-0.222	-0.233	-0.211	-0.310	-0.282	-0.493*
		(0.217)	(0.225)	(0.229)	(0.227)	(0.236)	(0.238)	(0.265)
Age		0.042***	0.047***	0.048***	0.048***	0.046***	0.049***	0.045***
		(0.007)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)
Foreign born		-1.544***	-1.568***	-1.508***	-1.544***	-1.577***	-1.487***	-1.538***
		(0.510)	(0.535)	(0.532)	(0.536)	(0.537)	(0.543)	(0.595)
Education		0.010	0.017	0.018	0.016	0.011	0.019	0.002
		(0.047)	(0.050)	(0.049)	(0.050)	(0.050)	(0.051)	(0.055)
Offshorability				-0.454**			-0.551**	-0.562*
				(0.228)			(0.261)	(0.309)
Skill-Specificity					0.008		0.024	0.043
					(0.029)		(0.031)	(0.032)
Task-Tech						-0.146	-0.326	-0.581
						(0.298)	(0.334)	(0.399)
Task-Inter						0.142	-0.217	-0.191
						(0.272)	(0.307)	(0.373)
Unemployed								-1.417
								(1.063)
Black								-3.698***
								(1.058)
Non-Believer								-2.440***
								(0.561)
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	732	726	726	726	722	726	722	722
R^2	0.032	0.106	0.146	0.152	0.148	0.147	0.155	0.272
AIC	648	606	597	595	594	600	595	526

Notes: Parentheses contain robust standard errors. The dependent variable is *Vote Switching* from the GSS

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Germany. The following table presents the results with a broader definition of the establishment including movements from the establishment left and right (i.e, adding defection from CDU and CSU) to the radical right populist parties. Results remain significant and show a positive relationship between exposure to automation and vote-switching likelihood.

TABLE A7: Switching Vote From Establishment Left and Right to Populist Right, IV - RTI, Germany

	(1) +Income	(2) +Demographic	(3) +Regional	(4) +Offshoring	(5) +Skill	(6) +Task	(7) All
Switching Vote							
RTI Index	0.116***	0.114***	0.128***	0.192***	0.141***	0.208***	0.247***
	(0.037)	(0.039)	(0.040)	(0.046)	(0.037)	(0.046)	(0.050)
Female		-1.190***	-1.129***	-1.123***	-1.210***	-1.302***	-1.322***
		(0.095)	(0.094)	(0.094)	(0.098)	(0.100)	(0.103)
Age		0.002	0.000	-0.001	0.001	-0.001	0.000
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Foreign born		-1.338***	-1.186***	-1.176***	-1.171***	-1.201***	-1.195***
		(0.197)	(0.199)	(0.199)	(0.199)	(0.199)	(0.197)
Education		-0.166***	-0.197***	-0.189***	-0.211***	-0.205***	-0.208***
		(0.022)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
Offshorability				-0.300***			-0.004
				(0.096)			(0.116)
Skill-Specificity					-0.070***		-0.068***
					(0.016)		(0.017)
Task-Tech						-0.145	0.117
						(0.113)	(0.136)
Task-Inter						0.497***	0.626***
						(0.122)	(0.152)
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional controls	No	No	Yes	Yes	Yes	Yes	Yes
Observations	18304	17712	17712	17712	17712	17665	17665
R^2	0.010	0.066	0.082	0.083	0.087	0.088	0.092
AIC	5994.285	5533.163	5444.404	5435.239	5415.184	5407.012	5386.263

Notes: Parentheses contain robust standard errors. The dependent variable is *Vote Switching* from SOEP data.

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

For the alternate specification for Germany, I re-estimated the model using exposed as a dummy variable. Results remain unchanged.

TABLE A8: Switching Vote, IV - Routine (dummy), Germany

	(1) +Income	(2) +Demographic	(3) +Regional	(4) +Offshoring	(5) +Skill	(6) +Task	(7) All
Switching Vote							
Routine	0.856***	0.372***	0.335***	0.315***	0.379***	0.402***	0.428***
	(0.085)	(0.089)	(0.089)	(0.091)	(0.090)	(0.089)	(0.090)
Female		-1.076***	-1.026***	-1.025***	-1.097***	-1.201***	-1.224***
		(0.093)	(0.092)	(0.092)	(0.095)	(0.097)	(0.099)
Age		0.003	0.001	0.001	0.001	-0.001	0.001
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Foreign born		-0.972***	-0.824***	-0.825***	-0.817***	-0.840***	-0.845***
		(0.166)	(0.168)	(0.168)	(0.168)	(0.167)	(0.166)
Education		-0.146***	-0.174***	-0.175***	-0.186***	-0.189***	-0.196***
		(0.021)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
Offshorability				-0.107			0.171
				(0.083)			(0.117)
Skill-Specificity					-0.069***		-0.060***
					(0.016)		(0.016)
Task-Tech						-0.334***	-0.094
						(0.105)	(0.122)
Task-Inter						0.208**	0.382***
						(0.103)	(0.140)
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional controls	No	No	Yes	Yes	Yes	Yes	Yes
Observations	20709	20056	20056	20056	19969	19922	19922
R^2	0.027	0.067	0.080	0.081	0.085	0.085	0.088
AIC	6379.127	5993.501	5911.644	5911.855	5859.255	5858.701	5842.995

Notes: Parentheses contain robust standard errors. The dependent variable is *Vote Switching* from SOEP data.

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Finally, limiting the analysis to the establishment right shows that exposure to automation is not what explains the type of switching from CDU/CSU to AfD.

TABLE A9: Switching Vote (Only from the Right), IV - RTI

	(1) +Income	(2) +Demographic	(3) +Regional	(4) +Offshoring	(5) +Skill	(6) +Task	(7) All
Right to AfD							
RTI Index	-0.086	-0.135	-0.109	-0.340**	-0.091	-0.083	-0.201
	(0.113)	(0.119)	(0.128)	(0.145)	(0.115)	(0.129)	(0.140)
Female		-2.056***	-1.766***	-1.637***	-1.840***	-1.971***	-1.962***
		(0.313)	(0.307)	(0.297)	(0.307)	(0.315)	(0.313)
Age		-0.010	-0.012	-0.009	-0.012	-0.012	-0.005
		(0.009)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Foreign born		0.397	0.851***	0.624*	0.761**	0.726**	0.324
		(0.296)	(0.328)	(0.320)	(0.329)	(0.359)	(0.325)
Education		-0.066	-0.119**	-0.172***	-0.131**	-0.135**	-0.257***
		(0.055)	(0.056)	(0.063)	(0.058)	(0.061)	(0.076)
Offshorability				1.343***			2.403***
				(0.297)			(0.447)
Skill-Specificity					-0.106*		-0.115*
					(0.058)		(0.067)
Task-Tech						-0.642*	-0.089
						(0.344)	(0.394)
Task-Inter						0.127	1.717***
						(0.327)	(0.422)
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional controls	No	No	Yes	Yes	Yes	Yes	Yes
Observations	3891	3739	3739	3739	3739	3719	3719
R^2	0.018	0.091	0.155	0.186	0.163	0.165	0.233
AIC	845.503	784.398	732.685	708.415	728.241	727.240	674.844

Notes: Parentheses contain robust standard errors. The dependent variable is *Vote Switching* from SOEP data.

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Table A10 provides context for the results in the multiparty case about the rates of switching looking at changes from mainstream to non-mainstream parties from 2002-2013.

TABLE A10: Switching in Germany from mainstream to non-mainstream parties 2002-2009

Election	SPD	Liberal	CDU	Total Switching
2002	10.6%	12.0%	1.5%	7.1%
2005	0.4%	8.1%	4.1%	5.0%
2009	1.9%	9.1%	0.9%	3.8%
2013	9.8%	22.2%	3.1%	6.7%

Source: Author's own elaboration based on CSES data Spoon and Klüver (2019) replication data.
Note: Switching refers to switching from mainstream to non-mainstream. Columns about parties refer to the proportion of switching relative to the party; total switching column refers to the total movement in the election.

D. Mechanisms: US

Regional Party Strategy. Data Description.

The sources of the data combined for the regional analysis of the US consist of the following:

- List of rallies: The source for the location and date of the Trump rallies was first obtained from https://en.wikipedia.org/wiki/List_of_rallies_for_the_2016_Donald_Trump_presidential_campaign, accessed on March 23, 2023. To verify the accuracy of the information, I cross-checked the data with news and with the American Presidency Project UC Santa Barbara to search for any unreported 2016 Trump rallies. However, no further rallies that took place during the campaign season were found.

- Hate incidents: In order to measure instances of hate crimes, I relied on the ADL Center on Extremism's compiled data on hate incidents reported from 2013-2016 (ADL H.E.A.T Map). The data includes information on the reported incident's date and location, which I then coded into metropolitan statistical areas - my chosen regional unit.

- Employment regional data: replication data from Brookings analysis of BLS, Census, and McKinsey data (Muro, Maxim, and Whiton 2019).

Table A11 shows the summary statistics for the variables in Trump's rallies campaign strategy data.

In the regional analysis of Trump's strategies, the number of rallies by MSA is the dependent variable, which serves as a proxy for targeting strategies. A higher number of visits indicates a greater focus on the area. The data shows that out of all the MSA visited by Trump, he visited 20% of them and made multiple visits to some (up to 4 visits). To account for the fact that the number of rallies is also influenced by population, I used a relative measure that divides the number of rallies by the population in the relevant electoral district (state). The analysis gives similar results if we use absolute values instead of relative ones.

The main independent variable is the share of exposed workers in the area. To measure this, I used a similar operationalization to the dependent variable, looking at the number of exposed workers relative to the population size in the electoral district. However, using the natural logarithm and the number of rallies yield similar results.

Descriptive statistics

	Mean	Median	S.D.	Min.	Max	Obs.
# Rallies per MSA	0.35	0.00	0.82	0.00	4.00	381
# Rallies relative to population	0.01	0.00	0.02	0.00	0.29	381
Visit MSA (dummy)	0.20	0.00	0.40	0.00	1.00	381
Visit (dummy) relative to population	0.00	0.00	0.01	0.00	0.07	381
# Workers Exposed to Automation per MSA	182502	63114	386542	14190	4128796	381
Workers Exposed to Automation (relative to MSA)	0.26	0.26	0.03	0.18	0.42	381
Workers Exposed to Automation (relative to pop.)	0.02	0.01	0.04	0.00	0.30	381
# Hate incident per MSA	3.75	0.00	19.92	0.00	329.00	381
Hate Incidents Per 100K Pop	0.04	0.00	0.20	0.00	2.46	381
Close election 2012 (5%)	0.15	0.00	0.36	0.00	1.00	381
Close election - Forecasting 2016	0.11	0.00	0.31	0.00	1.00	381
Close election 2012 (10%)	0.42	0.00	0.49	0.00	1.00	381

TABLE A11: Summary statistics of variables used in this study about Trump's campaign strategies: rallies.

Tables A12 and A13 present the result using two alternative measures of close elections at 10% or looking at 2016 forecasting. Results remain substantively and statistically similar.

TABLE A12: Trump's Campaing Strategy (Close election 10)

	(1) Simple	(2) Close	(3) Hate	(4) All
Workers Exposed to Automation	0.191***	0.052*	0.167***	0.062
	(0.067)	(0.029)	(0.062)	(0.039)
Close Elections	0.016**	0.006	0.015**	0.006
	(0.006)	(0.004)	(0.006)	(0.004)
Hate Incidents Per 100K Pop	-0.048*	-0.040	0.016	-0.023
	(0.028)	(0.026)	(0.030)	(0.050)
Exposed x Close Elections		0.301***		0.238***
		(0.077)		(0.088)
Exposed x Hate Incidents			-0.249	-0.075
			(0.156)	(0.185)
Hate Incidents x Close				0.016
				(0.038)
FE State	Yes	Yes	Yes	Yes
Observations	381	381	381	381
R^2	0.671	0.727	0.689	0.731
AIC	-2.2e+03	-2.3e+03	-2.3e+03	-2.3e+03

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV is the number of Trump's rallies per 100,000 of the population by Metropolitan Statistical Area. Standard errors are clustered by state. The IV, 'close elections,' is a dummy variable that takes a value of 1 when the result of the state in the 2012 presidential election was determined by less than 10%.

TABLE A13: Trump's Campaing Strategy (Forecasting 2016)

	(1) Simple	(2) Close	(3) Hate	(4) All
Workers Exposed to Automation	0.192***	0.162**	0.168**	0.140**
	(0.071)	(0.065)	(0.065)	(0.061)
Close Elections	-0.019***	-0.025***	-0.019***	-0.025***
	(0.006)	(0.006)	(0.005)	(0.006)
Hate Incidents Per 100K Pop	-0.051*	-0.049*	0.015	0.017
	(0.030)	(0.029)	(0.031)	(0.035)
Exposed x Close Elections		0.315***		0.353***
		(0.055)		(0.080)
Exposed x Hate Incidents			-0.256	-0.252
			(0.156)	(0.165)
Hate Incidents x Close				-0.043
				(0.034)
FE State	Yes	Yes	Yes	Yes
Observations	381	381	381	381
R^2	0.662	0.678	0.681	0.694
AIC	-2.2e+03	-2.2e+03	-2.2e+03	-2.3e+03

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV is the number of Trump's rallies per 100,000 of the population by Metropolitan Statistical Area. Standard errors are clustered by state. The IV, 'close elections,' is a dummy variable that takes a value of 1 when the forecasting for the 2016 presidential election in the state had a probability between 30-70% that one of the parties would win.

Speeches US. This section presents the sources of speeches and the construction of dictionaries. *Source of the Data*: My corpus consisted of rally speeches available during the general elections (June-November 2016) with two main sources:

- 58 transcripts were obtained through the American Presidency Project website (https://www.presidency.ucsb.edu/)
- 40 were collected from Youtube transcript API using Python.

To prepare the corpus for analysis, I carried out several preprocessing steps that are widely used in statistical text analysis (Manning, Raghavan, and Schütze 2009). These steps included common transformation procedures such as eliminating excess whitespace, converting documents to lowercase, removing stop words and punctuation, and removing specific speech annotations (such as applause). *Dictionary definition:*

- Pro-worker:
  - 'factory', 'factories', 'job', 'employ', 'unemploy', 'worker', 'labor', 'wage', 'paid', 'fair', 'unfair', 'manufactur', 'union', 'steel', 'hardwork', 'pay', 'hire', 'decent', 'trade', 'autoworker', 'deindustrialization', 'industr', 'globalization', 'offshor'
  - ('middle', 'class'), ('hard','work'), ('bring','back'),('America','first'), ('america','first'), ('forgotten', 'man'), ('blue', 'collar'), ('American','hands'),('american','hands'), ('hire','america'), ('buy','america'), ('america','made'), ('lai','off'), ('people','work','at')
- Culture:
  - 'immigr', 'border', 'wall', 'heritage', 'values', 'culture', 'inclusion', 'enforcement', 'muslim', 'christian', 'islamic', 'gay', 'lesbian', 'lgbt','terrorism', 'undocumented' ,'way of life'

The score will be the counting of these words divided by the total word count in the speech. The speeches with the highest score of pro-worker rhetoric and one example of a sentence:

- September 16, Miami (FL): "While my opponent slanders you as deplorable and irredeemable, I call you hardworking American patriots who love your family and love your country (...) My economic agenda can be summed up in three words: jobs, jobs, jobs."
- September 14, Canton (OH): "There is no greater example of this in our country than Flint, Michigan. The city of Flint was once known as Buick City. More than 80,000 workers were employed by GM in 1970 – today, its less than 8,000. Forty percent of the city's residents are living in poverty. Violent crime is among the nation's highest. (...) We are going to turn this around. We are going to bring our jobs back and protect our people."
- September 12, Asheville (NC): "While my opponent slanders you as deplorable and irredeemable, I call you, hard-working American Patriots who love your country, love your families, and want a better future for all Americans."
- September 13, Clive (IA): "Our plan lowers the tax rate on family farms down to 15 percent, and to stop the double-taxation of family farms at death – helping to ensure that the family farm tradition in Iowa continues to thrive and flourish. My economic agenda can be summed up in three words: jobs, jobs, jobs."

The speeches with the highest score of cultural rhetoric and one example of a sentence:

- June 13, Manchester (NH): “But today there is only one thing to discuss: the growing threat of terrorism inside of our borders. (...) This is a very dark moment in America’s history. A radical Islamic terrorist targeted the nightclub not only because he wanted to kill Americans, but in order to execute gay and lesbian citizens because of their sexual orientation."

- September 20 High Point (NC): “we are going to protect our country from Radical Islamic Terrorism. Over the weekend, there were Islamic terrorist attacks in Minnesota and New York City, and in New Jersey. These attacks were made possible because of our extremely open immigration system, which fails to properly vet and screen the individuals or families coming into our country."

- September 17, Houston (TX): “Every day our border remains open, innocent Americans are needlessly victimized. Every day Sanctuary Cities are left in place, innocent Americans are put in harm’s way. Every day we fail to enforce our laws is a day when a loving parent is at risk of losing their child.”

- August 31, Phoenix (AZ): “Sadly, sadly there is no other way. The truth is our immigration system is worse than anybody ever realized. But the facts aren’t known because the media won’t report on them. The politicians won’t talk about them and the special interests spend a lot of money trying to cover them up because they are making an absolute fortune. That’s the way it is.”

In Table A14, I conduct a robustness check by using word counts as the measure of pro-worker or cultural rhetoric, rather than the proportion of these words relative to the total number of words used. The analysis shows that the interaction of interest in my model yields positive and statistically significant results for pro-worker rhetoric. Specifically, in areas with a higher proportion of exposed workers and close electoral races, we observe a greater absolute number of pro-worker words used. Interestingly, I find that in regions with a high share of routine workers and close elections, Trump used less cultural rhetoric.

TABLE A14: Trump’s Campaing Strategy: Speeches (Total count)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Pro-Work	W Close	Work Int	Work Intx2	Culture	C Close	C Int	C Intx2
Workers Exp. Auto.	636.18	636.18	-4017.86***	-3658.56***	-12.97	-12.97	399.21	377.56
	(450.61)	(450.61)	(1375.41)	(1246.38)	(40.57)	(40.57)	(234.13)	(231.52)
Hate Per 100K Pop	-119.44*	-119.44*	-124.44*	287.08	-3.23	-3.23	-2.79	-27.59
	(67.36)	(67.36)	(62.78)	(277.98)	(5.17)	(5.17)	(4.61)	(16.76)
Close		198.14***	-371.74**	-297.68*		63.79***	114.26***	109.80***
		(28.05)	(168.17)	(144.97)		(4.69)	(29.17)	(29.43)
Exposed x Close			4714.86***	4116.91***			-417.56*	-381.54*
			(1243.99)	(1063.07)			(217.72)	(220.61)
Exposed x Hate				-1542.64				92.95*
				(985.93)				(51.69)
FE State	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Foreign	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fe Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	98	98	98	98	98	98	98	98
R^2	0.38	0.38	0.40	0.42	0.50	0.50	0.51	0.51
AIC	1222.34	1222.34	1220.39	1218.40	785.24	785.24	783.93	784.70

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

To further confirm the greater polarization in the party leaders' strategies, I conducted a final robustness test by analyzing 34 available speeches from Clinton on the American Presidency Project (Table A15). Although the number of speeches available for Clinton is much lower than that of Trump, our analysis indicates that there is no significant relationship between the use of pro-worker or cultural rhetoric and Clinton's messaging, as the estimates of the coefficient for workers exposed to the estimation are not statistically significant. These findings suggest an increase in polarization between the candidates, as while Clinton's rhetoric remained consistent, Trump increased his use of pro-worker rhetoric.

TABLE A15: Clinton's Campaing Strategy

	Pro-Work Score (1-4)				Cultural Score (4-8)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Simple	Close	Int	Intx2	Simple	Close	Int	Intx2
Workers Exposed to Aut.	-0.002	-0.002	-0.002	-0.003	0.000*	0.000*	0.000*	0.000
	(0.003)	(0.003)	(0.003)	(0.005)	(0.000)	(0.000)	(0.000)	(0.000)
Hate Incidents	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Close		0.041	0.041	0.038		0.010**	0.010**	0.010**
		(0.048)	(0.048)	(0.051)		(0.004)	(0.004)	(0.004)
Exposed x Close			0.000	0.000			0.000	0.000
			(.)	(.)			(.)	(.)
Exposed x Hate Inc.				0.000				0.000
				(0.000)				(0.000)
FE State	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Foreign	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	34	34	34	34	34	34	34	34
R^2	0.518	0.518	0.518	0.522	0.423	0.423	0.423	0.424
AIC	-206.308	-206.308	-206.308	-204.572	-367.583	-367.583	-367.583	-365.622

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

E. Mechanisms: Germany

Data Description. The sources of the data combined for the regional analysis of German elections consist of the following:

- Electoral results: https://www.bundeswahlleiter.de/. This data contains the total number of votes per districts and valid votes.

- Hate incidents: In order to measure instances of hate crimes, I utilized the anti-refugee violence and social unrest dataset (ARVIG). This dataset was created byBenček and Strasheim (2016) using event data obtained from civil society organizations and contains geo-referenced information. ARVIG comprises various forms of violence such as demonstrations, arson, assaults, and other attacks that directly impact refugees and asylees. Additionally, it provides regional data which I paired with electoral performance data for analysis.

- Employment regional data: Dauth, Findeisen, and Suedekum (2017)

Table A16 shows the summary statistics for the variables in the AfD's electoral performance data.

In analyzing the regional success of the AfD, the dependent variable used is the share of votes obtained by the party in each district. This serves as a proxy for understanding the linkages between the AfD and the regions and may be influenced by the party's targeting of areas with a higher number of exposed workers and/or racism. The data indicate that the AfD's performance varied widely across different regions, ranging from no votes in some areas to as high as 35% in others. To address the fact that electoral success is determined by the majority of votes in a PRITM system, the analysis considers the share of votes in relation to the population of the district, rather than absolute numbers.

The main independent variable in this analysis is the share of exposed workers in each area. To measure this, a similar operationalization was used as the dependent variable, looking at the number of exposed workers relative to the population size in the electoral district.

In addition to the variables mentioned earlier, this analysis also considers the number of hate incidents by region as a proxy for pre-existing levels of racism. This variable is linked to the fixed-value parameter of the model. Rather than using the absolute number of hate incidents, the analysis uses a measure that takes into account the population size of the electoral district. Specifically, the number of hate incidents is measured relative to the population size, using a per-1000-population rate. This approach allows for a more meaningful comparison of hate incidents across different regions with varying population sizes.

Descriptive statistics

	Mean	Median	S.D.	Min.	Max	Obs.
AfD Share of votes	0.12	0.11	0.06	0.00	0.37	400
Share of exposed workers	0.08	0.08	0.01	0.04	0.15	400
Hate Incidents Per 1K Pop	0.02	0.01	0.11	0.00	1.75	400
# Hate incidents per district	4.11	1.00	18.94	0.00	212.00	400
South Region	0.35	0.00	0.48	0.00	1.00	400
East Region	0.19	0.00	0.39	0.00	1.00	400
North Region	0.15	0.00	0.36	0.00	1.00	400
Employment share of workers with University degree (%)	14.30	12.98	5.55	5.77	36.42	400
Employment share of Foreign Born (%)	7.27	6.79	4.15	0.85	21.46	400
Employment share of Female (%)	45.81	45.81	4.35	29.34	58.43	400
Employment share of other manuf. (%)	21.53	20.08	9.98	1.86	56.96	400
Employment share of manuf. of cars (%)	1.04	0.00	5.04	0.00	54.34	400

TABLE A16: Summary statistics of variables used in this study about AfD regional performance.

F. Topic Analysis: Speeches and Manifesto

Preprocessing. To prepare the corpus for analysis, I carried out several preprocessing steps that are widely used in statistical text analysis (Manning, Raghavan, and Schütze 2009). These steps included common transformation procedures such as eliminating excess whitespace, converting documents to lowercase, removing stop words and punctuation, and removing specific speech annotations (such as applause).

Automated Topic Analysis: NMF. For topic analysis, I used non-negative matrix factorization (NMF), which is a matrix decomposition technique that accounts for the contribution of each word to a corpus. I combined it with the log-based term frequency-inverse document frequency (TF-IDF) as a weighting factor (Manning, Raghavan, and Schütze 2009). NMF is particularly useful for determining the importance of words in a collection of texts using weighted term-frequency values. Previous scholars have shown that this modeling tool can produce diverse and semantically coherent topics. For reference about NMF see Wang et al. (2012), O'Callaghan et al. (2015), or previous work applying it to political speeches Greene and Cross (2017).

NMF topic analysis provides us with a method to identify the most frequent words associated with clusters (topic structures). This helps us to interpret the topics substantively by identifying their key characteristics. Simply put, NMF topic analysis gives us a list of words that represent each topic, making it easier to understand what the topic is about. Note in the following table labels are mine.

Table A17 shows the top 10 words of the topic modeling implemented using NMF over Trump speeches and the AfD manifesto.

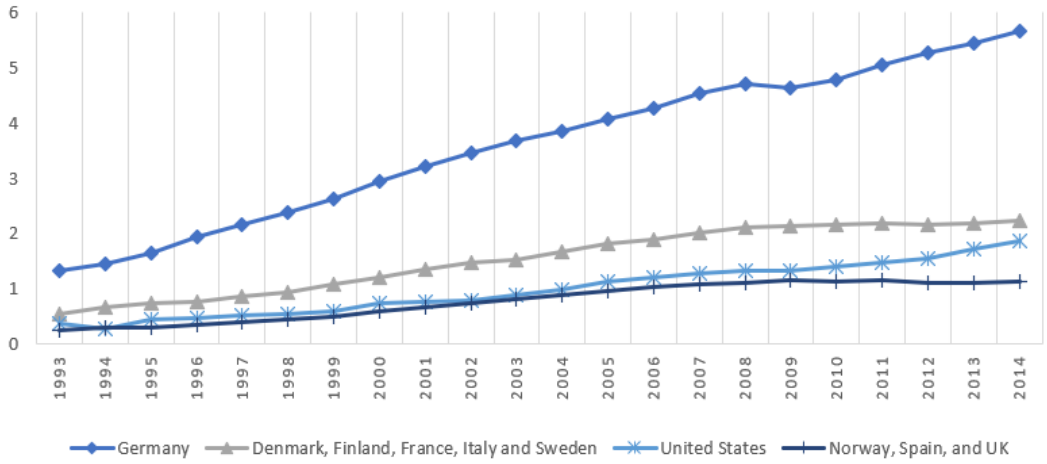
Trump speeches				**AfD Manifesto**			
Pro-worker	**Americanism**	**Anti-elite**	**Speech**	**National and Euro politics**	**Policies**	**Family and tradition**	**Anti-immigration and EU**
going	america	Hillary	thank	german	*policy*	children	immigration
people	make	Clinton	bless	*afd*	security	families	integration
american	*great*	Clintons	god	*germany*	protection	parents	countries
country	safe	state	*great*	political	infrastructure	family	eu
new	strong	wants	everybody	public	*schools*	care	social
jobs	wealthy	secretary	*want*	*policy*	nature	*schools*	migration
want	*going*	emails	today	euro	economy	support	country
know	proud	Obama	love	national	culture	social	*germany*
im	better	trade	good	*foreign*	*foreign*	*afd*	legal
dont	world	donors	incredible	power	language	special	right
43.4%	**20.0%**	**20.0%**	**16.7%**	**43.3%**	**18.4%**	**27.3%**	**11.0%**

TABLE A17: NMF Topic Modeling, 4 clusters, top-10 terms. Italic terms are shared in more than one cluster.

G. Time-Series Cross-Sectional Evidence: CMP data

Robots Incorporation - preamble. Figure A1 presents the evolution of industrial robots per thousand workers with base 1993.

Figure A1: Stock of robots per thousand of workers base 1993



Source: Replication of Acemoglu (2020) with data from the IFR.et al.

Model Specification and Variables' construction. To **classify** countries as PRITM institutions, I follow Hays (2021). To identify the type of electoral system, my classification is based on Bormann and Golder (2013), and to identify whether party systems are ideologically trichotomous, I rely on Armingeon et al. (2017).

In what follows, I will explain the constructions of the dependent variables for the party-level analysis.

My measures follow a similar approach to Burgoon and Schakel (2022) using the Comparative Manifesto Project Database. All measures focus on "net" measures, where for instance, statements constituting anti-globalization positioning are subtracted by pro-globalization positioning.

Since I look at the polarization over redistribution and fixed-value positions I will define two operationalization of the dependent variable.

1. Redistribution:*Distance Redistribution (DR) - Net Welfare* relies on the questions: *per504* and *per505* which refers to welfare expansion and limitation.

$$\text{Net Welfare} = ln(per504 + 0.5) - ln(per505 + 0.5)$$

2. fixed-value positions: *Distance fixed-value positions (DFA) - Net Anti-Global broad* relies on the definition of Anti-Global by Burgoon and Schakel (2022) and uses the following questions: net internationalism (*per107, per109*), net anti-EU (*per108, per110*), net protectionism (*per407, per406*), net national way of life (*per602, per601*), and net immigration (*per602-2, per601-2*).

$$\text{Net Anti-Global broad} = ln(per107 + per108 + per407 + per602 + 0.5 + per602_2) - ln(per109 + per110 + per406 + per601 + 0.5 + per601_2)$$

3. I then propose alternative definitions of FV using the following questions:

   - DFA - Net Anti-Global Narrow (Internationalism): *per107, per109* which represents net internationalism.

$$\text{Net Anti-Global Narrow (Internationalism)} = ln(0.5 + per107) - ln(0.5 + per109)$$

- DFA - Net Anti-EU: *per108 per602-2, per110, per601-2*, which represents the net of European Community/Union views and net immigration.

$$\text{Net Anti-EU} = ln(per108 + per602_2 + 0.5) - ln(per110 + per601_2 + 0.5)$$

- DFA - Anti-Global and Cultural: which combines anti-global questions with cultural and moral values. It is constructed as the net of: internationalism (*per107, per109*), anti-EU (*per108, per110*), protectionism (*per407, per406*), national way of life (*per602, per601*), and immigration (*per602-2, per601-2*), multiculturalism (*per608 & per607*), and traditional morality (*per604 & per603*).

$$\begin{aligned}\text{Anti-Global and Cultural} = ln(&per107 + per108 + per407 + per602 + per602_2 + per604 + \\ &per607 + 0.5) - ln(per109 + per110 + per406 + per601 + \\ &per601_2 + per603 + per608 + 0.5)\end{aligned}$$

Finally, once I have each measure for redistribution and fixed-value positions, I will calculate a measure of polarization of the party system.

- **Main Operationalzation:** Distance between mainstream left and radical right parties:

$$Pol = \sum |\alpha_L - \alpha_R|$$

where α refers to the position of party family L or R. Moreover, R is operationalized as follows depending on the institutional context:

  - Based on party families from CMP, radical right are considered those labeled as party family nationalists.

- **Alternatives - Party System Polarization**

  1. Distance of each party to the average position in the party system

$$Pol = \sum |\alpha_i - \bar{\alpha}|$$

  where α refers to the position of party i, and $\bar{\alpha}$ the average of all the party system.

  2. Dalton Index.

$$Pol = \sqrt{\sum (voteshare_i) \frac{\bar{\alpha} - \alpha_i}{5}^2}$$

  where α refers to the position of party i, and $\bar{\alpha}$ the average of all the party system.

  3. Esteban and Ray.

$$Pol = \sum_i^n \sum_i^n voteshare_i^{1.6} voteshare_j |\alpha_i - \alpha_j|$$

  where α refers to the position of the party family i and j the remaining.

List of Outsider parties . This list contains parties classified as Nationalist party family in the CMP database.

- Austria: Alliance for the Future of Austria, Austrian Freedom Party, and Freedom Movement.

- Belgium: Flemish Bloc, and Flemish Interest.

- Denmark: Danish People's Party, and Progress Party.
- Estonia: Conservative People's Party of Estonia
- Finland: Finnish Rural Party and True Finns.
- Germany: Alternative for Germany
- Hungary: Hungarian Justice and Life Party, and Movement for a Better Hungary
- Italy: Italian Social Movement-National Right, League, National Alliance, and Northern League.
- Netherlands: Centre Democrats, Centre Party, Forum for Democracy, List Pim Fortuyn, and Party of Freedom.
- Norway: Anders Lange's Party , and Progress Party.
- Slovenia: Slovenian National Party.
- Slovakia: Kotleba – People's Party Our Slovakia, Movement for a Democratic Slovakia, National Democratic Party - New Alternative, Slovak National Party, and We Are Family.
- Sweden: Sweden Democrats
- Switzerland: Federal Democratic Union, National Action against Foreign Domine, National Action for People and Father, Swiss Democrats, and Swiss People's Party.

Descriptives. Table A18 presents the summary statistics for the main variables of the CMP analysis on 16 PRITM countries.

TABLE A18: Descriptive statistic: PRITM 1970-2019

	Mean	Median	S.D.	Min.	Max	Obs.
Total Number of Seats	235.44	175.00	162.72	60	709	202
Total Number of Parties	7.72	8.00	2.62	3	19	202
OECD member	9.16	10.00	2.78	0	10	202
Distance Redistribution (DR) - Net Welfare	4.46	4.02	2.65	0	17	202
Distance Fixed-Value Positions (DFVP) - Net Anti-Global	3.07	2.84	2.12	0	12	202
DFVP - Net Anti-EU	2.19	1.82	1.93	0	9	202
DFVP - Net Anti-Global Narrow (Internationalism)	2.63	2.50	1.83	0	9	202
DFVP - Anti-Global and Cultural	3.18	2.62	2.37	0	13	202
DFVP - Anti-Global and Cultural (no log)	18.59	12.11	20.42	0	110	202
# Robot Stock (IFR)	17829.68	4399.50	41004.76	6	200497	62
Ln # Robot Stock (IFR)	7.90	8.39	2.34	2	12	62

Different Cut-off. Table A19 presents the main model estimation using different cutoffs instead of the mid-90s (1994). The results remain unchanged.

TABLE A19: Partisan Polarization over Redistribution and Fixed Attributes Different Cut-Off

	Cut off 1992		Cut off 1993		Cut off 1996		Cut off 1997		Cut off 1998	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Redist	Fixed	Redist	Fixed	Redist	Fixed	Redist	Fixed	Redist	Fixed
Post-LMP	2.919	2.708***	2.919	2.708***	2.921	2.679***	2.791	2.696***	2.642	2.671***
	(2.304)	(0.866)	(2.304)	(0.866)	(2.297)	(0.855)	(2.269)	(0.864)	(2.240)	(0.838)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LDV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	186	186	186	186	182	182	178	178	174	174
R^2	0.519	0.333	0.519	0.333	0.516	0.344	0.531	0.352	0.542	0.360
AIC	783	768	783	768	771	752	751	733	733	709

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV is the polarization over redistribution, and fixed-value positions, estimated as the distance between establishment left and outsider parties. Further control variables are whether there are OECD members and the total number of seats.

Results with Alternative DVs and Party-System Polarization. 1) **Alternative definition of FV**: Anti-EU, internationalism, and anti-global cultural.

TABLE A20: Alternative measures of Partisan Polarization over Fixed Attributes between Mainstream Left and Right-Populist

	Anti-EU		Internationalism		Anti-Global and Cultural		Anti-Global & Cultural (no log)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post-LMP	2.581***		1.491***		3.603***		21.639***	
	(0.362)		(0.450)		(0.571)		(5.703)	
Robots Stock		0.306**		0.411**		0.589***		5.678***
		(0.125)		(0.167)		(0.177)		(1.714)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LDV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	186	62	186	62	186	62	186	62
R^2	0.532	0.472	0.373	0.363	0.408	0.467	0.614	0.552
AIC	666.836	249.215	699.495	258.617	787.820	278.176	1509.478	534.144

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV is the polarization over redistribution, and fixed-value positions, estimated as the distance between establishment left and outsider parties. Further control variables are whether there are OECD members and the total number of seats.

2) Following Tables A21, A22 and A23 present the estimation of the regression models with **measures of party system Polarization** rather than just the distance between two party families. Again, the results are consistent with the theoretical expectations of the model.

TABLE A21: Partisan Polarization over Redistribution and Fixed Attributes

	(1) Redistribution	(2) Fixed Values
Post-LMP	-1.505	3.399***
	(1.933)	(1.011)
Controls	Yes	Yes
LDV	Yes	Yes
FE Year	Yes	Yes
Observations	186	186
R^2	0.631	0.705
AIC	899.206	889.795

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV is the party system polarization over redistribution, and fixed-value positions, estimated as the distance of each party to the average position on each one of these areas from the CMP.

TABLE A22: Partisan Polarization over Redistribution and Fixed Attributes, Dalton Index

	(1) Redistribution	(2) Fixed Values
Post-LMP	-12.476***	9.747***
	(2.216)	(1.003)
Controls	Yes	Yes
LDV	Yes	Yes
FE Year	Yes	Yes
Observations	186	186
R^2	0.384	0.401
AIC	1074.384	1031.899

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV is the party system polarization over redistribution, and fixed-value positions, estimated following Dalton (2008).

TABLE A23: Partisan Polarization over Redistribution and Fixed Attributes

	(1) Redistribution	(2) Fixed Values
Post LMP	-3.3e+03	1.1e+04***
	(1.3e+04)	(3248.358)
Control variables	Yes	Yes
LDV	Yes	Yes
Observations	180	180
R^2	0.326	0.295
AIC	4589.552	4358.513

Standard errors in parentheses

$^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$

Note: The DV is the party system polarization over redistribution, and fixed-value positions, estimated following Esteban and Ray (1994).

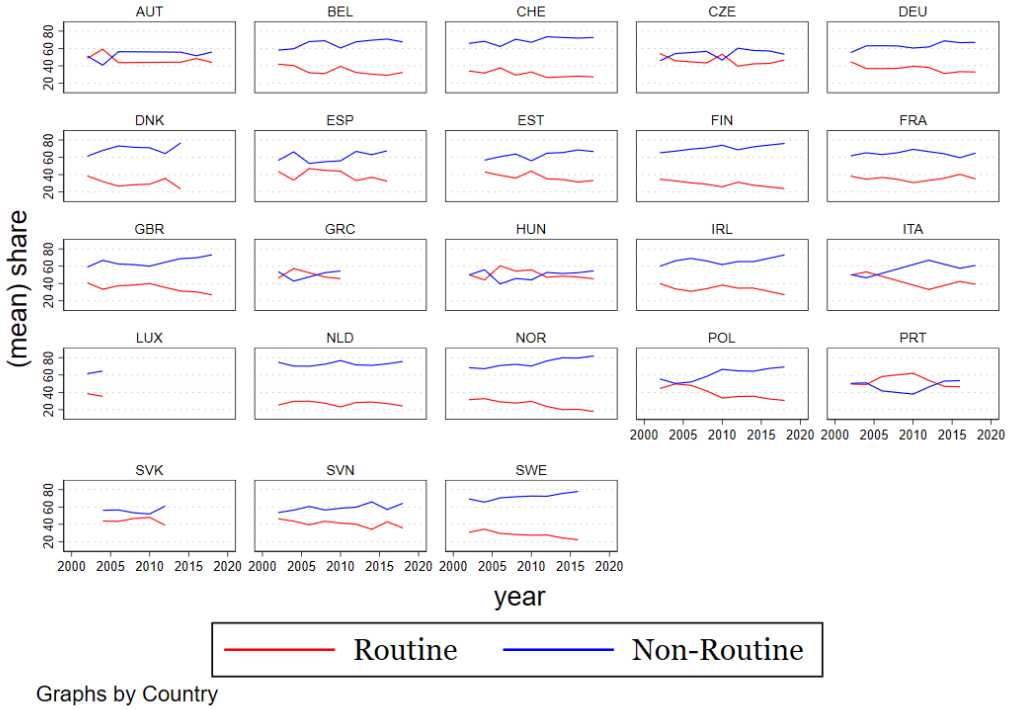
H. Supplementary Tables

TABLE A24: Populist Radical Right Parties (PRRPs) in government from 1970 to 2021 (ParlGov 2022)

Country	Start date	Cabinet Name	Party	Coalition partner
Austria	2/4/2000	Schuessel I	FPO	OVP
Austria	11/24/2002	Schuessel II	FPO	OVP
Austria	2/28/2003	Schuessel III	FPO	OVP
Austria	4/5/2005	Schuessel IV	BZO	OVP
Austria	12/18/2017	Kurz I	FPO	OVP
Greece	11/11/2011	Papademos	LAOS	ND PASOK
Italy	5/11/1994	Berlusconi I	LN	FI-PdL AN CCD UdCe
Italy	6/11/2001	Berlusconi II	LN	FI-PdL AN CCD+CDU
Italy	5/28/2005	Berlusconi III	LN	FI-PdL AN NPSI PRI UC
Italy	5/8/2008	Berlusconi IV	LN	FI-PdL
Italy	6/1/2018	Conte I	LN	PC M5S
Italy	2/13/2021	Draghi	LN	PC FI-PdL IV M5S PD
Netherlands	7/22/2002	Balkenende I	LPF	CDA VVD
Netherlands	10/16/2002	Balkenende II	LPF	CDA VVD
Slovakia	6/24/1992	Meciar II	SNS	HZDS
Slovakia	1/12/1993	Meciar III	SNS	HZDS
Slovakia	11/17/1993	Meciar V	SNS	HZDS
Slovakia	12/13/1994	Meciar VI	SNS	HZDS
Slovakia	7/4/2006	Fico I	SNS	Smer HZDS
Slovakia	3/23/2016	Fico III	SNS	Smer MH S
Slovakia	9/1/2016	Fico IV	SNS	Smer MH
Slovakia	3/22/2018	Pellegrini	SNS	Smer MH
Switzerland	12/15/1999	Bundesrat 1999	SVP-UDC	FDP-PRD KK/CVP SP-PS
Switzerland	12/10/2003	Bundesrat 2003	SVP-UDC	FDP-PRD KK/CVP SP-PS
Switzerland	12/10/2008	Bundesrat 2008	SVP-UDC	BDP FDP-PRD KK/CVP SP-PS
Switzerland	12/14/2011	Bundesrat 2011	SVP-UDC	BDP FDP-PRD KK/CVP SP-PS
Switzerland	12/9/2015	Bundesrat 2015	SVP-UDC	FDP-PRD KK/CVP SP-PS
Switzerland	12/11/2019	Bundesrat 2019	SVP-UDC	FDP-PRD KK/CVP SP-PS

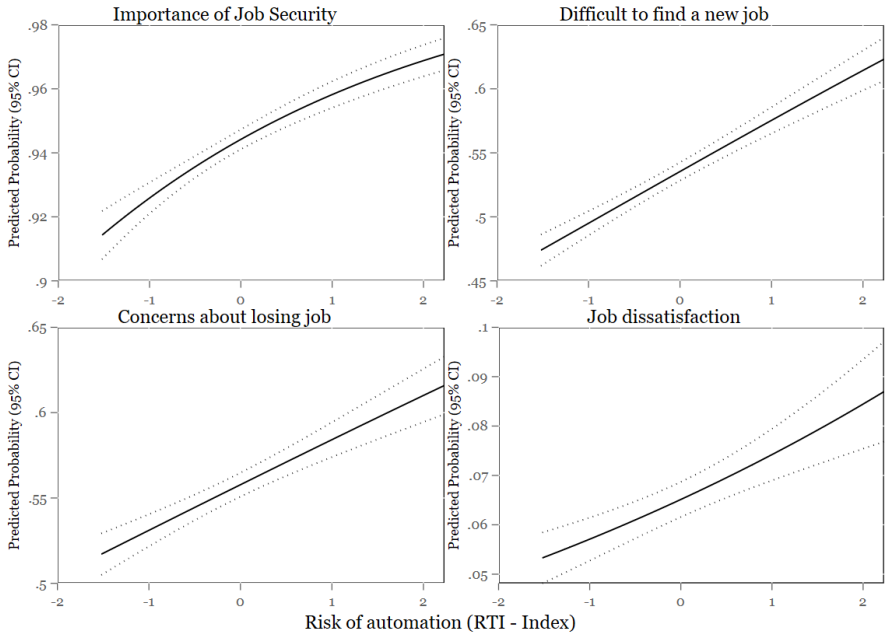
I. Supplementary Figures

Figure A2: Share routine and non-routine 2002-2018



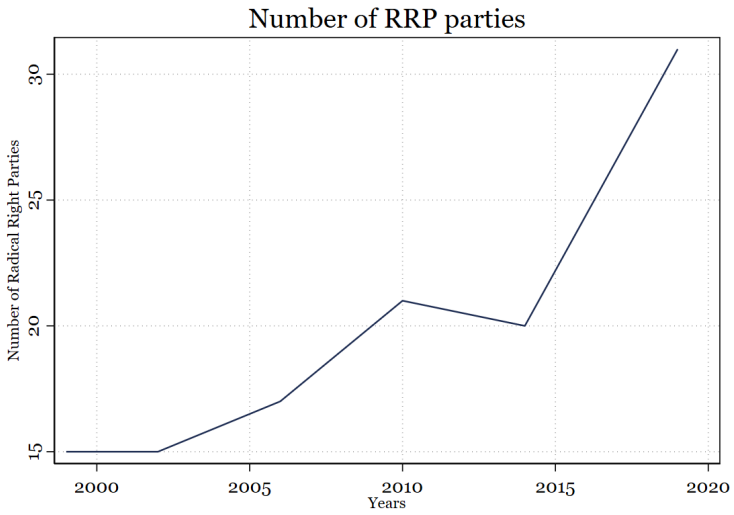
Source: Author's own calculation based on ESS data -waves 1-9.

Figure A3: Importance of job security, Difficulties to find a new job, Concerns about losing the job and Job dissatisfaction



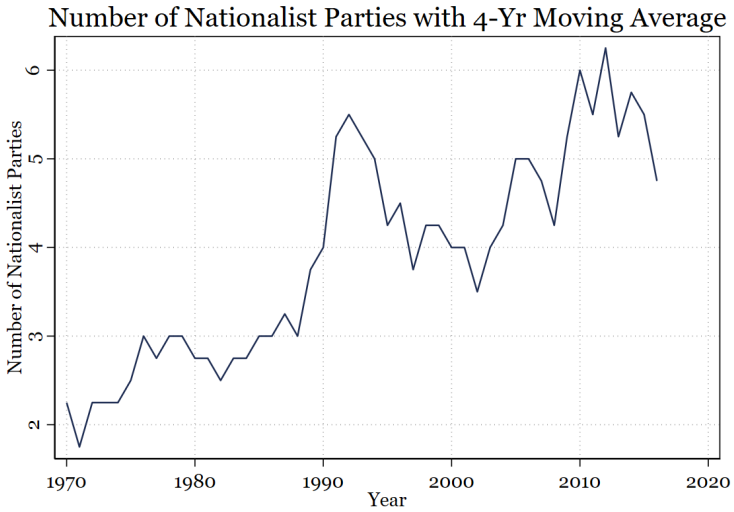
Source: Author's own calculation based on ISSP data (1997, 2005 and 2015)

Figure A4: Number of Radical Right Parties in the Party System



Source: Author's own calculation based on CHES data (Europe).

Figure A5: Number of Nationalist Parties in Elections



Source: Author's own calculation based on (CMP data, 25 developed countries).

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