

# Immigration Policy in the Presence of Identity Politics

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December 13, 2018

## Abstract

This paper studies the effects of cultural identity on electoral and policy outcomes when voters are “behavioral.” Building on the evidence that voters assess political or economic events through the lens of their partisan identifications, we analyze an election between two office-motivated candidates in which voters over-reward or under-punish the candidate that shares their cultural identity. Focusing on immigration and the cultural divide based on nativism as the source of partisanship, we find that the candidates’ equilibrium policies are always preferred by the electorally-dominant cultural group to the policy that would be optimal if policies only had distributional consequences. We also show that candidates do not necessarily target their own cultural bases in equilibrium. Furthermore, stronger partisanship increases policy polarization. Our findings contribute to the debates on the decoupling of voting behavior from economic interests and the rise of immigration as a political issue that can shift historical voting patterns.

**Keywords** : Partisanship; Immigration; Nativism; Downsian competition; Policy divergence.

**JEL Classification** : D72, D78, D91.

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# 1 Introduction

Partisanship is prevalent and growing across Western democracies.<sup>1</sup> Moreover, cultural identity and values are increasingly replacing more traditional lines of division such as educational attainment as the bases on which partisanship is defined. For instance, in its most recent survey of political values among American voters, the Pew Research Center found record gaps between Democrats and Republicans in their attitudes toward the role of government in helping the poor, immigration, or the value of diplomacy in conducting foreign affairs, while demographic gaps have remained more or less constant.<sup>2</sup>

Evidence suggests that voters assess political and economic events through the lens of their partisan identities.<sup>3</sup> In this paper, we study the effects of cultural partisanship on electoral and policy outcomes when voters judge candidates' policy platforms subjectively. We demonstrate how candidates can take advantage of the cultural divisions in the electorate through strategic policy choices. As a theoretical contribution, we introduce such "behavioral" voters to an otherwise-standard probabilistic voting model to generate equilibrium policy divergence and novel results on voter targeting.

In their seminal book, Campbell, Converse, Miller and Stokes (1960) state that "identification with a party raises a perpetual screen through which the individual tends to see what is favorable to his partisan orientation. The stronger the party bond, the more exaggerated the process of selection and perceptual distortion will be." Experimental evidence such as in Chen and Li (2009) supports this view, indicating that individuals are more likely to reward and less likely to punish another individual they share a group identity with. However, even though growing partisanship is a widely-studied phenomenon, the policy implications of voters' partisan assessments of candidates have received scant attention. Given the evolving nature of partisanship toward identity politics and its influence on voting behavior as summarized in Figure 1, this constitutes our focus in this paper.

We consider immigration as a policy issue with cultural as well as distributional consequences in order to illustrate the role cultural identity plays in voting behavior and policy-making.<sup>4</sup> This choice is mainly motivated by findings such as the Pew Research

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<sup>1</sup>The Merriam-Webster Dictionary defines a partisan as "a firm adherent to a party, faction, cause, or person." See McCarty, Poole and Rosenthal (2008) for evidence of partisanship in the U.S.

<sup>2</sup>See Pew Research Center, (October, 2017), "The Partisan Divide on Political Values Grows Even Wider."

<sup>3</sup>For example, see Bartels (2002), Evans and Anderson (2006), or Gerber and Huber (2009) for evidence that voters are more likely to rate the economy positively if their party is in power.

<sup>4</sup>Our results do not depend on immigration being the focus of the analysis. For example, voters may be divided based on their nationalist stands on trade policy and therefore protectionist voters may be

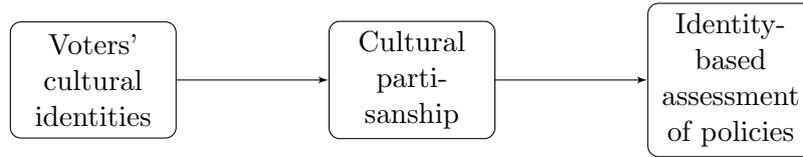


Figure 1: Identity politics and voting behavior in our model.

Center's: the same survey that reported that 30 percent of Republicans and 32 percent of Democrats expressed pro-immigration views in 1994 most recently found that 84 percent of Democrats and only 42 percent of Republicans now think immigrants strengthen the country.<sup>5</sup> Hence, it can be argued that attitudes toward immigrants are one of the driving forces behind greater cultural partisanship. In addition, there exists evidence that these attitudes have shaped voting outcomes in the recent past, in particular boosting the candidacies of some right-wing parties.<sup>6</sup>

The model features two office-motivated candidates who compete for the support of a culturally-divided electorate. Each candidate has a fixed characteristic that represents her degree of conservatism, is defined by a cultural identity that is either open or nativist, and strategically chooses an immigration policy to maximize her vote share. Each voter is described by his conservatism bliss point and his cultural identity as either open or nativist, where the latter identity implies opposition to the cultural presence of immigrants in the society. Upon observing the candidates' fixed characteristics, cultural identities, and policy platforms, voters vote sincerely for their preferred candidate.

The voters' bliss points on conservatism are continuously distributed. On the other hand, while all voters agree on their assessments of the distributional consequences of immigration, their preferences regarding its cultural aspects depend on their cultural identity. Furthermore, based on the evidence that their partisan affiliations guide voters' judgments, we let the relative weight with which voters evaluate the cultural versus the distributional aspects of a given immigration policy depend on the candidate. This dependence takes the form of amplifying voters' cultural utility or disutility from a given policy when it is proposed by the candidate whose exogenous identity conforms with the policy's cultural affiliation. We make the additional behavioral assumption that a policy's cultural affiliation is determined relative to an exogenous reference point such as the status-quo or a policy based on recent historical experience.

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more receptive to trade agreements if a protectionist administration leads the negotiations.

<sup>5</sup>In addition, see Abrajano and Hajnal (2015), Chapter 2, for detailed evidence on how voters' views on immigration shape partisan identities in the U.S.

<sup>6</sup>For example, see Hajnal and Rivera (2014), Barone, D'Ignazio, de Blasio and Naticchioni (2016), and Halla, Wagner and Zweimuller (2017).

Our behavioral voting assumptions imply that a policy deemed nativist based on the reference point yields greater (lower) cultural utility to the nativist voters and greater (lower) cultural disutility to the open voters if it is proposed by the nativist (open) candidate. Likewise, an open policy yields greater (lower) cultural utility to the open voters and greater (lower) cultural disutility to the nativist voters if it is proposed by the open (nativist) candidate.

In equilibrium, candidates target the swing voters from each cultural group to maximize their vote shares. A novel implication of our model is that it is possible in equilibrium to vote against a candidate despite preferring both her degree of conservatism and policy to the other candidate's. Such voting behavior may be observed if the candidates' cultural identities are sufficiently strong that the behavioral implications of cultural partisanship dominate the fundamental issues of concern to the voters. In particular, a voter may over-reward or under-punish the policy of the candidate that shares his cultural identity to such an extent that his fundamental preference for the degree of conservatism and policy of the other candidate may no longer matter.

In contrast to the symmetric equilibrium of the standard probabilistic voting model, cultural partisanship leads to policy asymmetry when voters are behavioral. Moreover, candidates' equilibrium policies are always preferred by the electorally-dominant cultural group to the policy that would be optimal in the absence of a cultural component to voting.<sup>7</sup> In other words, the electorally-dominant group always succeeds in manipulating policies toward its preferred cultural direction in equilibrium, distorting them away from the unique optimum that maximizes all voters' consumption utilities.

Our findings indicate that a candidate does not necessarily target her own cultural base in equilibrium. Specifically, while it is possible that the open candidate proposes the more open and the nativist candidate proposes the more nativist policy in equilibrium, this ceases to be the case when a cultural group cuts sufficient slack to its own candidate in a way that allows her to target the opposite group. Overall, while candidates always take positions on the same side of the policy that would be optimal in the absence of a cultural component to voting, whether they lean deeper into their own base or target the opposite cultural group by exploiting their base's partisan loyalty depends on the type of equilibrium. The relative strength of distributional versus cultural motives behind the candidates' optimal policies guides their sorting on the policy spectrum.

We find that the candidates respond to greater cultural divisions in the electorate by increasing their targeting of the electorally-dominant group. The same result is ob-

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<sup>7</sup>In probabilistic voting models, the electorally-dominant voter group is the candidates' primary electoral target due to a combination of its size and the ideological density of its swing voters.

tained if the cultural aspects of immigration gain prominence vis-a-vis all other concerns in voting decisions.<sup>8</sup> Moreover, equilibrium policies move in the preferred direction of the voter group whose cultural preferences intensify relative to the other group. For instance, our model predicts more open policies in response to media coverage on successful integration programs for immigrants if this leads to deeper cultural support from the open voters and milder opposition from the nativist voters. In addition, we find that policies become more polarized as cultural partisanship strengthens, increasing the intensity of behavioral voting.

In response to growing cultural partisanship in the electorate, our model predicts the decoupling of the candidates' vote shares to a greater extent from their fixed degree of conservatism, a traditional basis of electoral division. We argue that the saliency of culturally-tinted electoral issues can transform the nature of electoral competition by offering cultural partisanship as a way for a candidate to overcome her disadvantage due to her degree of conservatism. For instance, a traditionally right-wing candidate in terms of economic conservatism can gain vote share among left-wing voters if her cultural identity allows her to capitalize on an electoral issue such as immigration. Accordingly, our results can shed light on how cultural partisanship and behavioral voting based on it can pave the way for shifts in traditional voting patterns.

The rest of the paper is organized as follows: Following a discussion of the related literature in the next section, Section 3 describes the model. Section 4 contains the main analysis and results of the paper. Section 5 concludes.

## 2 Related Literature

The contributions this paper aims to make are two-fold: First, we focus on cultural divisions among voters as an increasingly important source of partisanship and analyze the policy implications of identity politics. Second, we identify partisan assessments of candidates' policies as a novel basis for behavioral voting.

A recent and growing literature in political economy is focused on understanding the causes and effects of political extremism. Among these studies, the most closely-related are Eguia and Giovannoni (2018), who explain extremism as a tactical investment by a

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<sup>8</sup>For instance, following the refugee crisis in Europe that elevated cultural discussions on immigration to the spotlight and possibly led to a deepening of the cultural divide, major parties in France, Austria, Netherlands and Denmark adopted more restrictive positions on immigration. This suggests that nativist voters constituted the electorally-dominant group in these countries due to their greater inclination to swing their votes in response to immigration policies.

party into its future ability to offer an alternative to mainstream policies, and Buisseret and Van Weelden (2018), who analyze the channels through which outsider candidates can pose a threat to traditional parties. In addition, Karakas and Mitra (2018) offer a model of how ideological extremeness and income inequality can propel support for outsider candidates. In this paper, we offer an alternative take on extremism by focusing on culturally-tinted electoral issues such as immigration to explain policy extremism as the strategic response of candidates to the existing cultural divisions in the electorate.

There exists a large literature on reconciling the convergence prediction of the Downsian model with the observed policy polarization in politics.<sup>9</sup> In this paper, we build a voting model based on Lindbeck and Weibull (1987) with differentiated candidates as in Krasa and Polborn (2010, 2012, 2014) that can generate policy divergence. In Krasa and Polborn (2014), the authors study electoral competition between two office-motivated candidates that differ not only in their fixed characteristics but also in their abilities to provide a public good, while voters have both economic and social preferences. As is the case in this paper, they establish the dependence of equilibrium policies on the voters' social as well as economic preferences. We build on this literature by introducing cultural identity as a novel source of candidate differentiation that constitutes the basis for the voters' partisan assessments of candidates' policies.

The behavioral focus of our model builds on a growing literature in behavioral political economy. For example, Levy and Razin (2015) analyze elections when voters fail to consider the correlation in their sources of political information and find that this cognitive bias may in fact improve information aggregation. Diermeier and Li (2017) ask whether accountability through elections is still viable when voters are forgetful and answer in the affirmative. To the best of our knowledge, ours is the first paper to study partisan evaluation of candidates' policies as a behavioral problem.

An extensive literature documents the growth in partisanship. In this paper, we study the electoral and policy implications of this trend when cultural partisan attachments guide voting behavior. In this regard, related studies that analyze the effects of social identities include Akerlof and Kranton (2000) that apply their seminal idea to various different strategic settings, Glaeser, Ponzetto and Shapiro (2005) on the parties' incentives to energize their base through policies based on religious identities, and Dickson and Scheve (2006) on identity-based appeals by candidates during campaigns.

Finally, studies on the political-economic determinants of immigration policies include, among others, Benhabib (1996), Dolmas and Huffman (2004), and Llavador and

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<sup>9</sup>For example, see Wittman (1983), Ansolabehere and Snyder (2000), Martinelli (2001), Ashworth and Bueno de Mesquita (2009), and Polborn and Snyder (2017).

Solano-Garcia (2011). This paper differs from the existing immigration policy models due to its focus on the role of cultural identities.

### 3 The Model

Two office-motivated candidates compete for the support of a continuum of voters. Each candidate has a fixed characteristic that represents her degree of conservatism, is defined by a cultural identity, and announces an immigration policy before the election. The candidates fully commit to implementing their policy announcements in case of their election. Based on the candidates' conservatism, cultural identity, and policy commitments, voters vote sincerely for their preferred candidate.

#### 3.1 Basics

We denote candidate  $j$ 's fixed degree of conservatism as  $\sigma_j \in \mathbb{R}$  for  $j \in \{L, R\}$  and let  $\sigma_L < \sigma_R$ . For instance,  $\sigma_j$  may represent candidate  $j$ 's stand on income inequality or redistribution.

In addition, each candidate  $j \in \{L, R\}$  has a cultural identity  $c_j \in \{n, o\}$  such that  $c_L \neq c_R$ , where  $c_j = n$  indicates that candidate  $j$  is a nativist and  $c_j = o$  indicates that she is open. Without loss of generality, we fix  $c_L = o$  and  $c_R = n$  for clarity. Given the candidates' history in politics, neither their degree of conservatism nor cultural identity can be credibly changed before voting takes place.

Before the election, each candidate  $j$  announces a policy  $p_j \in [0, 1]$  on restrictions to immigration, where  $p_j = 0$  indicates no restrictions and  $p_j = 1$  indicates closed borders. In general, while a high policy represents tight restrictions, such as through mass deportations, a low policy implies greater openness through, for instance, guest worker programs or the selective enforcement of existing immigration laws.<sup>10</sup>

Similar to the candidates, each voter  $i$  belongs to cultural identity group  $h \in \{n, o\}$  and has an ideal degree of conservatism denoted  $\sigma_{ih} \in \mathbb{R}$ . A fraction  $\alpha_n \in (0, 1)$  of voters are nativists and the remaining fraction  $\alpha_o = 1 - \alpha_n$  are open. The conservatism bliss points  $\sigma_{ih}$  of voters  $i$  in group  $h$  are distributed according to the continuous cumulative distribution function  $F_h$  for  $h \in \{n, o\}$  that admits the positive density  $f_h$ . The candidates can observe these distributions from which the voters' conservatism bliss points are drawn.

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<sup>10</sup>Note that candidates do not have policy preferences. Thus, for example, the fact that  $c_R = n$  does not imply that  $p_R = 1$  is the nativist candidate  $R$ 's most-preferred policy.

## 3.2 Payoffs

Immigration is a policy issue that has distributional as well as cultural consequences for the voters due to the fact that it adds new members to the society. Hence, we expect voters to evaluate an immigration policy based on both grounds.<sup>11</sup>

While voters within each cultural group have the same preferences on the cultural consequences of immigration, they differ in how they value a candidate's conservatism. We also simplify by assuming that all voters share the same preferences on the distributional impact of immigration policy.<sup>12</sup>

Accordingly, the utility that voter  $i$  in cultural group  $h$  receives from candidate  $j$ , conditional on this candidate's election, can be written as

$$u_{ih}^j(p_j; \sigma_j, c_j) = -\eta(\sigma_j - \sigma_{ih})^2 + w(p_j) + \lambda_j(p_j)z_h(p_j), \quad (1)$$

where  $\eta > 0$  is a parameter common to all voters that represents the relative salience of the candidates' degree of conservatism to immigration policy. The policy components of equation (1) are described below:

1.) The function  $w(p_j)$  in equation (1) represents the voters' consumption preferences with regards to immigration policy. We assume it is a twice-differentiable, strictly concave and bounded function with a bounded first derivative that satisfies  $w'(0) > 0$  and  $w'(1) < 0$ , exhibiting an inverted U-shape. In a competitive economy in which the only factors of production are capital and labor that earns its marginal product, we fix the amount of capital so that an influx of immigrants into the labor force unambiguously decreases the prevailing wage in the economy. Thus, voters are unambiguously hurt by immigration through a decrease in their wages. At the same time, they also benefit from a greater variety of consumption goods produced by an expanded work force due to immigration, thereby ensuring, under standard assumptions, that some immigration is preferred to none even for purely economic (consumption-related) reasons.<sup>13</sup>

2.) The function  $\lambda_j(p_j)z_h(p_j)$  captures the voters' cultural preferences toward im-

<sup>11</sup>Mayda (2006) provides evidence that the native population forms attitudes toward immigrants based on both economic and non-economic factors.

<sup>12</sup>We assume there are two factor owners in the economy: unskilled workers and capitalists. We assume that capitalists are a negligible share of the population so that all voters are unskilled workers.

<sup>13</sup>If capital and labor are used, under constant returns to scale, to produce an intermediate good, which is the numeraire, and this intermediate good is used to produce many final good varieties produced under monopolistic competition and increasing returns to scale, then an expansion in the labor force through immigration, while lowering the wage due to diminishing marginal product of labor in the intermediate good production function, will increase the endogenous number of varieties through the market size effect (which will be a welfare-enhancing effect).

migration. The main contribution of our model, behavioral voting based on cultural partisanship, manifests itself in this term. While the function  $z_h(p_j)$  represents a group- $h$  voter’s cultural like or dislike of immigrants, the function  $\lambda_j(p_j)$  yields the relative weight with which voters evaluate the cultural versus the distributional aspects of any given immigration policy proposed by candidate  $j$ .

The behavioral voting assumptions behind the term  $\lambda_j(p_j)z_h(p_j)$  are two-fold. First, voters evaluate the cultural consequences of a policy relative to a common reference point  $\bar{p} \in (0, 1)$ , which, for instance, may be the status-quo or a centrist policy such as  $p_j = \frac{1}{2}$ . We assume that voters perceive any policy  $p_j > \bar{p}$  as nativist and any  $p_j < \bar{p}$  as open.<sup>14</sup> For tractability, we let  $z_n(p_j) = \beta_n(p_j - \bar{p})$  and  $z_o(p_j) = \beta_o(\bar{p} - p_j)$  for  $j \in \{L, R\}$ , where  $\beta_h \in (0, \bar{\beta})$  for both  $h$  so that  $z_h(p_j)$  is strictly increasing for  $h = n$  and strictly decreasing for  $h = o$ . We refer to the fact that nativist and open voters have opposite cultural preferences as the “cultural divide” in the electorate.

“Cultural partisanship,” which we interpret as the voters’ attachment to the candidate that shares their cultural identity, forms the basis of our second behavioral assumption: The cultural utility (or disutility)  $z_h(p_j)$  that a given policy  $p_j$  yields for a group- $h$  voter is amplified when it is proposed by the candidate  $j$  whose cultural identity  $c_j$  conforms with her policy’s cultural affiliation. Specifically, a nativist policy  $p_j > \bar{p}$  yields greater (lower) cultural utility to the nativist voters and greater (lower) cultural disutility to the open voters if  $j$  is the nativist (open) candidate (compared to their utilities or disutilities if the same policy was proposed by the other candidate  $-j$ ). Similarly, an open policy  $p_j < \bar{p}$  yields greater (lower) cultural utility to the open voters and greater (lower) cultural disutility to the nativist voters if  $j$  is the open (nativist) candidate. Formally, since  $c_L = o$  and  $c_R = n$ , we let  $\lambda_L(p) > \lambda_R(p)$  for any given  $p_L = p_R \equiv p < \bar{p}$ , and  $\lambda_L(p) < \lambda_R(p)$  for any given  $p_L = p_R \equiv p > \bar{p}$ .

In the main analysis presented in Section 4, we characterize the equilibrium of this model under a uniform distribution assumption on the voters’ conservatism bliss points for simplicity and using the simplest functional form for  $\lambda_j(p_j)$  that still allows us to capture the model’s essence by letting

$$\lambda_L(p_L) = \begin{cases} \bar{\lambda} & \text{if } p_L \leq \bar{p} \\ \underline{\lambda} & \text{otherwise} \end{cases} \quad (2)$$

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<sup>14</sup>This assumption is motivated by the widely-studied idea that agents make choices not in isolation of their environments but by evaluating the various outcomes in relation to a reference point. For example, see Kahneman and Tversky (1979) and Kahneman, Knetsch and Thaler (1990).

and

$$\lambda_R(p_R) = \begin{cases} \underline{\lambda} & \text{if } p_R \leq \bar{p} \\ \bar{\lambda} & \text{otherwise} \end{cases} \quad (3)$$

where  $b > \bar{\lambda} > \underline{\lambda} > 0$  for some  $b$ . In the Online Supplemental Analysis, we establish the robustness of our results by analyzing a more general case in which we abandon the uniform distribution assumption on the voters' conservatism bliss points and let  $\lambda_j(p_j)$  be a continuous function.

### 3.3 Discussion of the Main Assumptions

To re-iterate, each candidate  $j$  is described by the triplet  $(\sigma_j, c_j, p_j)$  before voting takes place. Of these three dimensions, only one of them (policy  $p_j$ ) is strategic and only two (degree of conservatism  $\sigma_j$  and policy  $p_j$ ) enter the voters' utilities directly. The fixed cultural identity  $c_j$  affects the utility that voters would receive from the election of candidate  $j$  only indirectly by affecting the weight with which the cultural versus the distributional consequences of a given policy  $p_j$  are evaluated.

We motivate the assumption that voters assess the cultural consequences of a given immigration policy differently depending on the candidate proposing it in two different ways. First, there exists widespread evidence that partisanship influences voters' assessments of various political and economic outcomes. For instance, Bartels (2002) and Gerber and Huber (2009) document and analyze the phenomenon that voters positively judge the state of the economy based on whether their party holds the executive branch.<sup>15</sup> More generally, Chen and Li (2009) demonstrate in an experimental setting that participants are more likely to reward and less likely to punish a member of their group respectively for good and bad behavior. In this paper, we build on the evidence that partisanship influences voting behavior and that voters' cultural identities constitute an important source of their partisan affiliations to motivate the candidate-specific policy assessments that we assume voters perform.<sup>16</sup>

Our second motivation is based on theories of intent.<sup>17</sup> Psychologists have long rec-

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<sup>15</sup>More recently, a 2017 survey by the Pew Research Center also found that the voters in the U.S. identifying as Republican became twice as likely to rate the economy favorably compared to before the 2016 election. See Stokes, B., (2017, April 3), "As Republicans' Views Improve, Americans Give the Economy Its Highest Marks since Financial Crisis," Pew Research Center. In addition, Bisgaard (2015) shows that partisan voters attribute blame to the other party when faced with objectively negative economic data.

<sup>16</sup>Also see Hajnal and Rivera (2014) or Huddy, Mason and Aaroe (2015) for recent evidence.

<sup>17</sup>For example, see McCabe, Rigdon and Smith (2003) and Fischbacher and Utikal (2013) for experimental evidence on notions of intent, trust and reciprocity.

ognized that people evaluate actions by taking into account the intent and motives they perceive behind them. Accordingly, we argue here that voters consider the candidates' perceived intentions when evaluating policies. For instance, upon observing a nativist policy proposed by an open candidate, voters may deduce that the candidate's "heart is not in it" and not be as energized, positively or negatively, by the policy's nativism.

Our model implies that the nativist (open) candidate has an unambiguous policy advantage with the nativist (open) voters whenever the two candidates propose the same policy, regardless of where this policy lies relative to the reference point. At the same time, even while her cultural identity shapes the relative weight with which the cultural versus the distributional aspects of her immigration policy are evaluated, our model allows a candidate the ability to influence this weight through her policy choice.

## 4 Equilibrium

Equation (1) suggests that voters' policy utility is candidate-specific. Thus, in our setup, a voter does not necessarily vote solely based on his ideal degree of conservatism and therefore always for the same candidate when the two candidates propose the same policy. This is because the different degrees to which the candidates emphasize the distributional versus the cultural aspects of the same immigration policy may result in voters switching their votes depending on the policy proposed.<sup>18</sup> The following remark illustrates this property that voter preferences have in our model:

**Remark 1.** *Consider a nativist voter  $i$  and let  $|\sigma_{in} - \sigma_R| > |\sigma_{in} - \sigma_L|$ . Suppose  $p_L = p_R \equiv p < \bar{p}$  is such that  $u_{in}^L(p; \sigma_L, c_L) \geq u_{in}^R(p; \sigma_R, c_R)$ , i.e.*

$$\eta[(\sigma_R - \sigma_{in})^2 - (\sigma_L - \sigma_{in})^2] \geq [\lambda_R(p) - \lambda_L(p)]z_n(p). \quad (4)$$

*As this policy decreases to become more open, the nativist voter's cultural utility  $z_n(p)$  becomes more negative. Since  $\lambda_L(p) > \lambda_R(p)$  for any given  $p < \bar{p}$ , it is possible to observe  $u_{in}^L(p'; \sigma_L, c_L) < u_{in}^R(p'; \sigma_R, c_R)$  for sufficiently small  $p_L = p_R \equiv p' < p$ . Then, the nativist voter would choose candidate  $L$  when the common policy is  $p$  and candidate  $R$  when it is  $p'$ .*

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<sup>18</sup>The fact that a voter's policy utility depends not only on the policy proposed but also on the candidate proposing it implies that the Uniform Candidate Ranking property of voters' preferences as defined in Krasa and Polborn (2012) is violated. A voter's preferences satisfy the Uniform Candidate Ranking property if the voter always votes for the same candidate when the two candidates propose the same policy. See Krasa and Polborn (2012) for a more detailed discussion.

In this case, what makes the nativist voter switch his vote from the open candidate  $L$ , whom he is closer to in terms of degree of conservatism, to the nativist candidate  $R$  as the common immigration policy becomes more open is the greater policy disutility from candidate  $L$  due to her increasing focus on the cultural implications of a more open policy such as greater diversity. While candidate  $R$ 's cultural focus also increases with the openness of the policy, her nativism serves as an effective check on how much nativist voters blame her compared to the open candidate.

Based on this preliminary, the following section characterizes equilibrium voting behavior.

#### 4.1 The Swing Voters

A swing voter of group  $h \in \{n, o\}$  is defined as a voter  $i$  with conservatism bliss point  $\sigma_{ih}$  who becomes indifferent between the two candidates upon observing their policies. These are the voters from each group that the candidates target as they are most susceptible to switching their votes in response to a policy change.

Given  $\sigma_j$ ,  $c_j$ , and  $p_j$  for  $j \in \{L, R\}$ , a voter  $i$  in group  $h \in \{n, o\}$  votes for candidate  $L$  over candidate  $R$  if and only if

$$\eta(\sigma_R - \sigma_{ih})^2 - \eta(\sigma_L - \sigma_{ih})^2 \geq [w(p_R) - w(p_L)] + [\lambda_R(p_R)z_h(p_R) - \lambda_L(p_L)z_h(p_L)]. \quad (5)$$

Based on (5), we can define the function  $\bar{\sigma}_h : [0, 1]^2 \rightarrow \mathbb{R}$  for  $h \in \{n, o\}$  such that the degree of conservatism

$$\bar{\sigma}_h(p_L, p_R) = \frac{[w(p_R) - w(p_L)] + [\lambda_R(p_R)z_h(p_R) - \lambda_L(p_L)z_h(p_L)] - \eta(\sigma_R^2 - \sigma_L^2)}{2\eta(\sigma_L - \sigma_R)} \quad (6)$$

uniquely defines the group- $h$  swing voter for any given policy pair  $(p_L, p_R)$ . Accordingly, letting  $\bar{\sigma}_h \equiv \bar{\sigma}_h(p_L, p_R)$ , all voters  $i$  in group  $h \in \{n, o\}$  such that  $\sigma_{ih} \leq \bar{\sigma}_h$  vote for  $L$  and all voters  $i$  in group  $h \in \{n, o\}$  such that  $\sigma_{ih} > \bar{\sigma}_h$  vote for  $R$ .

To see how the nativist and open swing voters are influenced by the candidates' different cultural identities, first suppose  $p_L = p_R$ . If we had  $c_L = c_R$  so that only the candidates' conservatism would matter to the voters, then equation (6) would imply  $\bar{\sigma}_h = \frac{\sigma_L + \sigma_R}{2}$  for  $h = n, o$ . On the other hand, when  $c_L \neq c_R$ , we have

$$\bar{\sigma}_h \equiv \bar{\sigma}_h(p_L, p_R) = \frac{(\lambda_R(p) - \lambda_L(p))z_h(p)}{2\eta(\sigma_L - \sigma_R)} + \frac{\sigma_L + \sigma_R}{2} \quad (7)$$

for  $h \in \{n, o\}$ , where  $p \equiv p_L = p_R$ . Equation (7) indicates that a swing voter is “unbiased” toward either candidate if and only if  $p_R = p_L = \bar{p}$ . For example, consider the nativist voters and let  $p_L = p_R \equiv p > \bar{p}$  so that  $z_n(p) > 0$ . Since we fixed  $c_R = n$  and  $c_L = o$  so that  $\lambda_L(p) < \lambda_R(p)$ , equation (7) implies  $\bar{\sigma}_n < \frac{\sigma_L + \sigma_R}{2}$ , i.e. the nativist swing voter has a left-wing bias on the conservatism spectrum. This is because the nativist candidate has a policy advantage with the nativist voters and their indifference between the candidates therefore requires a bias for the open candidate  $L$ .

When the candidates adopt different policies, our behavioral assumptions yield novel implications of voter behavior that are difficult to obtain using traditional models. For instance, suppose  $p_R < p_L < \bar{p}$  is such that  $w(p_L) > w(p_R)$ . Consider a nativist voter with bliss point  $\sigma_{in}$  that is closer to  $\sigma_L$  than to  $\sigma_R$  so that this nativist voter prefers both the lower conservatism and the policy of candidate  $L$ . Nonetheless, this voter can still vote for  $R$ : If  $\lambda_R(p_R) = \underline{\lambda}$  is sufficiently smaller than  $\lambda_L(p_L) = \bar{\lambda}$  that the condition  $|w(p_R) - w(p_L)| < \underline{\lambda}z_n(p_R) - \bar{\lambda}z_n(p_L)$  holds despite the fact that  $z_n(p_R) < z_n(p_L)$ , then  $\bar{\sigma}_n < \frac{\sigma_L + \sigma_R}{2}$ . This implies there exist nativist voters with  $\sigma_{in} \in (\bar{\sigma}_n, \frac{\sigma_L + \sigma_R}{2})$  so that they vote for  $R$ . This phenomenon would be observed if  $L$  is perceived as a very open candidate that even relatively restrictive policies she proposes would be greatly discounted by the nativist voters. Likewise, candidate  $R$ 's nativism must be sufficiently strong that the nativist voters receive disproportionately less cultural disutility from her relatively open policies.

While each group's swing voter is still determined by the voters' conservatism and policy utilities as in the standard probabilistic voting model, the cultural components of the policy utilities here are weighted according to the candidates' cultural identities. As described in the above example, this gives rise to voting behavior that might seem detached from the candidates' fixed degrees of conservatism or strategic platforms, and instead driven by cultural partisanship. Building on this analysis, the following section characterizes the candidates' equilibrium policy choices.

## 4.2 Optimal Policy Platforms

We assume that the office-motivated candidates are vote share maximizers. Given the voters' optimal voting behavior as described in the previous section, candidate  $L$  chooses her policy platform  $p_L \in [0, 1]$  in order to maximize

$$V_L(p_L, p_R) = \alpha_n F_n(\bar{\sigma}_n) + \alpha_o F_o(\bar{\sigma}_o), \quad (8)$$

and candidate  $R$  chooses  $p_R \in [0, 1]$  in order to maximize

$$V_R(p_L, p_R) = \alpha_n(1 - F_n(\bar{\sigma}_n)) + \alpha_o(1 - F_o(\bar{\sigma}_o)). \quad (9)$$

Imposing an upper bound on the difference  $\bar{\lambda} - \underline{\lambda}$ , we obtain the existence of a unique pure strategy equilibrium to our model in which candidates with different cultural identities choose different policies.<sup>19</sup>

The vote shares in (8) and (9) that the candidates maximize in equilibrium are weighted sums of support from the nativist and open voters, where a group's weight is determined by its relative size in the electorate. Cultural partisanship that leads to behavioral voting in the form of candidate-specificity of the voters' policy utilities implies an asymmetric equilibrium. This is in contrast to standard probabilistic voting models in which equilibrium is always symmetric: As a policy change affects the voters of a given group identically on the margin regardless of the candidate's identity, the candidates always face the same necessary and sufficient condition for optimality, leading to identical policy choices. In contrast, the form of behavioral voting we model implies that the candidates have different marginal effects on the voters' policy utilities and hence find different policies optimal.

In the following analysis, we let  $\beta_n = \beta_o \equiv \beta$  in order to characterize equilibrium under a baseline scenario in which neither group has more intense cultural preferences than the other.<sup>20</sup> Our first main result provides a general description of the candidates' equilibrium policies:<sup>21</sup>

**Proposition 1.** *In equilibrium, candidate  $j$ 's policy  $p_j^*$  for  $j \in \{L, R\}$  is such that  $p_j^* < \tilde{p}$  if and only if  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$ , where  $\tilde{p}$  is implicitly defined by  $w'(\tilde{p}) = 0$ .*

Note that the strategy profile  $(\tilde{p}, \tilde{p})$  would be the unique pure strategy equilibrium in the absence of a cultural component to voting. Proposition 1 states that a candidate's optimal policy is more open than the policy  $\tilde{p}$  that uniquely maximizes the consumption component of both groups' policy utilities if and only if open voters are the electorally-

<sup>19</sup>While the candidates' vote share functions are differentiable, there is a discontinuity in the voters' marginal policy utilities and hence in the candidates' marginal vote shares at  $p_j = \tilde{p}$ . This implies that based on the ranking between  $\alpha_n f_n(\bar{\sigma}_n)$  and  $\alpha_o f_o(\bar{\sigma}_o)$ , exactly one candidate's vote share function is strictly concave in her own policy. We impose an upper bound on  $\bar{\lambda} - \underline{\lambda}$  so as to rule out the possibility that only one candidate's marginal vote share function intersects the horizontal axis below the reference point  $\tilde{p}$ . Since the game is constant sum and there exists a unique  $p_j^*$  at which  $V_j'(p_j^*) = 0$  and  $V_j''(p_j^*) < 0$  for  $j \in \{L, R\}$ , uniqueness of equilibrium is obtained. We provide a full proof of equilibrium existence and uniqueness for the more complicated case considered in the Online Supplemental Analysis.

<sup>20</sup>This assumption is just for clarity and will be relaxed later.

<sup>21</sup>All proofs are in the Appendix.

dominant group.<sup>22</sup> Since the two groups agree on their evaluations of the distributional consequences of immigration, this result demonstrates the power of identity politics: The electorally-dominant voter group always succeeds in manipulating policy toward its preferred cultural direction in equilibrium.

### 4.3 Targeting

The relative position of the consumption utility maximizer  $\tilde{p}$  with respect to the reference point  $\bar{p}$  has implications for the equilibrium alignments between the candidates and the groups of voters, i.e. equilibrium targeting.

The unique pure strategy equilibrium may belong to one of two general classes of equilibria based on the relative positions of the policies  $\bar{p}$  and  $\tilde{p}$ : First,  $\tilde{p}$  and  $\bar{p}$  may be positioned such that the equilibrium policies are unambiguously below or above  $\bar{p}$ , depending on the ranking between the electoral importance of the open and nativist voters. Alternatively, the relative positions of  $\bar{p}$  and  $\tilde{p}$  may in principle allow equilibrium policies to be on opposite sides of  $\bar{p}$ . However, we subsequently show that equilibrium policies will never be on opposite sides of  $\bar{p}$ . Figure 2 illustrates this point that various equilibrium cases may arise based on the relative positions of the policies  $\tilde{p}$  and  $\bar{p}$ , and depicts these cases for when  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$  so that  $p_j^* < \tilde{p}$  for both  $j$  according to Proposition 1.<sup>23</sup>

We begin our characterization of equilibrium targeting by focusing on the first of these two classes of equilibria, which we denote a Type 1 equilibrium and illustrate in Figure 2a (for the case in which open voters dominate nativists). In a Type 1 equilibrium, candidates' policies unambiguously carry the same cultural affiliation. Specifically, a Type 1 equilibrium is defined such that either  $p_j^* < \tilde{p} < \bar{p}$  or  $\bar{p} < \tilde{p} < p_j^*$  for  $j = L, R$ , where Proposition 1 indicates that the former is observed only if  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$  and the latter is observed only if  $\alpha_o f_o(\bar{\sigma}_o) < \alpha_n f_n(\bar{\sigma}_n)$ .

**Proposition 2.** *Let  $(p_L^*, p_R^*)$  be a Type 1 equilibrium, i.e.  $p_j^* < \tilde{p} < \bar{p}$  or  $\bar{p} < \tilde{p} < p_j^*$  for  $j = L, R$ . Then,  $p_L^* < p_R^*$ .*

Proposition 2 states that the open candidate always adopts the more open policy in a Type 1 equilibrium, regardless of the ranking between the electoral importance of the two voter groups. The open candidate elevates her partisan advantage with the open

<sup>22</sup>Recall that a group's size and the density of its swing voters together determine the relative influence it has on the candidates' equilibrium policies.

<sup>23</sup>The equilibrium possibilities for the opposite case in which  $\alpha_o f_o(\bar{\sigma}_o) < \alpha_n f_n(\bar{\sigma}_n)$  are symmetric.

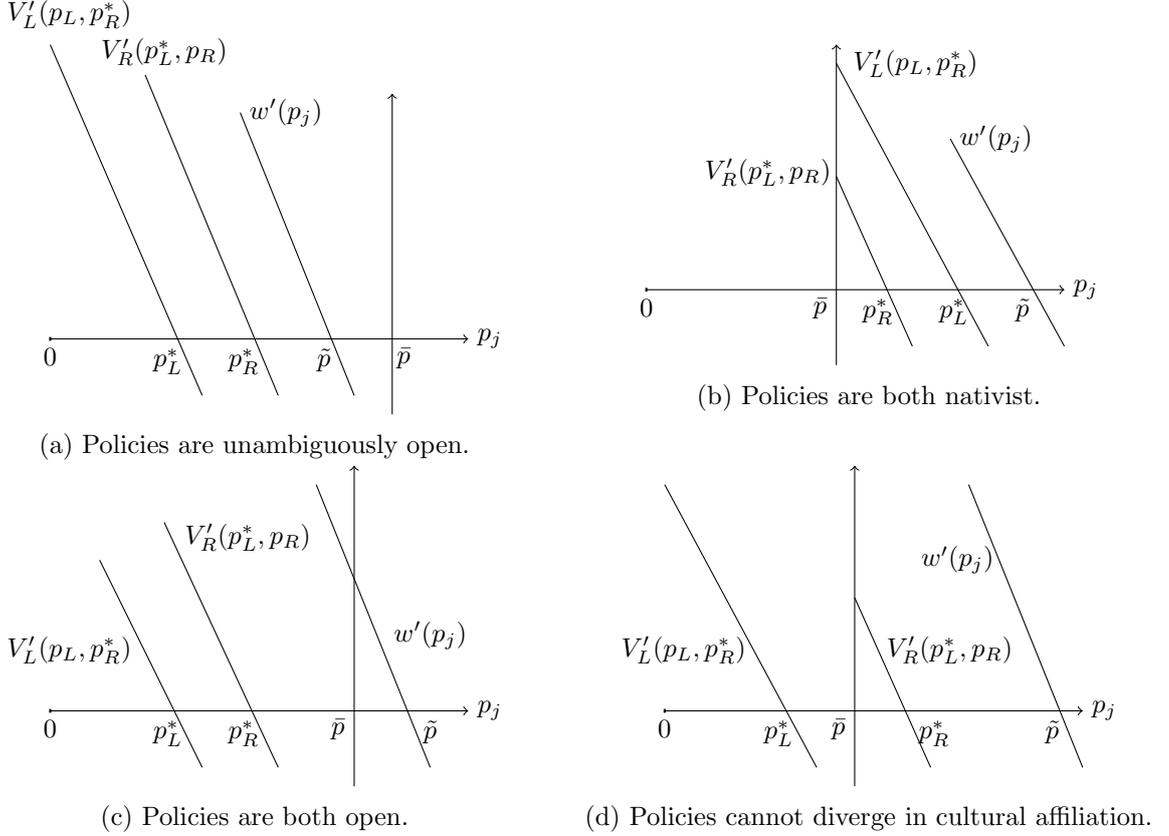


Figure 2: Possible equilibria when  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$ .

voters by targeting them to a greater extent than the nativist candidate finds optimal, while the nativist candidate plays to her advantage with the nativist voters by proposing a less open policy.

For instance, we have  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$  and  $\bar{p} > \tilde{p}$  in Figure 2a so that equilibrium policies are unambiguously open by Proposition 1, and are determined where each candidate's marginal vote share function intersects the horizontal axis. When open voters dominate the nativists, the open candidate  $L$ 's marginal vote share lies below that of the nativist candidate  $R$  in the range of open policies. Thus, one can observe that the open candidate always proposes the more open policy in this equilibrium so that each candidate targets relatively more her own cultural base. Intuitively, given that an open policy is unambiguously optimal for both, the open candidate exploits the open voters' deeper appreciation of her while the nativist candidate capitalizes on the nativist voters' milder dissatisfaction compared to their disdain of her opponent.

In a Type 1 equilibrium, the divergence between the magnitudes of the marginal

cultural utilities that voters receive from candidates  $L$  and  $R$  results in greater targeting by the candidate whose cultural base is electorally-dominant. However, an alternative relative positioning between the policies  $\tilde{p}$  and  $\bar{p}$  introduces important nuances to this conclusion. More specifically, in contrast to Figure 2a, whether the candidates' optimal policies are nativist or open is ambiguous and depends on the candidates' exact marginal vote share functions when  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$  and  $\bar{p} < \tilde{p}$  as in the remaining figures.

We denote this second class of equilibria as Type 2 and define it such that either  $\bar{p} < \tilde{p}$  when  $p_j^* < \tilde{p}$ , or  $\bar{p} > \tilde{p}$  when  $p_j^* > \tilde{p}$  for  $j = L, R$ . There are three cases that may potentially describe a Type 2 equilibrium: First,  $p_j^*$  for  $j = L, R$  may be such that  $\bar{p} < p_j^* < \tilde{p}$  or  $\bar{p} > p_j^* > \tilde{p}$ . Second,  $p_j^*$  for  $j = L, R$  may be such that  $p_j^* < \bar{p} < \tilde{p}$  or  $p_j^* > \bar{p} > \tilde{p}$ . Third, we may, in principle, have  $p_j^* < \bar{p} < p_{-j}^* < \tilde{p}$  or  $p_j^* > \bar{p} > p_{-j}^* > \tilde{p}$  for  $j \in \{L, R\}$ , indicating an equilibrium that is divergent in the policies' cultural affiliation. Momentarily leaving aside the question of when the unique pure strategy equilibrium would be described by either of these cases, the following proposition describes their properties:

**Proposition 3.** *Let  $(p_L^*, p_R^*)$  be a Type 2 equilibrium, i.e.  $\bar{p} < \tilde{p}$  when  $p_j^* < \tilde{p}$ , or  $\bar{p} > \tilde{p}$  when  $p_j^* > \tilde{p}$  for  $j = L, R$ .*

- a. *If  $\bar{p} < p_j^* < \tilde{p}$  or  $\bar{p} > p_j^* > \tilde{p}$  for  $j = L, R$ , then  $p_R^* < p_L^*$ .*
- b. *If  $p_j^* < \bar{p} < \tilde{p}$  or  $p_j^* > \bar{p} > \tilde{p}$  for  $j = L, R$ , then  $p_L^* < p_R^*$ .*
- c. *Equilibrium policies  $p_L^*$  and  $p_R^*$  cannot be on opposite sides of  $\bar{p}$ .*

We denote the equilibrium described in part (a) of Proposition 3 in which there exists a discrepancy between the electorally-dominant voter group and the one that is targeted by the candidates a Type 2A equilibrium. For instance, in Figure 2b, the equilibrium policies are between  $\bar{p}$  and  $\tilde{p}$  so that they are both considered nativist despite the greater electoral importance of the open voters. Here, the nativist candidate  $R$  proposes the more open policy as her marginal vote share function jumps down and that of the open candidate  $L$  jumps up at the reference point  $\bar{p}$ . In this policy range, the open candidate is penalized less by the open voters but also rewarded less by the nativist voters relative to the nativist candidate. Given the aforementioned discrepancy, the voters' punishment incentives take center stage in the candidates' policy calculus, leading the nativist candidate  $R$  to adopt the more open policy.

In contrast, if  $\tilde{p} < \bar{p}$  and the nativist voters are assumed to dominate electorally, the marginal disutility to the nativist voters of a more open policy is greater from the open

candidate than from the nativist candidate. Selective punishment by the electorally-dominant voter group is elevated to the forefront of the candidates' policy calculus again, resulting in the open candidate  $L$  choosing the more nativist policy relative to the nativist candidate  $R$  in this equilibrium. Overall, the candidates' policies downplay their cultural identities in a Type 2A equilibrium.

Similar to Proposition 2, part (b) of Proposition 3 indicates that the open candidate proposes the more open policy in a Type 2 equilibrium in which equilibrium policies that are more open (nativist) than  $\tilde{p}$  are also considered open (nativist) based on the reference point. In this case, which we denote a Type 2B equilibrium and illustrate in Figure 2c for when open voters dominate, the candidate whose cultural identity conforms with the target voter group's leans deeper into her base than her opponent as she capitalizes on her reward advantage with them.

As part (c) of Proposition 3 indicates, the case depicted in Figure 2d cannot be observed in equilibrium as it is ruled out by the upper bound we impose on the difference  $\bar{\lambda} - \underline{\lambda}$ . However, as we show in the Online Supplemental Analysis, allowing for candidates' cultural identities to differ also in intensity under a continuous functional form for  $\lambda_j(p_j)$  re-introduces this equilibrium possibility.

To summarize, the analysis has so far established that each candidate's optimal policy lies below the policy  $\tilde{p}$  that maximizes the value of  $w(p_j)$  if and only if the open voters are electorally more important than the nativist voters, and that the equilibrium will belong to one of two general classes of equilibria based on the relative positions of  $\tilde{p}$  and the reference point  $\bar{p}$ . Having described these possible equilibrium types above, we turn our attention to discussing the conditions under which each of these types would describe the model's unique pure strategy equilibrium.

Note that if  $\bar{p} > \tilde{p}$  and  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$ , we have an open Type 1 equilibrium (i.e.  $p_j^* < \tilde{p} < \bar{p}$  for  $j = L, R$ ), and if  $\bar{p} < \tilde{p}$  and  $\alpha_n f_n(\bar{\sigma}_n) > \alpha_o f_o(\bar{\sigma}_o)$ , we have a nativist Type 1 equilibrium (i.e.  $\bar{p} < \tilde{p} < p_j^*$  for  $j = L, R$ ). However, conditions for the existence of a Type 2A or 2B equilibrium as described in parts (a) and (b) of Proposition 3 need further scrutiny.

Given relative positions between  $\tilde{p}$  and  $\bar{p}$  that produce a Type 2 equilibrium, a Type 2B equilibrium, defined by congruence between the electorally-dominant voter group and the group that is being targeted, ensues if and only if marginal cultural concerns outweigh distributional ones at the reference point for both candidates. The reverse is true for a Type 2A equilibrium so that rather than reinforcing the distributional imperative that positions both policies on the same side of  $\tilde{p}$ , candidates go against it in a Type 2A

equilibrium by targeting the group that shares the cultural affiliation of  $\tilde{p}$ .<sup>24</sup> Overall, the relative strength of distributional versus cultural motives in the determination of a candidate's optimal policy guides the behavioral sorting of candidates on the policy spectrum.

#### 4.4 Comparative Statics

In this section, we explore the effects of changes to the depth of the cultural division in the electorate and the strength of cultural partisanship on equilibrium policies and the candidates' vote shares. Then, we relax the assumption that open and nativist voters must have equally intense cultural preferences.

The following proposition focuses on the implications of a deeper cultural divide in the electorate as manifested in greater values of  $\beta$ :

**Proposition 4.** *As the cultural divide deepens (i.e. as  $\beta$  increases), equilibrium policies become more open and the vote share of the open candidate in a Type 1 or Type 2B equilibrium increases if and only if  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$ .*

Proposition 4 indicates that equilibrium policies become more open as the cultural divide in the electorate deepens whenever the open voters are electorally-dominant. In the opposite scenario, candidates respond by increasing their targeting of the nativist voters through more restrictive policies. This arises as the vote share effect of the greater disutility nativist voters receive from a given policy due to more intense cultural preferences exceeds the corresponding effect of the open voters' greater cultural utility.

Moreover, greater values of  $\beta$  help the open candidate's vote share whenever the open voters are electorally-dominant if the open candidate is the one proposing the more open policy, which happens in a Type 1 or Type 2B equilibrium. As before, this result is due to open voters having an outsize effect on vote shares in this case due to the combination of their size and density of conservatism preferences. The intuition for why the nativist candidate benefits from a deeper cultural divide in the same types of equilibria when nativist voters are electorally-dominant is equivalent.

The parameter  $\beta$  can also be interpreted as the relative importance of the cultural aspects of immigration for voters to other concerns. This suggests that more restrictive

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<sup>24</sup>Formally, the unique pure strategy equilibrium  $(p_L^*, p_R^*)$  is a Type 2A equilibrium if and only if  $\alpha_o f_o(\bar{\sigma}_o) + \alpha_n f_n(\bar{\sigma}_n) |w'(\bar{p})| > |\alpha_o f_o(\bar{\sigma}_o) - \alpha_n f_n(\bar{\sigma}_n)| \beta \lambda_j(\bar{p})$  for  $j = L, R$  whenever  $\bar{p} < \tilde{p}$  and  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$ , or  $\bar{p} > \tilde{p}$  and  $\alpha_n f_n(\bar{\sigma}_n) > \alpha_o f_o(\bar{\sigma}_o)$ . The unique pure strategy equilibrium is a Type 2B equilibrium if and only if this condition fails to hold for both  $j = L, R$ .

policies would follow a shock such as the refugee crisis in Europe that intensifies all voters' cultural attitudes toward immigrants whenever the combination of the nativist voters' size and homogeneity of conservatism preferences elevates them to dominance. Furthermore, when cultural concerns outweigh distributional ones in the candidates' policy choices so that each candidate targets relatively more her own base, such a shock is expected to benefit the nativist candidate at the expense of the open one.

Next, we investigate how equilibrium policies would be affected by stronger cultural partisanship. In our model, stronger cultural partisanship implies voters over-rewarding or under-punishing the candidate that shares their cultural identity to an even greater extent. Technically, this trend can be captured by an increase in  $\bar{\lambda}$  and a decrease in  $\underline{\lambda}$ . The following proposition summarizes the implications:

**Proposition 5.** *Equilibrium policy polarization always increases in response to stronger cultural partisanship (i.e. an increase in  $\bar{\lambda}$  and a decrease in  $\underline{\lambda}$ ).*

Proposition 5 indicates that regardless of the ranking between the electoral importance of the two voter groups and the type of equilibrium, the distance between the equilibrium policies  $p_L^*$  and  $p_R^*$  always increases as behavioral voting intensifies due to stronger cultural partisanship.

More specifically, in a Type 1 or Type 2B equilibrium in which  $p_L^* < p_R^*$  is always true so that each candidate targets relatively more her own cultural base, stronger cultural partisanship leads to more open policies from the open candidate and more nativist policies from the nativist candidate. This happens as stronger cultural partisanship reinforces the same cultural forces that, by dominating distributional concerns, induced a Type 1 or Type 2B equilibrium. On the other hand, in a Type 2A equilibrium in which  $p_R^* < p_L^*$ , stronger cultural partisanship increases the nativism of the open candidate's policy and the openness of the nativist candidate's policy as it similarly fortifies the cultural motivations behind the candidates' choices.

Finally, we relax the simplifying assumption that  $\beta_n = \beta_o \equiv \beta$ , i.e. that the open and nativist voters must have equally intense cultural preferences. This allows us to consider shocks that may differentially impact the open and the nativist voters. Once the value of  $\beta_h$  is allowed to differ between the voter groups, it is straightforward to observe the following modification to Proposition 1: Candidate  $j$ 's equilibrium policy  $p_j^*$  for  $j \in \{L, R\}$  is such that  $p_j^* < \tilde{p}$  if and only if  $\beta_o \alpha_o f_o(\bar{\sigma}_o) > \beta_n \alpha_n f_n(\bar{\sigma}_n)$ . Intuitively, the parameter  $\beta_h$  also becomes a determinant of the electoral importance of group  $h \in \{n, o\}$ , which in turn determines whether the equilibrium policies will be more or less restrictive than the policy  $\tilde{p}$ . Together with its size and the density of its swing voters, more intense

cultural preferences help a voter group push the candidates' equilibrium policies toward the side of  $\tilde{p}$  that they culturally prefer.<sup>25</sup>

The shock to the parameter  $\beta$  considered in Proposition 4 implied an intensification of all voters' innate attitudes toward immigrants. In other words, an increase in  $\beta$  meant greater positive feelings by the open voters and greater negative feelings by the nativist voters simultaneously. However, it is also conceivable that certain shocks might change all voters' views on the cultural consequences of immigration in the same direction. For instance, greater media coverage on the plight of the refugees or the success of integration efforts may intensify the open voters' positive attitudes while diminishing the nativist voters' negative feelings. Alternatively, a period of high unemployment after an economic crisis might make all voters partially blame immigrants for their hardships, which in turn may manifest itself in a greater electorate-wide dislike of immigrants.

While the former example would be captured in our model by an increase in  $\beta_o$  and a decrease in  $\beta_n$ , the latter example would be captured by the opposite movements. The following corollary to Proposition 4 focuses on such asymmetric shocks to the voter groups' intensity of cultural preferences:

**Corollary 1.** *Equilibrium policies become more open and the open candidate's vote share in a Type 1 or 2B equilibrium increases in response to a shock that increases  $\beta_o$  and decreases  $\beta_n$ .*

Corollary 1 indicates that equilibrium policies become more open as all voters increase their appreciation of immigrants, while they get more restrictive in response to an opposite shock. Furthermore, it states that in an equilibrium in which candidates target their own bases, the open candidate's vote share increases as a result since she is the one proposing the more open policy. Intuitively, what benefits the open candidate in such an equilibrium is the elevation of her more open policy in the eyes of the voters.

## 5 Conclusion

This paper studied the effects of cultural identities on candidates' policy proposals and vote shares when voters are behavioral. While voters care about the candidates' degrees of conservatism and policies, they evaluate these attributes through the lens of their

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<sup>25</sup>Note that Propositions 2 and 3 are unaffected by this modification as the determinant of the candidates' equilibrium targeting remains the ranking between the magnitudes of the marginal cultural utilities voters receive from the two candidates.

partisan affiliations. Specifically, voters either over-reward or under-punish the candidate that shares their cultural identity. Focusing on immigration as a policy issue with cultural as well as distributional consequences, and the cultural divide based on nativism as the source of partisanship in the electorate, the model allowed for voting behavior ostensibly detached from the candidates' conservatism and policy platforms.

Our main results indicate that behavioral voting based on cultural partisanship creates policy polarization, and stronger cultural partisanship that translates into more intense behavioral voting exacerbates this outcome. We find that equilibrium policies are always biased in the cultural direction that the electorally-dominant voter group prefers. However, we also find that candidates do not necessarily target their own cultural bases in equilibrium and that the cultural affiliation of equilibrium policies need not agree with the cultural identity of the electorally-dominant group.

With a focus on demonstrating the powerful pull of identity politics, this paper provides a theoretical foundation for understanding the observed decoupling of voting behavior from traditional lines of division such as economic ideology. The results further suggest that culture-based alignments between a voter group and a candidate that propels that candidate to office may lead to the adoption of economic policies that oppose the interests of even a majority of the members of that voter group. Thus, we aim to highlight a channel through which partisanship can create an alliance between voter groups and candidates that is grounded not in economic ideology or policy interests but in behavioral traits.

Our analysis can be extended in various directions with potentially interesting results. First, while we take as given the saliency of immigration as an election issue, it is reasonable that a candidate who would benefit from exploiting cultural divisions could take actions to influence the saliency of an issue. In other words, saliency of immigration as an election issue might itself be endogenous. Second, while we characterize how the saliency of immigration creates policy effects based on the existing cultural divide in the electorate, it is also possible that feedback effects may exist from policies to the voters' cultural identities, conservatism preferences, or to other policy areas. Third, we do not take into account the dynamic aspects of immigration in terms of changing the future composition of the electorate. Finally, we believe that adding a campaigning stage to our model during which candidates may choose the focus of their rhetoric on immigration between its distributional and cultural aspects in order to influence the behavioral weights with which their immigration proposals are evaluated would be a valuable extension.

## References

- [1] Abrajano, Marisa, and Zoltan L. Hajnal. 2015. *White Backlash: Immigration, Race, and American Politics*. Princeton, NJ: Princeton University Press.
- [2] Akerlof, George Arthur, and Rachel E. Kranton. 2000. "Economics and Identity." *Quarterly Journal of Economics* 115, no. 3: 715-53.
- [3] Ansolabehere, Stephen, and James M. Snyder. 2000. "Valence Politics and Equilibrium in Spatial Election Models." *Public Choice* 103: 327-36.
- [4] Ashworth, Scott, and Ethan Bueno de Mesquita. 2009. "Elections with Platform and Valence Competition." *Games and Economic Behavior* 67, no. 1: 191-216.
- [5] Barone, Guglielmo, Alessio D'Ignazio, Guido de Blasio, and Paolo Naticchioni. 2016. "Mr. Rossi, Mr. Hu and Politics: The Role of Immigration in Shaping Natives' Voting Behavior." *Journal of Public Economics* 136: 1-13.
- [6] Bartels, Larry M. 2002. "Beyond the Running Tally: Partisan Bias in Political Perceptions." *Political Behavior* 24, no. 2: 117-50.
- [7] Benhabib, Jess. 1996. "On the Political Economy of Immigration." *European Economic Review* 40, no. 9: 1737-43.
- [8] Bisgaard, Martin. 2015. "Bias Will Find A Way: Economic Perceptions, Attributions of Blame, and Partisan-Motivated Reasoning during Crisis." *Journal of Politics* 77, no. 3: 849-60.
- [9] Buisseret, Peter, and Richard Van Weelden. 2018. "Crashing the Party? Elites, Outsiders, and Elections." Working Paper.
- [10] Campbell, Angus, Philip Converse, Warren Miller, and Donald Stokes. 1960. *The American Voter*. Chicago, IL: University of Chicago Press.
- [11] Chen, Yan, and Sherry Xin Li. 2009. "Group Identity and Social Preferences." *American Economic Review* 99, no. 1: 431-57.
- [12] Dickson, Eric S., and Kenneth Scheve. 2006. "Social Identity, Political Speech, and Electoral Competition." *Journal of Theoretical Politics* 18, no. 1: 5-39.
- [13] Diermeier, Daniel, and Christopher Li. 2017. "Electoral Control with Behavioral Voters." *Journal of Politics* 79, no. 3: 890-902.

- [14] Dolmas, Jim, and Gregort W. Huffman. 2004. "On the Political Economy of Immigration and Income Redistribution." *International Economic Review* 45, no. 4: 1129-68.
- [15] Eguia, Jon X., and Francesco Giovannoni. 2018. "Tactical Extremism." *American Political Science Review* <https://doi.org/10.1017/S0003055418000758>.
- [16] Evans, Geoffrey, and Robert Andersen. 2006. "The Political Conditioning of Economic Perceptions." *Journal of Politics* 68, no. 1: 194-207.
- [17] Fischbacher, Urs, and Verena Utikal. 2013. "On the Acceptance of Apologies." *Games and Economic Behavior* 82: 592-608.
- [18] Gerber, Alan S., and Gregory A. Huber. 2009. "Partisanship and Economic Behavior: Do Partisan Differences in Economic Forecasts Predict Real Economic Behavior?" *American Political Science Review* 103, no. 3: 407-26.
- [19] Glaeser, Edward L., Giacomo A. M. Ponzetto, and Jesse M. Shapiro. 2005. "Strategic Extremism: Why Republicans and Democrats Divide on Religious Values." *Quarterly Journal of Economics* 120, no. 4: 1283-1330.
- [20] Hajnal, Zoltan, and Michael U. Rivera. 2014. "Immigration, Latinos, and White Partisan Politics: The New Democratic Defection." *American Journal of Political Science* 58, no. 4: 773-89.
- [21] Halla, Martin, Alexander F. Wagner, and Josef Zweimuller. 2017. "Immigration and Voting for the Far Right." *Journal of the European Economic Association* 15, no. 6: 1341-85.
- [22] Huddy, Leonie, Lilliana Mason, and Lene Aaroe. 2015. "Excessive Partisanship: Campaign Involvement, Political Emotion, and Partisan Identity." *American Political Science Review* 109, no. 1: 1-17.
- [23] Kahneman, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica* 47, no. 2: 263-91.
- [24] Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler. 1990. "Experimental Tests of the Endowment Effect and the Coase Theorem." *Journal of Political Economy* 98, no. 6: 1325-48.
- [25] Karakas, Leyla D., and Devashish Mitra. 2018. "Inequality, Redistribution and the Rise of Outsider Candidates." Working Paper.

- [26] Krasa, Stefan, and Mattias Polborn. 2010. "Competition between Specialized Candidates." *American Political Science Review* 104, no. 4: 745-65.
- [27] Krasa, Stefan, and Mattias Polborn. 2012. "Political Competition between Differentiated Candidates." *Games and Economic Behavior* 76, no. 1: 249-71.
- [28] Krasa, Stefan, and Mattias Polborn. 2014. "Social Ideology and Taxes in a Differentiated Candidates Framework" *American Economic Review* 104, no. 1: 308-22.
- [29] Levy, Gilat, and Ronny Razin. 2015. "Correlation Neglect, Voting Behavior, and Information Aggregation." *American Economic Review* 105, no. 4: 1634-45.
- [30] Lindbeck, Assar, and Jorgen W. Weibull. 1987. "Balanced-budget Redistribution as the Outcome of Political Competition." *Public Choice* 52, no. 3: 273-97.
- [31] Llavador, Humberto, and Angel Solano-Garcia. 2011. "Immigration Policy with Partisan Parties." *Journal of Public Economics* 95, no. 1-2: 134-42.
- [32] Martinelli, Cesar. 2001. "Elections with Privately Informed Parties and Voters." *Public Choice* 108, no. 1-2: 147-67.
- [33] Matakos, Konstantinos, and Dimitrios Xefteris. 2017. "Divide and Rule: Redistribution in a Model with Differentiated Candidates." *Economic Theory* 63, no. 4: 867-902.
- [34] Mayda, Anna Maria. 2006. "Who Is Against Immigration? A Cross-Country Investigation of Individual Attitudes toward Immigrants." *Review of Economics and Statistics* 88, no. 3: 510-30.
- [35] McCabe, Kevin A., Mary L. Rigdon, and Vernon L. Smith. 2003 "Positive Reciprocity and Intentions in Trust Games." *Journal of Economic Behavior and Organization* 52, no. 2: 267-75.
- [36] McCarty, Nolan, Keith Poole, and Howard Rosenthal. 2008. *Polarized America: The Dance of Ideology and Unequal Riches*. Cambridge, MA: MIT Press.
- [37] Pew Research Center. (October, 2017). "The Partisan Divide on Political Values Grows Even Wider."
- [38] Polborn, Mattias, and James M. Snyder. 2017. "Party Polarization in Legislatures with Office-Motivated Candidates." *Quarterly Journal of Economics* 132, no. 3: 1509-50.

- [39] Stokes, Bruce. (2017, April 3). As Republicans' Views Improve, Americans Give the Economy Its Highest Marks since Financial Crisis. Pew Research Center.
- [40] Wittman, Donald. 1983. "Candidate Motivation: A Synthesis of Alternative Theories." *American Political Science Review* 77, no. 1: 142-57.

## 6 Appendix

*Proof of Proposition 1.* First note that there exists a unique  $\tilde{p} \in (0, 1)$  such that  $w'(\tilde{p}) = 0$ ,  $w'(p_j) > 0$  for all  $p_j < \tilde{p}$  and  $w'(p_j) < 0$  for all  $p_j > \tilde{p}$  for  $j \in \{L, R\}$ .

The necessary and sufficient condition for the optimality of  $p_j^* \in (0, 1)$  for candidate  $j \in \{L, R\}$  (since  $V_j'(p_j)$  is differentiable everywhere except at  $p_j = \bar{p}$  and  $V_j''(p_j^*) < 0$  is satisfied at the unique policy  $p_j^*$  for which  $V_j'(p_j^*) = 0$ ) is given by

$$\alpha_n f_n(\bar{\sigma}_n) \frac{\partial \bar{\sigma}_n(p_j^*, p_{-j}^*)}{\partial p_j} + \alpha_o f_o(\bar{\sigma}_o) \frac{\partial \bar{\sigma}_o(p_j^*, p_{-j}^*)}{\partial p_j} = 0, \quad (10)$$

which can be written as

$$[\alpha_n f_n(\bar{\sigma}_n) + \alpha_o f_o(\bar{\sigma}_o)] w'(p_j^*) + \beta [\alpha_n f_n(\bar{\sigma}_n) - \alpha_o f_o(\bar{\sigma}_o)] \lambda_j(p_j^*) = 0. \quad (11)$$

Since  $\lambda_j(p_j) > 0$  for all  $p_j$  and  $\beta > 0$ , equation (11) implies that  $w'(p_j^*) > 0$  if and only if  $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$ . This implies  $p_j^* < \tilde{p}$  if and only if  $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$ .  $\square$

*Proof of Proposition 2.* The necessary and sufficient first-order condition (11) for optimality can be written as

$$-\frac{\alpha_n f_n(\bar{\sigma}_n)}{\alpha_o f_o(\bar{\sigma}_o)} = \frac{w'(p_j^*) - \beta \lambda_j(p_j^*)}{w'(p_j^*) + \beta \lambda_j(p_j^*)} \quad (12)$$

for  $j \in \{L, R\}$ , and the fact that the right-hand sides of (12) are equalized for candidates  $L$  and  $R$  in equilibrium yields

$$\frac{w'(p_L^*)}{w'(p_R^*)} = \frac{\lambda_L(p_L^*)}{\lambda_R(p_R^*)}. \quad (13)$$

First, consider a Type 1 equilibrium such that  $p_j^* < \tilde{p} < \bar{p}$  for both  $j$ . Then, we have  $\lambda_L(p_L^*) > \lambda_R(p_R^*)$ . Given  $\lambda_j(p_j) > 0$  for all  $p_j$  and  $j \in \{L, R\}$ , and the fact that  $w'(p_j) > 0$  for all  $p_j < \tilde{p}$ , equation (13) implies  $w'(p_L^*) > w'(p_R^*)$ . Since  $w'(p_j)$  is decreasing in  $p_j$  by the strict concavity of  $w(p_j)$ , we have  $p_L^* < p_R^*$  in an open Type 1 equilibrium. Second, consider a Type 1 equilibrium such that  $p_j^* > \tilde{p} > \bar{p}$  for both  $j$ . Since  $\lambda_R(p_R^*) > \lambda_L(p_L^*)$ , we obtain  $w'(p_L^*) > w'(p_R^*)$  due to the fact that  $w'(p_j) < 0$  for all  $p_j > \tilde{p}$ . The strict concavity of  $w(p_j)$  for  $j \in \{L, R\}$  then implies  $p_L^* < p_R^*$  in a nativist Type 1 equilibrium.  $\square$

*Proof of Proposition 3.* For part (a), first consider a Type 2 equilibrium such that  $\bar{p} < p_j^* < \tilde{p}$  for both  $j$ . Then,  $\lambda_R(p_R^*) > \lambda_L(p_L^*)$ . By equation (13) and the fact that we must

have  $w'(p_R^*) > w'(p_L^*) > 0$ , it follows that  $p_R^* < p_L^*$  in this Type 2 equilibrium. Second, consider a Type 2 equilibrium such that  $\tilde{p} < p_j^* < \bar{p}$  for both  $j$ . Since  $\lambda_L(p_L^*) > \lambda_R(p_R^*)$  here, equation (13) and the fact that  $0 > w'(p_R^*) > w'(p_L^*)$  together imply  $p_R^* < p_L^*$  in this Type 2 equilibrium.

The proof of part (b) is identical to the proof of Proposition 2.

For part (c), first note that equilibrium divergence in cultural affiliation is impossible by Proposition 1 when  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$  and  $\bar{p} > \tilde{p}$ , or when  $\alpha_n f_n(\bar{\sigma}_n) > \alpha_o f_o(\bar{\sigma}_o)$  and  $\bar{p} < \tilde{p}$ , i.e. in a Type 1 equilibrium. For a Type 2 equilibrium, the upper bound on  $\bar{\lambda} - \underline{\lambda}$  ensures that the two marginal vote share functions cannot intersect the horizontal axis on opposite sides of  $\bar{p}$ .  $\square$

*Proof of Proposition 4.* Given that  $V_j'(p_j)$  is differentiable everywhere except at  $p_j = \bar{p}$  for both  $j$ , implicitly differentiating equation (11) that defines candidate  $j$ 's optimal policy  $p_j^*$  with respect to  $\beta$  yields

$$\frac{\partial^2 V_j(p_j^*, p_{-j}^*)}{\partial \beta \partial p_j} + \frac{\partial^2 V_j(p_j^*, p_{-j}^*)}{\partial p_j^2} \frac{\partial p_j^*}{\partial \beta} = 0 \quad (14)$$

for  $j \in \{L, R\}$ . Note that  $\frac{\partial^2 V_j(p_j^*, p_{-j}^*)}{\partial p_j^2} < 0$  and  $\frac{\partial^2 V_j(p_j^*, p_{-j}^*)}{\partial \beta \partial p_j} = [\alpha_n f_n(\bar{\sigma}_n) - \alpha_o f_o(\bar{\sigma}_o)] \lambda_j(p_j^*)$ , which is negative if and only if  $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$ . It follows that  $\frac{\partial p_j^*}{\partial \beta} < 0$  for  $j \in \{L, R\}$  if and only if  $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$ .

Since  $\frac{\partial V_j(p_j^*, p_{-j}^*)}{\partial \beta} = \frac{\partial V_j(p_j^*, p_{-j}^*)}{\partial \beta} + \frac{\partial V_j(p_j^*, p_{-j}^*)}{\partial p_j} \frac{\partial p_j^*}{\partial \beta}$  and  $\frac{\partial V_j(p_j^*, p_{-j}^*)}{\partial p_j} = 0$  by optimality for  $j \in \{L, R\}$ , it follows that

$$\frac{\partial V_L(p_L^*, p_R^*)}{\partial \beta} = \frac{[\alpha_o f_o(\bar{\sigma}_o) - \alpha_n f_n(\bar{\sigma}_n)] [\lambda_R(p_R^*)(\bar{p} - p_R^*) - \lambda_L(p_L^*)(\bar{p} - p_L^*)]}{2\eta(\sigma_L - \sigma_R)}. \quad (15)$$

In a Type 1 or Type 2B equilibrium, the inequality  $\lambda_R(p_R^*)(\bar{p} - p_R^*) < \lambda_L(p_L^*)(\bar{p} - p_L^*)$  is always true. Thus, in a Type 1 or Type 2B equilibrium, equation (15) is positive for the open candidate  $L$  if and only if  $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$ .  $\square$

*Proof of Proposition 5.* Note that  $\frac{\partial^2 V_j(p_j^*, p_{-j}^*)}{\partial p_j^2} < 0$  and implicitly differentiating equation (11) with respect to the constant  $\lambda_j(p_j^*)$  by holding policy constant yields  $\beta[\alpha_n f_n(\bar{\sigma}_n) - \alpha_o f_o(\bar{\sigma}_o)]$  for  $j \in \{L, R\}$ . As a result, we obtain  $\frac{\partial p_j^*}{\partial \lambda} > 0$  and  $\frac{\partial p_{-j}^*}{\partial \lambda} > 0$  if and only if  $\alpha_n f_n(\bar{\sigma}_n) > \alpha_o f_o(\bar{\sigma}_o)$ , where  $j \in \{L, R\}$  is the candidate whose cultural identity conforms with the cultural affiliation of  $p_j^*$ .

In a Type 1 equilibrium,  $\alpha_n f_n(\bar{\sigma}_n) > \alpha_o f_o(\bar{\sigma}_o)$  if and only if  $p_j^* > \bar{p}$  for  $j = L, R$ .

This implies that a simultaneous increase in  $\bar{\lambda}$  and a decrease in  $\underline{\lambda}$  unambiguously result in an increase in  $p_R^*$  and a decrease in  $p_L^*$  so that, given  $p_L^* < p_R^*$  in a Type 1 equilibrium, policy polarization  $p_R^* - p_L^*$  increases. The same is true for a Type 2B equilibrium.

In a Type 2A equilibrium, in contrast, we have  $\alpha_n f_n(\bar{\sigma}_n) > \alpha_o f_o(\bar{\sigma}_o)$  if and only if  $p_j^* < \bar{p}$  for  $j = L, R$ . In this case, an increase in  $\bar{\lambda}$  and a decrease in  $\underline{\lambda}$  unambiguously imply an increase in  $p_L^*$  and a decrease in  $p_R^*$ . Since  $p_R^* < p_L^*$  in a Type 2A equilibrium, policy polarization  $p_L^* - p_R^*$  again increases.  $\square$

*Proof of Corollary 1.* In the absence of imposing  $\beta_n = \beta_o$ , the necessary and sufficient condition (11) for optimality becomes

$$[\alpha_n f_n(\bar{\sigma}_n) + \alpha_o f_o(\bar{\sigma}_o)]w'(p_j^*) + [\beta_n \alpha_n f_n(\bar{\sigma}_n) - \beta_o \alpha_o f_o(\bar{\sigma}_o)]\lambda_j(p_j^*) = 0. \quad (16)$$

Implicitly differentiating equation (16) with respect to  $\beta_n$  yields

$$\frac{\partial^2 V_j(p_j^*, p_{-j}^*)}{\partial \beta_n \partial p_j} + \frac{\partial^2 V_j(p_j^*, p_{-j}^*)}{\partial p_j^2} \frac{\partial p_j^*}{\partial \beta_n} = 0 \quad (17)$$

for  $j \in \{L, R\}$ , where  $\frac{\partial^2 V_j(p_j^*, p_{-j}^*)}{\partial p_j^2} < 0$ . Given  $\frac{\partial^2 V_j(p_j^*, p_{-j}^*)}{\partial \beta_n \partial p_j} = \alpha_n f_n(\bar{\sigma}_n)\lambda_j(p_j^*) > 0$ , it follows that  $\frac{\partial p_j^*}{\partial \beta_n} > 0$  for  $j \in \{L, R\}$ . We similarly obtain  $\frac{\partial p_j^*}{\partial \beta_o} < 0$  for  $j \in \{L, R\}$ .

Since  $\frac{\partial V_j(p_j^*, p_{-j}^*)}{\partial \beta_h} = \frac{\partial V_j(p_j^*, p_{-j}^*)}{\partial \beta_h} + \frac{\partial V_j(p_j^*, p_{-j}^*)}{\partial p_j} \frac{\partial p_j^*}{\partial \beta_h}$  for both  $h$  and  $j$ , and  $\frac{\partial V_j(p_j^*, p_{-j}^*)}{\partial p_j} = 0$  by optimality, we have

$$\frac{\partial V_L(p_L^*, p_R^*)}{\partial \beta_o} = \frac{\alpha_o f_o(\bar{\sigma}_o)[\lambda_R(p_R^*)(\bar{p} - p_R^*) - \lambda_L(p_L^*)(\bar{p} - p_L^*)]}{2\eta(\sigma_L - \sigma_R)} \quad (18)$$

and

$$\frac{\partial V_L(p_L^*, p_R^*)}{\partial \beta_n} = -\frac{\alpha_n f_n(\bar{\sigma}_n)[\lambda_R(p_R^*)(\bar{p} - p_R^*) - \lambda_L(p_L^*)(\bar{p} - p_L^*)]}{2\eta(\sigma_L - \sigma_R)}. \quad (19)$$

Given  $\sigma_L < \sigma_R$ , it follows that  $\frac{\partial V_L(p_L^*, p_R^*)}{\partial \beta_o} > 0$  and  $\frac{\partial V_L(p_L^*, p_R^*)}{\partial \beta_n} < 0$  if and only if  $\lambda_R(p_R^*)(\bar{p} - p_R^*) - \lambda_L(p_L^*)(\bar{p} - p_L^*) < 0$ , which is always satisfied in a Type 1 or Type 2B equilibrium as established in Proposition 4. Then, in response to a shock that increases  $\beta_o$  and decreases  $\beta_n$ , the open candidate  $L$ 's vote share increases in a Type 1 or Type 2B equilibrium.  $\square$