The Power of Identity Politics: A Behavioral Political-Economy Analysis of Policy-Making

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Abstract

This paper studies the effects of cultural partisanship 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. We assume that each candidate has a fixed socioeconomic ideology and strategically chooses a policy that has both distributional and cultural consequences. Focusing on immigration as one such policy 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. However, we also show that candidates do not necessarily pander to the same group or even to their own cultural bases in equilibrium. The results further indicate that greater cultural partisanship increases pandering to the electorally-dominant group, while more intense behavioral voting may lead to greater policy polarization. Our findings contribute to the ongoing 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 across the developed world.

Keywords : Partisanship; Pandering; Behavioral voters; Immigration policy; Nativism; Differentiated candidates; Downsian competition; Policy divergence.

JEL Classification : D72, D78, D91.

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1 Introduction

Partisanship is prevalent and growing across Western democracies.[1] 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 versus military strength in conducting foreign affairs, while demographic gaps have remained more or less constant.[2]

Partisanship is increasingly expected to shape elections and policy-making as evidence suggests that voters assess political and economic events through the lens of their partisan identities.[3] In this paper, we study the effects of cultural partisanship on electoral and policy outcomes when voters act behaviorally by judging candidates' policy platforms subjectively. Our goal is to make both a conceptual and a theoretical point with our analysis: First, we demonstrate how candidates can take advantage of the cultural divisions in the electorate through strategic policy choices. Second, we introduce behavioral voters to an otherwise-standard probabilistic voting model with office-motivated candidates to generate equilibrium policy divergence and novel pandering results.

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 presented 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 and their policies have received scant attention. Given the evolving nature of partisanship toward identity politics and its growing influence on voting behavior, it is important to systematically understand how candidates can exploit these dynamics and what the policy implications of such strategic behavior are.

In this paper, we focus on immigration as a policy issue with cultural as well as distributional consequences in order to illustrate the role cultural partisanship plays on voting behavior and

[1]The Merriam-Webster Dictionary defines a partisan as "a firm adherent to a party, faction, cause, or person." See Bartels (2000), McCarty, Poole and Rosenthal (2008), and Weinschenk (2013) for evidence of partisanship in the U.S.

[2]See Pew Research Center, (October, 2017), "The Partisan Divide on Political Values Grows Even Wider."

[3]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. Furthermore, Autor, Dorn, Hanson and Majlesi (2017) show that the electoral response of counties in the U.S. to the China trade shock depends on their racial composition.

policy-making. This choice is mainly motivated by findings such as the Pew Research 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.[4] 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 that happened to have adopted nativist platforms.[5] In light of these trends and evidence, we operationalize our analysis through immigration-related divisions in the electorate.[6]

The model features two office-motivated candidates who compete for the support of a culturally-divided electorate. Each candidate has a fixed characteristic that we interpret as her socioeconomic ideology and strategically chooses an immigration policy to maximize her vote share. The fixed characteristic may represent the candidates' stands on traditional issues such as poverty programs, health care, gun control, or abortion, and is immutable before the election. The voters' bliss points on this fixed characteristic are continuously distributed. On the other hand, while voters agree on their assessments of the distributional consequences of immigration, their preferences regarding its cultural aspects depend on their cultural identity.[7] Specifically, we assume that voters are either culturally nativist or open, where the former implies opposition to the cultural presence of immigrants in their society and the latter implies a welcome attitude.[8] Upon observing the candidates' fixed characteristics and policy platforms, voters vote sincerely for their preferred candidate.

Based on the aforementioned evidence that their partisan affiliations guide voters' judgments,

[4]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.

[5]For example, Hajnal and Rivera (2014) and Abrajano and Hajnal (2015), Chapter 3, document a strong correlation in anti-immigrant views and Republican votes among white American voters. Barone, D'Ignazio, de Blasio and Naticchioni (2016) provide evidence based on data from Italian municipal elections that immigration led to an increase in votes for the center-right coalition. Halla, Wagner and Zweimuller (2017) report similar evidence from Austria on the effect of immigration on voting for the extreme right Freedom Party.

[6]It is important to note that our equilibrium results do not depend on immigration being the focus of the analysis. There exist various other policies that voters arguably evaluate in a partisan manner and that would apply equally to the framework we propose here. For example, voters may be divided based on their nationalist stands on trade policy (evidence for which is presented in van der Waal and de Koster (2017)) and therefore protectionist voters may be more receptive to international trade agreements if a protectionist administration leads the negotiations. Similarly, in an electorate divided based on the value placed on the military versus diplomacy in foreign affairs, diplomatic negotiations with the leader of a hostile power may elicit greater criticism from hawkish voters when a dovish administration is in power.

[7]The distributional consequences of immigration refer to the consumption effects of immigrants on the native population.

[8]Nativism is generally understood as a desire to preserve a country's founding cultural identity as its supporters see it. It frequently manifests itself in opposition to the ideas of multiculturalism, diversity, or multilateralism in international affairs. An article by Uri Friedman in The Atlantic on April 11, 2017 defines nativism as "an ideology that wants congruence of state and nation...It wants one state for every nation and one nation for every state."

cultural partisanship in our model implies candidate-specific evaluations of policy platforms. Specifically, we assume that each candidate also belongs to a cultural group and let the relative weight with which voters evaluate the cultural versus the distributional aspects of a given immigration policy depend on the candidate's identity. This dependence takes the form of amplifying voters' cultural utility or disutility from a given policy when it is proposed by the candidate whose identity conforms with the policy's cultural affiliation. Thus, a nativist policy 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.[9]

In equilibrium, candidates target the swing voters from each cultural group to maximize their vote shares as in the standard probabilistic voting models. However, our analysis of these swing voters yields novel implications for voting behavior due to partisan evaluation of candidates' policies. For example, we show that it is possible in equilibrium to vote against a candidate despite preferring both her socioeconomic ideology 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. More specifically, a voter may over-reward the policy proposed by the candidate with the same cultural identity as him to such a great extent that his fundamental preference for the socioeconomic ideology and policy of the other candidate may no longer matter. Hence, in culturally divided environments with strongly partisan candidates, our model can account for voting behavior that is ostensibly incompatible with economic interests.

Results indicate that cultural partisanship may lead to policy asymmetry in equilibrium when voters are behavioral, in contrast to the symmetric equilibrium of the non-behavioral models. 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.[10] In other words, the electorally-dominant group always succeeds in manipulating policies toward its preferred cultural direction in equilibrium, revealing the power of cultural partisanship in distorting policies away from the unique optimum that maximizes all voters' consumption utilities.

To characterize the strategic alignments between the candidates and the cultural groups, we first present each of the cases that may be observed in equilibrium based on the relative positions

[9]This behavior can be summarized as voters either over-rewarding or under-punishing the candidate with whom they share a cultural identity. As we argued above and will discuss in more detail in the following sections, such behavioral voting is consistent with both experimental and empirical evidence regarding the impact of group identities on decision-making.

[10]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.

of two benchmark policies that we establish.[11] Then, we describe the conditions under which the model's unique pure strategy equilibrium will be described by either of these cases. Our main findings indicate that a candidate does not necessarily pander more to 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 not pandering to the opposite cultural group becomes too costly for the candidates' vote shares. The fact that their own cultural base always over-rewards or under-punishes them is what allows the candidates the strategic room for such maneuvers. 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 to double down on their behavioral support or instead pander to the opposite cultural group by exploiting their base's partisan loyalty depends on the type of equilibrium. The relative strength of distributional and cultural motives behind the candidates' optimal policies guides their behavioral sorting on the policy spectrum.

Analyzing the effects of deeper cultural divisions in the electorate, we find that candidates respond to greater partisanship by increasing their pandering to the electorally-dominant group. The same result is obtained if the cultural aspects of immigration gain prominence vis-a-vis all other concerns in voting decisions.[12] 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 fact, more intense cultural preferences help a voter group become the candidates' primary electoral target despite its size by elevating its sensitivity to marginal policy changes and hence its electoral importance. In addition, we find that policies may become more polarized as the candidates' cultural identities become stronger. This happens as stronger candidate identities translate into greater partisan attachments by the voters, which in turn lead to more intense behavioral voting.[13] We also show that a shock such as automation that alters

[11]Specifically, a reference point policy such as the status-quo that determines the cultural affiliation of policies as either open or nativist, and the policy that maximizes the consumption component of all voters' policy utilities constitute the two benchmark policies of interest to our analysis.

[12]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 existing cultural divide in European societies, major centrist parties in countries such as France, Austria, Netherlands or Denmark adopted more restrictive positions on immigration. This suggests that nativist voters constituted the electorally-dominant group in these countries due to a combination of their size and greater inclination to swing their votes in response to immigration policy changes.

[13]For example, a greater gap was observed between the immigration policy proposals of Trump and Clinton in 2016 than was observed between those of Romney and Obama in 2012, with both candidates contributing to this gap. This greater policy polarization in 2016 coincided with cultural partisanship in the electorate and the nomination of two candidates with strong cultural identities. Our analysis supports the view that the greater electoral importance of voters with anti-immigrant views in states such as Michigan or Wisconsin contributed to increasing the Republican vote share in those states compared to the 2012 election. For example, see Edsall, T.B. (2017, October 5) How

the voters' labor-market related preferences on immigration results in more restrictive policies and increases the vote share of the candidate proposing the more nativist policy.

In response to the simultaneous trends of deeper cultural divisions among the voters and stronger cultural identities held by the candidates, our model predicts decoupling of the candidates' vote shares to a greater extent from their socioeconomic ideologies, a traditional basis of electoral divisions. Thus, our results can potentially offer relevant insights for the debates on the observed detachment of certain groups' voting behavior from their socioeconomic interests. 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 socioeconomic stand. For instance, a traditionally right-wing candidate on the socioeconomic spectrum can gain vote share among left-wing voters if her cultural identity allows her to capitalize on the rise to prominence of an electoral issue such as immigration. Accordingly, our results can shed light on how cultural partisanship and its behavioral voting implications can pave the way for shifts in traditional socioeconomic voting patterns.

Following a discussion of the related literature in the next section, Section 3 describes the model. Section 4 introduces a simple benchmark that illustrates how behavioral voting based on cultural partisanship affects equilibrium. Section 5 contains the main analysis and results of the paper, while Section 6 considers two extensions. Section 7 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 literature in political economy is focused on understanding the causes and effects of political extremism and populism. For example, Acemoglu, Egorov and Sonin (2013) explain the adoption of populist policies as an effective way for politicians to take a public stand against corruption. Eguia and Giovannoni (2017) explain extremism as a tactical investment by a party into its future ability to offer an alternative to mainstream policies. Karakas and Mitra (2017) theoretically demonstrate how ideological extremeness and income inequality can propel support for outsider candidates. Guiso, Herrera, Morelli and Sonno (2017) empirically show that populist parties are more likely to become prominent during periods of economic hardship and insecurity. Rodrik (2017) argues that differences between left-wing and right-wing populist parties arise from

Immigration Foiled Hillary, The New York Times.

their different abilities to exploit existing cleavages in the society. Buisseret and Van Weelden (2018) analyze the conditions and channels through which outsider candidates can pose a threat to the traditional parties. In this paper, we offer an alternative take on populism by focusing on culturally-tinted electoral issues such as immigration and explain extremeness as the strategic response of candidates to the existing cultural divisions in the electorate.

The behavioral focus of our model builds on a growing and exciting 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. Ortoleva and Snowberg (2015a) study voters who underestimate the bias in their information sources and are therefore overconfident in their own information. The authors show theoretically and empirically how such overconfidence leads to ideological extremeness, greater partisanship, and higher voter turnout. Nunnari and Zapal (2017) study voters who disproportionately focus on the attribute of a policy for which they face a wider range of options and find that equilibrium policies are distorted in favor of the more biased voter group. Diermeier and Li (2017) ask whether accountability through elections is still viable when voters are forgetful and answer in the affirmative. Ashworth, Bueno de Mesquita and Friedenberg (2018) show how events outside the control of the incumbent may nonetheless affect voting outcomes even when voters are fully rational.[14] To the best of our knowledge, ours is the first paper to formally study the voters' partisan evaluation of candidates' policies as a behavioral problem.

There exists a large literature that attempts to reconcile the convergence prediction of the Downsian model with the observed policy polarization in politics.[15] In this paper, we build a probabilistic voting model based on Lindbeck and Weibull (1987) with differentiated candidates as studied in Krasa and Polborn (2010a, 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 ideologies but also in their abilities to provide a public good, while voters have both economic and social preferences. Theirs is the first study, to the best of our knowledge, that establishes the dependence of equilibrium public good provision on the voters' social as well as economic preferences. In a more general framework with differentiated candidates, Matakos and Xefteris (2017) analyze the conditions under which redistribution policies exhibit a bias in favor of a given class of voters.[16] This paper contributes to this literature by introducing

[14] Other related studies with behavioral voters or candidates include Huber, Hill and Lenz (2012) on retrospective voting, Ortoleva and Snowberg (2015b) on partisan differences in overconfidence, and Lockwood (2017) on confirmation bias.

[15] For example, see Wittman (1983), Calvert (1985), Ansolabehere and Snyder (2000), Martinelli (2001), Aragones and Palfrey (2002), Kartik and McAfee (2007), Schofield (2007), Gul and Pesendorfer (2009), Ashworth and Bueno de Mesquita (2009), Hummel (2012), Boleslavsky and Cotton (2015), and Polborn and Snyder (2017).

[16] Callander and Wilkie (2007), Bueno de Mesquita and Friedenberg (2011), and Ghosh and Tripathi (2012) are additional examples of studies with candidate differentiation based on factors such as honesty and pragmatism.

cultural identity as a novel source of candidate differentiation that induces behavioral voting.

An extensive literature in political science 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, Dickson and Scheve (2006) on identity-based appeals by candidates during election campaigns, and Chen and Li (2009) on the effects of group identities in an experimental setting. With its focus on the political effects of religious identities, the central tenet of the findings in Glaeser, Ponzetto and Shapiro (2005) that parties strategically take extreme positions on identity-based policies to increase their vote shares closely mirrors this paper's main premise. However, while a party's desire to energize its base through more extreme policies drives the equilibrium findings of Glaeser, Ponzetto and Shapiro (2005), our analysis generates strategic extremeness based on the relative strength of distributional versus cultural motives in candidates' policy choices without relying on the possibility of abstentions.

Finally, while we employ immigration policy simply to illustrate our theoretical results in a more concrete fashion and do not claim to contribute to the wide-ranging studies of immigration, it is nonetheless important to note that there exist many interesting studies on the political-economic determinants and effects of immigration policies. For example, Barone, D'Ignazio, de Blasio and Naticchioni (2016) and Halla, Wagner and Zweimuller (2017) provide compelling evidence that immigration leads to an increase in the vote shares of right-wing parties.[17] Llavador and Solano-Garcia (2011) construct a probabilistic voting model over expenditures on immigration restrictions and establish policy polarization in equilibrium between the political parties.[18] Dolmas and Huffman (2004) and Ortega (2005) study voting over immigration policies when voters are aware of the dynamic implications of immigration for the composition of the future electorate. This paper differs from the existing models of electoral competition over immigration policies due to its focus on the candidates' cultural identities and the consequent behavioral voting.

3 The Model

We introduce a behavioral voting model based on cultural partisanship in which the relative weight voters use to evaluate the distributional versus the cultural aspects of a candidate's policy platform

[17]Other empirical studies of immigration on election outcomes include Mendez and Cutillas (2014) and Otto and Steinhardt (2014). In addition, Roemer and Van der Straeten (2006) predict that anti-immigrant sentiments have a negative effect on the size of the public sector in Denmark. Sanchez-Pages and Solano-Garcia (2016) show that immigration results in lower overall redistribution.

[18]Benhabib (1996) and Mayr (2007) are earlier models of electoral competition over immigration policy and redistribution in the presence of immigrants.

depends on the candidate herself. For concreteness and intuition, we operationalize our model using immigration policy as the strategic platform with dual consequences.

Two office-motivated candidates compete for the support of a continuum of voters. Each candidate announces an immigration policy before the election and has a fixed position on a (non-immigration related) issue. We assume that the candidates fully commit to implementing their policy announcements in case of their election. Based on the candidates' policy commitments and fixed positions, voters vote sincerely for their preferred candidate.[19]

We interpret candidate j's fixed position $\sigma_j \in \mathbb{R}$ for $j \in \{L, R\}$ as her socioeconomic ideology and let $\sigma_L < \sigma_R$. For instance, σ_j may represent candidate j's stand on income inequality or redistribution programs. Given the candidates' past experiences in politics and the persistent saliency of traditional socioeconomic issues during elections, these fixed characteristics cannot be credibly changed before voting takes place. Our focus on socioeconomic issues as the policy dimension on which the candidates' positions are fixed is without loss of generality; σ_j can be interpreted as representing any fixed characteristic or policy position candidate j may have that matters to the voters such as race, gender or a social issue.

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

As discussed in the Introduction, immigration represents a policy issue that has distributional as well as cultural consequences for the voters. Hence, we expect voters to evaluate an immigration policy based on both grounds.[20] First, consider the distributional effects of immigration on the voters. 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. We assume for simplicity that native workers constitute the entire voting population.[21] Thus, the 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

[19]While voting formally takes place over two separate dimensions, the fact that the candidates' positions on one of these dimensions is fixed implies that the model is strategically unidimensional.

[20]Studies such as Mayda (2006) provide evidence that the native population forms attitudes toward immigrants based on both economic and non-economic factors.

[21]Capitalists are generally a very small proportion of the population so that this assumption becomes a good approximation of reality.

for purely economic (consumption-related) reasons.[22]

Second, consider the cultural effects of immigration policy on the voters. In contrast to a standard welfare policy such as Medicare that would have distributional consequences only among the existing members of the society, immigration adds new members to this society, leading to cultural changes that impact the native population. Therefore, we argue that immigration policy motivates the voters for non-economic reasons by altering the composition of the society they live in. To model the different preferences in the electorate with regards to such cultural effects, we assume that each voter i belongs to either a *nativist* or an *open* culture, manifested simply in whether they belong to group $h = n$ of voters that dislike or group $h = o$ of voters that enjoy the cultural presence of immigrants in their society. A fraction $\alpha_n \in (0, 1)$ of voters hold nativist views and the remaining fraction $\alpha_o = 1 - \alpha_n$ are culturally open. We refer to this divide as cultural partisanship due to the rigidity of the voters' group affiliations.

While voters within each group $h \in \{n, o\}$ have the same preferences with regards to the cultural consequences of a given immigration policy, they differ in how they value a candidate's fixed (non-immigration related) socioeconomic ideology.[23] We assume that the socioeconomic ideologies σ_{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. While the voters can perfectly observe the candidates' fixed positions, the candidates can only observe these distributions from which the voters' socioeconomic ideologies are drawn.

Based on the above description of the voters' socioeconomic ideology and immigration policy preferences, the utility that a voter i in group h receives from candidate j, conditional on this candidate's election, can be written as

$$u^j_{ih}(p_j; \sigma_j) = -\eta(\sigma_j - \sigma_{ih})^2 + [v(p_j) + y(p_j) + \lambda_j(p_j) z_h(p_j)], \tag{1}$$

where $\eta > 0$ is a parameter that represents the relative salience of traditional socioeconomic issues to immigration policy in the election that is common to all voters; v and y are twice-differentiable and strictly concave functions that are respectively strictly increasing and decreasing in p_j and that represent the voters' consumption preferences; and z_h for $h \in \{n, o\}$ is a twice-differentiable function of p_j with a non-positive second derivative and is strictly increasing for nativist voters

[22] 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). Thus, the purely economic payoff to natives from immigration can end up exhibiting an inverted U-shaped relationship with immigration policy.

[23] Since all voters are unskilled workers, they also share the same preferences with regards to the distributional impact of a given immigration policy.

and strictly decreasing for open voters such that it captures their cultural preferences toward immigrants. We assume that the functions $v(p_j)$, $v'(p_j)$, $y(p_j)$, $y'(p_j)$, $z_h(p_j)$ and $z'_h(p_j)$ are bounded for $h \in \{n, o\}$ and $j \in \{L, R\}$.

The main contribution of our model, behavioral voting based on cultural partisanship, manifests itself in the term $\lambda_j(p_j)z_h(p_j)$ in equation (1). We assume that $\lambda_j : [0, 1] \to (0, \infty)$ is a bounded function with a bounded first derivative such that $\lambda_j(p_j)$ for $j \in \{L, R\}$ 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 that lurk behind the term $\lambda_j(p_j)z_h(p_j)$ are two-fold and are described below:

1.) First, voters evaluate the cultural consequences of a given immigration policy relative to a common reference point denoted $\bar{p} \in (0, 1)$. For instance, this reference point may be the status-quo policy or a centrist policy such as $p_j = \frac{1}{2}$.[24] We normalize $z_h(\bar{p}) = 0$ for $h \in \{n, o\}$ and let the voters perceive any policy $p_j > \bar{p}$ as being nativist and any $p_j < \bar{p}$ as being open.

The assumption that voters attach a particular cultural affiliation to a given immigration policy relative to a reference point 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.[25] Here, lacking a clear mapping between immigration restrictions and their cultural consequences, voters assess any immigration policy that is more (less) restrictive than the reference point as nativist (open).

2.) Second, the cultural utility (or disutility) $z_h(p_j)$ that a given immigration policy p_j yields for a group-h voter is amplified when this policy is proposed by a candidate whose cultural identity conforms with her policy's affiliation. We assume that each candidate is perceived by the voters as being either a nativist or open.[26] 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 (compared to their utilities or disutilities if the same policy was proposed by the other candidate $-j$) if j is the nativist (open) candidate. 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, for any given policy $p_L = p_R \equiv p < \bar{p}$, we let $\lambda_L(p) > \lambda_R(p)$ if and only if candidate L is open. Likewise, given any $p_L = p_R \equiv p > \bar{p}$, we let

[24] There exists a large literature in behavioral economics that studies the effects of reference points such as the status-quo or the agent's expectations in decision-making. For example, see Kahneman and Tversky (1979, 1981), Samuelson and Zeckhauser (1988), or Koszegi and Rabin (2006).

[25] Prominent theories of decision-making in behavioral economics such as loss aversion or the endowment effect, studied in the the seminal works Kahneman and Tversky (1979) and Kahneman, Knetch and Thaler (1990), constitute applications of reference-dependent utility.

[26] Note that it is common knowledge that both candidates are purely office-motivated and that their platforms do not reflect any policy motivations that may be guided by their inherent nativism or openness.

$\lambda_L(p) > \lambda_R(p)$ if and only if candidate L is nativist.[27] In the equilibrium analysis, we present our main results both for a simplified case that illustrates the model's main intuition and a more general case in which candidates can manipulate their behavioral weights through their policy choices to a certain extent. The differentiable functional form we consider for $\lambda_j(p_j)$ satisfies the condition $\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j) > 0$ for all $p_j \in [0,1]$, whose intuition will be explained in further detail during the analysis.

We motivate the assumption that voters evaluate 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 (2000, 2002), Gerber and Huber (2009), and Mian, Sufi and Khoshkhou (2018) document and analyze the phenomenon that voters positively judge the state of the economy based on whether their party holds the executive branch.[28] Bisgaard (2015) shows that partisan voters attribute blame to the other party when faced with objectively negative economic data.[29] 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. However, while the influence of partisanship on voting behavior is widely accepted in the literature, whether this can be traced to voters' economic, social or cultural interests remains in dispute. In this paper, we build on the growing evidence that voters' cultural identities constitute an important source of their partisan affiliations.[30] Along with the evidence that partisanship is a strong determinant of voting behavior, this motivates our assumption that voters perform candidate-specific assessments of policies.

Our second motivation is based on theories of intent in behavioral game theory.[31] Psychologists have long recognized that people evaluate actions by also taking into account the intent and motives they perceive behind them.[32] Accordingly, we argue here that voters take into account the

[27] While there exist political systems where we observe a correlation between candidates' expressions of right-wing socioeconomic ideologies and nativism against immigrants or refugees, such correlation is not a universal phenomenon. For instance, some European parties such as France's National Front or the Alternative for Germany have redistributionist economic agendas along with commonly-held perceptions of holding nativist views. Therefore, we do not impose at the onset that the candidates' perceived identities as either nativist or open are determined by the relative positions of their socioeconomic ideologies.

[28] 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.

[29] Johnston Conover (1984) is an early study that affirms the importance of political group affiliations on perceptions and evaluations of events.

[30] For example, see Hajnal and Rivera (2014), Huddy, Mason and Aaroe (2015), or Abramowitz and Webster (2016) for recent evidence.

[31] For example, see Falk, Fehr and Fischbacher (2003), McCabe, Rigdon and Smith (2003), or Fischbacher and Utikal (2013) for experimental evidence on notions of intent, trust and reciprocity.

[32] For example, see Heider (1958).

candidates' perceived intentions when evaluating policies. This cognitive trait translates into discounting the extent to which they view a policy favorably or unfavorably if the candidate's identity as a nativist or open is not in congruence with her policy's cultural affiliation. 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 always 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 identity shapes the relative weight with which the cultural versus the distributional aspects of her immigration policy are evaluated, we also allow a candidate the ability to influence this weight through both the cultural affiliation and the exact position of her policy choice. For a simpler exposition of the model's main themes, we first present a benchmark analysis in the following section in which immigration policy and socioeconomic ideology are both binary variables. We characterize the equilibrium of the full model in Section 5.

4 Benchmark Analysis: The Binary Model

To illustrate how behavioral voters introduce a new equilibrium cleavage in the electorate based on cultural partisanship, consider the model presented in the previous section with the following modifications: Let candidate j's fixed position σ_j and policy choice p_j both be binary such that $\sigma_j \in \{0, 1\}$ and $p_j \in \{0, 1\}$ for $j \in \{L, R\}$.[33] We let $\sigma_L = 0$ and $\sigma_R = 1$. For clarity, we also discard the functions $v(p_j)$ and $y(p_j)$ from the voters' utility functions. This binary model admits four groups of voters described by their socioeconomic ideologies and cultural partisanship: Left-wing nativist voters, left-wing open voters, right-wing nativist voters and right-wing open voters.[34] Formally, a voter's group can be described by the pair $(g, h) \in \{\ell, r\} \times \{n, o\}$, where $h \in \{n, o\}$ again denotes a voter's cultural group and $g \in \{\ell, r\}$ denotes a voter's socioeconomic ideology group such that $g = \ell$ represents a left-wing voter who prefers the socioeconomic ideology 0 and $g = r$ represents a right-wing voter who prefers the socioeconomic ideology 1. We let $\alpha_{gh} \in (0, 1)$ denote the proportion of voters with socioeconomic ideology g and cultural partisanship h such that $\sum_{gh} \alpha_{gh} = 1$. We also normalize $z_n(1) = z_o(0) = 1$ and $z_n(0) = z_o(1) = -1$.

Assuming $\eta < 1$ throughout, the unique pure strategy Nash equilibrium of the policy game between two candidates who are undifferentiated in their cultural identities is given by $(p_L, p_R) =$

[33] Here, $\sigma_j = 0$ represents a left-wing socioeconomic agenda while $\sigma_j = 1$ represents a right-wing one. Similarly, $p_j = 0$ represents a pro-immigration policy while $p_j = 1$ represents opposition to immigration.

[34] Krasa and Polborn (2010b) study a similar binary model. The authors motivate their analysis by arguing that voters can realistically distinguish between only a small number of distinct policy positions that the candidates offer.

$(0,0)$ if and only if $\alpha_{ro} > \alpha_{\ell n}$ and $\alpha_{\ell o} > \alpha_{rn}$, and $(p_L, p_R) = (1,1)$ in the opposite scenario.[35] This is because all left-wing voters vote for candidate L and all right-wing voters vote for candidate R when $p_L = p_R$, while the assumption $\eta < 1$ ensures that all nativist (open) voters choose the candidate $j \in \{L, R\}$ who proposes $p_j = 1$ ($p_j = 0$) when the two candidates propose different policies.[36] Note that a necessary condition for the unique and symmetric equilibrium $(p_L, p_R) = (0,0)$ is that there are more open than nativist voters in the electorate, while the opposite is necessary if $(p_L, p_R) = (1,1)$ is the unique equilibrium.

When one candidate has a nativist and the other an open identity, cultural partisanship starts playing a role on voting behavior even when the candidates propose the same policy. To see this, suppose $p_L = p_R = 1$ and let $\lambda_L(1) = 1$ and $\lambda_R(1) = 0$ so that candidate L is the nativist. In this case, left-wing nativist voters always choose candidate L and right-wing open voters always choose candidate R. More interestingly, despite the fact that both candidates are proposing the same anti-immigration policy, right-wing nativist voters also choose candidate L whenever $\eta < 1$, which also ensures that left-wing open voters choose candidate R. In other words, when $\eta < 1$ so that immigration policy is relatively more important to the voters than the candidates' socioeconomic ideologies, all nativist voters vote for the nativist candidate and all open voters vote for the open candidate. Note that this is true also if $p_L = p_R = 0$ and we let $\lambda_L(0) = 0$ and $\lambda_R(0) = 1$ accordingly.

When voters' evaluations of the cultural consequences of an immigration policy are candidate-specific, the electoral cleavage that used to be based on socioeconomic ideology whenever the two candidates proposed the same policy transforms into one based on cultural partisanship. This voting behavior gives rise to multiple pure strategy equilibria based on the relative proportions of voter groups in the electorate, as summarized below:[37]

Lemma 1. *Let $\eta < 1$ and suppose L is the nativist candidate. Then, for any $\alpha_{gh} \in (0,1)$ for $g \in \{\ell, r\}$ and $h \in \{n, o\}$, the strategy profile $(p_L, p_R) = (1,0)$ is always a Nash equilibrium of the binary model.*

There always exist two pure strategy Nash equilibria to the policy game between two candidates who have different cultural identities. Specifically, the symmetric strategy profile $(p_L, p_R) = (0,0)$ is a Nash equilibrium if and only if $\alpha_{\ell o} > \alpha_{rn}$, and $(p_L, p_R) = (1,1)$ is a Nash equilibrium in the opposite scenario. In addition, the strategy profile $(p_L, p_R) = (1,0)$ is always a Nash equilibrium due to the candidates' different identities: The fact that all nativist voters choose candidate L and

[35] We assume no two proportions of groups of voters are equal.

[36] In fact, we only need to assume that $\eta < 2$ in order to obtain the unique pure strategy Nash equilibrium as described in this paragraph. However, we impose $\eta < 1$ to ensure consistency with the subsequent result on candidates with different cultural identities.

[37] All proofs are in the Appendix.

all open voters choose candidate R when either $p_L = p_R$ or $(p_L, p_R) = (1, 0)$ ensures that neither candidate has an incentive to mimic her opponent's policy.

This section illustrated the possibility of policy divergence in a pure strategy equilibrium when the voters' assessment of a policy is based on the candidate's cultural identity. This is in contrast to the policy convergence result that is obtained when the candidates are solely differentiated in their socioeconomic ideologies and the evaluations of the cultural consequences of their immigration policies are independent of their identities. Having motivated the analysis, we proceed with the equilibrium characterization of the full model described in Section 3.

5 Equilibrium

This section presents the equilibrium of the voting game described in Section 3 in which two candidates simultaneously announce their immigration policies and voters vote for their preferred candidate based on the candidates' policies and fixed socioeconomic ideologies. Behavioral voting implies that voters evaluate the cultural aspects of a candidate's policy relative to a common reference point and based on the candidate's cultural identity.

Equation (1) suggests that a voter's socioeconomic ideology utility is higher from the candidate who has a position closer to him. On the other hand, the candidates' differentiated abilities to elevate or downplay the voters' focus on the cultural consequences of immigration imply that policy utility is candidate-specific. Thus, in our set-up, a voter does not necessarily vote solely based on his socioeconomic ideology 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.[38] The following example illustrates this property that voter preferences have in our model:

Example 1. *Suppose R is the nativist and L is the open candidate. Consider a nativist voter i and let $|\sigma_{in} - \sigma_R| > |\sigma_{in} - \sigma_L|$. In this case, candidate R has a policy advantage with this voter whenever $p_L = p_R$ and candidate L has a socioeconomic ideology advantage. Suppose $p_L = p_R \equiv p < \bar{p}$ is such that $u^L_{in}(p; \sigma_L) \geq u^R_{in}(p; \sigma_R)$, i.e.*

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

[38] 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 of this property.

As this immigration 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 $u^L_{in}(p'; \sigma_L) < u^R_{in}(p'; \sigma_R)$ for sufficiently small $p_L = p_R \equiv p' < p$ and/or sufficiently large difference between $\lambda_R(p')$ and $\lambda_L(p')$. Then, the nativist voter would choose candidate L when the common immigration policy is p and candidate R when it is p'.

In this example, what makes the nativist voter switch his vote from the open candidate L, whom he is closer to in terms of socioeconomic ideology, to the nativist candidate R as the common immigration policy becomes more open is the greater policy disutility from candidate L due to her candidacy's increasing focus on the cultural implications of a more open immigration policy such as greater diversity. While candidate R's cultural focus may also increase 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.

The candidate-specificity of the voters' policy utilities as described above necessitates the following assumption in order to proceed with the equilibrium characterization:

Assumption 1. *For all $j \in \{L, R\}$ and $h \in \{n, o\}$, the voters' policy utility $v(p_j) + y(p_j) + \lambda_j(p_j)z_h(p_j)$ is twice-differentiable and strictly concave so that*

$$|v''(p_j) + y''(p_j) + \lambda_j(p_j)z''_h(p_j)| > \lambda'_j(p_j)z'_h(p_j) + \frac{d(\lambda'_j(p_j)z_h(p_j))}{dp_j} \quad \forall p_j \in [0, 1]. \tag{3}$$

Note that since the voters' consumption utility $v(p_j) + y(p_j)$ is strictly concave for both j, Assumption 1 implies that if voters' policy utility is decomposed into a direct (the left-hand side of (3)) and a behavioral component (the right-hand side of (3)), then the former dominates the latter in magnitude. Note that the left-hand side of (3) represents the rate of change in policy utility in the absence of reference point-based evaluation of the cultural consequences of immigration, while the right-hand side captures this rate of change due to our behavioral assumptions.

Based on these preliminaries, the following section characterizes equilibrium voting behavior.

5.1 The Swing Voters

A swing voter of group $h \in \{n, o\}$ is defined as a voter i with socioeconomic ideology σ_{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 the candidates' fixed socioeconomic ideologies σ_j and policy platforms 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

$$\eta(\sigma_R - \sigma_{ih})^2 - \eta(\sigma_L - \sigma_{ih})^2 \geq [w(p_R) - w(p_L)] + [\lambda_R(p_R)z_h(p_R) - \lambda_L(p_L)z_h(p_L)], \quad (4)$$

where $w(p_j) \equiv v(p_j) + y(p_j)$ for any given $p_j \in [0, 1]$ and $j \in \{L, R\}$.[39] Based on (4), we can define the function $\bar{\sigma}_h : [0, 1]^2 \to \mathbb{R}$ for $h \in \{n, o\}$ such that the socioeconomic ideology

$$\bar{\sigma}_h(p_L, p_R) = \frac{[w(p_R) - w(p_L)] + [\lambda_R(p_R)z_h(p_R) - \lambda_L(p_L)z_h(p_L)] - \eta(\sigma_R^2 - \sigma_L^2)}{2\eta(\sigma_L - \sigma_R)} \quad (5)$$

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 candidate L and all voters i in group $h \in \{n, o\}$ such that $\sigma_{ih} > \bar{\sigma}_h$ vote for candidate R.

To understand how the nativist and open swing voters are influenced by the fact that candidates have different cultural identities, first suppose $p_L = p_R$. In the absence of candidate differentiation based on cultural identity, we have $w(p_L) = w(p_R)$, $z_h(p_L) = z_h(p_R)$ for $h \in \{n, o\}$, and $\lambda_L(p_L) = \lambda_R(p_R)$ for any given $p_L = p_R$ so that equation (5) implies $\bar{\sigma}_h = \frac{\sigma_L + \sigma_R}{2}$ for $h \in \{n, o\}$. Thus, when effectively only the candidates' socioeconomic ideologies matter to the voters, each group's swing voter is positioned at the median socioeconomic ideology between the two candidates and is therefore unbiased. On the other hand, once candidate differentiation in cultural identities is introduced so that $\lambda_L(p_L) \neq \lambda_R(p_R)$ for any given $p_L = p_R$, then equation (5) implies

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

for $h \in \{n, o\}$, where $p \equiv p_L = p_R$. Equation (6) indicates that a swing voter is unbiased toward either of the culturally-differentiated candidates if and only if $p_R = p_L = \bar{p}$. Otherwise, the candidates' different identities result in biased swing voters for each group even as they propose the same policy.

For example, consider the nativist voters and let $p_L = p_R \equiv p > \bar{p}$ so that $z_n(p) > 0$. Then, equation (6) implies $\bar{\sigma}_n > \frac{\sigma_L + \sigma_R}{2}$, i.e. that the nativist swing voter has a socioeconomic bias for candidate R, if and only if $\lambda_R(p) < \lambda_L(p)$ so that R is the open candidate. This is because the nativist candidate has a policy advantage with the nativist voters and indifference between the two candidates therefore requires a socioeconomic ideology bias for the open candidate. Similarly, since $z_o(p) < 0$ for all $p > \bar{p}$, equation (6) implies $\bar{\sigma}_o > \frac{\sigma_L + \sigma_R}{2}$ if and only if $\lambda_R(p) > \lambda_L(p)$ so that R is the nativist candidate. As the open voters receive a lower policy disutility from the open can-

[39] Given that $w(p_j)$ is a strictly concave function, we assume $w'(0) > 0$ and $w'(1) < 0$ so 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 $j \in \{L, R\}$.

didate L, the open swing voters must prefer the socioeconomic ideology of the nativist candidate R. Since nativist and open voters always have opposite cultural preferences toward immigration, their swing voters always have opposite biases for the candidates whenever $p_L = p_R$.

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 $w(p_L) > w(p_R)$ and let R be the nativist candidate. Consider a nativist voter with socioeconomic ideology σ_{in} that is closer to σ_L than to σ_R so that this nativist voter prefers both the socioeconomic ideology and the policy of candidate L. Nonetheless, our model implies that this voter can still vote for candidate R: If $\lambda_R(p_R)$ is sufficiently smaller than $\lambda_L(p_L)$ that the condition $|w(p_R) - w(p_L)| < (\lambda_R(p_R)z_n(p_R) - \lambda_L(p_L)z_n(p_L))$ holds despite the fact that $z_n(p_R) < z_n(p_L)$, then the socioeconomic ideology of the nativist swing voter satisfies $\bar{\sigma}_n < \frac{\sigma_L+\sigma_R}{2}$. This implies there exist nativist voters with socioeconomic ideologies $\sigma_{in} \in (\bar{\sigma}_n, \frac{\sigma_L+\sigma_R}{2})$ so that they vote for candidate 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 perceived nativism must be sufficiently strong that the nativist voters receive disproportionately lower cultural disutility from her relatively open policies.

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

5.2 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

$$V_L(p_L, p_R) = \alpha_n F_n(\bar{\sigma}_n) + \alpha_o F_o(\bar{\sigma}_o), \tag{7}$$

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

$$V_R(p_L, p_R) = \alpha_n(1 - F_n(\bar{\sigma}_n)) + \alpha_o(1 - F_o(\bar{\sigma}_o)). \tag{8}$$

In our first main result, we assert the existence of a unique equilibrium under Assumption 1 in which the candidates may choose different policies:

Lemma 2. *There exists a unique pure strategy equilibrium* (p_L^*, p_R^*) *for sufficiently large values of* $\sigma_R - \sigma_L$ *such that* $p_L^* \neq p_R^*$ *only if* $\lambda_L(p_L) \neq \lambda_R(p_R)$ *for any given* $p_L = p_R$.

The vote shares given in (7) and (8) 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 size and distribution of socioeconomic ideology preferences. Cultural partisanship that leads to behavioral voting in the form of candidate-specificity of the voters' policy utilities introduces the possibility of an asymmetric equilibrium in our model. This is in contrast to standard probabilistic voting models in which the 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 may find different policies optimal.[40]

In standard probabilistic voting models, candidates always pander to the same group of voters. However, adding behavioral elements to an otherwise-standard probabilistic voting framework introduces important nuances to this conclusion. In order to proceed with the full equilibrium characterization, we make the following simplifying assumption on the voters' cultural utilities:

Assumption 2. *The cultural utility function* $z_h(p_j)$ *is linear such that* $z_n(p_j) = \beta_n(p_j - \bar{p})$ *and* $z_o(p_j) = \beta_o(\bar{p} - p_j)$ *for* $j \in \{L, R\}$*, where* $\beta_h > 0$ *for* $h \in \{n, o\}$.

In the following analysis, we let $\beta_n = \beta_o \equiv \beta$ in order to provide a characterization of equilibrium under a baseline scenario in which neither group has more intense cultural preferences than the other. We will relax this assumption later in Section 6.1 by allowing these two parameters to differ. Assuming $\beta_n = \beta_o$, the following proposition provides a general description of a candidate's optimal policy in equilibrium:

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 symmetric 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-dominant group.[41] Since

[40] While Lemma 2 states that only candidates with different cultural identities choose different immigration policies in equilibrium, the converse of this statement is not necessarily true. Specifically, it is possible to observe a symmetric equilibrium with candidates who have different identities.

[41] 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.

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

The relative position of the policy $\tilde{p}$ with respect to the reference point policy $\bar{p}$ has implications for the equilibrium alignments between the candidates and the groups of voters, i.e. equilibrium pandering.[42] While we provide our main characterization results on pandering based on a general case in which $\lambda_j(p_j)$ is a continuous function of p_j, we first present a simplified analysis in the following section for intuition. This analysis assumes that $\lambda_j(p_j)$ can take only two different values and offers a clear exposition of the more general results that will follow in the subsequent section.

5.3 Pandering: A Simple Case

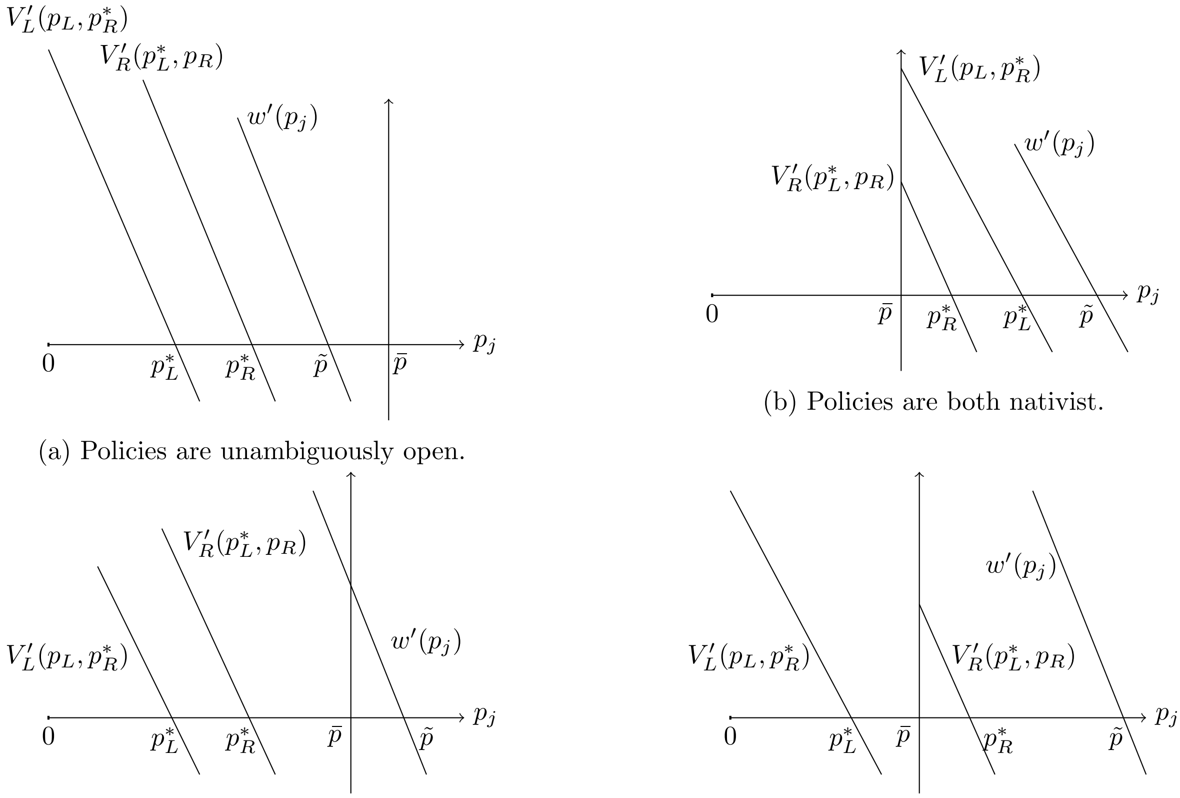
Let $\lambda_j(p_j) \in \{\underline{\lambda}, \bar{\lambda}\}$ for $j \in \{L, R\}$, where $\bar{\lambda} > \underline{\lambda} > 0$. We assume here that $\lambda_j(p_j) = \underline{\lambda}$ for all $p_j \leq \bar{p}$ and $\lambda_j(p_j) = \bar{\lambda}$ for all $p_j > \bar{p}$ for the nativist candidate j. Similarly, we assume that $\lambda_j(p_j) = \bar{\lambda}$ for all $p_j \leq \bar{p}$ and $\lambda_j(p_j) = \underline{\lambda}$ for all $p_j > \bar{p}$ for the open candidate j.[43] In addition, we let the open and nativist voters' socioeconomic ideology bliss points be uniformly distributed on some interval(s) so that $f_h(\bar{\sigma}_h)$ is constant for $h \in \{n, o\}$. Figure 1 illustrates the point that various equilibrium cases may arise based on the relative positions of the policies $\tilde{p}$ and $\bar{p}$, and depicts these possible equilibria for when $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$ so that $p_j^* < \tilde{p}$ for $j \in \{L, R\}$ according to Proposition 1.[44] For concreteness, it assumes L is the open and R is the nativist candidate so that $\lambda_L(p_L) = \bar{\lambda}$ if and only if $p_L \leq \bar{p}$ and $\lambda_R(p_R) = \underline{\lambda}$ if and only if $p_R \leq \bar{p}$.

In Figure 1a, we have $\bar{p} > \tilde{p}$ so that the equilibrium policies are unambiguously open by Proposition 1 and are determined where each candidate's marginal vote share function intersects the horizontal axis. According to the proof of Proposition 1, the simple case implies $V_L'(p_L, p_R^*) = [\alpha_n f_n(\bar{\sigma}_n) + \alpha_o f_o(\bar{\sigma}_o)]w'(p_L) - \beta\bar{\lambda}[\alpha_o f_o(\bar{\sigma}_o) - \alpha_n f_n(\bar{\sigma}_n)]$ for all $p_L \leq \bar{p}$ and $V_R'(p_L^*, p_R) = [\alpha_n f_n(\bar{\sigma}_n) + \alpha_o f_o(\bar{\sigma}_o)]w'(p_R) - \beta\underline{\lambda}[\alpha_o f_o(\bar{\sigma}_o) - \alpha_n f_n(\bar{\sigma}_n)]$ for all $p_R \leq \bar{p}$ so that the open candidate L's marginal vote share lies below that of the nativist candidate R in the range of open policies. Thus, one

[42]Specifically, suppose the reference point $\bar{p}$ above which a policy is deemed nativist and below which it is deemed open is relatively restrictive such that $\bar{p} > \tilde{p}$. Then, Proposition 1 implies that each candidate chooses an open policy whenever open voters are the electorally more important group. On the other hand, if $\bar{p} < \tilde{p}$ so that the policy that would be optimal in the absence of a cultural component to voting is nativist, then Proposition 1 implies that the candidates may choose not only different policies in an asymmetric equilibrium but also policies with different cultural affiliations when open voters dominate the nativists in electoral importance. The converse implication is that when $\alpha_n f_n(\bar{\sigma}_n) > \alpha_o f_o(\bar{\sigma}_o)$, each candidate proposes a nativist policy if $\bar{p} < \tilde{p}$ and may propose policies on opposite sides of the reference point $\bar{p}$ if $\bar{p} > \tilde{p}$.

[43]Note that Assumption 1 is abandoned in this section since a voter's marginal policy utility now has a discontinuity at $p_j = \bar{p}$ for $j \in \{L, R\}$. We impose an upper bound on $\bar{\lambda} - \underline{\lambda}$ to retain existence and uniqueness of equilibrium.

[44]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.



(a) Policies are unambiguously open.

(b) Policies are both nativist.

(c) Policies are both open.

(d) Policies diverge in cultural affiliation.

Figure 1: Possible equilibria of the simple case when $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$.

can observe that the open candidate always proposes the more open policy in equilibrium in this scenario. While both candidates pander to the open voters due to the fact that $p_j^* < \bar{p}$ for both j, they each pander relatively more to their own cultural base.

In contrast to Figure 1a, whether the candidates' optimal policies are both nativist, both open, or diverge in their cultural affiliations is ambiguous and depends on the candidates' exact marginal vote share functions when $\bar{p} < \tilde{p}$ as in the remaining figures. In Figure 1b, the equilibrium policies are between the policies $\bar{p}$ and $\tilde{p}$ so that they are both considered nativist despite the greater electoral importance of the open voters. Moreover, 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 $\bar{p}$. The opposite happens in Figure 1c, where the equilibrium policies both lie below $\bar{p}$ and are thus both open. Note that while each candidate panders relatively more to her opponent's cultural base in the equilibrium depicted in Figure 1b, the same relative pandering in the equilibrium of Figure 1a is observed in Figure 1c.

The equilibrium depicted in Figure 1d is a special case and can be observed only if the candidates differ in the intensity of their cultural identities such that $\underline{\lambda}_L \neq \underline{\lambda}_R$ and $\bar{\lambda}_L \neq \bar{\lambda}_R$. While the candidates' policies remain more open than the policy $\tilde{p}$ due to the greater electoral importance of the open voters, they position on opposite sides of $\bar{p}$ so that the cultural affiliation of their equilibrium policies diverge. Here, we simply note the possibility of existence of such an equilibrium and postpone a more detailed discussion until the full equilibrium analysis.

The simplifying assumption that $\lambda_j(p_j)$ for $j \in \{L, R\}$ can only take two values allows us to depict the possible equilibrium cases as in Figure 1 and draw conclusions on relative pandering by the candidates when cultural partisanship leads to behavioral voting. However, it also implies a very strong form of partisanship in the electorate. Specifically, the simple case assumes that the candidates passively accept the behavioral implications of cultural partisanship and are restricted in the actions they can take to influence the weights voters use to evaluate the cultural aspects of their policies. Therefore, even though the analysis in this section provides an intuitive visualization of the possibilities we may encounter in equilibrium, a more realistic approach would allow the candidates greater influence in manipulating the behavioral evaluation of their policies. This is our motivation for characterizing equilibrium under a different assumption on the $\lambda_j(p_j)$ function in the next section.

5.4 Pandering When Candidates are More Manipulative

To more generally characterize the equilibrium alignments between the candidates' policies and the voter groups due to cultural partisanship, we first focus on the different types of equilibria that might be observed based on the relative positions of the policies $\tilde{p}$ and $\bar{p}$. Then, we establish the conditions under which the model's unique pure strategy equilibrium will be described by either of these possible equilibrium types. For a more concise exposition of our results, we make the following assumption:

Assumption 3. *Let $\bar{p} = \frac{1}{2}$. The function $\lambda_j(p_j)$ for $j \in \{L, R\}$ is such that $\lambda_j(p_j) = Ap_j + K$ and $\lambda_{-j}(p_{-j}) = A(1 - p_{-j}) + K$ if and only if j is the nativist candidate, where $K > \frac{A}{2} > 0$.*

Note that $\lambda_L(\bar{p}) = \lambda_R(\bar{p})$ under Assumption 3 and recall that $\lambda_L(p) > \lambda_R(p)$ for any given $p_L = p_R \equiv p < \bar{p}$ if and only if L is the open candidate, and that $\lambda_L(p) > \lambda_R(p)$ for any given $p_L = p_R \equiv p > \bar{p}$ if and only if L is the nativist candidate. Assumption 3 imposes a form of behavioral voting that places more emphasis on the cultural aspects of a candidate's policy as this policy becomes more extreme in the direction of the candidate's identity. More specifically, all voters increase the weight on their cultural utilities from the open (nativist) candidate as she proposes more open (nativist) policies.

The behavioral weight functions $\lambda_j(p_j)$ for each candidate j are illustrated in Figure 2. Since

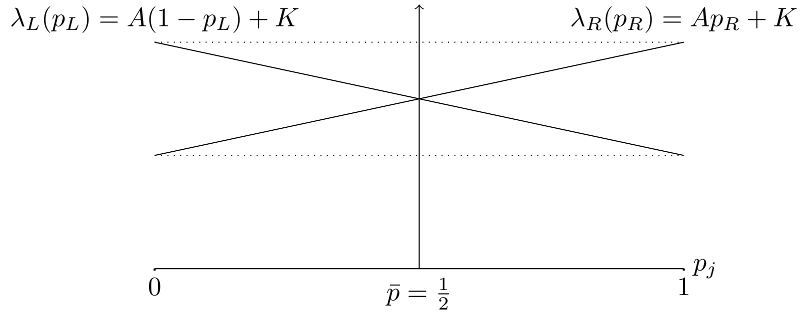


Figure 2: The behavioral weight functions for open candidate L and nativist candidate R.

the parameter K represents the minimum weight voters can attach to their cultural utilities and A represents the magnitude of the slope of the $\lambda_j(p_j)$ function for both j, the restriction $K > \frac{A}{2}$ imposes a ceiling on how much candidates can influence cultural partisanship through their policy choices.[45] This assumption allows the candidates some influence over behavioral voting through their policy choices to a greater extent than was the case in the previous section's simple case, thereby imposing a less stark form of partisan policy assessments on the voters.[46]

As mentioned in the previous section, the unique pure strategy equilibrium may belong to one of two general types of equilibria defined based on the relative positions of the reference point $\bar{p}$ and the consumption utility maximizer $\tilde{p}$: First, $\tilde{p}$ and $\bar{p}$ may be positioned such that the equilibrium policies would be unambiguously either 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 allow equilibrium policies to be positioned on the opposite sides of $\bar{p}$. However, we will subsequently show that equilibrium policies will never be on opposite sides of $\bar{p}$, unless the candidates' cultural identities differ in intensity.

We begin our characterization of equilibrium alignments by focusing on the first of these two classes of equilibria, which we denote a Type 1 equilibrium. In a Type 1 equilibrium, candidates' policies necessarily 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 $\alpha_o f_o(\bar{\sigma}_o) < \alpha_n f_n(\bar{\sigma}_n)$. A Type 1 equilibrium can be described as a convergent equilibrium, where the term convergence refers not to identical policies but to policies with identical cultural affiliations.

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 $j = L, R$.*

[45] The restriction that $K > \frac{A}{2}$ also ensures that $\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j) > 0$ for all p_j and $j \in \{L, R\}$ as assumed in the core model.

[46] We analyze an alternative functional form for $\lambda_j(p_j)$ in Section 6.2 according to which more extreme policies relative to the reference point lead to greater emphasis by all voters on the cultural aspects of immigration regardless of the candidate's identity.

Then, $p_L^* < p_R^*$ if and only if L is the open candidate.

While candidates' policies always have identical cultural affiliations, the extent to which they pander relatively more to a given voter group differs in an asymmetric Type 1 equilibrium. Specifically, Proposition 2 asserts that the open candidate always proposes the more open and the nativist candidate always proposes the more nativist policy in a Type 1 equilibrium, regardless of the ranking between the electoral importance of the two voter groups. For instance, given that both policies are more open than the policy $\tilde{p}$ if $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$ in equilibrium, Proposition 2 indicates that the open candidate elevates her advantage with the open voters in this policy range by pandering to them to a greater extent than the nativist candidate finds optimal. Similarly, the nativist candidate plays to her advantage with the nativist voters by proposing a less open policy. For both candidates, these advantages originate from cultural partisanship: Voters' judgment of the open candidate is shaped by their belief that she fully supports the cultural consequences of her open policy, contrary to her nativist opponent. Given that an open policy is unambiguously optimal for both candidates in this Type 1 equilibrium, 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 marginal vote share of the open candidate always lies below that of the nativist candidate, as observed in Figure 1a for an open equilibrium of the simple case. This is a consequence of the divergence between the magnitudes of the marginal cultural utilities that voters receive from candidates L and R, which itself is a direct consequence of behavioral voting based on cultural partisanship. In a Type 1 equilibrium, this results in policy affiliation convergence along with greater pandering by the candidate whose cultural base is electorally-dominant. However, an alternative relative positioning between the policies $\tilde{p}$ and $\bar{p}$ would produce different implications of behavioral voting, which we focus on next. We denote this second class of equilibria that in principle allows for equilibrium policy affiliation divergence a Type 2 equilibrium, which is defined 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 possible cases that may potentially describe a Type 2 equilibrium: First, p_j^* for $j = L, R$ may be such that $p_j^* < \bar{p} < \tilde{p}$ or $p_j^* > \bar{p} > \tilde{p}$, yielding a convergent Type 2 equilibrium. Second, we may have $p_j^* < \bar{p} < p_{-j}^* < \tilde{p}$ or $p_j^* > \bar{p} > p_{-j}^* > \tilde{p}$ for $j \in \{L, R\}$, indicating a divergent equilibrium. Third, p_j^* may be such that $\bar{p} < p_j^* < \tilde{p}$ or $\bar{p} > p_j^* > \tilde{p}$ for $j = L, R$, again yielding a convergent Type 2 equilibrium. Momentarily leaving aside the question of when the unique pure strategy equilibrium would be described by either of these cases, the following proposition describes each of their properties for a Type 2 equilibrium:

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 $p_j^* < \bar{p} < \tilde{p}$ or $p_j^* > \bar{p} > \tilde{p}$ for $j = L, R$, then $p_L^* < p_R^*$ if and only if L is the open candidate.

b. If (p_L^*, p_R^*) is a divergent Type 2 equilibrium, then $K_L \neq K_R$ and/or $A_L \neq A_R$.

c. If $\bar{p} < p_j^* < \tilde{p}$ or $\tilde{p} < p_j^* < \bar{p}$ for $j = L, R$, then $p_R^* < p_L^*$ if and only if L is the open candidate.

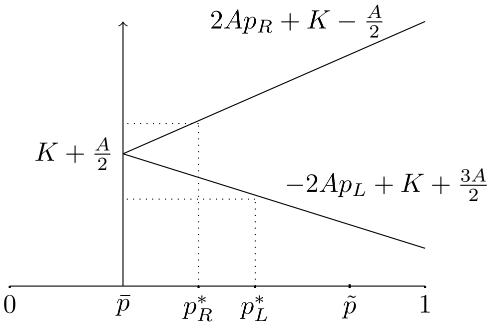
Similar to Proposition 2, part (a) of Proposition 3 states that the open candidate always proposes the more open and the nativist candidate always proposes the more nativist policy in a convergent Type 2 equilibrium in which equilibrium policies that are more open (nativist) than $\tilde{p}$ are also considered open (nativist) based on the reference point (henceforth called a "Type 2A equilibrium.") This equilibrium is convergent due to the fact that candidates' policies are always positioned on the same side of $\bar{p}$ so that both candidates pander to the same voter group. Moreover, the candidate whose cultural identity conforms with that of the voter group being pandered to always leans deeper into her cultural base than her opponent as she finds it optimal to emphasize her advantage with her base.

Part (b) of Proposition 3 focuses on a potentially divergent equilibrium, or a Type 2B equilibrium, in which candidates' policies carry different cultural affiliations. Note that under Assumption 3, a divergent equilibrium cannot exist: As can be observed in Figure 2, the fact that $\lambda_L(\bar{p}) = \lambda_R(\bar{p})$ when $\bar{p} = \frac{1}{2}$ implies that the candidates' marginal vote shares are equalized at the reference point. Furthermore, as long as open voters are electorally-dominant, the marginal vote share function of the open candidate always lies below that of the nativist candidate in the range of open policies below $\bar{p}$, ruling out the possibility that the two marginal vote share functions may cross the horizontal axis on opposite sides of the reference point.[47]

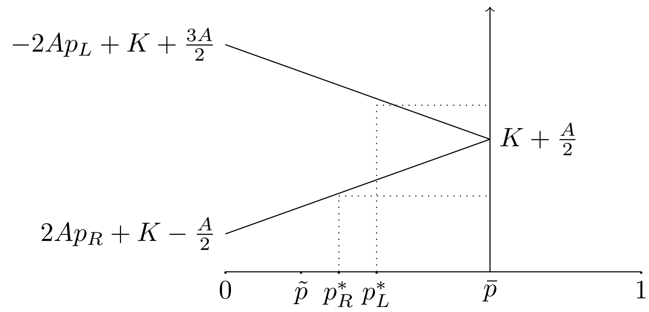
On the other hand, the possibility of a divergent equilibrium arises once Assumption 3 is relaxed to allow for candidate-specific parameters K_j and/or A_j in the behavioral weight function $\lambda_j(p_j)$. Technically, this is due to the fact that the candidates' marginal vote share functions cease to take equal values at the reference point. The implications of a Type 2B equilibrium are particularly interesting as candidates pander to different voter groups. As candidates become differentiated not only in their cultural identities but also in the intensity of these identities as manifested in their behavioral weights, one candidate may find it optimal to choose a policy with a cultural affiliation that is in opposition to the identity of the electorally-dominant voter group.

Finally, part (c) of Proposition 3 indicates that if there exists a discrepancy in equilibrium between the electorally-dominant voter group and the one that is being pandered to by both candidates, then candidates must be downplaying their cultural identities. We call this a Type 2C equilibrium and illustrate it in Figure 3 using the magnitudes of the marginal cultural utilities that voters receive from the two candidates, where L denotes the open and R denotes the nativist

[47] The argument for when nativist voters are electorally-dominant is symmetric.



(a) Candidates pander to the nativist voters despite the greater electoral importance of open voters.



(b) Candidates pander to the open voters despite the greater electoral importance of nativist voters.

Figure 3: Candidates downplay their cultural identities in a Type 2C equilibrium.

candidate. For example, if $\tilde{p} > \bar{p}$ and the open voters are electorally-dominant as assumed in Figure 3a, then the candidates operate in the nativist policy range in this equilibrium, where the open candidate is penalized less by the open voters but also rewarded less by the nativist voters relative to the nativist candidate. In Figure 3a, the marginal cultural disutility of a tighter policy to the electorally-dominant open voters is greater from the nativist candidate than from the open candidate. In contrast, in Figure 3b where $\tilde{p} < \bar{p}$ 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 always elevated to the forefront of the candidates' policy calculus, resulting in the open candidate choosing the more nativist policy relative to the nativist candidate in a Type 2C equilibrium. Overall, the candidates' optimal policies do not reinforce their identities here in order to control the implications of cultural partisanship on their vote shares.

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 that we define based on the relative positions of $\tilde{p}$ and the reference point $\bar{p}$. While the first of these equilibrium types implies unambiguously open or nativist policies by both candidates, the second one lends itself to three different configurations of the candidates' optimal policies, one of which indicates policy divergence in cultural affiliation and can be observed only if candidates differ in the intensity of their cultural identities. Having described above all of these possible equilibrium types, we now focus on establishing 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 either of the three sub-classes of a Type 2 equilibrium as described in Proposition 3 are less clear, i.e. what happens when $\bar{p} < \tilde{p}$ and $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$, or when $\bar{p} > \tilde{p}$ and $\alpha_n f_n(\bar{\sigma}_n) > \alpha_o f_o(\bar{\sigma}_o)$. The following proposition focuses on this question:

Proposition 4. *Let $\bar{\bar{\sigma}}_{hj} \equiv \bar{\sigma}_h(\bar{p}, p_{-j}^*)$ for $h \in \{n, o\}$ and $j \in \{L, R\}$. The unique pure strategy equilibrium (p_L^*, p_R^*) is a Type 2A equilibrium if and only if*

$$\frac{\alpha_o f_o(\bar{\bar{\sigma}}_{oj}) + \alpha_n f_n(\bar{\bar{\sigma}}_{nj})}{|\alpha_o f_o(\bar{\bar{\sigma}}_{oj}) - \alpha_n f_n(\bar{\bar{\sigma}}_{nj})|} < \frac{\beta(K + \frac{A}{2})}{|w'(\bar{p})|} \qquad \text{for } j = L, R \tag{9}$$

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 (9) holds for exactly one candidate $j \in \{L, R\}$, and is a Type 2C equilibrium if and only if (9) fails to hold for both $j = L, R$.

Assuming relative positions between $\tilde{p}$ and $\bar{p}$ that would produce a Type 2 equilibrium, Proposition 4 indicates that a Type 2A equilibrium is obtained if and only if the magnitudes of both candidates' marginal vote shares due to the distributional aspects of their immigration policies are less than the magnitudes of their marginal vote shares due to their policies' cultural consequences when evaluated at the reference point $\bar{p}$. Recall that a Type 2A equilibrium is defined by congruence between the electorally-dominant voter group and the group that is being pandered to, while the reverse is true for a Type 2C equilibrium, which would be obtained if the opposite of (9) holds for both candidates. Accordingly, when marginal distributional concerns outweigh cultural ones at the reference point for both candidates, the equilibrium policies always lie between $\bar{p}$ and $\tilde{p}$. Rather than reinforcing the distributional imperative that positions both policies on the same side of $\tilde{p}$, the candidates go against it in a Type 2C equilibrium by pandering to the group that shares the cultural affiliation of $\tilde{p}$.[48] As can be observed from condition (9), this requires sufficient similarity between the electoral importance of the two groups evaluated at $p_j = \bar{p}$ and $p_{-j} = p_{-j}^*$ for $j \in \{L, R\}$ and a sufficiently large magnitude for $w'(\bar{p})$.

As discussed below Proposition 3, Type 2A and Type 2C equilibria are both convergent in cultural affiliation. This arises as condition (9) is either simultaneously satisfied or fails to hold for both candidates. In contrast, a divergent equilibrium (i.e. a Type 2B equilibrium) ensues if and only if condition (9) holds for exactly one candidate. However, as stated in part (b) of Proposition 3, condition (9) can never hold for only one candidate as long as the parameters defined in Assumption 3 are not candidate-specific. Once candidate-specific parameters are allowed for the $\lambda_j(p_j)$ functions, if the asymmetry between the intensity of the candidates' cultural identities leads

[48] Also recall part (c) of Proposition 3 along with Figure 3 indicated that a candidate's *relative* pandering is always to her opponent's base.

to differences between the ideologies $\bar{\sigma}_h(\bar{p}, p_R^*)$ and $\bar{\sigma}_h(\bar{p}, p_L^*)$ for $h \in \{n, o\}$ that in turn translate into sufficiently different density values, a divergent equilibrium is obtained.

The results of this section indicated that the relative strength of distributional versus cultural motives in the determination of a candidate's optimal immigration policy guides the behavioral sorting of candidates on the policy spectrum. An alternative interpretation suggests that the relative forces of agreement and cultural division in the electorate pins down equilibrium pandering by the candidates. Based on this analysis, the following section performs comparative statics exercises on the model's main parameters of interest.

5.5 Comparative Statics

In this section, we explore the effects that changes to the strength of cultural partisanship, elasticity of labor demand, and intensity of behavioral voting have on the equilibrium policies and the candidates' vote shares. For simplicity, we assume uniform distributions for the voters' socioeconomic ideologies.[49]

The following proposition focuses on the implications of a greater cultural divide in the electorate, or equivalently stronger cultural partisanship, as manifested in greater values of β:

Proposition 5. *Candidate j's equilibrium policy p_j^* for $j \in \{L, R\}$ decreases as cultural partisanship strengthens if and only if $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$. In a convergent equilibrium in which candidates pander relatively more to their own base, the vote share of the open candidate increases if and only if $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$.*

Proposition 5 indicates that the equilibrium policies become more open with greater cultural partisanship whenever the open voters are electorally-dominant. Specifically, in order for stronger cultural partisanship to result in more open equilibrium policies, the relative density of open swing voters must exceed the threshold $\frac{\alpha_n}{\alpha_o}$, which is decreasing in the proportion α_o of open voters. In the opposite scenario, the candidates respond by increasing their relative pandering to the nativist voters through more restrictive immigration 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 the corresponding effect of the open voters' greater cultural utility.

Proposition 5 also states that greater values of β help the vote share of the open candidate whenever the open voters are electorally-dominant in any convergent equilibrium with relative pandering to the candidates' own cultural base. The intuition for this result is similar to why

[49] The uniform distribution assumption is not necessary for the following comparative statics results to hold. As long as the direct effect of a parameter shock dominates its indirect effect that materializes through changes in the densities of open and nativist swing voter socioeconomic ideologies, the below results continue to hold.

candidates respond to a greater cultural division by relaxing their immigration restrictions when the open voters matter more: The open voters have an outsize effect on vote shares in this case due to the combination of their size and density of socioeconomic ideological preferences. Coupled with the fact that the open candidate elicits stronger reactions from both groups of voters in this range of policies, this results in a greater vote share for the open candidate. The intuition for why the nativist candidate benefits from greater cultural partisanship when nativist voters are the electorally-dominant group is equivalent.

A consequence of Assumption 2, which imposed the linearity of the voters' cultural utility functions, is that the parameter β can also be interpreted as the relative importance of the cultural aspects of immigration for voters to all other concerns. This suggests that more restrictive immigration policies can be expected following 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 socioeconomic ideologies elevates them to a dominant position in elections. Moreover, when cultural concerns outweigh distributional ones in the candidates' optimal policy choices so that equilibrium is convergent in cultural affiliation and each candidate panders relatively more to her own base, such a shock is expected to benefit the nativist candidate at the expense of the open one.

Next, we investigate the role that the structure of aggregate labor demand in the economy plays on the equilibrium policies and the candidates' vote shares. Let δ be a parameter that captures the inelasticity of aggregate labor demand such that $\frac{\partial^2 w(p_j)}{\partial p_j \partial \delta} > 0$ for $j \in \{L, R\}$. For instance, if shifts in the cost structure of firms as a result of automation lead to a less elastic labor demand, how does this technological trend affect immigration policy and the candidates' vote shares?[50] The following proposition offers an answer to this question:

Proposition 6. *Candidate j's equilibrium policy p_j^* for $j \in \{L, R\}$ becomes more restrictive as aggregate labor demand becomes more inelastic. The nativist candidate's vote share increases as a result if and only if equilibrium is convergent with relative pandering to each candidate's own base.*

The first part of Proposition 6 states that both candidates respond to a more inelastic aggregate labor demand by increasing their relative pandering to the nativist voters. This is because greater inelasticity elevates all voters' labor market-related concerns, increasing the restrictiveness of the policy $\tilde{p}$ that maximizes the function $w(p_j)$. Since the nativist voters' consumption and cultural preferences on immigration are in congruence, they benefit from this change.

While there exists no ambiguity on the directional change in the candidates' equilibrium policies in response to a shock such as automation, the second part of Proposition 6 indicates that how the

[50] Specifically, the firms' reduced abilities to substitute labor for capital as a result of automation might lead to an inelastic labor demand.

candidates' vote shares change as a result depends on the type of the equilibrium. For a Type 1 or Type 2A equilibrium, i.e. a convergent equilibrium with relative pandering to each candidate's own base, Proposition 6 states that the nativist candidate's vote share increases, and consequently the open candidate's vote share decreases, in response to a shock that makes labor demand less elastic. Intuitively, the voters' demand for a more restrictive immigration policy for purely consumption reasons elevates the support of the candidate proposing the more nativist policy. In either of these two types of equilibria, this candidate is the nativist by Propositions 2 and 3. However, in a Type 2C equilibrium, the fact that the open candidate proposes the more nativist policy increases her vote share as all voters become more receptive to her candidacy due to distributional concerns.

Finally, how would the equilibrium policies be affected by stronger cultural identities held by the candidates, which would in turn be manifested in more intense behavioral voting? Focusing on a Type 1 equilibrium for simplicity, the following proposition summarizes the implications:

Proposition 7. *For moderate equilibrium policies such that $\frac{\bar{p}}{2} < p_j^* < \frac{1+\bar{p}}{2}$ for $j \in \{L, R\}$, candidate j's equilibrium policy p_j^* decreases as the candidates' cultural identities intensify if and only if $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$. For all other equilibrium policies p_j^* for $j \in \{L, R\}$, the open candidate's equilibrium policy decreases and the nativist candidate's equilibrium policy increases regardless of the ranking between $\alpha_o f_o(\bar{\sigma}_o)$ and $\alpha_n f_n(\bar{\sigma}_n)$.*

Proposition 7 suggests that for moderate equilibrium policies, more intense behavioral voting, represented by an increase in the value of the parameter A, lead to tighter immigration policies as candidates' cultural identities strengthen when the nativist voters electorally dominate the open voters, and vice-versa. This happens as open voters either appreciate more or dislike less the open candidate's policy, while reacting in the opposite way to the nativist candidate. At the same time, the nativist voters react in the opposite way to the candidates' policies. Overall, these forces lead to changes in the candidates' equilibrium policies that are unambiguously in the same direction. On the other hand, for more extreme equilibrium policies, candidates may respond to more intense behavioral voting in opposite directions, simultaneously contributing to greater equilibrium policy polarization. In the following section, we consider an alternative functional form for the candidates' behavioral weights that always yields greater policy polarization in response to stronger candidate identities.

6 Extensions

This section discusses the ways in which our main results change when we introduce two modifications to our core model: First, we relax the assumption that the open and nativist voters must have equally intense cultural preferences. This analysis allows us to consider shocks that may differentially impact the open and the nativist voters. Second, we analyze an alternative functional form for the $\lambda_j(p_j)$ function that captures the possibility that the direction of the voters' behavioral response to more extreme policies need not be candidate-specific.

6.1 Differences in the Intensity of Cultural Preferences

This section relaxes the assumption that $\beta_n = \beta_o \equiv \beta$, which was maintained in the core analysis mainly for simplicity of exposition. Once the value of the β_h parameter 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 value of the parameter β_h for $h \in \{n, o\}$ also becomes a determinant of a group's electoral importance, 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 ideological 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.[51]

In the previous section, the shock to the parameter β considered in Proposition 5 implied an intensification of all voters' innate attitudes toward immigrants. In other words, an increase in β 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 prolonged period of higher 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 the context of our model by an increase in β_o and a decrease in β_n, the latter example would be captured by the opposite movements. The following corollary to Proposition 5 focuses on such asymmetric shocks to the voter groups' intensity of cultural preferences:

Corollary 1. *In response to a shock that increases β_o and decreases β_n, candidate j's equilibrium policy p_j^* decreases for $j \in \{L, R\}$. The open candidate's vote share increases as a result in a convergent equilibrium in which candidates pander relatively more to their own base.*

[51] Note that Propositions 2 and 3 are unaffected by this modification as the determinant of the candidates' relative equilibrium pandering remains the ranking between the magnitudes of the marginal cultural utility voters receive from the two candidates.

Corollary 1 indicates that equilibrium policies will be unambiguously more open in response to shocks that increase all voters' appreciation of immigrants, while they will be unambiguously more restrictive in response to an opposite shock. Furthermore, it states that in any convergent equilibrium in which candidates are pandering to their own base, i.e. in any equilibrium in which $p_L^* < p_R^*$ if and only if L is the open candidate, the open candidate's vote share increases as a result. Recall that these scenarios were analyzed under a Type 1 and a Type 2A equilibrium in the previous sections.

What benefits the open candidate in a convergent equilibrium in which she is pandering relatively more to her own base is the elevation of her policy choice in the eyes of the voters due to cultural partisanship. When all voters increase their appreciation of immigrants, the open candidate also happens to be the one proposing the more open policy in such equilibria, emphasizing her behavioral advantage with the voters. These represent cases in which both her identity and the relative position of her optimal policy push her vote share upward.

6.2 An Alternative Functional Form for Behavioral Weights

Recall that the functional form imposed in Assumption 3 on the candidates' behavioral weight $\lambda_j(p_j)$ for $j \in \{L, R\}$ implied growing voter attention on the cultural aspects of immigration as policies became more extreme if and only if it was proposed by the candidate whose identity conformed with the policy's cultural affiliation. However, it is also reasonable that voters might place more weight on their cultural utilities as a policy becomes more extreme relative to the reference point $\bar{p}$ and that this property may apply equally to the behavioral weights of the two candidates regardless of their cultural identities. In this extension, we analyze the equilibrium implications of this modification to the candidates' behavioral weights for robustness. The results indicate that the only equilibrium difference between the two functional forms arises in the candidates' policy responses to more intense behavioral voting.

For a simple formalization of the idea that the directional change in $\lambda_j(p_j)$ as p_j becomes more extreme does not necessarily depend on whether candidate j's identity and the cultural affiliation of policy p_j are in agreement, consider the following functional form for $\lambda_j(p_j)$:

Assumption 4. *The function $\lambda_j(p_j)$ is linear for $j \in \{L, R\}$ such that*

$$\lambda_j(p_j) = \begin{cases} \gamma_j(\bar{p} - p_j) + K & \text{if} \quad p_j \leq \bar{p} \\ \mu_j(p_j - \bar{p}) + K & \text{if} \quad p_j > \bar{p} \end{cases} \tag{10}$$

where $K > 0$, $\gamma_j > 0$, $\mu_j > 0$, $\gamma_j \neq \mu_j$, and $\gamma_j > \mu_j$ if and only if j is the open candidate.

Note that the v-shaped behavioral weight function as assumed above introduces certain technical complications to the analysis due to the fact that $\lambda_j(p_j)z_h(p_j)$ for $j \in \{L, R\}$ and $h \in \{n, o\}$ ceases to be twice-differentiable.[52] However, it is straightforward to show that Propositions 2, 3 and 4 that characterized equilibrium pandering by the candidates are not affected by Assumption 4. Fundamentally, this is due to the fact that the relative positions of the candidates' marginal vote share functions remain unchanged. Proposition 5 also continues to hold under Assumption 4 by the same reason. For Proposition 6, the equilibrium effects of a less elastic labor demand, such as through automation, do not change with the alternative functional form for the behavioral weights since the δ parameter does not impact the voters' cultural utilities.

On the other hand, the behavioral weights imposed by Assumptions 3 and 4 have different implications for what it means for the candidates' cultural identities to strengthen. Specifically, while stronger cultural identities were manifested in a greater parameter value for A under Assumption 3, Assumption 4 implies opposite movements in the parameters γ_j and μ_j. The effects of this change on the candidates' equilibrium policy responses are summarized in the following corollary to Proposition 7, which also focuses on a Type 1 equilibrium for comparison:

Corollary 2. *Suppose L is the open and R is the nativist candidate. Under Assumption 4, as the candidates respectively become more strongly open and more strongly nativist, the equilibrium p_L^* decreases and p_R^* increases.*

While both candidates increase their relative pandering to the electorally-dominant group for moderate equilibrium policies in response to more intense behavioral voting under Assumption 3 as summarized in Proposition 7, Corollary 2 implies that equilibrium policy polarization increases regardless of the ranking between the electoral importance of the two groups in response to the same shock under Assumption 4. The main difference between these two functional forms that lead to different equilibrium responses to stronger candidate identities lies in the candidates' control over their behavioral weights. While the response of the candidates' behavioral weights to more extreme policies is fully symmetric under Assumption 3, this is no longer the case under Assumption 4.

7 Conclusion

This paper studied the effects of cultural partisanship on candidates' policy proposals and vote shares when voters are behavioral. While voters care about the socioeconomic ideologies and the

[52]Specifically, under Assumption 4, the voters' policy utilities are twice-differentiable everywhere except at $p_j = \bar{p}$. The core model's existence and uniqueness of equilibrium result can be maintained by assuming strict concavity of the voters' policy utilities and imposing that $f_h'(\bar{\sigma}_h)$ is negligible in the neighborhood of $p_j = \bar{p}$ for any given p_{-j} for $j \in \{L, R\}$ and $h \in \{n, o\}$.

policies of the candidates, they evaluate these attributes through the lens of their partisan affiliations. Specifically, the model assumed that voters either over-reward or under-punish the candidate with whom they share a 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' socioeconomic ideologies and platforms.

Our main results indicate that behavioral voting based on cultural partisanship creates policy polarization between the candidates and that stronger candidate identities that translate into more intense behavioral voting may exacerbate this equilibrium outcome. We find that equilibrium policies are always biased in the cultural direction that is preferred by the electorally-dominant group. However, we also find that candidates do not necessarily pander to their own cultural bases in equilibrium. In fact, under certain conditions, the cultural affiliation of the equilibrium policies need not even 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 income or education. 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 socioeconomic 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 socioeconomic ideology or policy interests but in behavioral traits.

The 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 throughout the analysis, it is also reasonable to conjecture that a candidate that stands to benefit from exploiting the cultural divisions in the electorate based on nativism 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, socioeconomic ideologies, or to secondary 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 integrating 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.

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8 Appendix

Proof of Lemma 1. Suppose L is the nativist and R is the open candidate so that $\lambda_L(1) = \lambda_R(0) = 1$ and $\lambda_L(0) = \lambda_R(1) = 0$. For any given $p_j \in \{0, 1\}$ for $j \in \{L, R\}$, a voter with socioeconomic ideology $g \in \{\ell, r\}$ and cultural identity $h \in \{n, o\}$ votes for candidate L over candidate R if and only if

$$-\eta(\sigma_L - \sigma_g)^2 + \lambda_L(p_L)z_h(p_L) \geq -\eta(\sigma_R - \sigma_g)^2 + \lambda_R(p_R)z_h(p_R). \tag{11}$$

To obtain the candidates' payoffs based on their vote shares, there are four strategy profiles to consider: First, if $(p_L, p_R) = (0, 0)$, then condition (11) reduces to $-\eta(\sigma_L - \sigma_g)^2 \geq -\eta(\sigma_R - \sigma_g)^2 + z_h(0)$, which is always satisfied for $(g, h) = (\ell, n)$ and never holds for $(g, h) = (r, o)$. Furthermore, it is satisfied for $(g, h) = (r, n)$ when $\eta < 1$, which also implies it is not satisfied for $(g, h) = (\ell, o)$. The same result is obtained when we consider $(p_L, p_R) = (1, 1)$. Third, if $(p_L, p_R) = (0, 1)$, then condition (11) reduces to $-\eta(\sigma_L - \sigma_g)^2 \geq -\eta(\sigma_R - \sigma_g)^2$, which implies that candidate L's vote share becomes $\alpha_{\ell n} + \alpha_{\ell o}$, while candidate R's becomes $\alpha_{rn} + \alpha_{ro}$. Finally, if $(p_L, p_R) = (1, 0)$, then condition (11) reduces to $-\eta(\sigma_L - \sigma_g)^2 + z_h(1) \geq -\eta(\sigma_R - \sigma_g)^2 + z_h(0)$, which yields the same vote shares for the candidates as the symmetric strategy profiles.

Based on these vote shares, note that the strategy profile $(p_L, p_R) = (1, 0)$ is always a Nash equilibrium as neither candidate can increase her vote share by imitating her opponent. In addition, the symmetric strategy profile $(p_L, p_R) = (0, 0)$ is a Nash equilibrium if and only if $p_R = 0$ is a best response to $p_L = 0$, given that candidate L's vote share is always $\alpha_{\ell n} + \alpha_{rn}$ when $p_R = 0$. This is true whenever $\alpha_{\ell o} + \alpha_{ro} > \alpha_{rn} + \alpha_{ro}$. In contrast, if $\alpha_{\ell o} < \alpha_{rn}$, then the opposite symmetric strategy profile $(p_L, p_R) = (1, 1)$ is a Nash equilibrium. Since exactly one candidate always has an incentive to mimic her opponent when $(p_L, p_R) = (0, 1)$, this strategy profile can never be a Nash equilibrium. □

Proof of Lemma 2. Given that the cumulative distribution functions are both continuous, establishing the strict concavity of each candidate's vote share function in her own policy for any given policy of the other candidate is sufficient for asserting the existence of a pure strategy equilibrium. Since the voters' policy utility $v(p_j) + y(p_j) + \lambda_j(p_j)z_h(p_j)$ is strictly concave for $j \in \{L, R\}$ and $h \in \{n, o\}$ by Assumption 1, and each component of this policy utility is a bounded function with a bounded first derivative, we obtain the strict concavity of the candidates' vote share functions as given in equations (7) and (8) respectively for candidates L and R, and hence the existence of a unique pure strategy equilibrium due to Matakos and Xefteris (2017) whenever σ_L and σ_R are sufficiently distant.[53] To see this, note that we need to show

$$V_L''(p_L, p_R) = \sum_{h=n,o} \alpha_h \left[f_h'(\bar{\sigma}_h) \left(\frac{\partial \bar{\sigma}_h}{\partial p_L} \right)^2 + f_h(\bar{\sigma}_h) \frac{\partial^2 \bar{\sigma}_h}{\partial p_L^2} \right] < 0 \tag{12}$$

for any given p_L and p_R. Based on equation (5) that defines the socioeconomic ideology of a group-h swing voter, we have for $h \in \{n, o\}$

$$\frac{\partial \bar{\sigma}_h(p_L, p_R)}{\partial p_L} = \frac{1}{2\eta(\sigma_R - \sigma_L)} [w'(p_L) + \lambda_L'(p_L) z_h(p_L) + \lambda_L(p_L) z_h'(p_L)] \tag{13}$$

and

$$\frac{\partial^2 \bar{\sigma}_h(p_L, p_R)}{\partial p_L^2} = \frac{1}{2\eta(\sigma_R - \sigma_L)} [w''(p_L) + \lambda_L(p_L) z_h''(p_L) + \lambda_L''(p_L) z_h(p_L) + (\lambda_L'(p_L) z_h'(p_L))^2]. \tag{14}$$

Given the boundedness of the functions $w(p_L)$, $\lambda_L(p_L)$ and $z_h(p_L)$ for $h \in \{n, o\}$ along with the boundedness of their first derivatives, it follows that

$$\lim_{\sigma_R - \sigma_L \to \infty} \frac{f_h'(\bar{\sigma}_h)}{2\eta(\sigma_R - \sigma_L)} [w'(p_L) + \lambda_L'(p_L) z_h(p_L) + \lambda_L(p_L) z_h'(p_L)]^2 = 0. \tag{15}$$

Since (14) is negative for all p_L and p_R and $h \in \{n, o\}$ by Assumption 1 that guarantees the twice-differentiability and strict concavity of the voters' policy utilities, we can conclude that $V_L(p_L, p_R)$ is strictly concave in p_L for any given p_R whenever σ_L and σ_R are sufficiently distant from each other. The strict concavity of $V_R(p_L, p_R)$ in p_R for any given p_L is obtained similarly. The uniqueness of equilibrium follows from the fact that the game is constant sum and the strict concavity of the vote share functions.

By the strict concavity of the vote share functions, the necessary and sufficient first-order condition for an interior solution $p_j \in (0, 1)$ to candidate j's immigration policy problem becomes

$$\alpha_n f_n(\bar{\sigma}_n) \frac{\partial \bar{\sigma}_n(p_j, p_{-j})}{\partial p_j} + \alpha_o f_o(\bar{\sigma}_o) \frac{\partial \bar{\sigma}_o(p_j, p_{-j})}{\partial p_j} = 0 \tag{16}$$

[53] The authors consider a similar electoral competition model as ours in which each candidate has a single fixed characteristic and chooses a policy to maximize her vote share. They allow for the voters' policy utilities to be candidate-specific by letting $w_{j,h} : [0, 1] \to \mathbb{R}$ denote the policy utility function for a group-h voter from candidate j. The two models are equivalent from the point of view of asserting the existence of a unique pure strategy equilibrium once we let $w_{j,h}(p_j) \equiv \lambda_j(p_j) z_h(p_j)$ for $j \in \{L, R\}$ and $h \in \{n, o\}$. Dziubinski and Roy (2011) also prove equilibrium existence in a similar context in which candidates' fixed characteristics may or may not be in the same dimension.

for $j \in \{L, R\}$. Then, based on (13), we can re-write (16) as

$$-\frac{\alpha_n f_n(\bar{\sigma}_n)}{\alpha_o f_o(\bar{\sigma}_o)} = \frac{w'(p_j) + \lambda_j'(p_j) z_o(p_j) + \lambda_j(p_j) z_o'(p_j)}{w'(p_j) + \lambda_j'(p_j) z_n(p_j) + \lambda_j(p_j) z_n'(p_j)} \tag{17}$$

for $j \in \{L, R\}$. First, suppose $\lambda_L(p_L) = \lambda_R(p_R)$ for any given $p_L = p_R$. Then, since the candidates would face the same necessary and sufficient condition for optimality in (17), we must have $p_L^* = p_R^*$. In other words, if we have an equilibrium with $p_L^* \in (0,1)$ and $p_R^* \in (0,1)$ such that $p_L^* \neq p_R^*$, then $\lambda_L(p_L) \neq \lambda_R(p_R)$ for any given $p_L = p_R$. Second, suppose $p_L^* = p_R^* \in (0,1)$ in equilibrium. Since condition (17) implies that its right-hand side must be equalized in equilibrium for the two candidates, we obtain

$$[\lambda_j'(p) - \lambda_{-j}'(p)] z_o(p) + [\lambda_j(p) - \lambda_{-j}(p)] z_o'(p) = \tag{18}$$

$$-\frac{\alpha_n f_n(\bar{\sigma}_n)}{\alpha_o f_o(\bar{\sigma}_o)} [\lambda_j'(p) - \lambda_{-j}'(p)] z_n(p) - \frac{\alpha_n f_n(\bar{\sigma}_n)}{\alpha_o f_o(\bar{\sigma}_o)} [\lambda_j(p) - \lambda_{-j}(p)] z_n'(p)$$

for $j \in \{L, R\}$, where $p \equiv p_L^* = p_R^*$, which can be re-written as

$$[\lambda_j'(p) - \lambda_{-j}'(p)][\alpha_o f_o(\bar{\sigma}_o) z_o(p) + \alpha_n f_n(\bar{\sigma}_n) z_n(p)] + \tag{19}$$

$$[\lambda_j(p) - \lambda_{-j}(p)][\alpha_o f_o(\bar{\sigma}_o) z_o'(p) + \alpha_n f_n(\bar{\sigma}_n) z_n'(p)] = 0.$$

While equation (19) clearly holds if $\lambda_L(p_L) = \lambda_R(p_R)$ for any given $p_L = p_R$, note that this is not a necessary condition for it. Lemma 2 is obtained as the same analysis applies also to corner solutions. □

Proof of Proposition 1. Under Assumption 2, the necessary and sufficient condition (17) for the optimality of $p_j^* \in (0,1)$ for $j \in \{L, R\}$ can be written as

$$[\alpha_n f_n(\bar{\sigma}_n) + \alpha_o f_o(\bar{\sigma}_o)] w'(p_j^*) \tag{20}$$

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

where $\beta_n = \beta_o \equiv \beta$. Since $\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j) > 0$ for all p_j (due to the fact that the functional forms we will consider satisfy this condition) and $\beta > 0$, equation (20) implies that $w'(p_j^*) > 0$ if and only if $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$. Having previously defined $\tilde{p}$ such that $w'(\tilde{p}) = 0$ and assumed $w'(p_j) > 0$ if and only if $p_j < \tilde{p}$, this implies $p_j^* < \tilde{p}$ if and only if $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$. □

Proof of Proposition 2. Under Assumption 2, the necessary and sufficient first-order condition (17) for optimality becomes

$$-\frac{\alpha_n f_n(\bar{\sigma}_n)}{\alpha_o f_o(\bar{\sigma}_o)} = \frac{w'(p_j^*) - \beta[\lambda_j'(p_j^*)(p_j^* - \bar{p}) + \lambda_j(p_j^*)]}{w'(p_j^*) + \beta[\lambda_j'(p_j^*)(p_j^* - \bar{p}) + \lambda_j(p_j^*)]} \tag{21}$$

for $j \in \{L, R\}$. By Assumption 3, $\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j) = A(p_j - \bar{p}) + Ap_j + K$ if j is the nativist candidate, and $\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j) = -A(p_j - \bar{p}) + A(1 - p_j) + K$ if j is the open candidate. Notice that $\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j) > 0$ for all p_j and $j \in \{L, R\}$ under the parameter restriction $K > \frac{A}{2}$. Let L denote the open and R denote the nativist candidate without loss of generality. Then, $\lambda_L'(p_L)(p_L - \bar{p}) + \lambda_L(p_L) > \lambda_R'(p_R)(p_R - \bar{p}) + \lambda_R(p_R)$ for all p_L and p_R strictly below $\bar{p}$, and $\lambda_L'(p_L)(p_L - \bar{p}) + \lambda_L(p_L) < \lambda_R'(p_R)(p_R - \bar{p}) + \lambda_R(p_R)$ for all p_L and p_R strictly above $\bar{p}$. To see this, note that $A(p_R - \bar{p}) + Ap_R + K > -A(p_L - \bar{p}) + A(1 - p_L) + K$ implies $p_L + p_R > 1$ when $\bar{p} = \frac{1}{2}$, which cannot hold if $p_j < \bar{p} = \frac{1}{2}$ for both j. Likewise, $A(p_R - \bar{p}) + Ap_R + K < -A(p_L - \bar{p}) + A(1 - p_L) + K$ implies $p_L + p_R < 1$, which cannot hold if $p_j > \bar{p} = \frac{1}{2}$ for both j. At $\bar{p}$, the magnitudes of the response of either group's weighted cultural utility to a marginal tightening in policy are equalized under the two candidates.

The fact that the right-hand sides of (21) are equalized for candidates L and R in equilibrium yields

$$\frac{w'(p_L^*)}{w'(p_R^*)} = \frac{\lambda_L'(p_L^*)(p_L^* - \bar{p}) + \lambda_L(p_L^*)}{\lambda_R'(p_R^*)(p_R^* - \bar{p}) + \lambda_R(p_R^*)}. \tag{22}$$

First, consider a Type 1 equilibrium such that $p_j^* < \tilde{p} < \bar{p}$ for both j. Then, the above comparison implies that $\lambda_L'(p_L^*)(p_L^* - \bar{p}) + \lambda_L(p_L^*) > \lambda_R'(p_R^*)(p_R^* - \bar{p}) + \lambda_R(p_R^*)$ if and only if L is the open candidate. Given $\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j) > 0$ for all p_j and $j \in \{L, R\}$, and the fact that $w'(p_j) > 0$ for all $p_j < \tilde{p}$, equation (22) then indicates that $w'(p_L^*) > w'(p_R^*)$ must be true. 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 if and only if L is the open candidate. Second, consider a Type 1 equilibrium such that $p_j^* > \tilde{p} > \bar{p}$ for both j. Since $\lambda_R'(p_R^*)(p_R^* - \bar{p}) + \lambda_R(p_R^*) > \lambda_L'(p_L^*)(p_L^* - \bar{p}) + \lambda_L(p_L^*)$ if and only if R is the nativist candidate, we obtain the result that $w'(p_L^*) > w'(p_R^*)$ if and only if R is the nativist 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 if and only if R is the nativist candidate. □

Proof of Proposition 3. The proof of part (a) is identical to the proof of Proposition 2. For part (b), 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 $\bar{p} < \tilde{p}$. For a Type 2 equilibrium, notice that equation (20) implies the equalization of the candidates' marginal vote shares at $\bar{p}$ since $\lambda_L(\bar{p}) = \lambda_R(\bar{p})$ when $\bar{p} = \frac{1}{2}$. Accordingly, it can be observed that the marginal vote share function of the open candidate always lies below that of the nativist candidate for all

$p_j < \bar{p} < \tilde{p}$, and vice-versa for all p_j such that $\bar{p} < p_j < \tilde{p}$. A symmetric argument applies to policies above $\tilde{p}$. Therefore, the two marginal vote share functions cannot intersect the horizontal axis on opposite sides of $\bar{p}$ in a Type 2 equilibrium under Assumption 3. However, if we let the parameters K and/or A be candidate specific such that $K_L \neq K_R$ and/or $A_L \neq A_R$, then a divergent equilibrium can exist. This is because $\lambda_L(\bar{p}) \neq \lambda_R(\bar{p})$ under candidate-specific parameters K_j and/or A_j for the function $\lambda_j(p_j)$. Specifically, if $p_j^* < \bar{p} < \tilde{p}$ is optimal so that $V_j'(\bar{p}, p_{-j}^*) < 0$ for candidate $j \in \{L, R\}$, the fact that $\lambda_L(\bar{p}) \neq \lambda_R(\bar{p})$ implies $V_{-j}'(p_j^*, \bar{p}) > 0$ is not ruled out.

For part (c), first consider a Type 2 equilibrium such that $\bar{p} < p_R^* < p_L^* < \tilde{p}$. Then, the analysis in Proposition 2 implies $\lambda_R'(p_R^*)(p_R^* - \bar{p}) + \lambda_R(p_R^*) > \lambda_L'(p_L^*)(p_L^* - \bar{p}) + \lambda_L(p_L^*)$ if and only if R is the nativist candidate. By equation (22) and the fact that $w'(p_R^*) > w'(p_L^*) > 0$, it follows that $p_R^* < p_L^*$ in this Type 2 equilibrium if and only if R is the nativist candidate. Second, consider a Type 2 equilibrium such that $\tilde{p} < p_R^* < p_L^* < \bar{p}$. Since the inequality $\lambda_R'(p_R^*)(p_R^* - \bar{p}) + \lambda_R(p_R^*) > \lambda_L'(p_L^*)(p_L^* - \bar{p}) + \lambda_L(p_L^*)$ holds here if and only if R is the open candidate, equation (22) and the fact that $0 > w'(p_L^*) > w'(p_R^*)$ together imply $p_R^* < p_L^*$ in this Type 2 equilibrium if and only if R is the nativist candidate. $\square$

Proof of Proposition 4. Since the candidates' vote shares as given in (7) and (8) are strictly concave, a Type 2A equilibrium such that $p_j^* < \bar{p} < \tilde{p}$ for $j = L, R$ is obtained if and only if $V_j'(\bar{p}, p_{-j}^*)$ for $j \in \{L, R\}$ satisfies

$$(\alpha_o f_o(\bar{\bar{\sigma}}_{oj}) + \alpha_n f_n(\bar{\bar{\sigma}}_{nj}))w'(\bar{p}) + (\alpha_n f_n(\bar{\bar{\sigma}}_{nj}) - \alpha_o f_o(\bar{\bar{\sigma}}_{oj}))\beta \left(K + \frac{A}{2}\right) < 0 \tag{23}$$

for both j, and a Type 2A equilibrium such that $\tilde{p} < \bar{p} < p_j^*$ for $j = L, R$ is obtained if and only if the opposite holds for both j. This yields inequality (9) for observing a Type 2A equilibrium. Similarly, a Type 2C equilibrium such that $\tilde{p} < p_j^* < \bar{p}$ for $j = L, R$ is obtained if and only if (23) is true for both j, while a Type 2C equilibrium such that $\bar{p} < p_j^* < \tilde{p}$ for $j = L, R$ is obtained in the opposite scenario. Overall, this implies that a Type 2C equilibrium is obtained if and only if the opposite of (9) is true for both j. Finally, note that by part (b) of Proposition 3, inequality (23) cannot hold for only one candidate as long as the parameters defined in Assumption 3 are not candidate-specific. Allowing for candidate-specific parameters A_j and/or K_j, a divergent Type 2 equilibrium, i.e. a Type 2B equilibrium, is obtained if and only if (23) holds for exactly one $j \in \{L, R\}$ and fails to hold for the other candidate. Specifically, a Type 2B equilibrium such that $p_j^* < \bar{p} < p_{-j}^*$ for $j \in \{L, R\}$ is obtained regardless of the position of $\tilde{p}$ if and only if (23) is true for candidate j but fails to hold for candidate $-j$. $\square$

Proof of Proposition 5. Implicitly differentiating the first-order condition (20) that defines candidate j's optimal policy p_j^* with respect to β yields

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial\beta\partial p_j} + \frac{\partial^2 V_j(p_j, p_{-j})}{\partial p_j^2}\frac{\partial p_j}{\partial \beta} = 0 \tag{24}$$

for $j \in \{L, R\}$, where $\frac{\partial^2 V_j(p_j,p_{-j})}{\partial p_j^2} < 0$ by the strict concavity of candidate j's vote share function and

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial\beta\partial p_j} = w'(p_j)\left[\alpha_n f_n'(\bar{\sigma}_n)\frac{\partial\bar{\sigma}_n}{\partial\beta} + \alpha_o f_o'(\bar{\sigma}_o)\frac{\partial\bar{\sigma}_o}{\partial\beta}\right] \tag{25}$$

$$+[\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j)]\left[(\alpha_n f_n(\bar{\sigma}_n) - \alpha_o f_o(\bar{\sigma}_o)) + \beta\left(\alpha_n f_n'(\bar{\sigma}_n)\frac{\partial\bar{\sigma}_n}{\partial\beta} + \alpha_o f_o'(\bar{\sigma}_o)\frac{\partial\bar{\sigma}_o}{\partial\beta}\right)\right].$$

The fact that $f_h(\bar{\sigma}_h)$ is constant for $h \in \{n, o\}$ implies that (25) is negative if and only if $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$, since $\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j) > 0$ for all p_j and $j \in \{L, R\}$. It follows that $\frac{\partial p_j}{\partial\beta} < 0$ in equilibrium 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

$$\frac{\partial V_L(p_L, p_R)}{\partial\beta} = \frac{[\alpha_o f_o(\bar{\sigma}_o) - \alpha_n f_n(\bar{\sigma}_n)][\lambda_R(p_R)(\bar{p} - p_R) - \lambda_L(p_L)(\bar{p} - p_L)]}{2\eta(\sigma_L - \sigma_R)}. \tag{26}$$

Let L be the open candidate without loss of generality. Restricting attention to convergent equilibrium types in which candidates pander relatively more to their own bases so that equilibrium is either Type 1 or Type 2A, the inequality $\lambda_R(p_R)(\bar{p} - p_R) < \lambda_L(p_L)(\bar{p} - p_L)$ is always true. Thus, equation (26) is positive for the open candidate L if and only if $\alpha_o f_o(\bar{\sigma}_o) > \alpha_n f_n(\bar{\sigma}_n)$. □

Proof of Proposition 6. Implicitly differentiating the first-order condition (20) with respect to the new parameter δ yields

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial\delta\partial p_j} + \frac{\partial^2 V_j(p_j, p_{-j})}{\partial p_j^2}\frac{\partial p_j}{\partial \delta} = 0 \tag{27}$$

for $j \in \{L, R\}$, where $\frac{\partial^2 V_j(p_j,p_{-j})}{\partial p_j^2} < 0$ by the strict concavity of candidate j's vote share. Given $\frac{\partial^2 V_j(p_j,p_{-j})}{\partial\delta\partial p_j} = (\alpha_n f_n(\bar{\sigma}_n) + \alpha_o f_o(\bar{\sigma}_o))\frac{\partial w'(p_j)}{\partial\delta} > 0$, it follows that $\frac{\partial p_j}{\partial\delta} > 0$ in equilibrium for $j \in \{L, R\}$.

For the effect of the parameter δ on the candidates' vote shares, we have

$$\frac{\partial V_L(p_L, p_R)}{\partial\delta} = \frac{\alpha_o f_o(\bar{\sigma}_o) + \alpha_n f_n(\bar{\sigma}_n)}{2\eta(\sigma_L - \sigma_R)}\left[\frac{\partial w(p_R)}{\partial\delta} - \frac{\partial w(p_L)}{\partial\delta}\right]. \tag{28}$$

Let candidate L be open without loss of generality. Since $\frac{\partial^2 w(p_j)}{\partial p_j\partial\delta} > 0$ for $j \in \{L, R\}$, equation

(28) is negative if and only if $p_L^* < p_R^*$ in equilibrium. Then, by Proposition 2 and part (a) of Proposition 3, we can conclude that the vote share of the open candidate decreases in δ in any convergent equilibrium in which candidates pander relatively more to their own bases, i.e. in a Type 1 or Type 2A equilibrium. In contrast, by part (c) of Proposition 3, it increases in a Type 2C equilibrium. $\square$

Proof of Proposition 7. Implicitly differentiating the first-order condition (20) with respect to the parameter A yields

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial A \partial p_j} + \frac{\partial^2 V_j(p_j, p_{-j})}{\partial p_j^2}\frac{\partial p_j}{\partial A} = 0 \tag{29}$$

for $j \in \{L, R\}$. Note that $\frac{\partial^2 V_j(p_j, p_{-j})}{\partial p_j^2} < 0$ by the strict concavity of candidate j's vote share and

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial A \partial p_j} = \beta[\alpha_n f_n(\bar{\sigma}_n) - \alpha_o f_o(\bar{\sigma}_o)] \left[\frac{\partial \lambda_j'(p_j)}{\partial A}(p_j - \bar{p}) + \frac{\partial \lambda_j(p_j)}{\partial A}\right]. \tag{30}$$

Given $\lambda_j(p_j) = Ap_j + K$ for the nativist candidate j and $\lambda_j(p_j) = A(1 - p_j) + K$ for the open candidate j, we have $\frac{\partial \lambda_j'(p_j)}{\partial A} = 1$ and $\frac{\partial \lambda_j(p_j)}{\partial A} = p_j$ if $j \in \{L, R\}$ is the nativist, and $\frac{\partial \lambda_j'(p_j)}{\partial A} = -1$ and $\frac{\partial \lambda_j(p_j)}{\partial A} = 1 - p_j$ if $j \in \{L, R\}$ is the open candidate. Focusing on a Type 1 equilibrium implies that $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$ if and only if $p_j^* < \bar{p}$. Then, for moderate equilibrium policies such that $1 + \bar{p} > 2p_j^* > \bar{p}$, (30) is negative for $j \in \{L, R\}$ if and only if $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$, which implies based on equation (29) that $\frac{\partial p_j}{\partial A} < 0$ for $j \in \{L, R\}$ if and only if $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$. On the other hand, for all other equilibrium policies such that $p_j^* \geq \frac{1+\bar{p}}{2}$ or $p_j^* < \frac{\bar{p}}{2}$, equation (30) is always non-negative for the nativist candidate $j \in \{L, R\}$ and non-positive for the open candidate $j \in \{L, R\}$. Equation (29) then implies that $\frac{\partial p_j}{\partial A} \geq 0$ if j is the nativist candidate and $\frac{\partial p_j}{\partial A} \leq 0$ if j is the open candidate. $\square$

Proof of Corollary 1. In the absence of imposing $\beta_n = \beta_o$, the necessary and sufficient condition (20) under Assumption 2 for the optimality of $p_j^* \in (0, 1)$ for $j \in \{L, R\}$ becomes

$$[\alpha_n f_n(\bar{\sigma}_n) + \alpha_o f_o(\bar{\sigma}_o)]w'(p_j^*) \tag{31}$$

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

Implicitly differentiating (31) with respect to β_n yields $\frac{\partial^2 V_j(p_j, p_{-j})}{\partial \beta_n \partial p_j} + \frac{\partial^2 V_j(p_j, p_{-j})}{\partial p_j^2}\frac{\partial p_j}{\partial \beta_n} = 0$ for $j \in \{L, R\}$. By the fact that each candidate j's vote share function is strictly concave and that

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial \beta_n \partial p_j} = \alpha_n f_n(\bar{\sigma}_n)[\lambda_j'(p_j)(p_j - \bar{p}) + \lambda_j(p_j)] > 0 \tag{32}$$

since the uniform distribution assumption on the voters' socioeconomic ideologies is maintained for simplicity, it follows that $\frac{\partial p_j}{\partial \beta_n} > 0$ for $j \in \{L, R\}$. A similar analysis yields the result that $\frac{\partial p_j}{\partial \beta_o} < 0$ 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 $h \in \{n, o\}$ and $j \in \{L, R\}$, and $\frac{\partial V_j(p_j,p_{-j})}{\partial p_j} = 0$ by optimality, we have

$$\frac{\partial V_L(p_L, p_R)}{\partial \beta_o} = \frac{\alpha_o f_o(\bar{\sigma}_o)[\lambda_R(p_R)(\bar{p} - p_R) - \lambda_L(p_L)(\bar{p} - p_L)]}{2\eta(\sigma_L - \sigma_R)} \tag{33}$$

and

$$\frac{\partial V_L(p_L, p_R)}{\partial \beta_n} = -\frac{\alpha_n f_n(\bar{\sigma}_n)[\lambda_R(p_R)(\bar{p} - p_R) - \lambda_L(p_L)(\bar{p} - p_L)]}{2\eta(\sigma_L - \sigma_R)}, \tag{34}$$

where the focus on candidate L is without loss of generality. 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 $\lambda_R(p_R)(\bar{p}-p_R)-\lambda_L(p_L)(\bar{p}-p_L) < 0$ in equilibrium, which is satisfied in all Type 1 and Type 2A equilibria as established in Proposition 5 when L is the open and R is the nativist candidate. Then, candidate L's vote share increases in a Type 1 or Type 2A equilibrium if and only if L is the open candidate. Note that these are the two types of convergent equilibria in which candidates pander relatively more to their own bases. $\square$

Proof of Corollary 2. Implicitly differentiating the first-order condition (20) for all $p_j \neq \bar{p}$ yields

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial \gamma_j \partial p_j} + \frac{\partial^2 V_j(p_j, p_{-j})}{\partial p_j^2}\frac{\partial p_j}{\partial \gamma_j} = 0 \tag{35}$$

for $j \in \{L, R\}$ and $p_j < \bar{p}$, and

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial \mu_j \partial p_j} + \frac{\partial^2 V_j(p_j, p_{-j})}{\partial p_j^2}\frac{\partial p_j}{\partial \mu_j} = 0 \tag{36}$$

for $j \in \{L, R\}$ and $p_j > \bar{p}$. Note that $\frac{\partial^2 V_j(p_j,p_{-j})}{\partial p_j^2} < 0$ by the strict concavity of candidate j's vote share for all $p_j \neq \bar{p}$ and

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial \gamma_j \partial p_j} = \beta[\alpha_n f_n(\bar{\sigma}_n) - \alpha_o f_o(\bar{\sigma}_o)]\left[\frac{\partial \lambda_j'(p_j)}{\partial \gamma_j}(p_j - \bar{p}) + \frac{\partial \lambda_j(p_j)}{\partial \gamma_j}\right] \tag{37}$$

for $p_j < \bar{p}$, while

$$\frac{\partial^2 V_j(p_j, p_{-j})}{\partial \mu_j \partial p_j} = \beta[\alpha_n f_n(\bar{\sigma}_n) - \alpha_o f_o(\bar{\sigma}_o)]\left[\frac{\partial \lambda_j'(p_j)}{\partial \mu_j}(p_j - \bar{p}) + \frac{\partial \lambda_j(p_j)}{\partial \mu_j}\right] \tag{38}$$

for $p_j > \bar{p}$ and $j \in \{L, R\}$. Given $\lambda_j(p_j) = \gamma_j(\bar{p} - p_j) + K$ for all $p_j \leq \bar{p}$, we have $\frac{\partial \lambda_j'(p_j)}{\partial \gamma_j} = -1$ and $\frac{\partial \lambda_j(p_j)}{\partial \gamma_j} = \bar{p} - p_j$ for all $p_j \leq \bar{p}$ and $j \in \{L, R\}$. Likewise, since $\lambda_j(p_j) = \mu_j(p_j - \bar{p}) + K$ for all $p_j > \bar{p}$, we have $\frac{\partial \lambda_j'(p_j)}{\partial \mu_j} = 1$ and $\frac{\partial \lambda_j(p_j)}{\partial \mu_j} = p_j - \bar{p}$ for all $p_j > \bar{p}$ and $j \in \{L, R\}$. Then, (37) and (38) are both negative for $j \in \{L, R\}$ if and only if $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$, which implies based on equations (35) and (36) that $\frac{\partial p_j}{\partial \gamma_j} < 0$ for all $p_j < \bar{p}$ and $\frac{\partial p_j}{\partial \mu_j} < 0$ for all $p_j > \bar{p}$ for $j \in \{L, R\}$ if and only if $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$. Focusing on a Type 1 equilibrium implies that $\alpha_n f_n(\bar{\sigma}_n) < \alpha_o f_o(\bar{\sigma}_o)$ if and only if $p_j^* < \bar{p}$. Since stronger cultural identities implies an increase in γ_L and a decrease in μ_L for the open candidate L, and an increase in μ_R and a decrease in γ_R for the nativist candidate R, it follows that p_L^* decreases and p_R^* increases in a Type 1 equilibrium regardless of the ranking between $\alpha_n f_n(\bar{\sigma}_n)$ and $\alpha_o f_o(\bar{\sigma}_o)$. □